Draft Source Control Evaluation Report

Brix Maritime Co.

9030 NW St. Helens Road
Portland, Oregon

ECSI No. 2364

Prepared for
Brix Maritime Co.

September 29, 2015
15634-04

HARTCROWSER

Draft Source Control Evaluation Report

Brix Maritime Co.

9030 NW St. Helens Road
Portland, Oregon

ECSI No. 2364

Prepared for
Brix Maritime Co.

September 29, 2015
15634-04

Prepared by
Hart Crowser, Inc.

DRAFT

Expires 5-31-2016
Richard D. Ernst, RG
Principal

8910 SW Gemini Drive
Beaverton, OR 97008-7123
Fax 503.620.6918
Tel 503.620.7284

Contents

EXECUTIVE SUMMARY 1

1.0 INTRODUCTION 2
1.1 Purpose and Objectives 3
1.2 Scope of Work 3
1.3 Report Organization 4
1.4 Limitations 4

2.0 BACKGROUND 5
2.1 Site Description 5
2.2 Site Ownership and Operational History 8
2.3 Regulatory History and Requirements 9
2.4 Previous Environmental Activities 10

3.0 CONCEPTUAL SITE MODEL 13
3.1 Sources of Contamination 13
3.2 Contaminants of Interest 14
3.3 Potential Contaminant Migration Pathways 14

4.0 STORMWATER PATHWAY 15
4.1 Stormwater System Configuration 15
4.2 Stormwater BMPs and SCMs 16
4.3 Catch Basin Sediment Assessment 19
4.4 Stormwater Discharge Collection 24
4.5 Stormwater Analyses and Results 26
4.6 Summary of Activities and Findings 30

5.0 GROUNDWATER PATHWAY 32
5.1 Data Summary 32
5.2 Data Assessment 37
5.3 Summary of Findings 39

6.0 EROSION PATHWAY 40
6.1 Extent of Soil Contamination 41
6.2 Surface Conditions 41
6.3 Summary of Findings 42

7.0 OVERWATER ACTIVITIES PATHWAY 42
7.1 Overwater Operations 42
7.2 Pollution Prevention 44
7.3 Summary of Findings 45

8.0 SOURCE CONTROL EVALUATION 45
8.1 Pathway Summary and Findings 45
8.2 Conclusions 48

9.0 REFERENCES 49

TABLES

1 Catch Basin Sediment Data: Non-Volatile Compounds
2 Catch Basin Sediment Data: VOCs
3 Catch Basin Sediment Data: Grain Size Analysis
4 Stormwater Outfall Field Parameters and Observations
5 Stormwater Data: Outfall A
6 Stormwater Data: Outfall B
7 Groundwater Chemical Analyses Results: TPH (Downgradient Wells)
8 Groundwater Chemical Analyses Results: PAHs (Downgradient Wells)
9 Groundwater Chemical Analyses Results: VOCs (Downgradient Wells)

FIGURES

1 Property Location Map
2 Property Plan and Exploration Locations
3 USTs and Product Lines
4 Stormwater System and Underground Utility Plan
5 Monitoring Well Locations and Potentiometric Surface (August 21, 2009)
6 Operational Areas
7 Extent of Petroleum Contamination
8 Conceptual Site Model
9 Catch Basin Construction (Typical)

APPENDIX A
Photographs

APPENDIX B
Soil and Groundwater Summary Data Tables

APPENDIX C
Stormwater Analytical Laboratory Reports

APPENDIX D
Stormwater Pathway Support Documentation

APPENDIX E
Groundwater Pathway Support Documentation

APPENDIX F
Erosion Pathway Support Documentation

APPENDIX G
Overwater Activities Pathway Support Documentation

ACRONYMS

Anchor	Anchor Environmental
ARI	Analytical Resources, Incorporated
AWQC	Ambient water quality criteria
BEHP	*Bis*(2-ethylhexyl) phthalate
BERA	Baseline Ecological Risk Assessment
bgs	Below ground surface
BMPs	Best management practices
cf	Cubic feet
City	City of Portland
COI	Contaminants of Interest
CSM	Conceptual Site Model
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EPA	United States Environmental Protection Agency
ESC	Environmental Science Corp
gpm	Gallon per minute
Hahn	Hahn and Associates
HPAHs	High-molecular weight PAHs
JSCS	Joint Source Control Strategy
LNAPL	Light non-aqueous phase liquids
LPAHs	Light-molecular weight PAHs
LUST	Leaking underground storage tank
MDL	Method detection limit
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
MRL	Method reporting limit
msl	Mean sea level
NPDES	National Pollutant Discharge Elimination System
Pace	Pace Analytical Services
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PQL	Practical quantification limit
PRGs	Preliminary remediation goals
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SCE	Source Control Evaluation
SCMs	Source control measures
SLV	Screening level value
TOC	Total organic carbon
TPH	Total petroleum hydrocarbons
TRVs	Toxicity reference values

ACRONYMS (CONTINUED)

TSS	Total suspended solids
µg/kg	Micrograms per kilogram
µg/L	Micrograms per liter
USGS	United States Geological Survey
UST	Underground storage tank
VOCs	Volatile organic compounds

Draft Source Control Evaluation Report

Brix Maritime Co.

9030 NW St. Helens Road, Portland, Oregon

EXECUTIVE SUMMARY

The Oregon Department of Environmental Quality (DEQ) is requiring individual upland property owners to identify, evaluate, and control sources of contamination that may reach the Willamette River consistent with the Portland Harbor Joint Source Control Strategy (JSCS), which is administered jointly by the DEQ and the United Stated Environmental Protection Agency (EPA) (DEQ/EPA 2005). The JSCS represents a framework for making upland source control decisions at the Portland Harbor Superfund Site.

This report presents the results of an upland source control evaluation (SCE) conducted for the Brix Maritime Co. (Brix) property (Property) within the Portland Harbor Superfund Study Area at 9030 NW St. Helens Road in Portland, Oregon (Figures 1 and 2). The purpose of this SCE is to assess whether actual or potential upland sources of contamination at the Brix Property pose an environmental concern to the Willamette River. This evaluation involved collecting and evaluating data associated with potential stormwater, groundwater, erosion, and overwater exposure pathways to the river. Each of these pathways at the Property is summarized below along with the activities performed, data reviewed, and the findings and conclusions of the SCE.

- **Stormwater Pathway.** Precipitation falling on upland paved areas of the Property is captured in on-site catch basins that convey the runoff through piping to two outfalls on the upper portion of the riverbank. Stormwater may be exposed to contaminants on the pavement surface from incidental drips from vehicles, tracking or air deposition of particulates onto the Property, and the weathering of asphalt pavement. To assess this pathway, catch basin sediments and stormwater discharges were characterized. Several contaminants of interest (COIs), particularly polycyclic aromatic hydrocarbons (PAHs), were detected at elevated concentrations. Source control measures (SCMs) were implemented in 2008 and 2012, which included cleaning out the entire stormwater conveyance system and pavement sweeping. Subsequent stormwater results have confirmed that the SCMs were effective in reducing COI concentrations to near, at, or below JSCS screening levels values (SLVs) and to levels within the lower range of "typical" industrial stormwater runoff. Brix continues to implement best management practices (BMPs) and SCMs at the Property to prevent and minimize potential contaminants in stormwater from reaching the river. Therefore, upland source control has been achieved.

- **Groundwater Pathway.** Historical releases at and near the underground storage tank (UST) nest in the upland portion of the Property resulted in petroleum contamination of groundwater beneath and in the area of the northwest portion of the maintenance building. Groundwater monitoring of on-site monitoring wells was performed from 2002 until 2009. Additionally, an assessment of a groundwater seep along the riverbank was conducted in 2005. Evaluation of the

latest groundwater data from downgradient monitoring wells (2007 through 2009) indicated that only PAHs were infrequently above human health screening criteria. These criteria, however, are intended to be applicable to only larger water bodies, not short stretches of riverbank. For the Property, ecological criteria provide a better screening tool. Screening of the downgradient well data against ecological criteria only identified one PAH that sometimes slightly exceeded its criterion; overall, the average concentration of PAHs was below the criterion. Because downgradient groundwater wells are at least 30 feet from the riverbank, groundwater seepage along the Property riverbank is relatively slow and quickly incorporated into the flow of the river, and the seep sample did not have any detectable PAHs exceeding both human health or ecological criteria, COIs in groundwater do not pose a concern to human health or aquatic receptors. Moreover, COI concentrations will continue to attenuate over time. Thus, there is no need for SCMs to mitigate the groundwater migration pathway at the Property.

- **Erosion Pathway.** Historical UST releases also resulted in petroleum contamination of soil in the upland area of the Property. If exposed at the ground surface, these contaminated soils could be eroded by wind, precipitation, wave action, or river flows. Contaminated soils, however, are set back from the riverbank, which is armored by riprap, by at least 30 feet. Because these soils do not extend to the riverbank, are localized, and are not subject to erosion because they are covered with asphalt pavement, the erosion pathway is an incomplete contaminant migration pathway for the Property and could not cause a current or future risk to the river.

- **Overwater Activities Pathway.** In support of its tugboat fleet, Brix conducts overwater activities consisting of fueling, oil changes, bilge water removal, and other routine maintenance and minor repairs. These activities are performed within covered and contained areas of the in-water work barge (which is permanently moored at the Property) and tugboats. Because these activities are also subject to Brix's implemented BMPs, maintenance standards, and procedures, Brix's overwater activities represent an insignificant or incomplete contaminant pathway. As such, no additional SCMs are necessary.

Based on these findings as described for each pathway above, Hart Crowser concludes that upland contaminant sources and overwater activities at the Brix Property pose no potential risk to the river, upland source control has been achieved, and through continued implementation of BMPs and SCMs, no additional actions are necessary.

1.0 INTRODUCTION

This report presents the results of an SCE for the Brix Property within the Portland Harbor Superfund Site study area (Figures 1 and 2). This SCE was performed at the request of, and with oversight by, the DEQ under the terms of the Voluntary Agreement for Remedial Investigation and Source Control Measures (No. LQDVC-NWR-02-03) between Brix and the DEQ (DEQ 2002). The Brix Property appears in DEQ's Environmental Cleanup Site Information (ECSI) database as ECSI No. 5277.

1.1 Purpose and Objectives

The purpose of this SCE is to identify actual or potential contaminant sources at the Brix Property and to evaluate whether they may pose an environmental concern to the river. The SCE's objectives are to: (1) demonstrate that actual or potential contaminant types and sources at the Brix Property have been adequately characterized; (2) confirm that there are no contaminant sources at the Brix Property that pose an environmental concern to the river; and (3) verify that existing BMPs and SCMs employed at the Brix Property will continue to address potential upland contaminants and meet Portland Harbor JSCS objectives and criteria.

1.2 Scope of Work

The SCE is consistent with the approach and framework established in Appendix D of the DEQ/EPA Portland Harbor JSCS and other relevant DEQ guidance documents for evaluating upland sites in Portland Harbor (DEQ/EPA 2005; DEQ 2010). The SCE also addresses DEQ's comments on the 2012 Stormwater SCE Report for the Brix Property and responds to DEQ's subsequent request that Brix evaluate other potential exposure pathways to the river (DEQ 2012). This report evaluates four potential exposure pathways by which upland contaminants may reach the river: groundwater, stormwater, erosion, and overwater activities. The following briefly describes these pathways and summarizes the scope of work performed to assess each potential exposure pathway.

- **Stormwater Pathway.** Stormwater runoff from rain falling on the Property has the potential to wash contaminants from the Property to the river via stormwater piping and overland sheetflow. Hart Crowser sampled, analyzed, and removed catch basin sediment; conducted stormwater sampling and analysis; implemented SCMs, including stormwater conveyance line cleaning; and evaluated the information generated.
- **Groundwater Pathway.** Groundwater has the potential to transport contaminants from upland releases toward the river. Historical petroleum releases from USTs on the upland portion of the Brix Property led to removal activities in 1993 and subsurface investigations from 1993 through 2005 to determine the extent of soil and groundwater contamination. Groundwater monitoring wells were installed, and groundwater sampled for chemical analysis from 2003 through 2009. Additionally, a groundwater seep along the river was sampled in 2005. Hart Crowser evaluated groundwater data from the downgradient monitoring wells nearest the river and the seep to assess whether contaminants associated with the historical UST releases may have migrated to the river with groundwater flow. This evaluation confirmed the petroleum contamination was localized in the upland portion of the Property, did not migrate off the Property, and does not pose a threat to the river.
- **Erosion Pathway.** Exposed surface and riverbank soils can be eroded by wind, precipitation, wave action, river flows, or mass wasting and come to rest in the river. Most of the upland portion of the Brix Property is covered with hardscape (e.g., buildings, pavement), and the riverbank is covered with riprap and/or vegetation. Hart Crowser reviewed soil data from previous environmental investigations, which confirmed that upland petroleum-contaminated soils from

historical UST releases are distant from the riverbank and not subject to erosion, and therefore are not a source control issue.

- **Overwater Activities.** Operational activities conducted on structures that extend into the river have the potential to impact the river if hazardous substances are released. Activities at the Brix Property include a limited amount of tugboat and barge moorage, minor tugboat fueling, and minor maintenance and repairs conducted at and within a covered work barge permanently moored at the Property. Hart Crowser reviewed these operational activities and existing BMPs (described in greater detail in Section 7) and concluded that the overwater activities pathway is insignificant given that most operational activities occur within the sheltered work barge.

Stormwater sampling was performed in general accordance with the scope and procedures presented in the Stormwater System Sampling and Analysis Work Plan (Work Plan; Hart Crowser 2007) approved by the DEQ (DEQ 2007, 2008). In 2012, Hart Crowser prepared a Stormwater SCE Report, which focused solely on the stormwater pathway (Hart Crowser 2012). This SCE, which evaluates additional potential pathways to the river, supersedes the 2012 SCE report. Previous soil and groundwater investigation activities were also conducted in accordance with the Remedial Investigation (RI) Work Plan and Addendum 1 (Anchor Environmental [Anchor] 2003c, 2005b), which were approved by the DEQ (DEQ 2005).

1.3 Report Organization

Section 2 of this report presents background information about the Brix Property, including a general description of the Property, the Property's history, and previous environmental activities conducted at the Property. Section 3 describes a Conceptual Site Model (CSM) that analyzes whether contaminant sources at the Property could adversely affect the Willamette River through various exposure pathways. The report then analyzes potential exposure pathways via stormwater, groundwater, erosion, and overwater activities in Sections 4, 5, 6, and 7, respectively. Section 8 then presents a summary of these pathways and the SCE conclusions. References are provided in Section 9. Tables and figures are ordered as presented in the text. Appendices provide supporting documentation, including photographs of the Brix Property (Appendix A), soil and groundwater data summary tables (Appendix B), laboratory reports for the stormwater SCE (Appendix C), and other pathway-specific information (Appendices D, E, F, and G).

1.4 Limitations

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. This report is intended for the exclusive use of Brix for specific application to the Brix Property. This report is not meant to represent a legal opinion. Hart Crowser makes no other warranty, expressed or implied.

2.0 BACKGROUND

This section describes the Brix Property, its ownership and operational history, its regulatory history and requirements, previous environmental activities completed at the Property, and an SCE CSM for the Property. Please refer to the cited references listed in Section 9 for additional background information.

2.1 Site Description

The Brix Property encompasses approximately 4.5 acres and is at approximately River Mile 5.5 along the southwest (left descending) bank of the Willamette River at 9030 NW St. Helens Road in Portland, Oregon (Figures 1 and 2). The Property and surrounding properties have been developed for marine, industrial, or transportation-related uses. General information about the Property is presented below. Appendix A includes representative photographs of the Property.

2.1.1 Site Features

Figure 2 shows the structures and other physical features present on the Brix Property. The Property was developed in the late 1970s on a vacant, dredge-filled parcel of land. Several buildings, sheds, and a UST nest are on the upland portion of the Property. Mooring docks and a covered work barge permanently moored in the Willamette River are located along the Property's riverbank. Security fencing with a lockable access gate surrounds the Property, except for the area abutting the river. Access to the upland area from the river is restricted to normal business hours. The mooring docks are private property and unavailable for use by the public or other entities. Pertinent site features are described below.

Buildings. Upland structures include an administration office building, a maintenance office and materials storage building, and several small sheds (Figure 2). The following describes each structure's use.

- *Office Building***.** The office building is a two-story building in the northeastern portion of the Property that is used as office space to perform traditional administrative activities.
- *Maintenance Building.* The maintenance building is in the southeastern portion of the Property and houses the maintenance manager's office, maintenance records, and materials that must be stored under cover. Materials kept within the building include equipment parts and supplies; small quantities (55-gallon drums and 5-gallon or smaller containers) of petroleum products, lubricants, low-volatile organic compound (VOC) paint, non-engine water coolant, and cleaning supplies; and drums with used materials (e.g., oil filters) pending transport off the Property. Brix recycles or uses these products in their entirety. In 2002, Brix switched to environmentally friendly, biodegradable oils.
- *Flammable Materials Storage Shed.* A small, metal flammable materials storage shed (the size of a small guard shack) sits along the southeastern perimeter of the Property. The shed contains two flammable storage cabinets used to store small containers (five gallons or less) of petroleum fuels and consumer-size quantities of flammable products (e.g., paint thinners). These products are not exposed to rainfall or stormwater.

- *Small Storage Sheds.* There are also two small metal sheds (each approximately 8 feet by 10 feet in size) located along the work barge access road. These sheds, which separately contain oxygen and acetylene welding gas cylinders, are largely empty.

UST Nest. Two 20,000-gallon diesel USTs and a 6,000-gallon lubricating oil UST are currently situated in a single tank nest northwest of the maintenance building (Figure 3). A concrete pad covers the UST nest. These USTs were retrofitted and upgraded in 1998 with tank liners, cathodic protection, and spill and overfill prevention equipment to comply with regulatory upgrade requirements (Anchor 2000). Brix electronically monitors these USTs and receives hourly reports and daily readouts that identify the amount of product in each UST. If a small leak were to occur, an alarm would be triggered to alert Brix personnel that a product loss had occurred.

Petroleum products are delivered to the site by tanker truck. Product transfer pipes run underground from the UST nest to the top of the bank where they daylight along the riverbank, and run above the river to the work barge (Figure 3). The product conveyances are made of steel pipes and flexible hose couplings with secondary containment at each end of the work barge access ramp to allow for river level fluctuations. The flexible coupling hoses are replaced every five years and line pressure tests are conducted annually in accordance with Brix's maintenance standards and procedures (Brix 2008). Product transfer from the work barge to tugboats is discussed further in Section 7 (Overwater Activities Pathway).

Stationary Covered Work Barge. The work barge is permanently moored in the river adjacent to the embankment between the mooring docks and shoreline. It is approximately 160 feet long and 35 feet wide, is largely enclosed, and has six watertight compartments. The work barge is used to facilitate fueling and general maintenance of the tugboats. The deck level of the work barge is completely covered and includes a mechanical work area, machine shop, electric shop, lunch room, and tool and parts storage. The below-deck areas of the work barge are used for storage and contain heating oil, used oil, bilge water, and sanitary wastewater holding tanks. Activities conducted on the work barge, including fueling, are described in greater detail in Section 7.

Outside Areas. The upland surface of the Property is generally covered with asphalt pavement, except for minor landscaped areas around the Property's perimeter and adjacent to the office building. The northwestern portion of the Property is used as an employee/visitor parking lot. An outside storage yard in the southeastern portion of the Property is used to store non-motorized equipment, large metal parts, tires (for bumpers on the tugs), cables, and ropes. Covered trash receptacles and metal scrap bins are also located in the yard. No liquid products are stored in the outside storage yard (liquid products are stored in the maintenance building). A paved access road leads down from the yard, across a metal access ramp, to the work barge. The riverbank is armored with riprap that is generally intact except for the lower bank east of the office building that has slid away downward toward the river (erosion is further discussed in Section 6). Opportunistic vegetation (grasses, trees, and blackberry bushes) has become established on the upper portions of the riverbank.

2.1.2 Utilities

As illustrated on Figure 4, the following underground utility lines (and their providers) are present on the Property: electricity (Portland General Electric [PGE]), natural gas (NW Natural), municipal water (City of Portland [City]), sanitary sewer (City), and telephone (CenturyLink [formerly Qwest]). Two pad-mounted transformers owned and maintained by PGE are also on the Brix Property. The Property's stormwater collection and conveyance system is further described below. These utilities, which have been maintained by Brix or the designated utility providers since their installation, have remained largely unchanged. No current or historical water supply wells, underground injection control wells (i.e., drywells), septic systems, or other subsurface disposal fields have ever been installed on the Property (Brix 2008). A municipal 48-inch diameter storm sewer line crosses beneath the Property, but does not service the Property; this line is discussed further below.

The entire Property, except for the riprapped riverbank and minor landscaped areas, is covered with buildings, concrete, or asphalt pavement. Precipitation falling on the office building discharges through roof drains directly to the riverbank and infiltrates through the riprap into the subsurface. Precipitation falling on the remaining areas of the Property with impervious surfaces is collected in two dedicated catchment areas (Figure 4), which are used for employee and visitor parking (Area A) and non-motorized equipment storage (Area B). Stormwater runoff from both catchment areas initially flows into catch basins, through underground piping, and ultimately discharges through either Outfall A or Outfall B onto the riverbank above the Willamette River (Figure 4). The individual components of this stormwater system are further described in Section 4.1. Stormwater from adjoining properties does not run onto the Property or enter the Property's stormwater system.

The City owns and maintains a separate 48-inch stormwater line that runs beneath the northern portion of the Brix Property and to dedicated Outfall AAE427 (a.k.a. Outfall OF-22D; Figure 4) pursuant to a 2000 easement. The catchment area for City Outfall AAE427 does not include the Property (i.e., the Property is not connected to this line), but collects stormwater runoff from NW St. Helens Road, the southbound approach from NW St. Helens Road to the St. Johns Bridge, and from residential and undeveloped forested areas west of NW St. Helens Road. Brix reconstructed the lower extent of this line in 1998 to replace an earlier corrugated steel line that was collapsing in the late 1990s. This line discharged to outfall AND882, as shown on Figure 4. Based on an aerial photograph review, this earlier line was likely installed before or at the time dredge fill was placed on the Property in late 1971 (Brix 2008). The entity that constructed this line is unknown. Concurrent with the installation of Outfall AAE427, Brix abandoned in place the collapsed section of metal piping and Outfall AND882 by filling the pipe and plugging the outfall with controlled density fill material.

2.1.3 Geology and Hydrogeology

Most of the upland portion of the Property is level and situated at an elevation of approximately 42 feet above mean sea level (msl NAVD88), except for a steep embankment (i.e., riverbank) along the northeast side that slopes down to the Willamette River. A river level gauge, shown on Figure 2, is present along the mooring dock. River levels measured during groundwater monitoring events indicate seasonal water levels ranging from 5 to 19 feet msl. The flood stage is approximately 23 feet.

The geology of the Property consists of fill material from surface to 19 to 25 feet below ground surface (bgs), underlain by native clays to silty clays at approximately 17 to 23 feet above msl. The fill material consists mostly of dredge sand fill placed on native soils in late 1971. During construction of the Property in the late 1970s, a gravelly base course layer was added on top of the dredge fill to bring the Property to grade. Based on environmental explorations conducted on the Property, this base course layer ranges from 0.5 to 6.5 feet and is composed of silty gravel, gravelly silt, or gravelly sand.

A network of groundwater monitoring wells has been installed as part of environmental investigations at the Property. Groundwater level measurements are listed in Table B-1 in Appendix B. Groundwater is present from approximately 17.2 to 23.7 feet bgs on the upland portion of the Property, equating to approximately 17.5 to 25 feet msl. Well MW-4, which is situated partly down an access road to the dock, has groundwater depth ranges from 11.5 to 20 feet msl. Groundwater is present in the dredge sand fill and is perched on native fine-grained soils. Groundwater levels seasonally fluctuate with higher levels present in winter and spring, and lower levels in summer and fall (similar to seasonal changes in river levels). Groundwater levels range from slightly below to slightly above the top of the native soil, indicating that the groundwater is perched in the sand fill.

As measured by the monitoring wells on the Property, groundwater flow is consistently to the east toward the Willamette River. Figure 5 provides an example of groundwater contours at the Property (Hart Crowser 2009). Groundwater flows within the sand fill, emerging as groundwater seeps during low river levels at the contact between native soils and the dredge fill sand. Seepage is very slow, measured at 0.5 liters/hour during a September 2005 seep sampling event.

2.2 Site Ownership and Operational History

The Brix Property was an undeveloped and vacant parcel of land prior to the late 1970s. Based on a review of historical aerial photographs, dredged sand fill was placed on the Property in 1971. Glen A. Widing, who owned the Property at the time of fill placement, sold the property to Arthur A. Riedel in 1973. Brix's predecessor, Knappton Towboat Company, began developing the Property in the late 1970s. In 1981, Arthur A. Riedel sold the Property to the Siegfried Company. Brix acquired the Property from the Siegfried Company in 1993 and continues to own the Property and all buildings and other improvements, except for the City's stormwater conveyance and outfall as noted in Section 2.1.2.

Brix and its predecessors have continuously operated a tugboat fleet and barge mooring and dispatch facility at the Property since the development of the Property in the late 1970s. Operational activities have remained largely unchanged since the late 1970s and consist principally of tug and barge scheduling and dispatch, fueling, routine maintenance, and crew rotation, although Brix has reduced its fleet size over the years. The Property's primary operational areas are shown on Figure 6. Brix has never conducted any shipbuilding, ship retrofitting, hull repair, sandblasting, hull scraping, re-powering or any other major maintenance or repairs at the Property. Major vessel maintenance and repairs, including those requiring a vessel to be out of the water, are performed off-Property.

The outside areas of the Property are used only for employee/visitor parking and for storage of large, non-motorized, tug-related equipment (e.g., towing or anchoring brackets, tire bumpers, cables, and

ropes). Unless Brix employees are serving as crewmembers stationed on vessels during extended trips, vehicles generally remain in the parking lots only during normal business hours. No hazardous liquids or other hazardous substances are stored outdoors or in other exposed areas of the Property. All petroleum fuels, oils, lubricants, solvents, other flammable materials or hazardous substances, and liquids are stored indoors and are sheltered from rain and stormwater. Brix uses an electronic purchasing system, ordering materials on an as-needed basis; thus it keeps only a limited quantity of basic supplies in inventory at the Property. All machine and equipment cleaning operations are performed in enclosed, contained areas (Brix 2008).

The Property and adjacent vicinity are zoned Heavy Industrial with River Industrial and Scenic Resources overlays (Portland Maps 2015). The River Industrial overlay encourages and promotes the development of river-dependent and river-related industries, which strengthen the economic viability of Portland as a marine shipping and industrial harbor, while preserving and enhancing riparian habitat and providing public access where practical. The purposes of the Scenic Resource overlay are achieved by establishing height limits within view corridors to protect significant views and by establishing additional landscaping and screening standards to preserve and enhance identified scenic resources. No changes in the designated land use zones are known or anticipated, and it is reasonably likely that future Property and area uses will remain the same as current uses.

2.3 Regulatory History and Requirements

With respect to regulated actions that may be related to a potential stormwater pathway to the Willamette River, the site meets and has always met the conditions for No Exposure Certification under the Clean Water Act and Oregon Water Quality Law regulations. As such, a National Pollutant Discharge Elimination System stormwater permit has never been required for the site.

A UST system has been in place at the Property since 1979 (Figure 4), and the Property is registered as DEQ UST Facility No. 7374. The UST system initially consisted of one 2,000-gallon gasoline UST, two 20,000-gallon diesel USTs, two 6,000-gallon lubrication oil USTs, a gasoline dispenser, and ancillary piping. The gasoline UST, dispenser, and one of the lubricating oil USTs were decommissioned by removal in 1998. No holes or leaks were observed in the decommissioned USTs. The three remaining USTs for diesel fuel and lubricating oil are still on the Property (described in Section 2.1.1). These remaining USTs were retrofitted and upgraded in 1998. Internal inspections of the USTs performed before lining confirmed that there were no holes or leaks. All associated reporting documents were submitted to the DEQ at the conclusion of the decommissioning and upgrade activities. There have been only three historical releases at the Property, as follows.

- In 1993, Brix discovered an upland subsurface release of lubricating oil from a UST product line. Brix immediately halted dispensing operations from the lubricating oil USTs, reported the release to the DEQ (Leaking underground storage tank [LUST] File No. 26-93-0009), repaired the product line, removed petroleum-contaminated soil, and initiated soil and groundwater investigations (discussed in Section 2.4).

- During subsurface investigations in 1993 to assess the extent of the above release, a gasoline release was also discovered. Although the source of the release is unknown (given that no holes or leaks were observed in the UST when it was decommissioned in 1998), the release was likely from the product lines or dispenser in the area of the gasoline release.
- During the 1998 UST upgrade activities, a release likely associated with minor historical diesel overfills at the fill end of the USTs was discovered and reported to DEQ under File No. 26-93-0009. Documentation did not specify which UST(s) were affected or when the historic overfills occurred. Chemical data on soil do not indicate diesel-contaminated soil beyond the observed overfills. When Brix entered into the DEQ's Voluntary Cleanup Program in May 2002 for an RI and SCM, the DEQ closed the LUST file.
- In October 2012, a sump sensor on the UST system alerted Brix personnel to a leak in the diesel line. An investigation revealed that the leak was fully contained in the pipe transition pump within the secondary containment system's double-walled pipe, and therefore, did not reach or affect surrounding soils. Brix replaced the existing double-walled diesel and lubricating oil lines with new double-walled fiberglass pipe. The detected leak was reported to the DEQ (LUST File No. 26-12-1331) and, based on a discussion with a DEQ representative, soil sampling beneath the double-walled pipe was performed. Analytical results confirmed there was no release from the double-walled pipe. The DEQ subsequently closed the LUST file in May 2013.

In 1994, Brix engaged in "housekeeping" activities involving the off-site disposal of unused paint and paint-related materials that had accumulated at the site over many years. Brix filed a Resource Conservation and Recovery Act (RCRA) Site Hazardous Waste Activity Notification with DEQ (EPA ID No. ORD103014866). Approximately 1,200 pounds of paint and paint-related waste were disposed of off-Property that consisted of xylenes, toluene, methanol, aliphatic hydrocarbons, silicon alkyd resin, and methyl ethyl ketone (RCRA Waste Codes 0001, F003, and F005). The waste was transported to a licensed facility (EPA ID No. WAD00812909) under Manifest No. 51919 on November 11, 1994. Activities associated with this off-Property disposal are included in DEQ Hazardous Waste Site Report 00035531. The Property has been a conditionally-exempt generator of hazardous waste since then.

2.4 Previous Environmental Activities

Brix initiated environmental investigations at the Property in 1993, and from 2001 through 2009, in response to historical UST releases in the upland portion of the Property. Figure 2 shows the subsurface exploration and monitoring well locations associated with these investigations. Soil and groundwater analytical data summary tables are included in Appendix B as Tables B-2 through B-9. These data were used to delineate the apparent extent of contamination in soil and groundwater at the Property, as shown on Figure 7. These investigation activities and their results are summarized below. Please refer to the cited references for additional information.

1993 Lubricating Oil Release, Site Investigations, and Remediation. In January 1993, Brix discovered an upland subsurface release that had occurred as a result of an approximately 1/8-inch diameter hole in the 30-weight lubricating oil line (pressure testing of the lines revealed no other holes). Brix reported the release (LUST File No. 26-93-0009), repaired the line, and in February 1993, excavated

approximately 45 cubic yards of petroleum-contaminated soil in the vicinity of the leak for treatment and disposal of off the Property. Figure 7 shows the approximate extent of the excavation.

In April 1993, Hahn and Associates (Hahn), as a consultant to Brix, completed borings B-1 to B-13 in the vicinity of the UST nest and product line leak to determine the extent of petroleum hydrocarbons in soil and groundwater. Petroleum-contaminated soil was detected in two areas: oil-range hydrocarbons were present in soil next to the maintenance building in the area of the lubricating product line leak (boring B-13); and gasoline-range petroleum hydrocarbons were encountered in one exploration south of the UST nest near the gasoline dispenser (boring B-7). Groundwater was encountered in several explorations at approximately 26 feet bgs. No petroleum hydrocarbons were detected either by visual observation or by analytical testing at the depth of the observed water table. Because soil data suggested petroleum hydrocarbons had not migrated to groundwater, groundwater was not sampled (Hahn 1993a,b).

2001 Investigation. In 2001, the DEQ requested that soil and groundwater sampling be performed as a follow up to previous information provided by Brix to the DEQ. Hahn completed push probes B-14 to B-30 in May 2001 to further assess soil conditions in the UST and piping system areas (Anchor and Hahn 2001). Diesel- to oil-range total petroleum hydrocarbons (TPH) was detected in soil in the area between the UST nest and the northern end of the maintenance building at depths from 3 to 23 feet bgs. Low concentrations of PAHs were present in two soil samples collected at 10 to 16 feet bgs. PAHs were not present in shallow (3 to 6 feet bgs) or deep (>20 feet bgs) soil samples. Gasoline-range TPH and low concentrations of gasoline-associated VOCs were detected in soil at depths from about 6 to 25 feet bgs near the northwest corner of the maintenance building in the area of the former gasoline dispenser and supply line. Groundwater samples collected from six probes detected PAHs and VOCs in groundwater from five probes, indicating that groundwater had been impacted.

2002 and 2003 Well Installations and 2003 to 2009 Monitoring Program. In May 2002, Brix entered into DEQ's Voluntary Cleanup Program and agreed to conduct a RI (this also resulted in DEQ closing LUST File No. 26-93-0009). In July 2002, Anchor installed two monitoring wells downgradient of the lubricating oil pipeline release as part of the initial RI activities. In February and June 2003, Anchor installed five additional wells (Anchor 2003a,b). All wells were initially sampled for gasoline- and diesel-to oil-range TPH, PAHs, VOCs, and lead. In 2005, groundwater samples were analyzed for other metals (arsenic, barium, cadmium, chromium, copper, manganese, and zinc) at DEQ's request. Metals were present in all samples at concentrations generally consistent across the Property with no discernable trends. Because these metals were never stored or processed at the Property, the detections likely reflected background conditions. In 2005, monitoring for metals in groundwater was discontinued. Anchor, and later Hart Crowser, conducted quarterly groundwater monitoring from first quarter 2003 through the third quarter of 2009. At that point, based on data indicating the downgradient chemical concentrations were stable with only infrequent minor screening levels exceedances, the DEQ approved Brix's request to discontinue groundwater monitoring (DEQ 2009; Hart Crowser 2009, 2010).

2005 Explorations and Monitoring Well Installation. In February 2005, Anchor completed three additional soil borings (B-31 to B-33) to obtain constituent data from the gasoline and lubricating oil release areas for risk screening and to develop site-specific risk-based criteria (Anchor 2005a). One

monitoring well (MW-8) was also installed next to B-33 to assess for light non-aqueous phase liquids (LNAPL) on groundwater beneath the lubricating oil release point. Two years of monitoring MW-8 did not indicate the presence of LNAPL. In early 2007, well MW-8 was damaged during a sewer line repair, and upon approval from DEQ, was properly abandoned in November 2007.

2005 Seep Assessment. Groundwater seeps occur along the riverbank during low river levels, emerging at the contact between native soils and the overlying dredge fill sand. The DEQ requested that Brix sample the only identified seep downgradient of the UST nest after PAHs were detected in well MW-2. Figure 7 shows the seep location along the lower riverbank. In September 2005, Anchor collected and analyzed seep water, river water by the river gauge in the immediate vicinity of the seep, groundwater (MW-2), and surface and near-surface (0.5 feet into the slope) soil samples from the seep area for PAHs (Anchor 2006a). PAHs were present in both surface and near-surface soil samples. Fluoranthene, naphthalene, phenanthrene, and pyrene were detected in the groundwater seep sample at concentrations below JSCS SLVs. By contrast, several PAHs were detected in the surface water slightly above potentially applicable JSCS SLVs. Brix subsequently learned that on the same day it was conducting seep and river water sampling at the Brix Property, NW Natural was undertaking Early Action activities at the Gasco site. Water quality samples obtained approximately 400 feet downstream of the Early Action activities indicated the presence of PAHs that were more than an order of magnitude higher than the concentrations found immediately off Brix's riverbank. These substantially higher PAH concentrations just upstream of the Brix Property suggest that PAHs detected in Brix's river water sample likely were due to the Gasco Early Action activities (see Section 5.1.3 for more information).

2006 Soil Sampling Around Transformers. PGE owns and maintains two pad-mounted electrical transformers on the Brix Property (Figure 4). Both transformers are in good condition with no visible indications of leakage. The transformer adjacent to Brix's maintenance building is labeled "NON-PCB." The transformer located south of the office building is not labeled. Although Brix has no reason to suspect that the transformers contained materials with polychlorinated biphenyls (PCBs), Anchor collected soil samples adjacent to both transformers in May 2005 and analyzed them for PCBs to assess the potential for historical releases of PCBs. No PCBs were detected in either soil sample (Anchor 2006a).

2012 UST Piping Assessment. In October 2012, a sump sensor on the UST system detected a leak in the diesel line. An investigation revealed that the leak was fully contained in the pipe transition pump within the secondary containment system's double-walled pipe, and therefore, did not reach or affect surrounding soils. Brix replaced the existing double-walled diesel and lubricating oil lines with new double-walled fiberglass pipes. The detected leak was reported to the DEQ (LUST File No. 26-12-1331) and sampling of soil beneath the original double-walled pipe was conducted approximately every 20 feet at a depth of 3.5 feet. Oil-range hydrocarbons were detected only in one sample at 177 milligrams per kilogram (mg/kg) on the north side of the maintenance building (4C's Environmental, Inc. 2012), specifically within the area where lubricating oil contaminated soil was previously detected (Figure 7). Because no release had occurred from the double-walled pipe and the detected concentration was below risk-based criteria, the DEQ closed the LUST file in May 2013.

3.0 CONCEPTUAL SITE MODEL

Hart Crowser developed a CSM of the Brix Property to identify potential or known contaminant sources, potential COIs, and possible migration exposure pathways to the river. Figure 8 shows a pictorial presentation of the CSM. A discussion of these CSM elements is presented below.

3.1 Sources of Contamination

Since development in the late 1970s, the Property has continuously operated a tugboat fleet and barge mooring and dispatch facility. Operational activities at the Property consist principally of tug and barge scheduling and dispatch, fueling, routine maintenance, and crew rotation. Outside areas of the Property are and have been used for employee/visitor parking and for storage of large, non-motorized, tug-related equipment (e.g., tire bumpers, brackets, and ropes). Diesel and lubricating oil is stored in USTs. Other chemical or petroleum products are not stored or used outdoors or in any other exposed areas; instead they are stored and used indoors or under cover, thus they are sheltered from rain and stormwater. Additionally, there are no documented surface releases to the upland in exposed areas of the Property.

Brix implements BMPs as part of its operational activities for storing, transferring, and using hazardous liquids or other hazardous substances (such as in the maintenance building, in the work barge, or on tugboats), and therefore, any potential sources of contaminants to the surface of the Property are from relatively benign sources. These potential sources include incidental oil and grease drips from parked vehicles, contaminated particulates transported to the Property by employee, delivery, or service vehicles; the wearing of the asphalt pavement surface due to exposure to the elements and traffic at the Property; and atmospheric deposition of airborne particulates generated by area-wide activities (the Property is in an industrial setting, adjacent to mainline railroad tracks and a highway). Because overwater activities associated with Brix's operations are conducted under covered enclosures and are subject to Brix's implementation of BMPs, maintenance standards, and procedures, no known potential overwater sources exist.

Historical releases from the UST system on the upland portion of the Property represent a source of contaminants to subsurface soils and groundwater. In 1993, a release of lubricating oil occurred from a pin-hole leak in a product line near the northeastern corner of the maintenance building; during follow-up investigation and removal actions, gasoline-range TPH and related VOCs were also discovered in soil near the northwest corner of the maintenance building from a former gasoline fuel dispenser supply line. These soil impacts range from 3 to 23 feet bgs. Environmental investigations have determined that gasoline- and oil-range hydrocarbons, including PAHs, are present in groundwater approximately 17 to 24 feet bgs. During the 1998 UST upgrade activities, minor historical diesel overfills appeared to be present; however, chemical data on soil do not indicate diesel-contaminated soil is present beyond the observed overfills. Based on chemical data and field observations at the site, the estimated extent of petroleum impacts to soil and groundwater is shown on Figures 7 and 8.

3.2 Contaminants of Interest

Petroleum fuels and their associated constituents are COIs at the Property based on chemical data from previous environmental investigations. These COIs include gasoline-, diesel-, and oil-range TPH; petroleum VOCs; and PAHs. Lead is present in soil, but at concentrations below DEQ's regional default background concentration for the Portland Basin (DEQ 2013). Metals concentrations in groundwater were generally consistent across the Property with no discernable trends, which also likely reflect background conditions. PCBs or PCB-containing materials have never been stored or used for operational activities at the Property. PCBs were also not detected in soil samples collected around the Property's two PGE pad-mounted transformers.

3.3 Potential Contaminant Migration Pathways

For the contaminant sources identified above to be an environmental concern to the Willamette River (the "receptor"), a migration pathway must be present to convey contaminants from the source to the river. The following briefly discusses the four general migration exposure pathways that are the focus of this SCE Report. Figure 8 illustrates these pathways. Each pathway is discussed in greater detail in Sections 4 through 7, even though only two of which are potentially complete pathways.

Stormwater Pathway. Stormwater falling on the site flows by overland flow into the site's stormwater collection and conveyance system, and discharges through two outfalls situated on the upper portion of the riverbank. Contaminants that may be present on the asphalt surface potentially may become entrained in stormwater (primarily as fine-grained suspended solids) and discharge with stormwater to the river. The stormwater pathway is a potentially complete contaminant migration pathway.

Groundwater Pathway. Groundwater has the potential to transport contaminants from upland releases toward the river. Contaminants from historical UST system releases on the upland portion of the Brix Property have reached groundwater. Groundwater beneath the Property migrates toward the Willamette River along the dredge fill/native soil interface and discharges to the river during high river levels or, during low river levels, through seeps on the riverbank that could flow down the bank to the river. The groundwater pathway has been identified as a potentially complete contaminant migration pathway.

Erosion Pathway. Contaminants in exposed surface and riverbank soils can be eroded by wind, precipitation, wave action, river flows, or mass wasting and come to rest in the river. The upland portion of the Property is paved or covered with hardscape, with the exception of small landscaped areas, and therefore, almost no soils are exposed to erosional processes. River action has resulted in relatively minor loss of riprap along the armored riverbank on the lower bank east of the office building. Vegetation has become established along the upper portions of the bank. Contaminated soils on the upland portion of the Property are set back from the riverbank (Figure 7) and are not subject to erosion. For these reasons, the erosion pathway is an incomplete contaminant migration pathway.

Overwater Activities. Operational activities conducted on structures that extend into the river have the potential to impact the river if hazardous substances are released. Activities at the Property include a limited amount of tugboat and barge moorage, minor tugboat fueling, and minor maintenance and

repairs conducted at and within a covered work barge permanently moored at the Property. Because overwater activities are conducted under covered enclosures and are subject to Brix's implemented BMPs, maintenance standards, and procedures, Brix's overwater activities represent an insignificant or incomplete contaminant pathway.

4.0 STORMWATER PATHWAY

The stormwater pathway focuses on the discharge of stormwater to the Willamette River, primarily through two stormwater outfalls at the Brix Property. Hart Crowser evaluated the stormwater pathway in accordance with DEQ guidance (DEQ 2010) and Portland Harbor JSCS (DEQ/EPA 2005). This section evaluates the following issues in connection with the stormwater pathway:

- Stormwater system configuration;
- Stormwater BMPs and SCMs;
- Stormwater catch basin sediment sampling and analyses;
- Stormwater discharge collection; and
- Stormwater analyses and results.

Detailed discussions of each issue are presented below; a summary of activities and findings is presented in Section 4.6. Appendix C includes copies of the analytical laboratory reports, and Appendix D includes supporting documentation, such as rainfall hydrographs, concentration plots, and photographs of the stormwater system and sampling activities.

4.1 Stormwater System Configuration

The entire Property, except for the riprapped riverbank and minor landscaped areas, is covered with buildings, concrete, or asphalt pavement. Precipitation falling on the office building discharges through roof drains directly to the riverbank and infiltrates through the riprap into the subsurface without entering the stormwater system. Although sheetflow does occur on the access road to the work barge, the road is infrequently used and comprises a relatively small area of the Property. Precipitation falling on the remaining areas of the Property with impervious surfaces is collected in two dedicated catchment areas. The stormwater catchment areas are used for employee and visitor parking and non-motorized equipment storage. Stormwater from adjoining properties does not run onto the site or enter the Property's stormwater system.

The catchment areas, stormwater conveyance configuration, and outfall locations are shown on Figure 4. Photographs of the system are included in Appendix D. Brix is responsible for maintaining this stormwater conveyance system. Stormwater runoff from both catchment areas initially flows into catch basins. Stormwater accumulates in each catch basin until it reaches the height of the inverted outlet pipe attached to the catch basin, and then flows through underground piping, ultimately discharging through either Outfall A or Outfall B onto the riverbank above the Willamette River. The individual components of the stormwater system are further described below.

- *Catchment Area A.* Catchment Area A encompasses the central and northwest areas of the Property and includes the office, employee/visitor parking lot, and the UST nest area. Stormwater in this catchment flows to three catch basins (designated CB-A1, CB-A2, and CB-A3). Catch basins CB-A1 and CB-A2 are connected to a single 6-inch diameter line that drains to an 8-inch diameter line, which in turn discharges through Outfall A north of the office building at approximately 33 feet msl on the riverbank (this is 10 feet above flood stage for the river). Water then must flow through riverbank vegetation, over and/or through rocks, and down the riverbank to reach the river. Catch basin CB-A3 is connected to the 8-inch diameter outfall line about 20 feet upstream from the junction with the 6-inch diameter line.

- *Catchment Area B.* Catchment Area B encompasses the southern portion of the Property and includes the maintenance and materials storage building, parking lot, and non-motorized equipment storage area. Stormwater in this catchment area flows to two catch basins (designated CB-B1 and CB-B2) that are connected to a single 6-inch diameter line, and discharges through Outfall B near the southern site boundary. The outfall is approximately 35 feet msl on the riverbank (or 12 feet above flood stage for the river). Water discharging from the outfall flows through riverbank vegetation, over and/or through rocks, and down the riverbank before reaching the river.

All five catch basins are of similar size and construction. Each catch basin is constructed with steel sidewalls and bottoms with traffic-rated steel surface grates. The internal dimensions of each catch basin are approximately 28-1/2 inches by 28-1/2 inches and 32 inches deep (approximately 15 cubic feet [cf]). The water outlet for each catch basin is a 4-inch diameter inverted pipe installed in one of the sidewalls about 6 inches below the base of the steel grate. Plan and side views of the Property's catch basins are shown on Figure 9.

4.2 Stormwater BMPs and SCMs

Since the late 1990s, Brix has implemented numerous BMPs, including maintenance standards and procedures, to prevent or minimize the potential for chemical products to be exposed to rainfall or stormwater or entrained in stormwater runoff. Additionally, Brix implemented SCMs in 2012 as part of its ongoing SCE activities in an effort to further minimize the possibility that contaminants might be present in stormwater. BMPs and SCMs that are implemented at the Property are described below.

4.2.1 Stormwater BMPs

The stormwater BMPs in place at the Property include the following.

- Except for minor landscaped areas around the Property's perimeter and next to the office building, the entire Property is surfaced with asphalt pavement, concrete, or riprap (along the embankment around the work barge and the remaining riverbank along the Property).

- Outside areas are used only for employee/visitor parking and for storage of non-motorized equipment, large metal parts, tires (for bumpers on the tugs), cables, and ropes. No petroleum fuels, oils, lubricants, solvents, other flammable materials or hazardous substances, or liquids are stored or handled in the exposed areas.

- Hazardous materials handling, storage, and disposal procedures and associated employee training in accordance with industry and regulatory standards and protocols are in place at the Property.
- All machine and equipment cleaning operations are performed in covered and contained areas. Absorbent pads, used cleaning cloths, or disposable towels are placed in drums and stored in covered areas until filled and transported off the Property for recycling or disposal.
- Used oil and fuel filters are placed in a lined drum and temporarily stored in a covered area with secondary containment until filled and transported off the Property for treatment and recycling.
- Miscellaneous trash and scrap metal are temporarily stored in covered dumpsters until transported off the Property for disposal or recycling.
- Spill mats (i.e., storm drain covers) and spill response materials (i.e., absorbent pads and booms) are distributed throughout the Property in the unlikely event a release to the ground surface or water were to occur.
- The existing USTs are equipped with leak detection and overfill prevention systems. UST filling operations are performed by trained personnel in accordance with industry standards and regulatory protocols and procedures. Buckets are placed beneath tanker and hose connections to catch incidental drips or residual product in the fill lines. A spill kit stocked with absorbent pads and containment socks is staged adjacent to the UST nest and is readily available in the unlikely event of a fill line leak or other surface spill during the UST filling operations.
- Each catch basin is fitted with a particulate and oil absorbent insert to filter debris, and/or oil residue from stormwater runoff prior to entering the stormwater conveyance system. The inserts are inspected and maintained by Brix personnel and are typically replaced every six to nine months as necessary (this BMP/SCM was implemented in 2008, following the catch basin sediment sampling and removal activities discussed below).
- Periodically sweeping all accessible areas of the office and employee/visitor parking lot (Catchment Area A) and the outdoor equipment storage area (Catchment Area B) (this BMP/SCM was implemented in spring 2012 in conjunction with the catch basin sediment removal and stormwater conveyance system inspection and cleanout activities discussed below).

4.2.2 Stormwater SCMs

In February 2008, Brix implemented two stormwater-related SCMs (catch basin sediment removal and periodic catch basin inspections and maintenance) at the Property following the catch basin sediment sampling activities discussed in Section 4.3. Based on analytical data from the initial four stormwater monitoring events, Brix implemented additional SCMs in May 2012 that included cleaning the stormwater conveyance system, visually inspecting the lines, and beginning periodic sweeping of the paved upland areas. Each of these fours SCMs is described as follows.

Catch Basin Sediment Removal. Sediment was present in each catch basin beneath the filter inserts at the time of sampling (Figure 4 shows the catch basin locations). The approximate sediment thickness ranged from 2 inches in CB-B2 to 18 inches in CB-A1 (the depth of the catch basins is

32 inches). The total volume of sediment present in the five catch basins was approximately 5.3 cf. Brix had all accumulated sediment from each catch basin immediately removed following the sampling activities; and following waste profiling and acceptance, the removed sediment was transported to Hillsboro Landfill for disposal as a Special Waste (Permit No. 101214R).

Periodic Catch Basin Inspections and Filter Replacement. A particulate filter was present in each catch basin at the time of the sediment sampling. Many of the filters, however, were filled with sediment or had come loose and were no longer capturing and containing sediment. The used filters were removed from all of the catch basins as part of the sediment removal activities, and each catch basin was fitted with a new particulate and oil absorbent filter insert to trap and contain debris, and/or oil residue from stormwater runoff prior to entering the stormwater conveyance system. Brix has implemented an inspection and maintenance program, whereby the catch basin filters are periodically inspected, and if damaged or filled with sediment, the used filters are removed and replaced with new filters.

Stormwater Conveyance System Cleanout. In May 2012, the stormwater conveyance lines were cleaned to the extent practicable from all accessible points by performing the following sequential activities.

- Beginning with the catch basin furthest upstream for each catchment area, the catch basin grates and sediment filter inserts were removed, and if feasible, the inverted pipe outlets were also removed to allow the insertion of cleaning and video inspection equipment.
- All accumulated catch basin sediment was removed using a suction hose attached to a vacuum truck equipped with a large holding tank.
- Each section of conveyance piping was cleaned out using a high-pressure water jet and remote controlled root cutter. Several roots protruding into the lines at joint connections were encountered in the conveyance discharge pipes down flow from CB-A3 and CB-B2 to the respective outfalls and were removed. The rinse water and entrained sediment and root debris were collected from access points along the conveyance piping using a suction hose attached to a vacuum truck equipped with a large holding tank. No water or entrained solids generated during the cleanout activities were allowed to discharge from the outfall to the riverbank.
- All collected sediment and root debris were transported to a waste handling facility where the solids were separated from the water, the water was treated by the facility and discharged under their permit to the City's sanitary sewer, and the solids were transported to a licensed landfill for disposal as non-hazardous special waste.
- The accessible sections of conveyance piping (the 8-inch diameter line from CB-A3 to Outfall A, and the 6-inch diameter line from CB-B2 to Outfall B) were visually inspected using a remote controlled closed circuit TV. Except for several roots encountered at joint connections, the conveyance lines were intact, and following the cleanout activities, were free of sediment and other debris.

- Any inverted pipe outlets that were removed to provide access to the conveyance lines were reinstalled, new sediment filter inserts were placed in each catch basin, and the catch basin grates were placed above the filters.

Parking Lot and Maintenance Yard Sweeping. Concurrent with the stormwater system cleanout activities, Brix swept all accessible areas of the office and employee/visitor parking lot (Catchment Area A) and the outdoor equipment storage area (Catchment Area B) using a regenerative air street sweeper. The objective of this SCM is to reduce the amount of sediment entering the stormwater catch basins. Currently, sweeping activities are performed once or twice a year, as necessary. A leaf blower is used to direct leaves and loose particles to a central location where they are swept up and properly disposed of.

4.3 Catch Basin Sediment Assessment

Catch basin sediment sampling was conducted on February 19, 2008. The objectives of the sampling activities were to obtain data of a quality suitable for comparison with Portland Harbor JSCS SLVs (DEQ/EPA 2005) and to identify site-specific and area-wide COI present in catch basin sediment that potentially may be discharging from the site with stormwater to the Willamette River. These data would also be used to develop the analytical program for stormwater (see Section 4.5). This section describes the catch basin sediment sampling procedures and analytical program and discusses the analytical results.

4.3.1 Catch Basin Sediment Sampling

Hart Crowser collected sediment samples from the Property's five catch basins (CB-A1, CB-A2, and CB-A3 in Catchment Area A, and CB-B1 and CB-B2 in Catchment Area B) to determine whether site-specific and area-wide COI were present in sediment. Sampling activities were conducted in accordance with the procedures presented in Brix's DEQ-approved Work Plan (Hart Crowser 2007).

Field Activities and Observations. Weather conditions during the inspection and sampling activities were generally cool (40-45°F) and calm, with no measurable precipitation in the area for several days before or during the field activities. Hart Crowser inspected each catch basin prior to collecting sediment samples by removing the steel grate and observing and noting the presence, type, and estimated quantity of sediment contained within the filter insert. After obtaining a sample of sediment material contained within the insert, Hart Crowser removed the insert to facilitate sample collection from the catch basin sump and to observe the catch basin's general condition, measure the internal dimensions, and remove any standing water.

Standing water, typically exhibiting a moderate to heavy petroleum-like sheen, was present in all of the catch basins, except for CB-A1. Hart Crowser removed most of the standing water using a wet/dry shop vacuum with the suction hose placed at the air/water interface to avoid disturbing sediment material in the catch basin. Hart Crowser then used a peristaltic pump with the inlet tubing positioned at the air/water interface to remove the remaining water while minimizing agitation of the sediment material. Approximately 100 gallons of standing water was removed, drummed, and stored at the Property pending sampling, analysis, and receipt of analytical data for waste profiling. Following

review of the analytical data, Hart Crowser transferred the drummed water to the bilge water holding tank on the work barge for final discharge to the City's sanitary sewer system.

The catch basin sediment generally consisted of gray to black silts and silty sands and exhibited a slight to moderate petroleum-like sheen and organic-like odor. Organic material, including leaves, pine needles, rootlets, and live and dead worms were observed in the catch basin sediment. Trash and other inorganic debris were not observed in the catch basin sediment. After sampling of the sediment, the accumulated sediment was removed from each catch basin. A total of approximately 5.3 cf of sediment were removed from the following five catch basins: 1.6 cf (CB-A1), 1.3 cf (CB-A2), 1.0 cf (CB-A3), 1.2 cf (CB-B1), and 0.2 cf (CB-B2). After sediment removal, Hart Crowser inspected each catch basin. Rust and minor pitting were observed on the sides and bottoms of each catch basin, but no holes or cracks. All inverted outlets were intact and appeared to be functional. A new insert was then fitted and installed into each catch basin.

Discrete Sediment Sampling for VOC Analysis. Hart Crowser collected two discrete undisturbed sediment samples from each basin to determine whether VOCs were present – one from sediment trapped in the catch basin insert, and one from sediment in the catch basin sump below the insert. These samples were collected in accordance with EPA Method 5035 sample collection and field preservation procedures using a dedicated plug-type corer supplied by the laboratory that was inserted at the sampling points and then removed with the sediment samples. Each collected sample was immediately transferred to a laboratory-prepared and -labeled sample vial containing preservative and a stirring device, and capped tightly with a Teflon®-lined lid.

Composite Sediment Sampling for Non-Volatile Compounds. Hart Crowser collected two additional sediment samples from each catch basin to determine whether non-volatile compounds were present – one from sediment trapped in the catch basin insert, and one from sediment in the catch basin sump below the insert.

Hart Crowser collected sediment samples by inserting a decontaminated stainless steel spoon into the sediment and collecting small sediment samples from at least three different locations above the insert. Due to the high sediment content beneath the insert (up to 18 inches) in four of the five catch basins, Hart Crowser used the same downward motion of the spoon to collect consistent and representative samples of the sediment column at the same location beneath the insert of each catch basin. This sampling approach was not required in the fifth catch basin (CB-B2) due to the low quantity of sediment present (approximately 2 inches). These ten sediment samples were then combined into four composite samples as follows:

- CB-A Upper – Sediment collected from the inserts of catch basins CB-A1, CB-A2, and CB-A3.
- CB-A Lower – Sediment collected from the sumps of catch basins CB-A1, CB-A2, and CB-A3.
- CB-B Upper – Sediment collected from the inserts of catch basins CB-B1 and CB-B2.
- CB-B Lower – Sediment collected from the sumps of catch basins CB-B1 and CB-B2.

The compositing procedure consisted of combining the individual sediment samples in a decontaminated stainless steel bowl and gently mixing the material until blended. The composite material was then transferred into laboratory-supplied and -labeled sample containers and capped tightly with Teflon®-lined lids.

Field Decontamination Procedures. The sediment samples were collected using procedures designed to minimize the introduction of contamination into samples from sampling equipment, adjacent media or site features, or from other samples. To minimize the potential for cross contamination, new and clean dedicated disposable sampling equipment (e.g., gloves, core syringes) was used only once at each sampling location and then discarded after use. Non-disposable items (e.g., stainless steel sampling spoons and mixing bowls) were cleaned before initial use and after each sample collection event by washing in a detergent solution, rinsing with tap water, rinsing with de-ionized water, and drying with a clean unused paper towel.

Sample Handling and Transport. All sediment samples were placed in a cooler chilled with ice immediately following collection for field storage and transport. The sediment samples were shipped to the analytical laboratories within 48 hours of collection. Chain of custody procedures were maintained and documented throughout the sample handling process.

4.3.2 Analytical Program

Hart Crowser submitted the catch basin sediment samples to Analytical Resources Incorporated (ARI) of Tukwila, Washington, and Environmental Science Corp (ESC) of Mt. Juliet, Tennessee, for chemical analysis. These two laboratories were selected based on the specific analytical methods used to achieve JSCS SLVs or the lowest method reporting limit (MRL) (also known as a practical quantification limit [PQL]) to facilitate data evaluation within the context of both the Property and other industrial properties within Portland Harbor, and to inform the analytical program for stormwater sampling (Section 4.5).

Sediment samples were analyzed for site-specific COIs (i.e., TPH, VOCs, PAHs) by Northwest or EPA SW-846 Methods. Additionally, the DEQ also required catch basin sediments to be analyzed for PCBs and phthalates due to the ubiquitous nature of these compounds in Portland Harbor. These area-wide COIs (i.e., PCBs and phthalates) were analyzed for by EPA SW-846 Methods. Samples were also analyzed for total organic carbon (TOC), total solids, and grain size to provide additional data for potentially evaluating COI fate and transport via the stormwater pathway. The four composite sediment samples were analyzed for the following physical parameters and chemical compounds by the indicated method:

- PCBs by EPA Method 8082 (low level);
- Phthalates and PAHs by EPA Method 8270D-SIM;
- Gasoline-range TPH by Northwest Method NWTPH-Gx;
- Diesel- to oil-range TPH by Northwest Method NWTPH-Dx;
- TOC by Plumb 1981;

- Total solids by EPA Method 160.3; and
- Grain size distribution by ASTM Method D-422.

Additionally, the 10 discrete sediment samples taken from the catch basins (two from each of the five catch basins) were analyzed for VOCs by EPA Method 5035/8260B.

4.3.3 Chemical Results

Chemical results on the sediment samples are listed in Tables 1 (non-volatile compounds) and 2 (VOCs). Grain size distributions are listed in Table 3. Appendix C includes copies of the laboratory reports, and Appendix D includes an electronic copy of the sediment data in DEQ's Data Reporting and Screening Tables format [DEQ 2010]). Analytical objectives were substantially met. If not raised for dilution for COI quantification, MRLs were below the JSCS SLVs except for di-n-butyl phthalate. The specific results and comparison to JSCS SLVs are discussed below. These data are assessed further in Section 4.3.4.

PCBs. Composite sediment samples collected from the two catchment areas were analyzed for PCB Aroclors. The only detected PCB Aroclor was Aroclor 1260 (Table 1), which was present in all four samples at concentrations ranging from 11 micrograms per kilogram (µg/kg) (CB-A Lower) to 38 µg/kg (CB-B Lower). These concentrations are well below the Aroclor 1260 SLV of 200 µg/kg. However, all four samples exceed the much lower Total PCB SLV of 0.39 µg/kg. Aroclor 1260 was slightly higher in Catchment Area B sediment than in Catchment Area A sediment.

Phthalates. *Bis*(2-ethylhexyl) phthalate (BEHP) was detected in all four samples at concentrations ranging from 3,000 µg/kg (CB-A Upper) to 20,000 µg/kg (CB-B Lower), exceeding the SLV of 330 µg/kg (Table 1). Di-n-butyl phthalate was present in the Catchment Area B sediment at concentrations of 190 µg/kg (Upper) and 260 µg/kg (Lower), exceeding its SLV of 60 µg/kg. Other phthalates detected in the sediment samples were dimethyl phthalate, butylbenzyl phthalate, and di-n-octyl phthalate; however, SLVs have not been established for these compounds.

PAHs. Chemical analyses detected multiple PAHs in all four composite samples, with at least one PAH in each sample present at concentrations exceeding JSCS SLVs. PAH concentrations were moderately elevated with exceedance ratios (i.e., the detected concentration divided by the SLV) for individual PAHs generally less than 3.5, except for indeno(1,2,3-cd)pyrene which had higher exceedance ratios up to 7.0.

TPH. Table 1 lists the TPH analyses results on the composite samples**.** Gasoline-range TPH was detected in three samples at very low concentrations ranging from 3.5 mg/kg to 27 mg/kg. Diesel- and oil-range TPH were detected in all four composite samples at concentrations ranging from 110 mg/kg to 220 mg/kg and 440 mg/kg to 2,000 mg/kg, respectively. JSCS SLVs have not been established for TPH in soil or sediment.

VOCs. Discrete samples were collected from each catch basin and analyzed for VOCs (Table 2). Acetone, ethylbenzene, toluene, xylenes, and 2-butanone (MEK) were present in one or more samples. However,

JSCS SLVs have not been established for these compounds, and the detected VOCs are not a significant COI at the site.

TOC. TOC in the catch basin sediment ranged from 5.35 to 13.3 percent (Table 1). There is no JSCS SLV for TOC as it is merely a measure of the amount of organic matter in a sample, which can come from a mix of various natural and chemical sources. While these concentrations are relatively high as compared to soil and river sediment, they reflect the organic matter observed in the sediment during sampling. Organic matter, such as TOC, tends to adsorb hydrophilic compounds such as PCBs, phthalates, PAHs, and diesel- and oil-range hydrocarbons. The presence of TOC probably resulted in the retention, and detection, of these compounds in catch basin sediment.

Total Solids. Total solids ranged from 46.7 to 67.2 percent (Table 1). These concentrations indicate that the sediment was fairly wet, as would be expected (soil is generally above 80 percent solids).

Grain Size Distribution. Grain size analysis indicates that catch basin sediment consists of gravelly, silty sand (Table 3). Plots of the grain size distribution are included with the laboratory report (Appendix C).

4.3.4 Data Assessment

COI detected in one or more of the catch basin sediment samples included PCB Aroclor 1260, phthalates, PAHs, TPH, and several VOCs (Tables 1 and 2). In general, non-volatile COI concentrations were up to three times higher in Catchment Area B than in Catchment Area A. Catchment Area B includes the storage area, whereas Catchment Area A is primarily a parking lot. Within each catchment area, COIs were typically higher in the catch basin sump (lower) sample than the filter insert (upper) sample. TOC, however, was lower for the sump samples, as biological activity has likely biodegraded the organic matter. VOCs did not have a discernable pattern, except that more VOC detections were present in Catchment Area B.

A comparison of the catch basin sediment data sampled at the Property to Portland Harbor JSCS SLVs indicates that certain COIs exceed their respective SLVs, including total PCBs, two phthalates (BEHP and di-n-butyl phthalate), and ten PAHs. The presence of phthalates and PAHs is expected (e.g., from storage of plastics, weathering of asphalt pavement, and incidental drips of oil from vehicles), but the detection of PCBs is not. Brix has never used or handled PCBs or PCB-containing items on the Property (Brix 2008), thus a specific source of PCBs in catch basin sediment was not identified. Low levels of PCBs are ubiquitously present in and near the Portland Harbor area, and the presence of PCBs at the Property may be the result of atmospheric deposition and/or from dust tracked onto the Property by vehicles. PCB concentrations were similar in both catchment areas, suggesting a more uniform input from deposition and/or tracked dust.

To further assess the sediment data in the context of other industrial sites, Hart Crowser compared Brix's catch basin sediment data to DEQ's catch basin sediment screening charts for Portland Harbor industrial sites (Appendix E of DEQ 2010). The DEQ developed these charts using contaminant concentration data from samples collected at Portland Harbor industrial sites for the specific purpose of distinguishing "typical" industrial sites from those containing potentially elevated contaminant concentrations. Screening charts are available for BEHP, total PCBs, and total PAHs. Hart Crowser

plotted the Brix's catch basin sediment data on DEQ's catch basin sediment screening charts, which are included in Appendix D. These charts indicate clearly that Brix's catch basin sediment data, except for total PAHs in the Catchment Area B sump sample, are well within the flat portion of the concentration curve, which is an indication that the Brix data are "typical" for the Portland Harbor industrial area. Total PAHs in the Catchment Area B sump sample were slightly elevated above this "typical" range.

Hart Crowser's observations during catch basin sampling indicate that Brix's catch basins effectively remove solids from stormwater, as indicated by the accumulated sediment in catch basin sumps and on filter inserts. The detection of COIs in catch basin sediment exemplifies the need to continue testing the Property's stormwater discharges for the potential presence of COIs, but does not indicate that a complete pathway to the river exists. While some COIs were above JSCS SLVs, they were generally at concentrations typical of industrial sites within the Portland Harbor area. The structure of the Property's catch basins coupled with Brix's use of filter inserts help prevent solids and potential contaminants from being entrained with stormwater discharges. As described above, catch basin sediments were removed, and the catch basins cleaned out. As discussed in Section 4.2, Brix's continued use of BMPs will minimize potential impacts to stormwater quality.

4.4 Stormwater Discharge Collection

The objective of stormwater sampling was to obtain representative stormwater discharge data that are of a quality suitable for comparison with JSCS SLVs and stormwater screening evaluations being performed at other Portland Harbor upland sites. Stormwater samples were collected from Outfall A and Outfall B during six separate storm events. Four sampling events were performed in 2008 and 2009 prior to performing the 2012 stormwater SCMs (Section 4.2.2). Two additional sampling events were performed in 2012 and 2013 to assess the effectiveness of the 2012 SCMs. Stormwater samples were not collected from the City's outfall because no stormwater falling on the site enters the City's stormwater system.

4.4.1 Storm Event Criteria for Sampling

Stormwater samples were collected during "storm events" as defined in Appendix D of the JSCS to ensure they were representative of stormwater being discharged from the Property and to obtain data consistent with SCEs at other Portland Harbor upland sites (DEQ/EPA 2005). The JSCS criteria for a storm event are:

- The event must be preceded by a dry period of at least 24 hours, which is defined by less than 0.1 inches of precipitation during the previous 24 hours;
- A predicted rainfall of at least 0.2 inches; and
- An expected duration of at least 3 hours.

The JSCS recommends at least four sampling events be performed, with two of the four events conducted (to the extent practicable) within the first 30 minutes of the onset of outfall discharge to represent "first flush" conditions. The remaining sampling events should be conducted within 3 hours of the onset of stormwater discharge (DEQ/EPA 2005).

4.4.2 Stormwater Sampling and Handling Procedures

Hart Crowser collected unfiltered whole water (i.e., water plus suspended sediment) grab stormwater samples from the two outfalls by placing clean laboratory-supplied and labeled containers directly into the central area of flow at the point of discharge, ensuring that the containers did not touch the discharge pipe so that the water flowed directly into the container. Care was taken to adequately fill, but not overfill, the container to prevent the loss of any preservative or COI, if present. When filled, each container was immediately capped and placed it in a cooler chilled with ice. The stormwater samples were shipped in coolers with ice to the analytical laboratory, within 24 hours of collection. Chain of custody procedures were maintained and documented throughout the sample handling process. Appendix D includes representative photographs taken during the sampling activities.

4.4.3 Storm Event Conditions and Sampling Activities

The storm event conditions, antecedent dry period, estimated time of initial discharge, estimated discharge flow rate, and other observations for each sampling event are discussed below. Rainfall data referenced below and shown on the hydrographs for each event are included in Appendix D. The 2008 and 2009 hydrographs are from the Terminal 4 rain gauge (Gauge No. 167), located about 5,000 feet northeast of the Property. The Terminal 4 gauge was removed from service in 2011. The 2012 and 2013 hydrographs are from the rain gauge located at the City's Water Pollution Control Laboratory (Gauge No. 160), about 3,000 feet southeast of the Property (United States Geological Survey [USGS] 2008-2013). All times referenced in the descriptions below and on the hydrographs are in Pacific Standard Time.

Field parameters (temperature, pH, and conductivity) of each outfall discharge were measured as part of the sampling activities. The discharge flow rate was estimated by timing the filling of a 5-gallon bucket. Visual observations (e.g., presence of sheen, solids) and weather conditions at the time of sampling were noted on the field form. The field parameters, estimated discharge rate, and other observations are listed in Table 4.

October 3, 2008, Event. The initial sampling event was performed on October 8, 2008, and met the criteria for a "first flush" event. Weather conditions were dry for 10 days preceding the sampling event with the first measurable rain recorded at 4:00 AM on October 3, 2008, and a total of 0.08 inches prior to the onset of discharge and sampling. The discharge rates at the time of sampling were estimated to be 1 gallon per minute (gpm) for Outfall A and 1.5 gpm for Outfall B. Traces of fine-grained sandy sediment were observed in both outfall discharges. No odor, sheen, or floating solids were observed in either discharge.

November 20, 2008, Event. There was no measurable precipitation in the preceding three days before this storm event. The first measurable rain was recorded at 12:00 AM on November 20, 2008, with a total of 0.16 inches prior to sampling. The sampling activities were conducted within three hours of the estimated onset of discharge. The discharge rates at the time of sampling were estimated at 1 gpm for Outfall A and 5 gpm for Outfall B. The outfall discharges were slightly turbid (Outfall A) to moderately turbid (Outfall B). No odor, sheen, or floating solids were observed in either discharge.

May 4, 2009, Event. There was no measurable precipitation in the preceding 36 hours of this storm event, consistent with "first flush" conditions. The first measurable rain was recorded at 11:00 AM on May 4, 2009, with the onset of discharge estimated at 1:30 PM. The sampling activities were initiated about 45 minutes following the estimated onset of discharge (slightly exceeding the "first flush" goal of sampling within 30 minutes of the onset of discharge). The discharge rates at the time of sampling were estimated at 10 gpm for Outfall A and 15 gpm for Outfall B. Both discharge samples exhibited moderate turbidity. No odor, sheen, or floating solids were observed in either discharge.

October 21, 2009, Event. There was no measurable precipitation in the preceding 44 hours of this storm event. The first measurable rain was recorded at 2:00 AM on October 21, 2009, with the onset of discharge estimated at 5:30 AM. The sampling activities were initiated at 7:30 AM. The discharge rates at the time of sampling were estimated at 5 gpm for Outfall A and 3 gpm for Outfall B. Both outfall discharges were slightly turbid, but the discharge samples were clear with no visible turbidity. No odor, sheen, or floating solids were observed in either the discharge or discharge samples.

June 4, 2012, Event. There was no measurable precipitation in the preceding 35 hours of this storm event. The first measurable rain was recorded at 11 PM on June 3, 2012, with the onset of discharge estimated at 5:00 AM. The sampling activities were initiated at 7:30 AM. The discharge rates at the time of sampling were estimated at 0.3 gpm for Outfall A and 0.5 gpm for Outfall B. Both outfall discharges were slightly turbid, perhaps from the conveyance cleaning that had been performed the prior month (Section 4.2.2). No odor, sheen, or floating solids were observed in either the discharge or discharge samples.

February 22, 2013, Event. There was 0.04 inches of sporadic measureable precipitation in the preceding 24 hours of this storm event. The first significant amount of rainfall (0.06 inches/hour) occurred by 9 AM on February 22, 2013, with the estimated onset of discharge occurring at that time. Sampling activities were initiated at 11:00 AM. The discharge rates at the time of sampling were estimated at 30 gpm for Outfall A and 8 gpm for Outfall B. Both outfall discharges were clear with minor amounts of suspended solids. No odor, sheen, or floating solids were observed in either the discharge or discharge samples.

4.5 Stormwater Analyses and Results

Hart Crowser submitted the stormwater samples collected in 2008 and 2009 to Pace Analytical Services (Pace) in Seattle, Washington, for chemical analysis for site-specific and selected Portland Harbor COI by Northwest or EPA SW-846 Methods. Samples collected in 2012 and 2013 were analyzed by ESC and/or TestAmerica in Beaverton, Oregon. These laboratories were selected for specific analytical methods to achieve JSCS SLVs or the lowest MRL or method detection limit (MDL). Appendix C includes copies of the analytical laboratory reports.

4.5.1 Analytical Program

All stormwater outfall samples were analyzed for the following site-specific and area-wide COIs:

- PCBs by EPA Method 8082A (low level);

- VOCs by EPA Method 8260B;
- Phthalates by EPA Method 8270 (low level);
- PAHs by EPA Method 8270 SPE-SIM;
- Gasoline-range TPH by Northwest Method NWTPH-Gx;
- Diesel- to oil-range TPH by Northwest Method NWTPH-Dx; and
- Total suspended solids (TSS) by EPA Method 160.2.

Analysis for total copper, lead, and zinc by EPA Method 6020 was added for samples collected after the 2012 SCMs at the request of the DEQ (DEQ 2012). The 2012 SCMs included stormwater conveyance system cleaning and pavement sweeping (see Section 4.2.2 for more details).

4.5.2 Chemical Results

Analytical results for stormwater discharge samples are listed in Tables 5 and 6 for Outfalls A and B, respectively. Appendix D also includes an electronic copy of the stormwater data in DEQ's Data Reporting and Screening Tables format (DEQ 2010). Laboratory MDLs or MRLs for undetected compounds were below JSCS SLVs for all COIs, except for PCBs. PCB SLVs are based on calculated values that are below the MDLs and MRLs achievable by typical laboratory instrumentation. However, PCBs are not a site-specific COI because PCBs were never stored or handled at the site (Brix 2008). Specific results and their comparison to JSCS SLVs are discussed below. These data are assessed further in Section 4.5.3

Metals. Copper, lead, and zinc were analyzed in the post-SCM sampling events in June 2012 and February 2013 at DEQ's request. Metals concentrations were relatively higher in the June 2012 sampling at Outfall A because suspended solids were higher in this sample (TSS was 30,000 micrograms per liter [µg/L]). Copper was detected at 3.3 and 29 µg/L at Outfall A and at 6.4 µg/L (both events) at Outfall B. These detections exceed the 2.7 µg/L JSCS SLV. Lead was detected at 1.9 and 5.3 µg/L at Outfall A, and once at 1.8 µg/L at Outfall B. The SLV is 0.54 µg/L. Zinc was detected between 81 and 97 µg/L in three of the four discharges samples, above the 36 µg/L SLV; the fourth sample had 15 µg/L.

PCBs. PCBs were not detected in any of the stormwater samples.

VOCs. Acetone was detected in the May and October 2009 samples from both outfalls ranging from 9.4 to 10.2 µg/L, and at 5.4 µg/L in the February 2013 sample from Outfall B. Acetone was also present in the trip blank from the October 2009 sampling event. All acetone detections were orders of magnitude below the SLV (1,500 µg/L). Toluene was also present in the May 2009 Outfall A sample at a concentration of 1.1 µg/L, well below the SLV (9.8 µg/L).

Phthalates. BEHP was detected in half of the samples ranging from 1.3 to 4.1 µg/L. Only two samples collected in the November 2008 sampling event – one each from Outfalls A and B – were above the 2.2 µg/L SLV. This sampling event occurred before the 2012 SCMs. The only other phthalate that was

detected was di-n-butyl phthalate at 1.4 µg/L in November 2008 and 0.32 µg/L in February 2013, both from Outfall A; both detections were below the 3 µg/L SLV.

PAHs. One or more PAH compounds were detected in all stormwater samples. For Outfall A, total PAH prior to the 2012 SCMs ranged from 0.12 µg/L (October 2008) to 0.79 µg/L (May 2009), with five individual PAH compounds exceeding their respective JSCS SLVs. The June 2012 sampling event occurred shortly after conveyance line system cleaning conducted as part of the May 2012 SCMs. The sample had higher PAH concentrations with eight PAHs exceeding SLVs; this sample also had a relatively high TSS concentration of 30,000 µg/L. These results are likely attributable to residual loose sediment that contributed to turbidity and the elevated PAH concentrations. The subsequent sample had the lowest total PAH concentration for Outfall A, with all PAHs below SLVs.

For Outfall B, total PAHs in stormwater samples before implementation of the 2012 SCMs ranged from a low of 0.50 µg/L (October 2009) to a high of 4.94 µg/L (November 2008). Up to 10 PAH compounds exceeded SLVs. These higher PAH concentrations prompted Brix to identify and implement additional SCMs in May 2012. The positive impact of this effort was immediately evident – total PAHs were only 0.23 µg/L in June 2012, and 0.40 µg/L in February 2013. Additionally, all PAH compounds met SLVs during the June 2012 sampling event, although four PAH compounds in the February 2013 sampling event were slightly above SLVs (exceedance ratios were low, below 2.2).

TPH. Gasoline-range TPH was not detected in any of the stormwater samples. Diesel-range TPH was detected in five Outfall A samples ranging from 90 to 270 µg/L, and in four Outfall B samples ranging from 120 to 390 µg/L. Oil-range TPH was detected in the two Outfall A samples at 180 and 320 µg/L, and in three Outfall B samples ranging from 340 to 530 µg/L. When detected, diesel - and oil-range TPH concentrations were lower after the 2012 SCMs. JSCS SLVs have not been established for TPH.

Total Suspended Solids. Before the 2012 SCMs, TSS in the Outfall A samples ranged from 2,000 to 12,000 µg/L. For the June 2012 event, TSS jumped to 30,000 µg/L. These results are likely attributable to conveyance line system cleaning conducted during the May 2012 SCMs, which loosened residual sediment that increased turbidity and led to elevated TSS. The subsequent sample was lower (14,000 µg/L). TSS in Outfall B ranged from 4,000 to 27,000 µg/L before the 2012 SCMs. The TSS concentrations after the SCMs were less than 10,000 µg/L.

4.5.3 Data Assessment

Hart Crowser collected representative stormwater discharge samples during six storm events. Four sampling events were conducted before implementation of the 2012 SCMs, and another two sampling events were conducted after the 2012 SCMs. Several COI were detected, but at low concentrations. As presented below, the data reveal that stormwater quality from the Property improved after implementation of the 2012 SCMs (see Section 4.2.2) and that the Property does not pose a concern to the Willamette River via a stormwater exposure pathway.

Detected COI. COI detected in one or more stormwater outfall samples consisted of the following: total copper, lead, and zinc; two VOCs (acetone and toluene); two phthalates (BEHP and di-n-butyl phthalate); multiple PAHs; and diesel- to oil-range TPH. VOC and phthalate detections were very low

(all less than 11 µg/kg), and lower still after the 2012 SCMs. For Outfall A, metals and PAH concentrations were relatively higher for the June 2012 sampling event than the other sampling events, although as noted above, this sample also had a relatively high TSS concentration of 30,000 µg/L that likely was due to residual loose sediment from the May 2012 conveyance system line cleaning, which created turbidity and elevated COI concentrations. Metals and PAH concentrations were lower for the February 2013 sampling event. For Outfall B, PAH concentrations decreased after the 2012 SCMs. Diesel - and oil-range TPH concentrations, when detected, were also lower for both outfalls after the 2012 SCMs. PCBs and gasoline-range TPH were not detected.

Screening Criteria Evaluation. Stormwater data were compared to JSCS SLVs (Section 4.5.2) to assess whether COI in stormwater might pose an unacceptable risk to the river and its uses (other sites within the Portland Harbor Superfund Site study area have conducted similar evaluations). Of the detected COIs, copper, lead, zinc, BEHP, and PAHs were present in at least one sample above their respective SLVs. TPH and TSS do not have SLVs. These COI are further assessed below.

Copper, lead, and zinc were analyzed on a total basis as requested by the DEQ (2012), but the JSCS SLVs for metals are based on dissolved concentrations and, thus, are not directly applicable because the presence of TSS in a total metals analysis will elevate metals concentrations. The DEQ does have stormwater benchmarks for total metals for its general National Pollutant Discharge Elimination System (NPDES) 1200-Z Industrial Stormwater General Permit. NPDES criteria are included in Tables 5 and 6. All metals results were below NPDES benchmarks except for copper (29 µg/L) in a June 2012 sample of Outfall A (likely due to the high TSS in this sample); the following sampling event in February 2013 was well below the 20 µg/L benchmark value. These data indicate that metals would be within DEQ's NPDES stormwater discharge criteria.

BEHP was slightly above its JSCS SLV in only the November 2008 outfall samples. After implementation of the 2012 SCMs, it was below the JSCS SLV. PAHs were initially high from the Outfall B catchment area, but also decreased after the 2012 SCMs were performed. Total PAH concentrations were similarly lower after implementation of the 2012 SCMs, with the June 2012 sample meeting SLVs. As noted above, Outfall A had a relatively high spike in PAHs after the 2012 SCMs, although this is likely due to residual loose sediment associated with the conveyance system line cleaning, which contributed to elevated TSS and PAH concentrations. The subsequent sample was below SLVs. With continued implementation of SCMs at the site, BEHP and PAHs should remain near, at, or below JSCS SLVs.

While TPH and TSS do not have SLVs, there are NPDES 1200-Z permit benchmarks for oil and grease (similar to TPH) and TSS. The DEQ also recommended using a 1,000 µg/L screening level for TPH (DEQ 2012). These criteria are included in Tables 5 and 6. All stormwater data results measured below these criteria.

Comparison to Other Industrial Sites. The DEQ has developed stormwater screening charts for several contaminants using stormwater data from Portland Harbor industrial sites (Appendix E of DEQ 2010). The purpose of these charts is to distinguish "typical" industrial sites from those with potentially elevated contaminant concentrations. To plot Brix's stormwater data on these charts, and to evaluate the relative effectiveness of Brix's SCMs, Hart Crowser calculated the geometric means of

the concentrations for detected COI for stormwater data collected before and after implementation of the 2012 SCMs. Use of the geometric mean accounts for the inherent variability in stormwater data and is consistent with DEQ's NPDES 1200-Z stormwater permit and the City of Portland's Stormwater Evaluation Report for municipal outfalls (City of Portland 2010). Table D-1 in Appendix D lists the calculated geometric means. For non-detect values, half the MRL or MDL was used in the geomean calculation.

The DEQ relies on screening charts for copper, lead, zinc, BEHP, total PAHs, and TSS. Appendix D includes these charts with the geometric means of Brix's stormwater data. Total copper, lead, zinc, and BEHP are within the lowest part of the flat portion of the concentration curve that is considered to be "typical" of industrial properties within Portland Harbor. Because metals were added to the stormwater analytical program after the 2012 SCMs, a comparison to pre-SCM cannot be performed. BEHP concentrations decreased following implementation of the 2012 SCMs as noted by a shift of the flat part of the concentration curve to the left on the chart. Similarly, PAH concentrations in stormwater from Outfall B, which were elevated above the "typical" range before the 2012 SCMs, decreased substantially after the 2012 SCMs such that it fell within the "typical" range of the concentration curve. PAHs in Outfall A were comparable before and after the SCMs. TSS was within the "typical" range, even though a slight increase was noted in Outfall A in June 2012 from residual sediment after cleanout of the conveyance line system. In summary, the data show that stormwater quality is typical of industrial sites, particularly after implementation of the 2012 SCMs.

Comparison to Municipal Outfall AAE427. Under a 2000 easement agreement with Brix, the City owns and maintains a separate 48-inch stormwater line that runs beneath the northern portion of the Property and runs to dedicated Outfall AAE427 (a.k.a. Outfall OF-22D; Figure 4). In 2008, as part of a stormwater evaluation of Portland Harbor municipal outfalls that was designed to identify significant contaminant sources and determine whether SCMs were needed, the City sampled stormwater on four occasions from the on-site manhole associated with Outfall AAE427 (City of Portland 2010, 2014). Stormwater data are listed in Table D-2 in Appendix D. These data show similar COI concentrations in Outfall AAE427 as those detected on the Brix Property, even though the drainage basin for Outfall AAE427 is comprised of 92 percent of parks and open space (the remainder of the basin is comprised of residential and transportation uses). In its evaluation of these data, the City concluded that concentrations were low, no further investigation was needed, and that there are no major contaminant sources in the basin. The DEQ also indicated in its Portland Harbor Upland Source Control Summary Report that the City's stormwater evaluation adequately characterized potential sources to and discharges from the City stormwater system, and that SCMs are adequate to demonstrate source control has effectively been achieved (DEQ 2014).

4.6 Summary of Activities and Findings

To assess whether the stormwater exposure pathway for the Brix Property poses an environmental concern to the Willamette River, Hart Crowser completed a stormwater evaluation in accordance with DEQ guidance (DEQ 2010) and the Portland Harbor JSCS (DEQ/EPA 2005), and consistent with SCEs conducted for other industrial sites within the Portland Harbor Superfund Site study area. As presented below, Hart Crowser's evaluation determined that stormwater discharges have been characterized and,

with implementation of BMPs and SCMs at the Property, are similar to or better than other industrial sites within the Portland Harbor Superfund Site study area and do not pose an environmental concern.

The stormwater conveyance system at the Property consists of two separate catchment areas that collect stormwater runoff in catch basins and convey the runoff through piping to two outfalls (Figure 4). Catchment Area A collects runoff from the office, a parking lot, and the UST nest area, and directs it to Outfall A. Catchment Area B includes the maintenance building, a parking lot, and an equipment storage area; runoff from this area is directed to Outfall B. The outfalls discharge stormwater onto the riverbank at least 10 feet above the flood stage of the river. The stormwater must then flow through vegetation and/or rocks along the bank slope before reaching the river, where it is quickly incorporated into the river flow. Potential contaminant sources are minor and consist generally of incidental oil and grease drips from vehicles, particulates tracked to the site by vehicles, the weathering of asphalt pavement, and atmospheric deposition of particles from off the Property. Stormwater from adjoining properties does not run onto the Brix Property or enter the Property's private stormwater system. The Property is not connected to the City's system that discharges to Outfall AAE427.

As an initial assessment of the Property's stormwater system, Hart Crowser sampled sediments from the catch basins in 2008. Chemical analyses of the sediment detected site-specific COIs (TPH, PAHs, and five VOCs) and area-wide COIs (two phthalates and PCBs). While most of these COIs were not unexpected given historical operations at the Property, PCBs were unexpected. PCBs or PCB-containing materials have never been stored or used at the Property for any purpose, and as such, their presence might be from air deposition and/or tracked dust. Comparison of these data to DEQ's catch basin sediment charts showed that the Brix Property is "typical" of industrial sites, with only PAHs slightly elevated above the "typical" range. Although COIs were present in the catch basin sediment (some above JSCS SLVs), it does not mean that COIs are reaching the river. The data, however, were useful for informing Brix's analytical program for stormwater sampling. As SCMs, the catch basin sediments were removed after sampling for off-Property disposal, and Brix personnel began periodic inspection and replacement of filters at the Property (Section 4.2.2).

In 2008 and 2009, Hart Crowser collected stormwater samples from Outfalls A and B on four occasions. Due to elevated PAH concentrations in Outfall B stormwater samples, Brix implemented additional SCMs in 2012 consisting of stormwater conveyance system cleanout and pavement sweeping. Two subsequent stormwater sampling events were conducted. Overall, COIs detected in one or more stormwater samples included: total copper, lead, and zinc; two VOCs (acetone and toluene); two phthalates (BEHP and di-n-butyl phthalate); PAHs; and diesel- to oil-range TPH. Chemical results indicate the 2012 SCMs were effective at reducing COIs in stormwater, with only PAHs occasionally still present above JSCS SLVs (VOCs and phthalates were below SLVs). For the other compounds, applicable JSCS SLVs are not available; however, total metals, TPH, and TSS would meet DEQ's NPDES 1200-Z stormwater permit benchmarks. Comparison of Brix's data to DEQ's stormwater charts shows that stormwater quality is "typical" of industrial sites (particularly after implementation of the 2012 SCMs) and consistent with stormwater discharges from the City's outfall which the City and DEQ indicate that no additional action is required.

Brix has implemented numerous BMPs, including maintenance standards and procedures, to prevent or minimize the potential for chemical products to be exposed to rainfall or stormwater. Petroleum products are stored in USTs or are stored and handled in covered or contained areas not exposed to stormwater or rainfall. Catch basins are designed to capture and retain solids in stormwater, and are fitted with filter inserts to further remove oils and particulates from vehicles and air deposition. The stormwater conveyance system has been cleaned out. Continued SCMs include periodic inspection, filter replacement, and pavement sweeping which will minimize potential particulates and contaminants in stormwater discharges. Brix's use of BMPs and SCMs will provide adequate stormwater source control for the foreseeable future.

In summary, only stormwater runoff from the Property is captured in on-site catch basins that convey the runoff through piping to two outfalls on the riverbank. The Property's stormwater conveyance system was cleaned out in 2012. Brix has implemented several BMPs and SCMs to minimize potential contaminants in stormwater. Stormwater data indicate that these practices are effective in reducing COI concentrations to near, at or below JSCS SLVs and to levels within the lower range of "typical" industrial stormwater runoff. Therefore, upland source control via the stormwater pathway has been achieved.

5.0 GROUNDWATER PATHWAY

The groundwater exposure pathway involves assessing whether groundwater impacted by historical UST releases at the Brix Property have migrated toward the Willamette River with the flow of groundwater. Figure 7 shows the approximate extent of contaminated groundwater at the Property. Hart Crowser evaluated the groundwater pathway by assessing groundwater data from on-site monitoring wells and a groundwater seep located on the downgradient edge of the Property. A review of these data confirm that the groundwater pathway at the Brix Property does not pose an environmental concern to the river.

5.1 Data Summary

Environmental investigation activities began at the Brix Property in 1993 following the discovery of a release of lubricating oil from UST piping. Historical UST releases and the subsequent environmental activities are described in Sections 2.3 and 2.4, respectively. Soil and groundwater analytical data summary tables are in Appendix B. These data are described below and were used to delineate the apparent extent of soil and groundwater contamination at the Property, as shown on Figure 7.

5.1.1 Type and Nature of Contaminant Sources

In 1993, lubricating oil leaked from a small hole in a product line near the northeastern corner of the maintenance building on the upland portion of the Brix Property. Explorations identified impacted soil from 3 to 23 feet bgs and to the estimated extent shown on Figure 7. A soil sample collected from below the release point (boring B-33 at 20-22 feet bgs) was analyzed for hydrocarbon composition and constituents. Hydrocarbon analysis detected primarily C_{21} to C_{34} aromatic and aliphatic hydrocarbons (Table B-3 in Appendix B), which confirmed that the release consisted of oil-range hydrocarbons. Although the sample had 28,400 mg/kg oil, PAHs were not detected at a MRL of 0.268 mg/kg (Table B-4). Samples from nearby borings B-27 and B-28, which had 6,010 and

8,330 mg/kg oil respectively, also did not have detectable PAHs at an MRL of 0.050 mg/kg (Table B-4). These data confirm that PAHs are not a primary constituent in the released lubricating oil.

During investigation of the lubricating oil release, gasoline-range TPH and related VOCs were discovered in soil near the northwest corner of the maintenance building, the source of which was a former gasoline fuel dispenser or supply line. Figure 3 shows the configuration of the USTs and product lines. Soil impacts similarly ranged from 3 to 23 feet bgs. Figure 7 shows the estimated extent of gasoline-contaminated soil. Detected VOCs included benzene, butylbenzenes, ethylbenzene, isopropylbenzene, 4-propyltoluene, *n*-propylbenzene, trimethylbenzenes, and xylenes (Table B-6). The highest concentrations were observed at 5 feet bgs in boring B-21 in the area of the release with individual VOC concentrations ranging up to 134.9 mg/kg (xylenes). PAH analyses on soil from B-32 and MW-1 indicated that naphthalene and 2-methylnapthalene are the primary PAHs in gasoline (Table B-4), as expected based on their carbon ranges.

During the 1998 UST upgrade activities, Brix discovered a release at the fill ports of the USTs that likely was the result of minor historical diesel overfills (Figure 7). Site documentation generated at that time did not specify which UST(s) were affected or when the historical overfills allegedly occurred. Chemical data on soil around the UST nest do not indicate the presence of diesel-contaminated soil beyond the fill ports of the USTs. Detections of several PAHs in groundwater from wells MW-3 and MW-5 that commonly are found in diesel (i.e., acenaphthene, fluoranthene, phenanthrene, and pyrene) suggest that these minor historical diesel overfills may have impacted groundwater.

5.1.2 Groundwater Monitoring

Seven groundwater monitoring wells were installed at the Brix Property in 2002 and 2003, with an eighth well installed in 2005 (Figure 5). Quarterly groundwater monitoring was completed from the first quarter of 2003 through the third quarter of 2009, when DEQ approved Brix's request to discontinue monitoring because data confirmed the extent of contaminated groundwater was stable and downgradient concentrations generally met JSCS SLVs (DEQ 2009; Hart Crowser 2009, 2010). The findings of the monitoring program are presented below.

Hydrogeology. Groundwater level measurements are listed in Table B-1 in Appendix B. Groundwater is present from approximately 17.2 to 23.7 feet bgs on the uplands portion of the Property, equating to approximately 17.5 to 25 feet msl. Groundwater is present in the dredge sand fill and is perched on native fine-grained soils. Groundwater levels seasonally fluctuate with higher levels in the winter and spring, and lower levels in summer and fall (similar to seasonal changes in river levels). Groundwater levels range from slightly below to slightly above the top of the native soil, indicating that groundwater is perched in the sand fill. Groundwater flows within the sand fill and to the east (Figure 5), emerging as seeps during low river levels at the contact between native soils and the dredge fill sand.

LNAPL. LNAPL (a.k.a. free product) has only been measured in well MW-3 (Table B-1). When installed in 2002, well MW-3 had up to 0.19 feet of LNAPL. Analysis of an LNAPL sample in September 2002 showed it was a "middle distillate, mineral oil, special petroleum product, and/or similar material," which is consistent with lubricating oil (Anchor 2002). Subsequent measurements showed infrequent

occurrences of diminishing LNAPL thicknesses: 0.11 feet in September 2003; 0.02 feet in July 2004; 0.01 feet in August 2005; and 0.01 feet in November 2007. No LNAPL was detected in 2006, 2008, or 2009. LNAPL has not been found in any of the other monitoring wells, including well MW-8, which was installed in the lubricating oil release area in 2005, and well MW-4, which is directly downgradient from well MW-3. Therefore, LNAPL no longer appears to be present.

Chemical Results. Groundwater samples were analyzed for TPH, PAHs, VOCs, and metals. Results are presented in Tables B-8 through B-12. Data from the February 2003 groundwater monitoring event had elevated contaminant concentrations due to sample turbidity because of the use of a bailer for sampling; beginning with the July 2003 monitoring event, low flow sampling methods were used to minimize turbidity. Therefore, the following summary focuses on data collected during groundwater sampling events that occurred during the monitoring period from July 2003 through August 2009. All data are compared to JSCS SLVs.

- *TPH.* During the monitoring program, gasoline-, diesel-, and oil-range hydrocarbons were routinely detected in wells MW-1, MW-3, MW-5, and MW-8, and to a lesser extent in MW-4 (Table B-8). Diesel-range hydrocarbons are often the result of an overlap of gasoline and oil. Concentrations have been decreasing over time. Since March 2006, TPH in samples from downgradient wells MW-2, MW-4, and MW-7 have never exceeded 1 milligrams per liter (mg/L), which is an SLV suggested by the DEQ for TPH (DEQ 2012).
- *PAHs.* PAHs were routinely detected in wells MW-1, MW-3, and MW-5 during the monitoring program (Table B-9). Naphthalene and 2- methylnaphthalene (gasoline-range PAHs) were primarily found in well MW-1 at the gasoline release point. Acenaphthene, fluoranthene, phenanthrene, and pyrene (PAHs found in diesel) were detected in wells MW-3 and MW-5. PAHs in these wells routinely exceeded JSCS SLVs. Downgradient wells MW-2, MW-4, and MW-7, however, had relatively lower PAH concentrations and infrequently exceeded SLVs (Table 8). Data from the last three years of monitoring these wells (2007 through 2009) indicated that total PAH concentrations were stable or decreasing (see concentration plot in Appendix E).
- *VOCs.* Gasoline-associated VOCs were primarily detected in wells MW-1 and MW-5, with lower concentrations detected in MW-3 and MW-4 during the monitoring program (Table B-10). Although MW-1 and MW-5 had VOCs exceeding SLVs, a comparison of VOC data for downgradient wells MW-2, MW-4, and MW-7 confirmed that those detection levels just barely exceeded the SLVs (Table 9).
- *Metals.* All wells initially had detections of total and dissolved lead (Table B-11). In 2005, at DEQ's request, groundwater samples were also analyzed for arsenic, barium, cadmium, chromium, copper, manganese, and zinc (Table B-12). These detections likely reflected background conditions given that: (1) metals were present in all samples at concentrations generally consistent across the Property with no discernable trends; and (2) because Brix never stored or processed these metals at the Property. In 2005, Brix discontinued monitoring for metals with DEQ's approval.

In summary, TPH, PAH, and VOC data indicate gasoline impacts to groundwater near well MW-1 (at the release point) that extend downgradient to MW-5. Lubricating oil impacts are indicated at MW-3 and MW-8. Based on the presence of PAHs typical of diesel, diesel impacts appear to be present in groundwater at MW-3 and MW-5. Downgradient data from wells MW-2, MW-4, and MW-7, however, confirm that contaminated groundwater is confined to the upland portion of the Brix Property to the area beneath the northwest portion of the maintenance building near the UST nest (Figure 7).

5.1.3 Seep Assessment

Groundwater seeps occur along the riverbank during low river levels and emerge at the contact between native soils and the overlying dredge fill sand. In September 2005, Anchor conducted a seep assessment by sampling a groundwater seep along the riverbank near well MW-2, nearby river water, and soil at the seep location (Anchor 2005c). Figure 7 shows the 2005 seep assessment location. Photographs of the 2005 seep assessment are included in Appendix E. Seepage was very slow, measuring 0.5 liters/hour. Chemical results are discussed below.

Seep Water. The groundwater seep sample was analyzed for PAHs. Only four PAHs were detected: fluoranthene, naphthalene, phenanthrene, and pyrene, all of which were below JSCS SLVs (Table 8 or B-9).

River Water. Anchor collected a sample of the river water at the nearby River Water Gauge (Figure 7) and analyzed it for PAHs. Six PAHs were detected: benzo(a)pyrene, benz(a)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene, the first three of which exceeded JSCS SLVs (see Table E-1 in Appendix E). Evaluation of the data suggest that the PAHs detected in the river water sample came from a different (likely upstream) source for the following reasons.

- First, nearly twice as many PAHs were detected in the river water sample, including carcinogenic PAHs such as benzo(a)pyrene, than the PAHs detected in the seep water sample.
- Second, given the slow rate of seepage (0.5 liters/hour), if seep water were a source of contaminants to the river, one would expect concentration levels in the seep water to be higher than in the river, where it would quickly and significantly be diluted by mixing with river water. To the contrary, concentrations of several PAHs detected in the river water were similar to or higher than concentrations of those same PAHs in the seep sample.
- Third, and perhaps most notably, research revealed that NW Natural was undertaking Early Action activities upstream to remove a tar body in nearshore sediment at the Gasco site at River Mile 6.3 on the same day that Anchor collected Brix's river water sample (Anchor 2006b). On that day, water quality samples taken 400 feet downriver from the Gasco site at various depths revealed PAH concentrations more than an order of magnitude higher than Brix's river sample (Table E-1).

For these reasons, there is a strong likelihood that the number and concentrations of PAHs detected in the river water sample were affected by upstream Early Action activities at the Gasco site.

Soil. Two soil samples were also obtained from the seep location, one from the native soil surface and another one at a depth of approximately half a foot. These samples were analyzed for PAHs. Multiple PAHs were detected in the sample (Table E-2). The presence of PAHs in the soil samples, and

particularly high-molecular weight PAHs (HPAHs), was surprising given that PAHs were not detected in upland soil samples collected in connection with significant lubricating oil contamination (Section 5.1.1).

Virgin petroleum products (e.g., gasoline, diesel, and oil) generally have light-molecular weight PAHs (LPAHs), such as naphthalene, acenaphthene, and phenanthrene. LPAHs are typically present as the result of petroleum-refining processes, and for this reason are known as "petrogenic" PAHs. By contrast, HPAHs, such as benzo(a)pyrene and benzo(b+k)fluoranthene, are associated with significant heating processes such as coal gasification and coal tar distillation, fuel combustion, and fires. These types of PAHs are known as "pyrogenic" PAHs. HPAHs are not typical of the petroleum products used or handled on the Property since Brix developed the Property in the late 1970s. A detailed analysis of PAH-specific data along and upstream of the Brix Property indicates that the presence of PAHs, and particularly HPAHs, in soil at the seep location and in sediment at the Property are likely due to historical operations conducted at the upstream Gasco site, and which have affected downstream native soil and sediment quality.

From 1913 to 1956, Gasco was a manufactured gas plant that produced oil gas, light oil, creosote oil, coke, tar, and lampblack (a solid residue from gasification of heavy oil). Large piles of lampblack and spent oxide (wood shavings mixed with a residue from the gas purification process) were stored at the Gasco site. From 1913 to 1941, Gasco discharged or placed waste materials such as wastewater with petroleum emulsions, lampblack, and tar stills in low-lying areas of the Gasco site that drained from the production area to the river (the primary sewer outfall discharged into a ditch that drained to the river). In 1941, Gasco completed construction of two effluent settling ponds at the Gasco site that allowed solids to settle before discharging fluids to the river (Hahn 2007). However, major flood events in 1948 and 1964 flooded the settling ponds at the Gasco site and reached the storage piles, likely washing materials to the river. Even after Gasco ceased operations, releases of contaminants from Gasco have resulted in downstream impacts as evidenced by the nature and extent of PAHs in sediment on contaminant maps in the RI for the Portland Harbor Superfund Site (see Maps 5.1-9, 5.1-10f, and 5.1-10g from Integral Consulting, et al. 2011).

These historical releases from the upstream Gasco site, combined with a long history of industrial activity in Portland Harbor, likely affected native soils at and in the vicinity of the Brix Property and at other downstream properties, creating an urban background PAH concentration. During installation of monitoring wells MW-6 and MW-7 in 2003, PAHs were detected in soils from the dredge fill/native soil boundary at approximately 25 feet deep (Table E-2). Both these wells are downgradient of, and outside the documented extent of, petroleum contamination from upland releases on the Property (notably, no TPH was detected in these samples). The PAH concentrations detected in the soil samples that were taken as part of the September 2005 seek assessment and in the samples taken in 2003 as part of the installation of the monitoring wells, attest to the presence of an urban background concentration. Dredge fill placed at the Brix Property in 1971 completely covered native soil, except where the interface of native soil and dredge fill is exposed along the river (i.e., where seep soil samples were collected). Furthermore, lower riverbank soils and sediment can still be affected by upstream sources as shown by the above observed river water impacts and the sediment contaminant maps from the Portland Harbor Superfund Site RI.

5.2 Data Assessment

Brix conducted groundwater monitoring at the Property for seven years to determine the nature and extent of UST releases at the Property. Analytical results have detected petroleum contamination (TPH) and its constituents (PAH and VOCs) in groundwater. To evaluate whether source control has been achieved with respect to the groundwater pathway, Hart Crowser assessed data generated from the 2005 seep assessment to data collected from downgradient wells MW-2, MW-4, and MW-7 during the last three years of monitoring (2007 through 2009). These data are listed in Tables 7 through 9. Hart Crowser's data assessment does not indicate that contaminated groundwater poses a risk to the river.

5.2.1 Screening Level Comparison

Chemical analyses on groundwater have detected TPH, PAHs, and VOCs in the area beneath and surrounding the northwest portion of the maintenance building on the upland portion of the Property. Figure 7 shows the estimated extent of groundwater contamination. To assess whether COIs detected in downgradient groundwater and the seep pose a risk to the river, Hart Crowser compared data from the downgradient wells and the seep to various screening levels.

The DEQ and EPA compiled JSCS SLVs to assess potential threats to the Willamette River from upland sources and to make upland source control decisions (DEQ/EPA 2005). Groundwater data collected at the Brix Property were compared to JSCS SLVs.

- *TPH.* The DEQ directed Brix to use 1 mg/L as an SLV (DEQ 2012) because there is no SLV available for TPH. Chemical data for the last three years of monitoring of downgradient wells MW-2, MW-4, and MW-7 (2007 through 2009) confirmed there were no exceedances for TPH (Table 7).
- *PAHs.* Chemical data for the last three years of monitoring of downgradient wells MW-2, MW-4, and MW-7 (2007 through 2009) confirmed there were only infrequent, slight exceedances of PAHs in MW-4 and MW-7 (Table 8).
- *VOCs.* Only naphthalene (a PAH) exceeded its SLV in MW-4, and only twice (Table 9).

Although the only SLV exceedances were PAHs, the data showed that PAHs were more likely to be either detected below SLVs or non-detectable with MDLs below SLVs. Based on data generated to date, total PAH groundwater concentrations are stable or decreasing (as shown in the graph in Appendix E).confined to the upland portion of the Property, and not impacting downgradient wells, as depicted on Figure 7. Furthermore, groundwater seep data did not indicate any PAH SLV exceedances.

The EPA recently proposed draft preliminary remediation goals (PRGs) in the Feasibility Study for the Portland Harbor Superfund Site (EPA 2015). Separate PRGs were compiled from various human health and ecological criteria to address the migration of contaminated groundwater to sediment and surface water across the Portland Harbor Site with subsequent human and ecological exposure. Available PRGs for PAHs and VOCs are included on Tables 8 and 9, respectively. A draft PRG for TPH has not been developed, particularly for the heavier hydrocarbon ranges present at the Property (as indicated by the B-33 soil data obtained from groundwater table in Table B-3). Because EPA's proposed PRGs are

specific to groundwater migration, Hart Crowser screened groundwater data from downgradient wells and the seep against available PRGs as presented in the following paragraphs.

An initial comparison of the Brix data to draft PRGs protective of human health indicates that several HPAHs in groundwater from downgradient wells at the Brix Property may exceed their respective PRGs. These PRGs, however, are based on human health criteria that are intended to apply to large water bodies that may serve as a municipal drinking water source (i.e., surface water) and that support an entire home range of fish consumed by humans; they are not designed for assessing human health risk at the micro level for short stretches of the riverbank, such as the Brix Property, for the following reasons.

- Groundwater discharges at the Brix Property are minimal and limited to low-flow seepage along the riverbank, which is quickly incorporated into the downstream flow of the river. Given that municipal water sources are readily available in the area, it is highly unlikely that a surface water intake would be installed at or downstream of the Brix Property; even if one were, the low-flow of Brix's groundwater at the seep (which had no PAHs detected above PRGs) would have no impact on that surface water intake or the surface water collected.
- Fish are not confined to Brix's riverbank, but rather, live and travel within a wide range of the river. For example, in the Baseline Ecological Risk Assessment (BERA) for the Portland Harbor Superfund Site, the feeding range of the smallmouth bass is assumed to be 1 mile (Windward Environmental 2013).

While the human health PRGs and the JSCS SLVs provide for a screening-level evaluation of the Property data, both these criteria are based on ambient water quality criteria (AWQC) intended for larger water bodies, and as described above, are not directly applicable to the Brix Property for assessing the risk to human health. Downgradient groundwater data from the Property, however, shows only infrequent and very low PAH detections, with seep data below SLVs; combined with the slow rate of groundwater seepage, COIs in groundwater discharges to the river do not pose a risk to human health.

For evaluating ecological risk, the EPA has also proposed draft PRGs for groundwater migration that are based on toxicity reference values (TRVs) listed in the BERA (Attachment 10 of Windward Environmental 2013). Comparison of downgradient groundwater data to these ecological PRGs indicate that the only COI that exceeds its PRG is benzo(a)pyrene in MW-4 (four times) and MW-7 (once). These exceedances were fairly low with exceedance ratios of approximately 2. Notably, benzo(a)pyrene was typically not detected in wells with MDLs significantly below the draft 0.014 µg/L PRG. Therefore, the average benzo(a)pyrene concentration in groundwater from downgradient wells likely meets ecological PRGs (keeping in mind that groundwater must still migrate at least 30 feet to the river). This conclusion is supported by the fact that the groundwater seep sample met ecological PRGs for detected PAHs. For these reasons and because groundwater seepage is minor, slow, and quickly incorporated into river water, there is no basis for concluding that groundwater seepage to the river at the Brix Property will have any impact on aquatic organisms.

5.2.2 Contaminant Mobility

Groundwater monitoring of downgradient wells has detected relatively low concentrations of TPH, PAHs, and VOCs. VOCs, which are present in gasoline, tend to be the most mobile compounds in groundwater because they have lower soil organic carbon-water partition coefficients (K_{oc}) values and are more soluble than PAHs. As such, VOCs have a tendency to migrate downgradient with groundwater. Based on data collected to date, VOCs were primarily, but infrequently, detected in well MW-4 – but none of Brix's other downgradient wells – until late 2007. This result indicates that MW-4 is at the downgradient edge of gasoline-associated groundwater contamination that is present on the uplands portion of the Brix Property. PAHs and TPH have also been detected downgradient, but have less migration potential as VOCs because they tend to adsorb to soil due to their higher K_{oc} values.

Screening of downgradient groundwater data indicates that PAHs, and particularly carcinogenic HPAHs, are occasionally present in groundwater samples collected from wells MW-4 and MW-7 above JSCS SLVs or the proposed draft PRGs. As explained above, HPAHs are present in the native soil horizon at the Property due to background conditions that are the result of historical upstream industrial activities. These PAHs may desorb from the soil matrix and/or be associated with suspended particles mobilized by groundwater well purging and sampling activities. Carcinogenic HPAHs, such as benzo(a)pyrene, are relatively immobile in the environment due to their tendency to adsorb to soil (high K_{oc} values). Given that none of these PAHs were detected in the groundwater seep sample, but that they were detected in soil attests to the adsorptive quality of PAHs to the native fine-grained soil matrix (clays and silty clays) that are present on the Brix Property.

5.2.3 Groundwater Migration

As discussed above, groundwater with COI were only detected occasionally in downgradient wells, each of which is inland and upland from the river by at least 30 feet. As a result, and as is apparent based on data collected to date, the likelihood of COI reaching the river is low because adsorption, diffusion, and/or biodegradation processes would reduce COI concentrations before they reached the river. Groundwater is perched on the pre-fill native soil horizon and flows slowly into the river, emerging at the contact between native soils and the overlying dredge fill sand, at a rate of 0.5 liters/hour based on the findings of the September 2005 seep assessment. Field inspection of the riverbank during the groundwater monitoring program (2002 through 2009) did not indicate the presence of petroleum hydrocarbons seeps, sheens, or odors. Based on these observations, the migration and emergence of groundwater along the riverbank of the Brix Property is not contributing appreciable levels of COI above screening criteria (if at all) to the river.

5.3 Summary of Findings

Groundwater monitoring was performed at the Brix Property for seven years from 2002 until 2009 to assess the nature and extent of petroleum-contaminated groundwater at the Brix Property as a result of historical upland UST releases. Monitoring results indicate that gasoline impacts to groundwater are present near well MW-1 (at the release point), but only extend downgradient to MW-5. Lubricating oil impacts are present at MW-3 and MW-8. Diesel impacts appear to be present in groundwater at MW-3 and MW-5 based on the presence of PAHs typical of diesel. Downgradient wells (MW-2, MW-4, and

MW-7), however, show only low COI concentrations (i.e., TPH, PAHs, and VOCs) from these releases. Additionally, an assessment of a groundwater seep along the riverbank only detected a few PAHs. Based on the frequency of detection and the concentration of COIs, the approximate extent of the groundwater contamination is confined to the upland portion of the Property, the approximate extent of which was delineated as shown on Figure 7.

To assess whether COIs detected in downgradient groundwater and the groundwater seep pose a potential environmental concern to the river, Hart Crowser screened groundwater data against JSCS SLVs and EPA's proposed draft PRGs. TPH and VOCs do not exceed these screening criteria, where available. PAHs were infrequently detected above JSCS SLVs and human health PRGs, but were mostly non-detect (when detected, concentrations were stable or decreasing). These screening criteria, however, are based on AWQC that include water and/or fish consumption, and therefore, are applicable to entire water bodies, not short stretches of riverbank. It is unlikely the river at or near the Property will serve as a municipal water source and that fish consumed by people will have exclusively used the Brix waterfront. For smaller areas, ecological PRGs provide a better screening tool. Only benzo(a)pyrene occasionally exceeded its criterion in wells MW-4 and MW-7, but typically this COI was not detected at an MDL that was substantially below its PRG. Given the relatively small volume and rate of groundwater discharge at the Property riverbank (which is quickly incorporated into and diluted by the river) and that the seep sample did not have any detectable PAHs exceeding SLVs or PRGs, the Brix Property does not pose a concern to human health or the aquatic environment.

Additional support for the conclusion that source control has been achieved for groundwater and that the groundwater pathway is not a risk to the river is that the COIs exceeding screening criteria, carcinogenic HPAHs, are immobile in the environment due to their affinity to adsorb to soil. While COIs were occasionally detected in downgradient monitoring wells (likely due to suspended particles from sampling), they would need to migrate at least another 30 feet before they would reach the river, during which COIs would likely undergo adsorption, diffusion, or biodegradation. Moreover, seepage along the riverbank occurs slowly. To date, however, there is no evidence such migration has occurred. Indeed, no COIs were detected in the seep sample and no field indications of petroleum contamination along the river were ever observed during the seven years of groundwater monitoring activities.

In summary, petroleum-contaminated groundwater associated with the past UST releases is stable and limited to the upland portion of the site. Any COI that may be present in groundwater in the upland wells are at concentration levels that will not pose risk to human health or the environment. Moreover, these COI will continue to attenuate over time. Accordingly, there is no need to conduct active source control measures to mitigate the groundwater migration pathway at the Property.

6.0 EROSION PATHWAY

Erosion can pose an environmental concern for the Willamette River if contaminated surface or subsurface riverbank soils are in an area undergoing erosion or potentially subject to erosional forces, such as wind, wave action, and surface water run-off. As presented below, Hart Crowser evaluated the erosion exposure pathway at the Brix Property and determined it is incomplete because

petroleum-contaminated soil from historical UST releases occurred in an upland area of the Property that is not subject to erosion, is localized, and does not extend to the riverbank.

6.1 Extent of Soil Contamination

Field screening and chemical analyses of soil samples collected during environmental investigations and excavation activities have delineated the extent of petroleum-contaminated soil at the Brix Property from historical UST releases to an area near the UST nest just northwest of the maintenance building. Figure 7 shows the extent of petroleum contamination in soil. This area is confined to the upland portion of the Property, which is set back at least 30 feet laterally from the riverbank. The following summarizes the three UST releases that have occurred at the Property and the limited extent of petroleum contaminated soil. More detailed information is presented in Sections 2.4 and 2.5.

In January 1993, Brix discovered that an upland subsurface release of 30-weight lubricating oil had occurred from a pin-hole leak in the product piping near the east corner of the UST nest pad, approximately halfway between the UST nest and the maintenance building. Contaminated soil in this area (i.e., the northeast portion of the peanut-shaped extent on Figure 7) was delineated to and area approximately 30 to 40 feet in diameter; it also extended down to approximately 23 feet bgs, reaching the groundwater table. Shallower contamination was also detected at 3 feet bgs in a product line trench along the north side of the maintenance building. This shallow contamination (the southwest portion of the peanut-shaped extent on Figure 7) ranged from 3 to probably 10 feet deep, and approximately 25 feet wide and 40 feet long.

During investigation of the lubricating oil release in 1993, a second upland subsurface release of gasoline-range hydrocarbons was discovered near a former gasoline dispenser at the west corner of the maintenance building. Explorations in this area revealed gasoline-impacted soil in an area approximately 20 to 30 feet in diameter. This contamination extended down to the groundwater table at approximately 21 feet bgs. The source of the gasoline release is unknown, but was likely from the former lines or the dispenser in the area of the contamination given that no holes or leaks were observed in the UST when it was decommissioned in 1998.

In 1998, minor historical diesel overfills at the fill end of the USTs were found during UST upgrade activities; however, chemical data on soil from around the UST nest do not indicate diesel-contaminated soil beyond the observed overfills. As such, the extent of diesel-contaminated soil is shown only around the fill ports of the diesel USTs on Figure 7.

6.2 Surface Conditions

The Brix Property is entirely covered with buildings, concrete or asphalt pavement, except for the riprapped riverbank and minor landscaped areas (i.e., around the Property's perimeter and adjacent to the office building) (Figure 2). Because the upland portion of the Property is covered with hardscape and the landscaped areas are flat and vegetated, there are no soils exposed to erosional processes on the upland portion of the Property. Photographs of the Brix Property are included in Appendix A.

When Brix developed the Property in the late 1970s, the riverbank (dredge fill placed on native silt/clay in 1971) was sloped and armored with basalt riprap (mostly 8 to 12 inches in diameter, but with boulders up to 2 feet in diameter). Along the upstream portion (the north end) of the Property near the work barge, the bank is protected from the river and is stable, with negligible erosion. Over time, river and wave action along other portions of Brix's waterfront have caused some erosion that is slowly winnowing the dredged fill and causing the overlying riprap to slide downward toward the river and/or settle onto the native silt/clay. Approximately 60 feet downstream of the work barge (in the area of the groundwater seep that was sampled), erosion has caused approximately 8 feet of lower portion of the riprap slope to settle onto the native silt/clay and created a 2-foot scarp (edge) at the top of this erosional area. Further downstream, approximately 60 feet of riprap below the office building has eroded and sloughed, exposing up to 15 feet of the lower portion of the dredge fill slope. The upper portion of the bank is stable and has retained its riprap and scattered grassy vegetation along the entire length of the riverbank. Appendix F includes photographs of the riverbank, including the above-described erosional areas.

6.3 Summary of Findings

Petroleum-contaminated soil on the Brix Property is in an isolated upland area beneath and along the northwest side of the maintenance building. This contaminated soil is laterally at least 30 feet inland from the riverbank. Although some erosion has occurred along the lower portion of the armored riverbank fronting the Brix Property, the remainder of the armored riverbank is stable (even withstanding the 1996 flood which crested at 28.6 feet). These erosional areas are more than 60 feet away from the petroleum-contaminated soil that is present in the upland portion of the Property. For these reasons, the erosion exposure pathway does not pose an environmental concern to the Willamette River.

7.0 OVERWATER ACTIVITIES PATHWAY

Overwater activities can pose an environmental concern to the Willamette River if hazardous substances are released. Overwater features at the Brix Property include mooring docks and a stationary covered work barge permanently moored in the river between the mooring docks and shoreline. Brix's overwater activities are described below. Because these activities are conducted under covered enclosures and are subject to Brix's implemented BMPs, maintenance standards, and procedures, Brix's overwater activities pathway represent an insignificant or incomplete contaminant pathway that does not warrant further source control.

7.1 Overwater Operations

Overwater operations at the site include tugboat and barge moorage, tugboat fueling, oil and gasket changes, and other routine maintenance and minor repairs. Brix only allows its own tugs and barges to berth at the Property. No barge loading or unloading occurs at the Property. A work barge is permanently moored at the Brix Property to facilitate fueling and minor maintenance of the tugboats. The following describes the work barge and specific overwater activities conducted by Brix in support of its tugboat fleet. Representative photographs are included in Appendix G.

7.1.1 Work Barge

The work barge is permanently moored in the river adjacent to the embankment between the mooring docks and shoreline. It is approximately 160 feet long and 35 feet wide, is largely enclosed, and has six watertight compartments. The deck level of the work barge is completely covered and includes a mechanical work area, machine shop, electric shop, lunch room, and tool and parts storage. The below-deck areas of the work barge are used for storage and contain diesel (for heating), waste oil, bilge water, and sanitary wastewater holding tanks. Used or waste materials held in these tanks are transferred via piping off the barge for recycling or proper disposal. The layout of the work barge is presented on a figure in Appendix G.

Routine equipment maintenance and minor repairs are performed within the covered interior of the deck level on the work barge. Besides the activities described below, the products primarily handled on the barge are diesel and kerosene. Diesel is stored in a 275-gallon holding tank on the work barge and is used to supply two heaters in the deck level work space. Kerosene is purchased in 55-gallon drums and stored in the maintenance building on the upland portion of the Property until needed on the work barge. Kerosene is used in the work barge's maintenance shop in place of solvent in a metal parts washer. Used kerosene is drained from the parts washer into the used oil tanks that are located within the hull of the work barge. Used kerosene helps to keep the heavy oils broken up in the used oil tanks. These tanks are routinely pumped out, with the used oil and kerosene transported off-site for recycling.

Sanitary waste from bathrooms on the work barge is held in the 1,000-gallon sanitary wastewater tank in the hold of the barge. When the sanitary wastewater level reaches approximately 70 percent capacity, a high level alarm is tripped and the sanitary waste is pumped from the tank directly to the City's sanitary sewer system. Most of Brix's tugboats use aerobic digesters to treat sanitary waste generated aboard the vessels, which is then discharged directly to the river pursuant to Section 312 of the Clean Water Act. One tugboat, however, has a sanitary wastewater holding tank onboard that is periodically pumped to the sanitary wastewater tank in the hold of the work barge.

7.1.2 Fueling

Diesel fuel is transferred from the upland USTs to tugboats through a fueling station located in a spill containment area beneath a canopy at the north end of the work barge. Fuel is transferred from the upland USTs via metal and flexible piping through a transfer pump, meter, and fueling hose located within a metal spill containment pan in the work barge's fueling station to waiting vessels moored adjacent to the work barge. During fueling, an employee is continuously present at the fueling station on the work barge, and a second employee is stationed on the vessel at the fuel intake port to monitor the fueling operation. The vessel's fuel inlet is in an enclosed area accessed from the breezeway (an open-air space between the living quarters and the engine room) through a portal. In the unlikely event of an overfill, fuel would be contained by the vessel's portal threshold. The fueling station is equipped with electronic shutoff switches, and absorbent pads and other spill containment materials are readily available in case of spills.

7.1.3 Oil Changes

Tugboat engine oil changes are typically conducted every several months and require between 150 to 300 gallons of 30-weight lubricating oil. Used oil is transferred from the tugboat into two 1,000-gallon used oil tanks located in the work barge, pending removal and transport off the site for recycling. Virgin lubricating oil is pumped from the upland UST using procedures similar to the fuel transfer process. Employees are stationed in the transfer station on the work barge and at the oil inlet port during the oil changes. Both areas are contained and absorbent materials are readily available in the event of minor spills.

7.1.4 Bilge Water Removal

Bilge water consists of water from rain, minor hull leaks, rough seas, other interior spillage or the packing gland (stuffing packed around a propeller shaft at the point it exits a boat's hull underwater to prevent water from entering the hull, while still allowing the propeller shaft to turn) that drains down through the vessel into the bilge. Additionally, any vessel engine washing conducted within a vessel's engine room is collected in the vessel's bilge compartment. Bilge water is predominately comprised of water, but may also contain oil, detergents, or other materials in varying amounts.

Bilge water from the tugboats is initially transferred to a 3,000-gallon tank within the hull of the work barge and held to allow any oil that may be present to separate. Accumulated oil flows to one of the two used oil tanks on the work barge. The remaining bilge water is transferred into a second 3,000-gallon tank and then passed through a Sarex® oily water separator and filtration system to remove any residual oil that might remain. Filtered bilge water is discharged to the City's sanitary sewer system. The first bilge tank is typically cleaned every six months. The second bilge water tank does not require cleaning because no solids are transferred out of the first bilge water tank.

7.1.5 Other Activities

As need for minor maintenance, hydraulic oil and other lubricants are retrieved from the maintenance building for use on the covered work barge; any used petroleum products that are generated are directed to the used oil tanks. Used oil and fuel filters are temporarily kept in lined 55-gallon steel drums in the secondary containment area of the work barge's covered transfer station. Used absorbent pads are also temporarily kept in drum-liner bags. When filled, the drums and drum liners are transported off the site for recycling or disposal.

7.2 Pollution Prevention

Fueling, oil changing, bilge water disposal, and routine maintenance and repairs are conducted within covered and contained areas of the work barge and tugs. The work barge has six watertight compartments. Any potential spillage from the deck or leaks from waste holding tanks, were they to occur, would be contained inside the barge, thereby preventing the possibility of a release to the river.

Brix has implemented BMPs, maintenance standards, and procedures to minimize the potential for virgin or spent products to reach the river. As indicated above, two employees are continuously present during fuel and lube oil transfers to monitor the transfer. The transfer pumps, meters, and hoses are located

within a metal spill containment pan within the transfer station, and the station is equipped with electronic shutoff switches. Flexible coupling hoses are also replaced every five years, and line pressure tests are conducted annually of product piping.

Spill kits are located on tugboats, absorbent pads and booms are present at the transfer station, and spill containment booms are located at the end of each dock. According to Brix personnel, if a spill occurs, the procedures to address the spill are as follows: ensure the health and safety of employees; determine the source of the spill and undertake initial containment; contact dispatch, appropriate agencies, and cleanup firms; initiate further containment (deploy booms); and clean up.

7.3 Summary of Findings

In support of its tugboat fleet, Brix conducts overwater activities consisting of fueling, oil changes, bilge water removal, and other routine maintenance and minor repairs. These activities are conducted within covered and contained areas of the work barge and tugboats. Virgin and spent products are properly managed, contained, and disposed of. Brix has also implemented BMPs, maintenance standards, and procedures to prevent releases to their vessels, the barge, and the river. Spill kits and absorbent booms are readily available to address any spills, should they occur. Through their environmental awareness, Brix's overwater activities present a low risk of releases to the river, and as such, no additional source control measures are necessary.

8.0 SOURCE CONTROL EVALUATION

The purpose of this SCE is to identify actual or potential contaminant sources at the Brix Property and to evaluate whether they may pose an environmental risk to the river. Hart Crowser evaluated available information and chemical data to assess four potential contaminant migration pathways: stormwater, groundwater, erosion, and overwater activities. This section provides a summary of each pathway, assessment findings, and conclusions regarding whether source control has been achieved.

8.1 Pathway Summary and Findings

In Section 3 and as shown on Figure 8, a CSM was developed for the Property to identify actual or potential contaminant sources and possible contaminant migration pathways to the river. Hart Crowser then evaluated four possible migration pathways in Sections 4 through 7, consisting of stormwater, groundwater, erosional transport and overwater activities. A summary of actual and potential contaminant sources and an evaluation of each pathway are presented below.

8.1.1 Stormwater Pathway

The stormwater pathway focuses on the discharge of stormwater to the river via the Property's stormwater collection and conveyance system shown on Figure 4. The Property has two separate catchment areas (Catchment Areas A and B) that collect stormwater runoff in catch basins and convey the runoff through piping to two outfalls (Outfalls A and B) situated on the upper portion of the riverbank. Contaminants that may be present on the pavement surface could become entrained in stormwater and be eventually discharged with stormwater to the river. Potential contaminant

sources could be from incidental oil and grease drips from vehicles, particulates tracked to the Property by vehicles, the weathering of asphalt pavement, and atmospheric deposition of particles from off the Property.

To assess the stormwater exposure pathway, Hart Crowser completed a stormwater evaluation (see Section 4 of this report) per DEQ guidance (DEQ 2010) and the Portland Harbor JSCS (DEQ/EPA 2005). In 2008, samples were collected from sediment in the catch basins on the Property and analyzed for site-specific and Portland Harbor COIs, which detected the presence of TPH, PAHs, five VOCs, two phthalates, and PCBs. While PAHs, phthalates, and PCBs exceeded JSCS SLVs, comparison of these data to DEQ's catch basin sediment charts showed that the Brix Property is "typical" of industrial sites, with only PAHs slightly elevated above the "typical" range for such compounds. Following these sampling activities, the catch basin sediment was removed and new catch basin filter inserts were installed as SCMs. Since then, Brix periodically inspects the filters and replaces them when needed. Stormwater sampling was then performed to assess whether COIs detected in catch basin sediment were actually present in stormwater being discharged from the Property's outfalls.

In 2008 and 2009, Hart Crowser collected stormwater samples from Outfalls A and B on four occasions. Due to elevated PAH concentrations in Outfall B stormwater samples, Brix implemented additional SCMs in 2012 consisting of stormwater conveyance system cleanout and pavement sweeping. Another two stormwater sampling events were then conducted. COIs detected in one or more stormwater samples during that period included: total copper, lead, and zinc; two VOCs; two phthalates; PAHs; and diesel- to oil-range TPH. Chemical results indicate the 2012 SCMs were effective at reducing COIs in stormwater. PAHs were still occasionally present above JSCS SLVs, but VOCs and phthalates were below SLVs. For the other compounds, applicable JSCS SLVs were not available; however, total metals, TPH, and TSS would meet DEQ's current NPDES 1200-Z stormwater permit benchmarks. Comparison of Brix's data to DEQ's stormwater charts showed that stormwater quality is "typical" of industrial sites (more so after implementation of the 2012 SCMs) and consistent with stormwater discharges from the City's outfall at the site.

Brix has implemented numerous BMPs, including maintenance standards and procedures, to prevent or minimize the potential for chemical products to be exposed to rainfall or stormwater. Petroleum products are stored in USTs or are stored and handled in covered or contained areas not exposed to stormwater or rainfall. Catch basins are designed to capture and retain solids in stormwater, and are fitted with filter inserts to further remove oils and particulates from vehicles and air deposition. The stormwater conveyance system has been cleaned out. Continued SCMs include periodic inspection, filter replacement, and pavement sweeping which will minimize potential particulates and contaminants in stormwater discharges. Brix's use of BMPs and SCMs will provide adequate stormwater source control for the foreseeable future.

8.1.2 Groundwater Pathway

The groundwater exposure pathway involves assessing whether groundwater impacted by historical UST releases at the Brix Property have migrated toward the river with the flow of groundwater. Brix conducted groundwater investigations that included: (1) quarterly sampling of monitoring wells on the

Property from 2002 until 2009; and (2) an assessment of a riverbank groundwater seep in 2005. These investigations delineated petroleum-contaminated groundwater beneath the northwest portion of the maintenance building (Figure 7). To assess whether COIs in groundwater pose a concern to the river environment, Hart Crowser evaluated groundwater data from downgradient monitoring wells (MW-2, MW-4, and MW-7), a seep along the Property riverbank, nearby river water, and soil near the groundwater seep.

Groundwater data from downgradient wells for the last three years of monitoring (2007 through 2009), which represents the most recent data, showed relatively low concentrations and/or occasional detections of TPH, PAHs, and VOCs. An initial screening-level comparison of these data against JSCS SLVs and EPA's draft human health PRGs only infrequently detected PAHs above screening criteria (overall, PAHs are more often not detected, but when they were detected, showed stable or decreasing concentrations). These screening criteria, however, are based on AWQC that include water and/or fish consumption, and therefore, are applicable to entire water bodies, not short stretches of riverbank. Not only is a municipal surface water intake unlikely to be installed at or immediately downstream of the Brix Property, fish harvested for consumption do not reside exclusively along the Brix riverbank. For smaller areas, ecological PRGs provide a better screening tool. Only benzo(a)pyrene occasionally exceeded its criterion in wells MW-4 and MW-7, but typically this COI was not detected at an MDL significantly below its PRG. Given the relatively small volume and rate of groundwater discharge from the seep at the Property's riverbank (which is quickly incorporated into and diluted by the river) and that the seep sample did not have any detectable PAHs exceeding SLVs or PRGs, the Brix Property does not pose a risk to human health or the aquatic environment.

Additional support for the conclusion that source control has been achieved for groundwater and that the groundwater pathway is not a risk to the river is that the COI exceeding screening criteria, carcinogenic HPAHs, are immobile in the environment due to their affinity to adsorb to soil. While COIs were occasionally detected in downgradient monitoring wells (likely due to suspended particles from sampling), they would need to migrate at least another 30 feet before they would reach the river, during which these COIs likely would undergo adsorption, diffusion, or biodegradation. Moreover, seepage along the riverbank occurs slowly. To date, however, there is no evidence such migration has occurred. Indeed, no COIs were detected in the seep sample, and no field indications of petroleum contamination along the river were ever observed during the seven years of groundwater monitoring activities.

8.1.3 Erosion Pathway

Erosion can pose an environmental risk for the Willamette River if contaminated riverbank soils are in an area undergoing erosion or potentially subject to erosional forces, such as wind, wave action, and surface water run-off. Based on environmental investigations at the Brix Property, the extent of petroleum-contaminated soil has been delineated to an isolated upland area beneath the northwest side of the maintenance building and at least 30 feet laterally back from the riverbank (Figure 7). This upland area is hardscaped with the maintenance building, the concrete pad of the UST nest, and asphalt pavement; and the adjacent riverbank has been armored with riprap. Although some erosion has occurred elsewhere along the lower portion of the Property's armored riverbank, the remainder of the armored riverbank is stable. These erosional areas are more than 60 feet away from the

petroleum-contaminated soil that is present in the upland portion of the Property. For these reasons, the erosion exposure pathway is not complete for the Brix Property.

8.1.4 Overwater Activities Pathway

In support of its tugboat fleet, Brix conducts overwater activities consisting of fueling, oil changes, bilge water removal, and other routine maintenance and minor repairs. The majority of these activities are performed within covered and contained areas of the work barge permanently moored at the Property. Similarly, work on tugboats is done under cover and in contained areas of the vessel. For their operations, Brix has also implemented BMPs, maintenance standards, and procedures to prevent releases to their vessels, the barge, and the river. For example, two employees are continuously present to monitor fuel and lube oil transfers from the barge to the adjacent tugboat. Virgin and spent products are properly managed, contained, and disposed of. Spill kits and absorbent booms are readily available in the work barge, mooring dock, and in upland areas to address any spills, should they occur. Through their environmental awareness, Brix's overwater activities present a low risk of releases to the river.

8.2 Conclusions

This SCE report has assessed four contaminant migration pathways (i.e., stormwater, groundwater, erosion, and overwater activities) to determine whether actual or potential contaminant sources on the Brix Property pose a current or future risk to the Willamette River. Summaries of Hart Crowser's findings for these four pathways are presented in the preceding section. Based on these findings and as described for each pathway below, Hart Crowser concludes that: (1) upland contaminant sources and overwater activities at the Brix Property do not pose a potential risk to the river; (2) upland source control has been achieved; and (3) through continued implementation of BMPs and SCMs, no additional SCE-related actions are necessary.

Stormwater Pathway. Precipitation falling on the Property is captured in on-site catch basins that convey the runoff through piping to two outfalls on the riverbank. To assess and address COIs that might be present in stormwater, Brix conducted sampling activities and has implemented BMPs and SCMs. As presented below, upland source control has been achieved.

- <u>Existing and potential Property-related contaminant sources have been identified and characterized.</u> Stormwater runoff from upland paved areas of the Property may entrain contaminants on the pavement surface from incidental drips from vehicles, particulates tracked onto the Property by vehicles, the weathering of asphalt pavement, and atmospheric deposition of particles from off the Property. Catch basin sediments and stormwater discharges were characterized. Besides existing BMPs at the Property, SCMs were implemented in 2008 and 2012. Stormwater data indicate that these practices were effective in reducing COI concentrations.
- <u>Contaminant sources are being controlled to the extent feasible.</u> Brix has implemented numerous BMPs and SCMs to prevent and minimize potential contaminants in stormwater (see Section 4.2). Petroleum products are stored in USTs with sensors and double-walled fiberglass product lines or are stored and handled in covered or contained areas that are protected from stormwater. The

stormwater conveyance system was cleaned out, and Brix continues SCMs including periodic inspections, catch basin filter replacements, and pavement sweeping to remove potential particulates and contaminants from stormwater runoff.

- Adequate measures are in place to ensure future source control and good stormwater management. As stated above, Brix will continue to implement BMPs and stormwater SCMs in place at the Property. These BMP and SCMs are anticipated to provide adequate stormwater source control for the foreseeable future.
- Contaminants in stormwater exceeding SLVs are not likely to result in Willamette River sediment contamination or contribute to unacceptable risk. Stormwater data collected after implementation of the 2012 SCMs confirmed that the SCMs were effective in reducing COI concentrations to near, at, or below JSCS SLVs and to levels within the lower range of "typical" stormwater runoff as compared to other Portland Harbor industrial sites, and were consistent with COI concentrations detected in discharges from the on-site City outfall. Stormwater discharges from the Property, which have relatively low COI concentrations, are quickly incorporated into river flows, which minimize the potential for sediment contamination or unacceptable risks to river users.

Groundwater Pathway. Petroleum-contaminated groundwater associated with historical UST releases is stable or decreasing, limited to the upland portion of the Property, and are not impacting downgradient wells. Groundwater data from downgradient monitoring wells and a groundwater seep assessment confirm that any COIs that may be present in groundwater in the upland portion of the Property are at downgradient concentrations that will not pose a risk to human health or aquatic receptors. Moreover, COI concentrations will continue to attenuate over time. Accordingly, there is no need to conduct active source control measures to mitigate the groundwater migration pathway at the Property.

Erosion Pathway. Petroleum-contaminated soil from historical UST releases is present in an upland area of the Property that is not subject to erosion, is localized, and does not extend to the riverbank. Therefore, the erosion exposure pathway is not complete for the Brix Property and will not cause a current or future risk to the river.

Overwater Activities Pathway. In support of its tugboat fleet, Brix conducts overwater activities consisting of fueling, oil changes, bilge water removal, and other routine maintenance and minor repairs. Because overwater activities are conducted under covered enclosures and are subject to Brix's implemented BMPs, maintenance standards, and procedures, Brix's overwater activities represent an insignificant or incomplete contaminant pathway. As such, no additional SCMs are necessary.

9.0 REFERENCES

4C's Environmental, Inc. 2012. Foss Maritime, 9030 NW Saint Helens Road, Portland, OR 97321. DEQ Cleanup File Number: 26-12-1331. November 1, 2012.

Anchor Environmental, LLC (Anchor) 2000. Supplemental Preliminary Assessment Summary Report, Brix Maritime Company, Portland, Oregon. October 2000.

Anchor 2002. Progress Report – Third Quarter 2002, Brix Maritime Company, Portland, Oregon. October 10, 2002.

Anchor 2003a. Progress Report – First Quarter 2003, Brix Maritime Company, Portland, Oregon. April 15, 2003.

Anchor 2003b. Progress Report – Second Quarter 2003, Brix Maritime Company, Portland, Oregon. July 15, 2003.

Anchor 2003c. Remedial Investigation Work Plan, Brix Maritime Company, Portland, Oregon. November 26, 2003.

Anchor 2005a. Progress Report – First Quarter 2005, Brix Maritime Company, Portland, Oregon. April 15, 2005.

Anchor 2005b. Addendum 1 to the Remedial Investigation Work Plan, Brix Maritime Company, Oregon, ECSI No. 2364. August 2005.

Anchor 2005c. Progress Report – Third Quarter 2005, Brix Maritime Company, Portland, Oregon. October 14, 2005.

Anchor 2006a. Progress Report – Fourth Quarter 2005, Brix Maritime Company, Portland, Oregon. January 13, 2006.

Anchor 2006b. Final Removal Action Completion Report, Removal Action, NW Natural "Gasco" Site. April 2006.

Anchor and Hahn 2001. Sampling Results Report in Support of the Preliminary Assessment of the Brix Maritime Company Property. September 2001.

Brix Maritime Company (Brix) 2008. Brix Maritime's Response to U.S. EPA CERCLA Section 104(e) Information Request. Brix Maritime Co. September 15, 2008.

City of Portland 2010. Stormwater Evaluation Report, City of Portland Outfall Project, ECSI No. 2425. February 2010.

City of Portland 2014. Municipal Stormwater Source Control Report for Portland Harbor, City of Portland Outfalls Project. December 2013, Amended February 2014.

DEQ 2002. Voluntary Agreement for Remedial Investigation and Source Control Measures, Brix Maritime Company, ECSI 2364, LQDVC-NWR-02-03. May 8, 2002.

DEQ 2005. Approval Letter: Remedial Investigation Work Plan, Brix Maritime Company, Portland, Oregon. ECSI No. 2364. September 6, 2005.

DEQ 2007. Comments Letter: Stormwater System Sampling and Analysis Plan, Brix Maritime-Portland, 9030 NW St. Helens Road, Portland, Oregon, ECSI No. 2364 (Draft). October 18, 2007.

DEQ 2008. Approval Letter: Stormwater System Sampling and Analysis Plan, Brix Maritime-Portland, 9030 NW St. Helens Road, Portland, Oregon, ECSI No. 2364 (Final). January 7, 2008.

DEQ 2009. Brix Monitoring: Approval to Postpone Groundwater Monitoring. E-mail Correspondence from Jim Orr, DEQ to Rick Ernst, Hart Crowser, dated November 13, 2009.

DEQ 2010. Guidance for Evaluating the Stormwater Pathway at Upland Sites. Updated October 2010.

DEQ 2012. Comments Letter: Stormwater Source Control Report, March 7, 2012, Brix Maritime-Portland, 9030 NW St. Helens Road, ECSI No. 2364. March 30, 2012.

DEQ 2013. Development of Oregon Background Metals Concentrations in Soil - Technical Report. March 2013.

DEQ 2014. Portland Harbor Upland Source Control Summary Report. November 21, 2014.

DEQ/EPA 2005. Portland Harbor Joint Source Control Strategy - Final. December 2005 (Table 3.1, July 16, 2007, Revision).

EPA 2015. Summary of Portland Harbor Preliminary Remediation Goals by Remedial Action Objective and Media – Draft. July 29, 2015.

Hahn 1993a. Underground Storage Tank System Investigation, Brix Maritime Company, 9030 NW St. Helens Road, Portland, Oregon. February 26, 1993.

Hahn 1993b. Subsurface Investigation, Brix Maritime Company, 9030 NW St. Helens Road, Portland, Oregon. August 12, 1993.

Hahn 2007. Remedial Investigation Report, NW Natural – Gasco Facility, 7900 NW St. Helens Road, Portland, Oregon. April 30, 2007.

Hart Crowser 2007. Stormwater System Sampling and Analysis Work Plan, Brix Maritime-Portland, 9030 NW St. Helens Road, Portland, Oregon, ECSI No. 2364. December 20, 2007.

Hart Crowser 2009. Progress Report, Third Quarter, 2009 Brix Maritime Company, 9030 NW St. Helens Road, Portland, Oregon, ECSI No. 2364. October 14, 2009.

Hart Crowser 2010. Progress Report, Fourth Quarter, 2009 Brix Maritime Company, 9030 NW St. Helens Road, Portland, Oregon, ECSI No. 2364. January 14, 2010.

Hart Crowser 2012. Stormwater Source Control Evaluation Report, Brix Maritime Company, 9030 NW St. Helens Road, Portland, Oregon. March 7, 2012.

Integral Consulting, Windward Environmental, Kennedy/Jenks Consultants, and Anchor QEA 2011. Portland Harbor RI/FS, Remedial Investigation Report – Draft Final. August 29, 2011

Plumb, Russell H., Jr. 1981. Procedures for Handling and Chemical Analysis of Sediment and Water Samples. U.S. Environmental Protection Agency/U.S. Army Corps of Engineers. May 1981.

Portland Maps 2015. 9030 NW St. Helens Road. City of Portland GIS On-Line Database. PortlandMaps.com.

United States Geological Survey (USGS), 2008-2013. City of Portland HYDRA Rainfall Network. Accessed at http://or.water.usgs.gov/non-usgs/bes/terminal4ne.html.

Windward Environmental 2013. Portland Harbor RI/FS, Final Remedial Investigation Report, Appendix G, Baseline Ecological Risk Assessment – Final. December 16, 2013.

Table 1 - Catch Basin Sediment Data: Non-Volatile Compounds
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Sample:	Catchment Area A		Catchment Area B		JSCS SLVs
	Date:	CB-A Upper Composite 19-Feb-08	CB-A Lower Composite 19-Feb-08	CB-B Upper Composite 19-Feb-08	CB-B Lower Composite 19-Feb-08	
PCBs		Concentration in microgram per kilogram (µg/kg)				
Aroclor 1016		<8.8	<8.9	<8.9	<8.8	530
Aroclor 1221		<8.8	<8.9	<8.9	<8.8	-
Aroclor 1232		<8.8	<8.9	<8.9	<8.8	-
Aroclor 1242		<8.8	<8.9	<8.9	<8.8	-
Aroclor 1248		<15 Y	<8.9	<18 Y	<30 Y	1,500
Aroclor 1254		<24 Y	<8.9	<30 Y	<88 Y	300
Aroclor 1260		**20**	**11**	**27**	**38**	200
Aroclor 1262		-	-	-	-	-
Aroclor 1268		-	-	-	-	-
Total PCBs		**20**	**11**	**27**	**38**	0.39
Phthalates						
Dimethylphthalate		<66	<330	**250 J**	<420	-
Diethylphthalate		<66	<330	<330	<420	600
Di-n-butylphthalate		<66	<330	**190 J**	**260 J**	60
Butylbenzylphthalate		<66	<330	**1,000**	**330 J**	-
Di-n-octylphthalate		**320**	**380**	**1,200**	**3,500**	-
bis (2-Ethylhexyl)phthalate		**3,000**	**5,700**	**14,000**	**20,000**	330
PAHs						
Naphthalene		<66	<330	<330	<420	561
2-Methylnaphthalene		<66	<330	<330	<420	200
Acenaphthylene		<66	<330	<330	<420	200
Acenaphthene		**39 J**	<330	**400**	**410 J**	300
Fluorene		**54 J**	<330	**170 J**	**580**	536
Phenanthrene		**550**	**1,200**	**1,600**	**4,100**	1,170
Anthracene		**100**	**220 J**	**240 J**	**650**	845
Fluoranthene		**1,100**	**2,400**	**3,300**	**7,500**	2,230
Pyrene		**710**	**1,600**	**1,800**	**4,500**	1,520
Benz(a)anthracene		**240**	**920**	**830**	**1,800**	1,050
Chrysene		**480**	**1,300**	**1,300**	**3,100**	1,290
Benzo(b)fluoranthene		**550**	**1,200**	**1,200**	**3,000**	-
Benzo(k)fluoranthene		**500**	**1,800**	**1,400**	**3,200**	13,000
Benzo(a)pyrene		**420**	**1,400**	**940**	**2,500**	1,450
Indeno(1,2,3-cd)pyrene		**170**	**450**	**260 J**	**700**	100
Dibenz(a,h)anthracene		<66	<330	<330	<420	1,300
Benzo(g,h,i)perylene		**210**	**420**	**260 J**	**710**	300
Total PAHs		**5,100**	**12,900**	**13,700**	**32,800**	-
TPH		Concentration in milligram per kilogram (mg/kg)				
TPH-Gasoline		**3.9**	<7	**3.5**	**27**	-
TPH-Diesel		**120**	**110**	**190**	**220**	-
TPH-Oil		**440**	**1,200**	**850**	**2,000**	-
Conventional Parameters		Concentration in Percent (%)				
Total Organic Carbon		**10.9**	**5.35**	**13.3**	**7.43**	-
Total Solids		**51.1**	**67.2**	**56.9**	**46.7**	-

Please refer to notes on the last page of this table.

Table 1 - Catch Basin Sediment Data: Non-Volatile Compounds
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Notes:
1. Polychlorinated biphenyls (PCBs) by EPA Method 8082A.
2. Phthalates and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM.
3. Total petroleum hydrocarbons (TPH) by Northwest Methods NWTPH-Gx and Dx. A silica gel cleanup was performed on the Dx samples.
4. Total solids by EPA Method 160.3.
5. Total organic carbon by Plumb (1981).
6. All results reported on a dry weight basis.
7. Bolding denotes a detected concentration.
8. Shading denotes concentrations exceeding the Joint Source Control Strategy (JSCS) Screening Level Values (SLVs) in Table 3.1 of the JSCS (DEQ/EPA 2005, 7/16/2007 revision). The exceeded SLV is also shaded.
9. - = Not analyzed or not available.
10. < = Analyte is not detected at or above the indicated concentration.
11. J = Associated value is below the lowest calibration point and is estimated.
12. Y = Reporting limit raised due to chromatographic interference. Analyte is not present at or above the indicated concentration.

Table 2 - Catch Basin Sediment Data: VOCs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

VOC	Sample:	Catchment Area A						Catchment Area B				JSCS SLVs
		CB-A1 Upper	CB-A1 Lower	CB-A2 Upper	CB-A2 Lower	CB-A3 Upper	CB-A3 Lower	CB-B1 Upper	CB-B1 Lower	CB-B2 Upper	CB-B2 Lower	
	Date:	19-Feb-08	19-Feb-08	19-Feb-08	19-Feb-08	19-Feb-08	19-Feb-08	19-Feb-08	19-Feb-08	19-Feb-08	19-Feb-08	
		Concentration in microgram per kilogram (µg/kg)										
Acetone		<50	<50	<50	**87**	<6,000	<50	**500**	**240**	**420**	**120**	-
Acrolein		-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile		<10	<10	<10	<10	<1,200	<10	<10	<10	<10	<10	-
Benzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Bromochloromethane		-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Bromoform		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Bromomethane		<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8	-
2- Butanone (MEK)		<10	<10	<10	**24**	<1,200	<10	**210**	**12**	**99**	<12	-
Carbon Disulfide		-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Chlorodibromomethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Chloroethane		<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8	-
2- Chloroethyl Vinyl Ether		<50	<50	<50	<50	<6,000	<50	<50	<50	<51	<58	-
Chloroform		<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8	-
Chloromethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
1,2- Dibromoethane (EDB)		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Dibromomethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
1,2-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	1,700
1,3-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	300
1,4-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	300
trans-1,4-Dichloro-2-butene		-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane		<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8	-
1,1- Dichloroethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
1,2- Dichloroethane (EDC)		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
cis-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
trans-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
1,2- Dichloropropane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
cis-1,3-Dichloropropene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
trans-1,3-Dichloropropene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	**1.4**	<1.0	<1.2	-
Hexachlorobutadiene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	600
2- Hexanone		-	-	-	-	-	-	-	-	-	-	-
Iodomethane (Methyl Iodide)		-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
4- Methyl-2-Pentanone (MIBK)		<10	<10	<10	**24**	<1,200	<10	**12**	<10	**11**	<12	-
Methyl tert-butyl ether		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Methylene Chloride		<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8	-
Styrene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
1,2,4-Trichlorobenzene		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	9,200
1,1,1,2- Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
1,1,2,2- Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Tetrachloroethene (PCE)		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	500
Toluene		<5.0	<5.0	<5.0	**1,400**	**5,500**	**6.0**	**1,300**	<5.0	<5.1	**3,000**	-
1,1,1-Trichloroethane (TCA)		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
1,1,2- Trichloroethane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Trichloroethene (TCE)		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	2,100
Trichlorofluoromethane		<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8	-
1,2,3- Trichloropropane		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
Vinyl Acetate		-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2	-
m,p-Xylene		-	-	-	-	-	-	-	-	-	-	-
o-Xylene		-	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)		<3.0	<3.0	<3.0	<3.0	<360	<3.0	<3.0	**4.3**	**8.5**	**3.5**	-

Notes:
1. Volatile organic compounds (VOCs) by EPA Method 5035/8260B.
2. All results reported on a dry weight basis.
3. Bolding denotes a detected concentration.
4. Screening Level Values (SLVs) from Table 3.1 of the Joint Source Control Strategy (DEQ/EPA 2005, 7/16/2007 revision).
5. - = Not analyzed or not available.
6. < = Analyte is not detected at or above the indicated concentration.

Table 3 - Catch Basin Sediment Data: Grain Size Analysis
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Grain Size	Sample: / Date:	Catchment Area A		Catchment Area B	
		CB-A Upper Composite 19-Feb-08	CB-A Lower Composite 19-Feb-08	CB-B Upper Composite 19-Feb-08	CB-B Lower Composite 19-Feb-08
		Percent (%)			
Gravel		11.3	17.4	8.3	16.9
Very Coarse Sand		24.5	12.9	22.0	18.9
Coarse Sand		20.2	16.5	23.7	16.2
Medium Sand		18.5	24.0	19.0	13.0
Fine Sand		7.7	9.6	9.4	8.5
Very Fine Sand		4.2	5.4	5.0	6.0
Coarse Silt		5.2	1.8	4.7	8.8
Medium Silt		4.5	5.2	4.7	6.2
Fine Silt		1.8	3.4	1.6	2.9
Very Fine Silt		0.9	1.8	0.7	1.3
Clay		1.1	2.0	1.0	1.2
	Total Fines	13.6	14.2	12.7	20.6

Note:
1. Grain size analysis by ASTM D 422.

Table 4 - Stormwater Outfall Field Parameters and Observations
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sampling Location	Sampling Date/Time PST	Weather Conditions	Est. Flow Rate (gpm)	Field Parameters			Other Observations
				Temperature (ºC)	pH	Conductivity (µΩ)	
Outfall A	10/3/08 12:15	Moderate to Light Rain	1	18.5	6.6	30	No odor, sheen, or floating debris; trace sediment (First Flush).
	11/20/08 9:10	Moderate Rain	3	9	5.0	10	No odor, sheen, or floating debris; slightly turbid.
	5/4/09 15:00	Heavy Rain	10	14.4	6.6	30	No odor, sheen, or floating debris; moderately turbid (First Flush).
	10/21/09 8:00	Moderate Rain	5	13.3	6.6	10	No odor, sheen, or floating debris; trace sediment.
	6/4/12 7:30	Light Rain	0.3	13.3	8.6	32	No odor, sheen, or floating debris; trace sediment.
	2/22/13 11:00	Heavy Rain	30	7.7	6.8	-	No odor, sheen, or floating debris; trace sediment.
Outfall B	10/3/08 11:30	Heavy to Moderate Rain	1.5	18.6	7.0	60	No odor, sheen, or floating debris; trace sediment (First Flush).
	11/20/08 8:30	Heavy Rain	5	8	5.0	30	No odor, sheen, or floating debris; moderately turbid.
	5/4/09 14:15	Heavy Rain	15	15.3	6.2	50	No odor, sheen, or floating debris; moderately turbid (First Flush).
	10/21/09 7:15	Light to Moderate Rain	2.5	13.6	6.8	40	No odor, sheen, or floating debris; clear.
	6/4/12 7:30	Light Rain	0.5	17.6	8.7	86	No odor, sheen, or floating debris; trace sediment.
	2/22/13 11:00	Heavy Rain	8	9.8	6.8	-	No odor, sheen, or floating debris; trace sediment.

Notes:
1. PST = Pacific Standard Time.
2. gpm = Gallons per Minute.
3. °C = Degrees Celsius.
4. µΩ = Micro ohms.

Table 5 - Stormwater Data: Outfall A
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Location: Timing: Date:	Outfall A						JSCS SLVs
		Before System Cleanout				After System Cleanout		
		3-Oct-08	20-Nov-08	4-May-09	20-Oct-09	4-Jun-12	22-Feb-13	
Total Metals		Concentration in microgram per liter (µg/L)						
	Copper	-	-	-	-	**29**	**3.3**	2.7 / 20‡
	Lead	-	-	-	-	**5.3**	**1.9**	0.54 / 40‡
	Zinc	-	-	-	-	**81**	**15**	36 / 120‡
PCBs								
	Aroclor 1016	<0.048	<0.048	<0.0031	<0.048	<0.10	<0.10	0.96
	Aroclor 1221	<0.048	<0.048	<0.049	<0.048	<0.20	<0.073	0.034
	Aroclor 1232	<0.048	<0.048	<0.049	<0.048	<0.10	<0.042	0.034
	Aroclor 1242	<0.048	<0.048	<0.049	<0.048	<0.10	<0.047	0.034
	Aroclor 1248	<0.048	<0.048	<0.049	<0.048	<0.10	<0.086	0.034
	Aroclor 1254	<0.048	<0.048	<0.049	<0.048	<0.10	<0.047	0.033
	Aroclor 1260	<0.048	<0.048	<0.0034	<0.048	<0.10	<0.12	0.034
	Aroclor 1262	<0.048	<0.048	<0.049	<0.048	<0.10	-	-
	Aroclor 1268	<0.048	<0.048	<0.049	<0.048	<0.10	-	-
	Total PCBs	<0.048	<0.048	<0.049	<0.048	<0.20	<0.12	0.000064
VOCs								
	Acetone	<20	<20	**9.4**	**9.5 T**	<25	<4.6	1,500
	Acrolein	-	-	-	-	-	<8.9	0.042
	Acrylonitrile	-	-	-	-	-	<1.9	0.12
	Benzene	<1.0	<1.0	<0.12	<1.0	<1.0	<0.33	1.2
	Bromochloromethane	<1.0	<1.0	<0.34	<1.0	<5.0	-	--
	Bromodichloromethane	<1.0	<1.0	<0.11	<1.0	<1.0	<0.38	1.1
	Bromoform	<1.0	<1.0	<0.23	<1.0	<5.0	<0.47	8.5
	Bromomethane	<1.0	<1.0	<0.072	<1.0	<5.0	<0.87	8.7
	2- Butanone (MEK)	<10	<10	<0.52	<5.0	<10	<3.9	7,100
	Carbon Disulfide	<1.0	<1.0	<0.16	<1.0	<10	-	0.92
	Carbon Tetrachloride	<1.0	<1.0	<0.25	<1.0	<1.0	<0.38	0.51
	Chlorobenzene	<1.0	<1.0	<0.12	<1.0	<1.0	<0.35	50
	Chlorodibromomethane	<1.0	<1.0	<0.20	<1.0	<1.0	<0.33	0.79
	Chloroethane	<1.0	<1.0	<0.27	<1.0	<1.0	<0.45	23
	2- Chloroethyl Vinyl Ether	-	-	-	-	-	<3.0	--
	Chloroform	<1.0	<1.0	<0.15	<1.0	<1.0	<0.32	0.17
	Chloromethane	<5.0	<5.0	<0.20	<1.0	<5.0	<0.28	2.1
	1,1- Dichloroethane	<1.0	<1.0	<0.23	<1.0	<1.0	<0.26	47
	1,2- Dibromoethane (EDB)	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38	0.033
	Dibromomethane	<1.0	<1.0	<0.18	<1.0	<5.0	<0.35	61
	1,2- Dichloroethane (EDC)	<1.0	<1.0	<0.074	<1.0	<1.0	<0.36	0.73
	cis-1,2-Dichloroethene	<1.0	<1.0	<0.32	<1.0	<1.0	<0.26	61
	trans-1,2-Dichloroethene	<1.0	<1.0	<0.22	<1.0	<1.0	<0.40	100
	1,2-Dichlorobenzene	<1.0	<1.0	<0.25	<1.0	<1.0	<0.35	49
	1,3-Dichlorobenzene	<1.0	<1.0	<0.16	<1.0	<1.0	<0.22	14
	1,4-Dichlorobenzene	<1.0	<1.0	<0.20	<1.0	<1.0	<0.27	2.8
	trans-1,4-Dichloro-2-butene	-	-	-	-	-	-	7,100
	Dichlorodifluoromethane	<1.0	<1.0	<0.19	<1.0	<5.0	<0.55	390
	1,2-Dichloropropane	<1.0	<1.0	<0.16	<1.0	<1.0	<0.31	0.97
	cis-1,3-Dichloropropene	<1.0	<1.0	<0.086	<1.0	<1.0	<0.42	0.055
	trans-1,3-Dichloropropene	<1.0	<1.0	<0.22	<1.0	<1.0	<0.42	0.055
	Ethyl Benzene	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38	7.3
	Hexachlorobutadiene	<1.0	<1.0	<0.27	<1.0	<4.0	<0.26	0.86
	2- Hexanone	<10	<10	<0.57	<5.0	<15	-	99
	Iodomethane (Methyl Iodide)	-	-	-	-	-	-	--
	Isopropylbenzene	<1.0	<1.0	<0.11	<1.0	<2.0	<0.33	660
	Methylene chloride	<5.0	<5.0	<1.0	<4.0	<5.0	<0.84	8.9
	4- Methyl-2-Pentanone (MIBK)	<10	<10	<0.32	<5.0	<5.0	<2.1	170

Please refer to notes on the last page of this table.

Table 5 - Stormwater Data: Outfall A
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Location:	Outfall A						JSCS SLVs
	Timing:	Before System Cleanout				After System Cleanout		
	Date:	3-Oct-08	20-Nov-08	4-May-09	20-Oct-09	4-Jun-12	22-Feb-13	
VOCs (Continued)		Concentration in microgram per liter (µg/L)						
Methyl tert-butyl ether		<1.0	<1.0	<0.16	<1.0	<1.0	<0.37	37
Styrene		<1.0	<1.0	<0.074	<1.0	<1.0	<0.31	100
1,1,1,2-Tetrachloroethane		<1.0	<1.0	<0.15	<1.0	<1.0	<0.38	2.5
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<0.22	<1.0	<1.0	<0.58	0.33
Tetrachloroethene (PCE)		<1.0	<1.0	<0.10	<1.0	<1.0	<0.37	0.12
Toluene		<1.0	<1.0	**1.1**	<1.0	<1.0	<0.78	9.8
1,2,4-Trichlorobenzene		<1.0	<1.0	<0.15	<1.0	<1.0	<0.21	8.2
1,1,1-Trichloroethane (TCA)		<1.0	<1.0	<0.20	<1.0	<1.0	<0.32	11
1,1,2-Trichloroethane		<1.0	<1.0	<0.19	<1.0	<5.0	<0.38	1.2
Trichloroethene (TCE)		<1.0	<1.0	<0.22	<1.0	<1.0	<0.40	0.17
Trichlorofluoromethane		<1.0	<1.0	<0.24	<1.0	<1.0	<1.2	1,300
1,2,3-Trichloropropane		<1.0	<1.0	<0.37	<1.0	<5.0	<0.81	0.0095
Vinyl Acetate		-	-	-	-	-	-	16
Vinyl Chloride		<0.20	<0.20	<0.27	<1.0	<1.0	<0.26	0.015
m,p-Xylene		<2.0	<2.0	<0.27	<2.0	<2.0	-	1.8
o-Xylene		<1.0	<1.0	<0.15	<1.0	<1.0	-	13
Xylenes (total)		-	-	<0.15	<3.0	<3.0	<1.10	200
Phthalates								
Dimethylphthalate		<0.075	<0.077	<0.36	<1.9	<0.95	<0.28	3
Diethylphthalate		<0.075	<0.077	<0.43	<1.9	<0.95	<0.28	3
Di-n-butylphthalate		<0.075	**1.4**	<0.30	<1.9	<0.95	**0.32 J**	3
Butylbenzylphthalate		<0.075	<0.077	<0.34	<1.9	<0.95	<0.28	3
Di-n-octylphthalate		<0.075	<0.077	<0.56	<1.9	<0.95	<0.28	3
bis(2-Ethylhexyl)phthalate		**1.3**	**4.1**	<0.42	<1.9	<0.95	**1.3 J**	2.2
PAHs								
Naphthalene		**0.053 J**	**0.071 J**	<0.0047	**0.13**	**0.071 J**	**0.046 J**	0.2
2-Methylnaphthalene		<0.0087	<0.0086	**0.013 B**	**0.045**	**0.018 J**	**0.012 J**	0.2
Acenaphthylene		<0.0087	<0.0086	<0.00082	<0.0095	<0.0068	<0.0068	0.2
Acenaphthene		<0.0087	**0.076 J**	<0.00091	<0.0095	**0.0095 J**	<0.0082	0.2
Fluorene		<0.0087	<0.0086	**0.13**	**0.037**	<0.0085	<0.0085	0.2
Phenanthrene		**0.067 J**	**0.11**	**0.053**	**0.094**	**0.089**	**0.023 J**	0.2
Anthracene		<0.0087	<0.0086	<0.00091	**0.014**	**0.026 J**	<0.0076	0.2
Fluoranthene		<0.0087	**0.067 J**	**0.096 B**	**0.046**	**0.24**	<0.016	0.2
Pyrene		<0.0087	**0.057 J**	**0.039**	**0.031**	**0.25**	**0.019 J**	0.2
Benz(a)anthracene		<0.0087	<0.0086	**0.027**	<0.0095	**0.15**	<0.012	0.018
Chrysene		<0.0087	<0.0086	**0.038**	**0.0095**	**0.18**	<0.011	0.018
Benzo(b)fluoranthene		<0.0087	<0.0086	**0.047**	**0.0099**	**0.19**	<0.014	0.018
Benzo(k)fluoranthene		<0.0087	<0.0086	<0.0031	<0.0095	**0.079**	<0.014	0.018
Benzo(a)pyrene		<0.0087	<0.0086	<0.0024	<0.0095	**0.12**	<0.012	0.018
Indeno(1,2,3-cd)pyrene		<0.0087	<0.0086	**0.099**	<0.0095	**0.070**	<0.015	0.018
Dibenz(a,h)anthracene		<0.0087	<0.0086	**0.14**	<0.0095	**0.018 J**	<0.0040	0.018
Benzo(g,h,i)perylene		<0.0087	<0.0086	**0.10**	<0.0095	**0.087**	**0.012 J**	0.2
Total PAHs		**0.120 J**	**0.381 J**	**0.78**	**0.42**	**1.60**	**0.112 J**	-
TPH								
TPH-Gasoline		<25.0	<25.0	<13.4	<50.0	<33	<100	-
TPH-Diesel		**270**	**110**	<39	**210**	**90 J**	**97 J**	-
TPH-Oil		**320**	<210	<64	<380	<82	**180 J**	-
TPH Sum		**590**	**110**	<64	**210**	**90 J**	**277 J**	1,000[†]
Other Analytes								
Total Suspended Solids		**8,000**	**7,000**	**12,000**	**2,000**	**30,000**	**14,000**	100,000[‡]

Please refer to notes on the last page of this table.

Table 5 - Stormwater Data: Outfall A
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Notes:
1. Total metals (copper, lead, and zinc) by EPA Method 6020.
2. Polychlorinated biphenyls (PCBs) by EPA Method 8082A.
3. Volatile organic compounds (VOCs) by EPA Method 5035/8260B.
4. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 SPE-SIM.
5. Phthalates by EPA Method 8270 (low level).
6. Total petroleum hydrocarbons (TPH) by Northwest Methods NWTPH-Gx and Dx.
7. Total suspended solids by EPA Method 160.2.
8. Bolding denotes a detected concentration.
9. Shading denotes concentrations exceeding the Joint Source Control Strategy (JSCS) Screening Level Values (SLVs) in Table 3.1 of the JSCS (DEQ/EPA 2005, 7/16/2007 revision). The exceeded SLV is also shaded.
10. - = Not analyzed or not available.
11. < = Analyte is not detected at or above the indicated concentration.
12. J = Associated value is below the reporting limit and is estimated.
13. B = Analyte is also present in the laboratory method blank.
14. T = Analyte is also present in the trip blank.
15. †The DEQ indicated use of a 1 ppm (1,000 µg/kg) SLV for TPH (DEQ 2012). The current NPDES stormwater discharge benchmark is 10,000 µg/kg.
16. ‡ = Current stormwater discharge benchmark from DEQ's NPDES 1200-Z stormwater permit.

Table 6 - Stormwater Data: Outfall B
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Location: Timing: Date:	Outfall B						JSCS SLVs
		Before System Cleanout				After System Cleanout		
		3-Oct-08	20-Nov-08	4-May-09	20-Oct-09	4-Jun-12	22-Feb-13	
Total Metals		Concentration in microgram per liter (µg/L)						
	Copper	-	-	-	-	**6.4**	**6.4**	2.7 / 20‡
	Lead	-	-	-	-	<1.0	**1.8**	0.54 / 40‡
	Zinc	-	-	-	-	**85**	**97**	36 / 120‡
PCBs								
	Aroclor 1016	<0.048	<0.048	<0.0031	<0.047	<0.10	<0.10	0.96
	Aroclor 1221	<0.048	<0.048	<0.048	<0.047	<0.20	<0.073	0.034
	Aroclor 1232	<0.048	<0.048	<0.048	<0.047	<0.10	<0.042	0.034
	Aroclor 1242	<0.048	<0.048	<0.048	<0.047	<0.10	<0.047	0.034
	Aroclor 1248	<0.048	<0.048	<0.048	<0.047	<0.10	<0.086	0.034
	Aroclor 1254	<0.048	<0.048	<0.048	<0.047	<0.10	<0.047	0.033
	Aroclor 1260	<0.048	<0.048	<0.0034	<0.047	<0.10	<0.12	0.034
	Aroclor 1262	<0.048	<0.048	<0.048	<0.047	<0.10	-	-
	Aroclor 1268	<0.048	<0.048	<0.048	<0.047	<0.10	-	-
	Total PCBs	<0.048	<0.048	<0.048	<0.047	<0.20	<0.12	0.000064
VOCs								
	Acetone	<20	<20	**9.7**	**10.2 T**	<25	**5.4 J**	1,500
	Acrolein	-	-	-	-	-	<8.9	0.042
	Acrylonitrile	-	-	-	-	-	<1.9	0.12
	Benzene	<1.0	<1.0	<0.12	<1.0	<1.0	<0.33	1.2
	Bromochloromethane	<1.0	<1.0	<0.34	<1.0	<5.0	-	--
	Bromodichloromethane	<1.0	<1.0	<0.11	<1.0	<1.0	<0.38	1.1
	Bromoform	<1.0	<1.0	<0.23	<1.0	<5.0	<0.47	8.5
	Bromomethane	<1.0	<1.0	<0.072	<1.0	<5.0	<0.87	8.7
	2- Butanone (MEK)	<10	<10	<0.52	<5.0	<10	<3.9	7,100
	Carbon Disulfide	<1.0	<1.0	<0.16	<1.0	<10	-	0.92
	Carbon Tetrachloride	<1.0	<1.0	<0.25	<1.0	<1.0	<0.38	0.51
	Chlorobenzene	<1.0	<1.0	<0.12	<1.0	<1.0	<0.35	50
	Chlorodibromomethane	<1.0	<1.0	<0.20	<1.0	<1.0	<0.33	0.79
	Chloroethane	<1.0	<1.0	<0.27	<1.0	<1.0	<0.45	23
	2- Chloroethyl Vinyl Ether	-	-	-	-	-	<3.0	--
	Chloroform	<1.0	<1.0	<0.15	<1.0	<1.0	<0.32	0.17
	Chloromethane	<5.0	<5.0	<0.20	<1.0	<5.0	<0.28	2.1
	1,1- Dichloroethane	<1.0	<1.0	<0.23	<1.0	<1.0	<0.26	47
	1,2- Dibromoethane (EDB)	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38	0.033
	Dibromomethane	<1.0	<1.0	<0.18	<1.0	<5.0	<0.35	61
	1,2- Dichloroethane (EDC)	<1.0	<1.0	<0.074	<1.0	<1.0	<0.36	0.73
	cis-1,2-Dichloroethene	<1.0	<1.0	<0.32	<1.0	<1.0	<0.26	61
	trans-1,2-Dichloroethene	<1.0	<1.0	<0.22	<1.0	<1.0	<0.40	100
	1,2-Dichlorobenzene	<1.0	<1.0	<0.25	<1.0	<1.0	<0.35	49
	1,3-Dichlorobenzene	<1.0	<1.0	<0.16	<1.0	<1.0	<0.22	14
	1,4-Dichlorobenzene	<1.0	<1.0	<0.20	<1.0	<1.0	<0.27	2.8
	trans-1,4-Dichloro-2-butene	-	-	-	-	-	-	7,100
	Dichlorodifluoromethane	<1.0	<1.0	<0.19	<1.0	<5.0	<0.55	390
	1,2-Dichloropropane	<1.0	<1.0	<0.16	<1.0	<1.0	<0.31	0.97
	cis-1,3-Dichloropropene	<1.0	<1.0	<0.086	<1.0	<1.0	<0.42	0.055
	trans-1,3-Dichloropropene	<1.0	<1.0	<0.22	<1.0	<1.0	<0.42	0.055
	Ethyl Benzene	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38	7.3
	Hexachlorobutadiene	<1.0	<1.0	<0.27	<1.0	<4.0	<0.26	0.86
	2- Hexanone	<10	<10	<0.57	<5.0	<15	-	99
	Iodomethane (Methyl Iodide)	-	-	-	-	-	-	--
	Isopropylbenzene	<1.0	<1.0	<0.11	<1.0	<2.0	<0.33	660
	Methylene chloride	<5.0	<5.0	<1.0	<4.0	<5.0	<0.84	8.9
	4- Methyl-2-Pentanone (MIBK)	<10	<10	<0.32	<5.0	<5.0	<2.1	170

Please refer to notes on the last page of this table.

Table 6 - Stormwater Data: Outfall B
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Location: Timing: Date:	Outfall B						JSCS SLVs
		Before System Cleanout				After System Cleanout		
		3-Oct-08	20-Nov-08	4-May-09	20-Oct-09	4-Jun-12	22-Feb-13	
VOCs (Continued)		Concentration in microgram per liter (µg/L)						
Methyl tert-butyl ether		<1.0	<1.0	<0.16	<1.0	<1.0	<0.37	37
Styrene		<1.0	<1.0	<0.074	<1.0	<1.0	<0.31	100
1,1,1,2-Tetrachloroethane		<1.0	<1.0	<0.15	<1.0	<1.0	<0.38	2.5
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<0.22	<1.0	<1.0	<0.58	0.33
Tetrachloroethene (PCE)		<1.0	<1.0	<0.10	<1.0	<1.0	<0.37	0.12
Toluene		<1.0	<1.0	<0.21	<1.0	<1.0	<0.78	9.8
1,2,4-Trichlorobenzene		<1.0	<1.0	<0.15	<1.0	<1.0	<0.21	8.2
1,1,1-Trichloroethane (TCA)		<1.0	<1.0	<0.20	<1.0	<1.0	<0.32	11
1,1,2-Trichloroethane		<1.0	<1.0	<0.19	<1.0	<5.0	<0.38	1.2
Trichloroethene (TCE)		<1.0	<1.0	<0.22	<1.0	<1.0	<0.40	0.17
Trichlorofluoromethane		<1.0	<1.0	<0.24	<1.0	<1.0	<1.2	1,300
1,2,3-Trichloropropane		<1.0	<1.0	<0.37	<1.0	<5.0	<0.81	0.0095
Vinyl Acetate		-	-	-	-	-	-	16
Vinyl Chloride		<0.20	<0.20	<0.27	<1.0	<1.0	<0.26	0.015
m,p-Xylene		<2.0	<2.0	<0.27	<2.0	<2.0	-	1.8
o-Xylene		<1.0	<1.0	<0.15	<1.0	<1.0	-	13
Xylenes (total)		-	-	<0.15	<3.0	<3.0	<1.10	200
Phthalates								
Dimethylphthalate		<0.075	<0.076	<0.36	<1.9	<0.95	<0.28	3
Diethylphthalate		<0.075	<0.076	<0.42	<1.9	<0.95	<0.28	3
Di-n-butylphthalate		<0.075	<0.076	<0.29	<1.9	<0.95	<0.27	3
Butylbenzylphthalate		<0.075	<0.076	<0.34	<1.9	<0.95	<0.28	3
Di-n-octylphthalate		<0.075	<0.076	<0.56	<1.9	<0.95	<0.28	3
bis(2-Ethylhexyl)phthalate		**1.3**	**3.6**	<0.42	<1.9	<0.95	**1.3 J**	2.2
PAHs								
Naphthalene		**0.053 J**	**0.095**	<0.0047	**0.051**	**0.057 J**	**0.030 J**	0.2
2-Methylnaphthalene		<0.0087	**0.048 J**	**0.023 B**	**0.026**	**0.018 J**	<0.0090	0.2
Acenaphthylene		<0.0087	<0.0086	<0.00081	<0.0095	<0.0068	<0.0068	0.2
Acenaphthene		<0.0087	**0.14**	**0.024**	<0.0095	<0.0082	<0.0082	0.2
Fluorene		<0.0087	**0.10**	**0.15**	**0.020**	<0.0085	<0.0085	0.2
Phenanthrene		**0.091 J**	**0.49**	**0.22**	**0.10**	**0.010 J**	**0.044 J**	0.2
Anthracene		<0.0087	**0.067 J**	**0.012**	**0.010**	<0.0076	**0.0092 J**	0.2
Fluoranthene		**0.16**	**0.79**	**0.50 B**	**0.091**	<0.016	**0.071**	0.2
Pyrene		**0.12**	**0.65**	**0.33**	**0.069**	<0.012	**0.075**	0.2
Benz(a)anthracene		**0.063 J**	**0.25**	**0.16**	**0.014**	<0.012	**0.031 J**	0.018
Chrysene		**0.087 J**	**0.43**	**0.24**	**0.028**	<0.011	**0.030 J**	0.018
Benzo(b)fluoranthene		**0.11**	**0.50**	**0.34**	**0.026**	<0.014	**0.039 J**	0.018
Benzo(k)fluoranthene		**0.077 J**	**0.32**	**0.18**	**0.015**	<0.014	<0.014	0.018
Benzo(a)pyrene		**0.077 J**	**0.36**	**0.27**	**0.013**	<0.012	**0.025 J**	0.018
Indeno(1,2,3-cd)pyrene		**0.11**	**0.39**	**0.30**	**0.014**	<0.015	**0.016 J**	0.018
Dibenz(a,h)anthracene		<0.0087	<0.0086	**0.19**	<0.0095	<0.0040	<0.0040	0.018
Benzo(g,h,i)perylene		**0.072 J**	**0.31**	**0.29**	**0.018**	<0.011	**0.030 J**	0.2
Total PAHs		**1.02 J**	**4.94**	**3.23**	**0.50**	**0.23 J**	**0.400 J**	-
TPH								
TPH-Gasoline		<25.0	<25.0	<13.4	<50.0	<33	<32	-
TPH-Diesel		**390**	**350**	**150**	<76	<33	**120**	-
TPH-Oil		**490**	**530**	<61	<380	<82	**340**	-
TPH Sum		**880**	**880**	**150**	<380	<82	**460**	1,000†
Other Analytes								
Total Suspended Solids		**8,000**	**27,000**	**15,000**	**4,000**	<10,000	**9,000**	100,000‡

Please refer to notes on the last page of this table.

Table 6 - Stormwater Data: Outfall B
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Notes:
1. Total metals (copper, lead, and zinc) by EPA Method 6020.
2. Polychlorinated biphenyls (PCBs) by EPA Method 8082A.
3. Volatile organic compounds (VOCs) by EPA Method 5035/8260B.
4. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 SPE-SIM.
5. Phthalates by EPA Method 8270 (low level).
6. Total petroleum hydrocarbons (TPH) by Northwest Methods NWTPH-Gx and Dx.
7. Total suspended solids by EPA Method 160.2.
8. Bolding denotes a detected concentration.
9. Shading denotes concentrations exceeding the Joint Source Control Strategy (JSCS) Screening Level Values (SLVs) in Table 3.1 of the JSCS (DEQ/EPA 2005, 7/16/2007 revision). The exceeded SLV is also shaded.
10. - = Not analyzed or not available.
11. < = Analyte is not detected at or above the indicated concentration.
12. J = Associated value is below the reporting limit and is estimated.
13. B = Analyte is also present in the laboratory method blank.
14. T = Analyte is also present in the trip blank.
15. †The DEQ indicated use of a 1 ppm (1,000 µg/kg) SLV for TPH (DEQ 2012). The current NPDES stormwater discharge benchmark is 10,000 µg/kg.
16. ‡ = Current stormwater discharge benchmark from DEQ's NPDES 1200-Z stormwater permit.

Table 7 - Groundwater Chemical Analyses Results: TPH (Downgradient Wells)
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Date	Total Petroleum Hydrocarbons		
		Gasoline	Diesel	Oil
		Concentration in mg/L (ppm)		
MW-2	16-Aug-07	0.013 U	0.011 U	0.019 U
	12-Nov-07	0.050 U	**0.059 J**	**0.17 J**
	23-May-08	0.033 U	0.033 U	**0.11 J**
	20-Nov-08	**0.096 J**	**0.058 J**	0.082 U
	19-May-09	0.033 U	0.033 U	0.082 U
MW-4	16-Feb-07	0.082 U	0.25 U	0.50 U
	30-May-07	0.013 U	0.011 U	0.019 U
	16-Aug-07	**0.31 Y**	0.011 U	**0.640 Z**
	12-Nov-07	**0.62**	**0.14**	**0.22 J**
	28-Feb-08	0.033 U	**0.20 J3**	0.082 UJ3
	23-May-08	0.033 U	**0.057 J**	0.082 U
	21-Aug-08	0.033 U	**0.10 J3**	**0.099 J**
	20-Nov-08	**0.036 J**	**0.051 J**	0.082 U
	25-Feb-09	**0.038 J**	**0.13**	0.082 U
	19-May-09	0.033 U	0.033 U	0.082 U
	21-Aug-09	0.033 U	0.033 U	0.082 U
MW-7	16-Aug-07	0.013 U	0.011 U	0.019 U
	12-Nov-07	0.050 U	0.050 U	0.13 U
	23-May-08	0.033 U	0.033 U	0.082 U
	20-Nov-08	**0.046 J**	0.033 U	0.082 U
	19-May-09	0.033 U	0.033 U	0.082 U
	SLV:	1		

Notes:
1. Total petroleum hydrocarbons (TPH) by Northwest Methods NWTPH-Gx and Dx.
2. Bolding denotes a detected concentration.
3. J = Associated value is below the lowest calibration point and is estimated.
4. J3 = The associated quality control (QC) batch was outside the control range for precision.
5. U = Not detected above the indicated laboratory method detection limit.
6. Y = The fingerprint resembles a petroleum product in the correct carbon range, but the elution pattern does not match the calibration standard.
7. Z = The chromatic fingerprint does not resemble a petroleum product.
8. There are no Joint Source Control Strategy screening level values (SLVs) for TPH; however, the DEQ indicated use of a 1 mg/L SLV for TPH (DEQ 2012).

Table 8 - Groundwater Chemical Analyses Results: PAHs (Downgradient Wells)
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

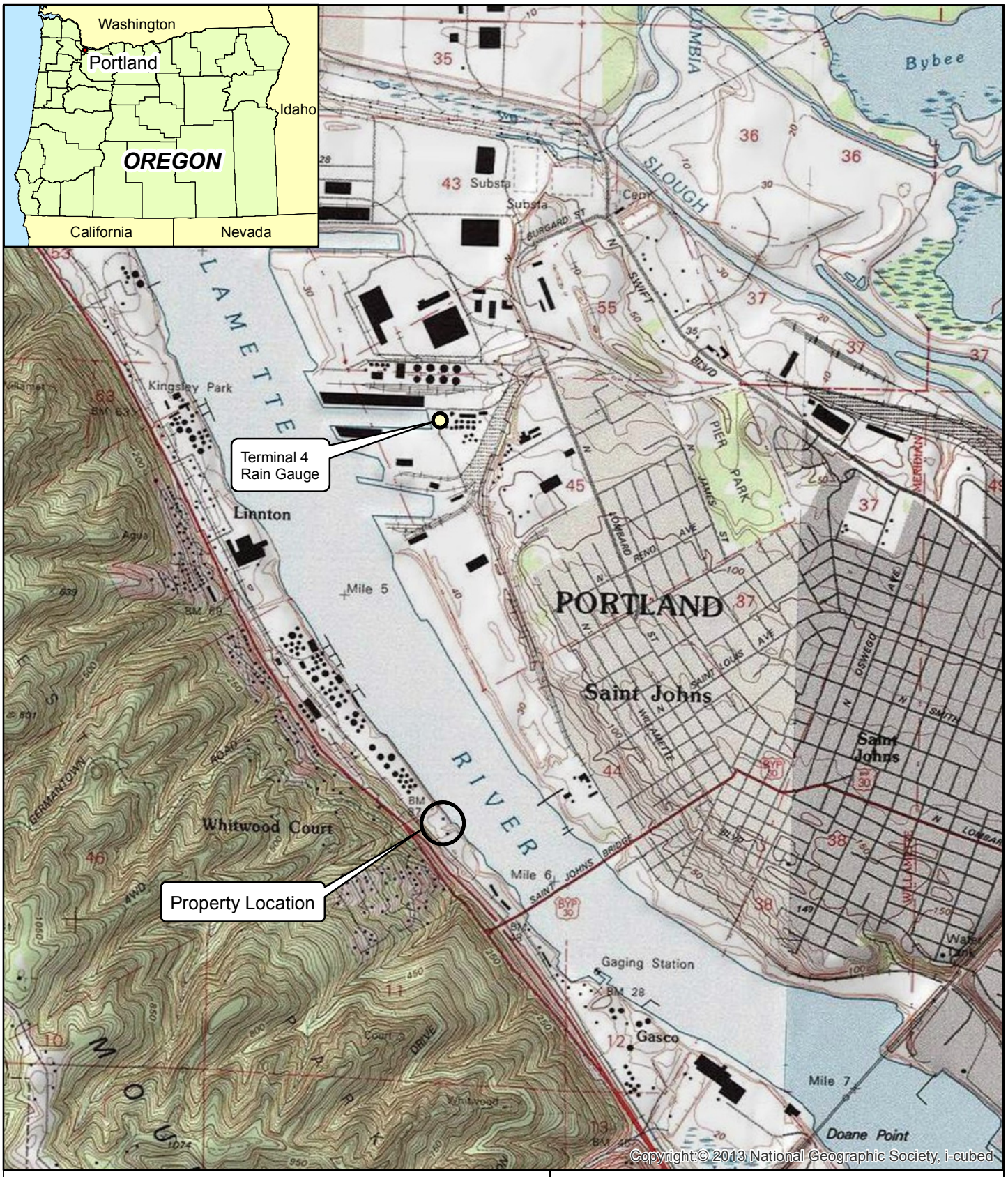
Sample Location and Date	Low Molecular Weight PAHs (LPAHs)									High Molecular Weight PAHs (HPAHs)										
	Acenaphthene	Acenaphthylene	Anthracene	Dibenzofuran	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	**Total LPAHs**	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)pyrene	Dibenz(a,h)anthracene	Chrysene	Fluoranthene	Ideno(1,2,3-cd)pyrene	Pyrene	**Total HPAHs**
MW-2	Concentration in microgram per liter (µg/L) parts per billion (ppb)																			
16-Aug-07	0.0044 U	0.0034 U	0.0036 U	0.0046 U	0.0038 U	0.0023 U	**0.023**	0.0050 U	**0.023**	0.0026 U	0.0043 U	0.0023 U	0.003 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	**0.077**	**0.077**
12-Nov-07	0.0018 U	0.0014 U	0.00045 U	-	0.0011 U	0.0020 U	0.011 U	0.00073 U	0.011 U	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.0007 U	0.00065 U	0.0012 U	0.00083 U	0.050 U
23-May-08	0.0021 U	0.0017 U	0.00054 U	-	0.0013 U	0.0024 U	**0.029 J**	0.00088 U	**0.029 J**	0.0012 U	0.0013 U	0.0012 U	0.0026 U	0.0013 U	0.0012 U	0.00082 U	0.00079 U	0.0014 U	0.00088 U	0.061 U
20-Nov-08	0.0018 U	0.0014 UJ3	0.00045 U	-	0.0011 U	**0.020 J**	**0.14 J**	0.00073 U	**0.16 J**	0.0010 U	0.0010 UJ3	0.0010 U	0.0021 U	0.0011 UJ3	0.00096 UJ3	0.00068 UJ3	0.00065 U	0.0012 UJ3	**0.018 JJ3**	**0.018 JJ3**
19-May-09	0.013 U	0.017 U	0.012 U	-	**0.018 J**	**0.018 J**	0.023 U	**0.054**	**0.090 J**	0.023 U	0.013 U	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	0.020 U	0.015 U	0.022 U	0.024 U
MW-4																				
16-Feb-07	**0.20**	0.0023 U	0.0039 U	0.0038 U	0.0036 U	0.0042 U	**0.30**	0.0032 U	**0.50**	0.0039 U	0.0043 U	0.0046 U	0.0051 U	0.0041 U	0.0036 U	0.0053 U	0.0047 U	0.0033 U	**0.023**	**0.023**
30-May-07	**0.061**	0.0034 U	0.0036 U	0.0046 U	0.0038 U	0.0023 U	**0.02**	0.0050 U	**0.08**	0.0026 U	0.0043 U	0.0023 U	0.0025 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	**0.021**	**0.021**
16-Aug-07	**0.810**	0.0034 U	0.0036 U	**0.030**	0.0038 U	0.0023 U	**0.049**	0.0050 U	**0.89**	0.0026 U	0.0043 U	0.0023 U	0.0025 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	**0.041**	**0.041**
12-Nov-07	**1.0**	0.0014 U	0.00045 U	-	0.0011 U	0.0020 U	0.011 U	0.00073 U	**1.0**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0011 U	0.00096 U	0.00068 U	0.0007 U	0.0012 U	0.00083 U	0.0012 U
28-Feb-08	**0.021 J**	**0.012 J**	**0.0045 J**	-	**0.0047 J**	**0.016 J**	0.36	**0.0044 J**	**0.42**	0.0010 U	**0.027 J**	**0.0032 J**	**0.044 J**	0.0011 U	0.00096 U	**0.022 J**	**0.0031 J**	**0.0013 J**	**0.0097 J**	**0.110 J**
23-May-08	**0.016 J**	**0.014 J**	**0.041 J**	-	**0.023 J**	**0.10 J**	**0.037 J**	**0.10**	**0.33**	**0.022 J**	0.0012 U	0.0012 U	0.0024 U	0.0012 U	0.0011 U	**0.012 J**	**0.10**	0.0013 U	**0.071**	**0.205**
21-Aug-08	**0.062**	**0.0086 J**	**0.053**	-	**0.034 J**	**0.024 J**	**0.033 J**	**0.16**	**0.37**	0.0010 U	**0.031 J**	**0.0044 J**	**0.0048 J**	0.0011 U	**0.0046 JJ3**	**0.026 J**	**0.012 J**	**0.0038 J**	**0.040 J**	**0.127 J**
20-Nov-08	**0.064 J3**	**0.0024 JJ3**	**0.012 J**	-	**0.0027 JJ3**	0.0023 UJ3	0.013 UJ3	**0.012 J**	**0.093 J**	**0.022 J**	0.0012 U	**0.0034 J**	**0.0036 J**	**0.0018 J**	0.0011 U	**0.025 J**	**0.0057 J**	**0.0016 J**	**0.027 J**	**0.090**
25-Feb-09	0.0018 U	0.0014 U	0.00045 U	-	0.0011 U	**0.0065 J**	**0.015 J**	0.00073 U	**0.022 J**	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.00068 U	**0.0018 J**	0.0012 U	**0.013 J**	**0.015 J**
19-May-09	0.013 U	0.017 U	0.012 U	-	0.012 U	0.014 U	0.023 U	0.018 U	0.023 U	0.023 U	**0.024 J**	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	0.020 U	0.015 U	0.022 U	**0.024 J**
21-Aug-09	**0.038 J**	0.017 U	0.012 U	-	0.012 U	0.014 U	0.023 U	0.018 U	**0.038 J**	0.023 U	**0.029 J**	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	0.020 U	0.015 U	0.022 U	**0.029 J**
MW-7																				
16-Aug-07	0.0044 U	0.0034 U	0.0036 U	0.0046 U	0.0038 U	0.0023 U	**0.021**	0.0050 U	**0.021**	0.0026 U	0.0043 U	0.0023 U	0.0025 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	0.0035 U	0.0044 U
12-Nov-07	0.0018 U	0.0014 U	0.00045 U	-	0.0011 U	0.0020 U	0.011 UJ4	0.00073 U	0.011 U	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.00068 U	0.00065 U	0.0012 U	0.00083 U	0.0021 U
23-May-08	0.0018 U	**0.012 J**	**0.0077 J**	-	0.0011 U	**0.030 J**	**0.060 J**	**0.019 J**	**0.129 J**	0.0011 U	0.0011 U	0.0011 U	0.0022 U	0.0012 U	0.0010 U	0.00071 U	0.00068 U	0.0012 U	0.00087 U	0.0022 U
20-Nov-08	**0.0033 JJ3**	0.0017 U	**0.0025 J**	-	**0.0019 JJ3**	0.0023 UJ3	0.0130 UJ3	**0.0069 J**	**0.015 J**	**0.020 J**	**0.028 J**	0.0012 U	0.0025 U	0.0013 U	0.0011 U	**0.022 J**	**0.0030 J**	0.0014 U	**0.0058 J**	**0.079 J**
19-May-09	0.013 UJ3	0.017 UJ3	0.012 UJ3	-	0.020 UJ3	0.014 U	0.023 U	0.018 U	0.023 U	0.023 U	0.013 UJ3	0.024 U	0.020 U	0.018 UJ3	0.013 UJ3	0.018 U	0.020 U	0.015 UJ3	0.022 U	0.024 U
Seep																				
29-Sep-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.027**	**0.037**	**0.064**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.024**	0.020 U	**0.11**	**0.134**
Screening Levels																				
JSCS SLVs:	0.2	0.2	0.2	3.7	0.2	0.2	0.2	0.2	-	0.018	0.018	0.018	0.018	0.2	0.018	0.018	0.2	0.018	0.2	-
EPA PRGs:																				
Human Health	-	-	-	-	-	-	-	-	-	0.0012	0.00012	0.0012	0.0013	-	0.00012	0.0013	-	0.0012	-	-
Ecological	23	-	0.73	-	3.9	2.1	12	6.3	-	0.027	0.014	0.68	0.64	0.44	0.28	2	6.2	0.28	10	-

Notes:
1. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270C-SIM.
2. Bolding denotes a detected concentration.
3. - = Not analyzed for or not available.
4. U = Not detected above the indicated laboratory method detection limit.
5. J = Associated value is below the lowest calibration point and is estimated.
6. J3/J4 = Associated batch quality control (QC) outside the established QC range for precision (J3) or accuracy (J4).
7. Screening levels are Joint Source Control Strategy (JSCS) screening level value (SLVs) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision) and EPA draft final Preliminary Remediation Goals (PRGs) for groundwater migration from Table 2.2.1 from the Portland Harbor Superfund Site Feasibility Study (EPA 2015; RAOs 4 and 8).
8. Shaded concentrations exceed JSCS SLVs; the associated SLV is also shaded. For EPA PRGs, the PRG is shaded if there is a detection above the PRG.

Table 9 - Groundwater Chemical Analyses Results: VOCs (Downgradient Wells)
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location and Date	*n*-Butylbenzene	*sec*-Butylbenzene	*tert*-Butylbenzene	Isopropylbenzene	Naphthalene	*n*-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-2	Concentration in microgram per liter (µg/L) parts per billion (ppb)								
16-Aug-07	2.0 U	2.0 U	2.0 U	2.0 U	0.29 U	2.0 U	0.5 U	2.0 U	2.0 U
12-Nov-07	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
23-May-08	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
20-Nov-08	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
19-May-09	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
MW-4									
16-Feb-07	2.0 U	**0.23 J**	2.0 U	**0.12 J**	**0.57 J**	2.0 U	0.5 U	2.0 U	2.0 U
30-May-07	2.0 U	2.0 U	2.0 U	2.0 U	0.29 U	2.0 U	0.5 U	2.0 U	2.0 U
16-Aug-07	2.0 U	**3.9**	2.0 U	**6.2**	0.29 U	**8.7**	0.5 U	2.0 U	2.0 U
12-Nov-07	**0.63 J**	**1.7**	**0.33 J**	**2.5**	0.17 U	**1.7**	5.0 U	**0.79 J**	**0.83 J**
28-Feb-08	1.0 U	1.0 U	1.0 U	1.0 U	**0.65 J**	1.0 U	5.0 U	1.0 U	1.0 U
23-May-08	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
21-Aug-08	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
20-Nov-08	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
25-Feb-09	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
19-May-09	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
21-Aug-09	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
MW-7									
16-Aug-07	2.0 U	2.0 U	2.0 U	2.0 U	0.29 U	2.0 U	0.5 U	2.0 U	2.0 U
12-Nov-07	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
23-May-08	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	**0.58 J**	1.0 U	1.0 U
20-Nov-08	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
19-May-09	1.0 U	1.0 U	1.0 U	1.0 U	0.17 U	1.0 U	5.0 U	1.0 U	1.0 U
Screening Levels									
JSCS SLVs:	-	-	-	660	0.2	-	9.8	-	-
EPA PRGs:									
Human Health	-	-	-	-	-	-	720	-	-
Ecological	-	-	-	-	12	-	9.8	-	-

Notes:
1. Volatile organic compound (VOCs) by EPA Method 8260B. Only detected VOCs at the site are shown.
2. Bolding denotes a detected concentration.
3. - = Not available.
4. J = Associated value is below the lowest calibration point and is estimated.
5. U = Not detected above the indicated laboratory method reporting limit or method detection limit (naphthalene only).
6. Screening levels are Joint Source Control Strategy (JSCS) screening level value (SLVs) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision) and EPA draft final Preliminary Remediation Goals (PRGs) for groundwater migration from Table 2.2.1 from the Portland Harbor Superfund Site Feasibility Study (EPA 2015).
7. Shaded concentrations exceed JSCS SLVs; the associated SLV is also shaded.



0 1,000 2,000 4,000 Feet

N

Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

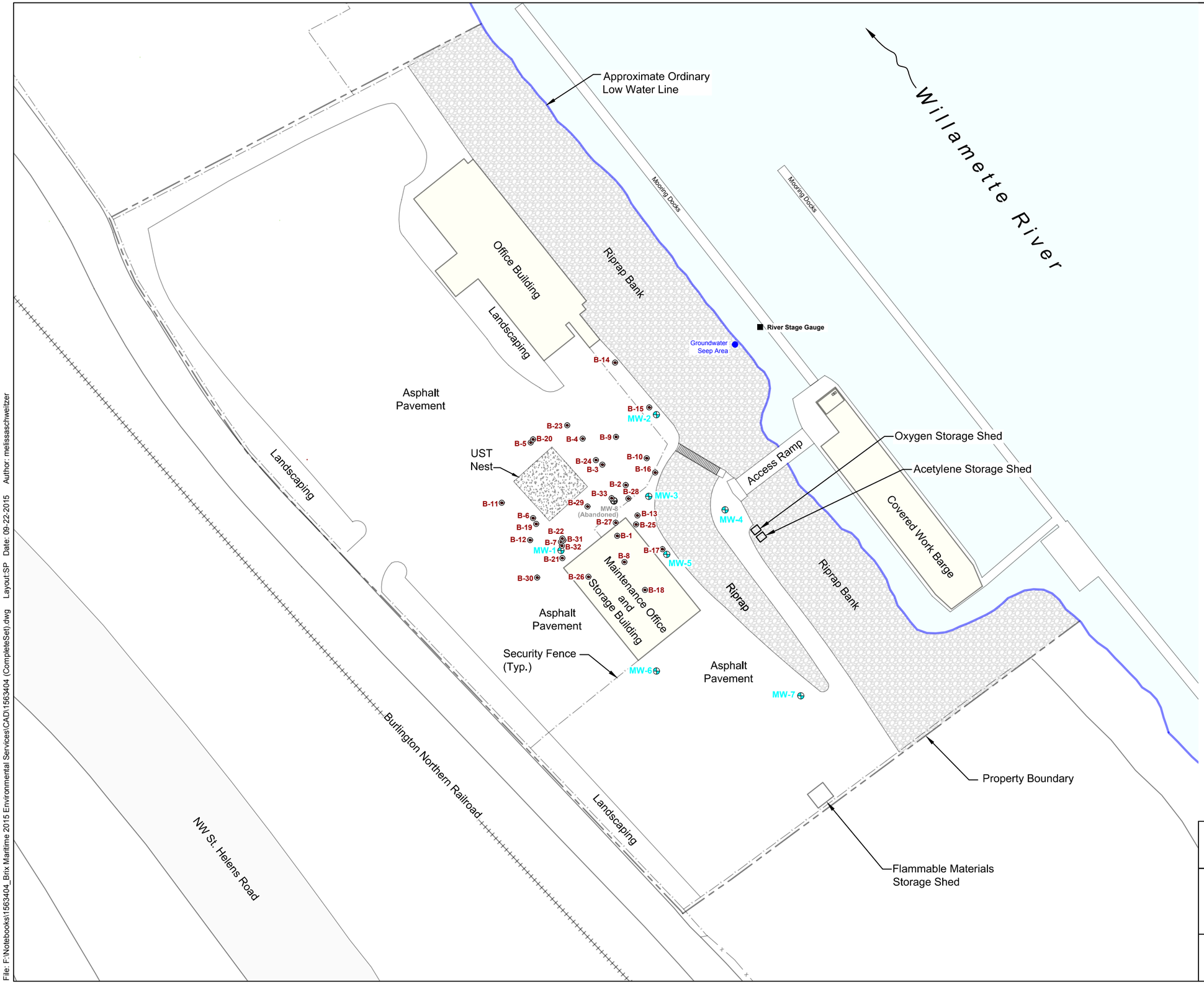
Property Location Map

15634-04 9/15

HARTCROWSER

Figure
1

Document Path: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\GIS\1563404_VMap.mxd Date: 9/17/2015 User Name: melissaschweitzer



Source: City of Portland and property surveys.

Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

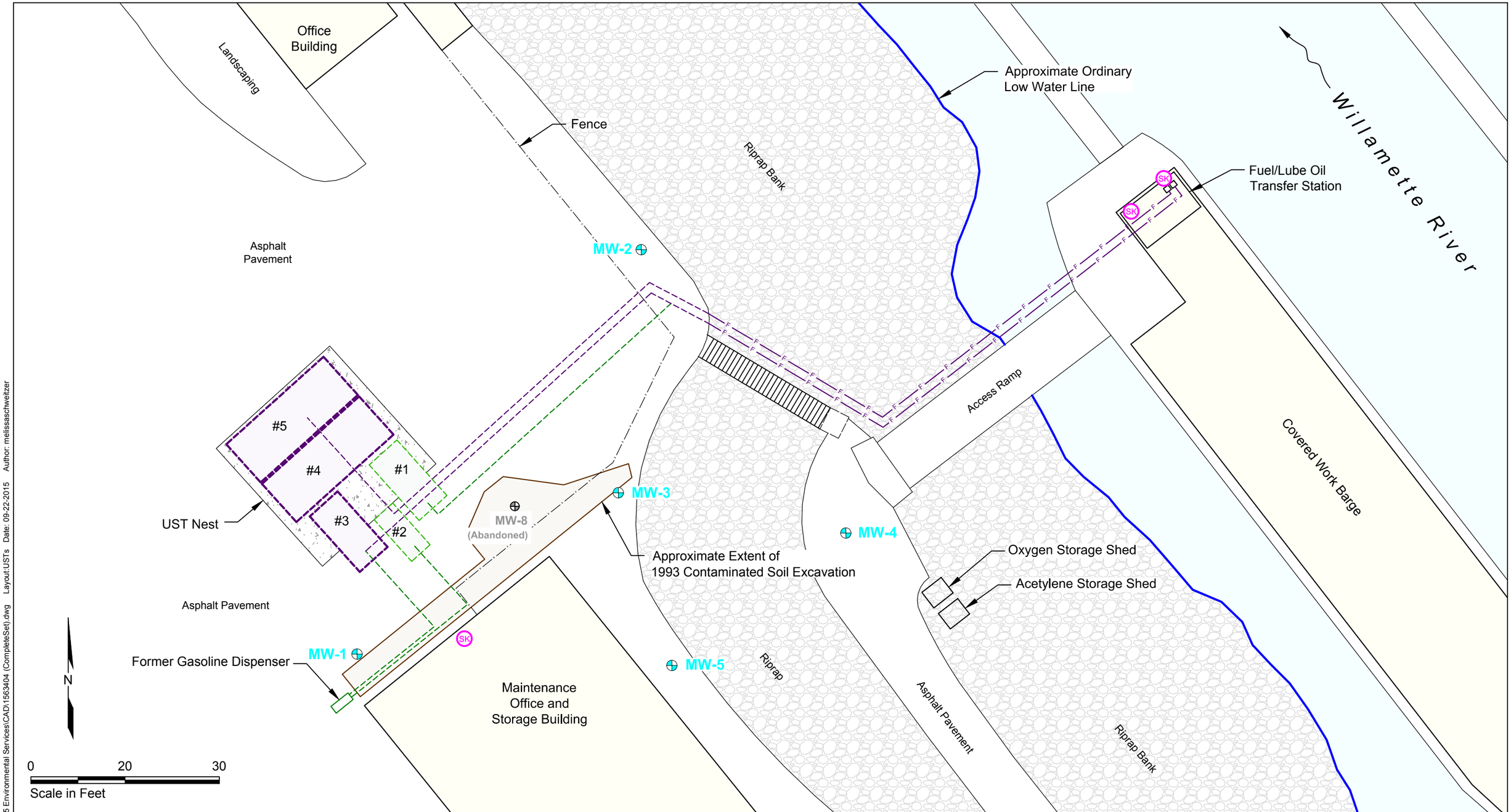
Property Plan and Exploration Locations

15634-04 9/15

HARTCROWSER

Figure
2

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:SP Date: 09-22-2015 Author: melissaschweitzer



UST Information:

UST #1 = 6,000-gallon Lubrication Oil UST (Decommissioned by Removal, 1998)
UST #2 = 2,000-gallon Gasoline UST (Decommissioned by Removal, 1998)
UST #3 = 6,000-gallon Lubrication Oil UST
UST #4 = 20,000-gallon Diesel UST
UST #5 = 20,000-gallon Diesel UST

LEGEND

- Existing UST
- Former UST
- Existing Aboveground Product Transfer Line
- Existing Underground Product Transfer Line
- MW-2 Monitoring Well
- Former Underground Product Transfer Line
- SK Spill Kit

Source: City of Portland survey and site observation by Hart Crowser personnel.

Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

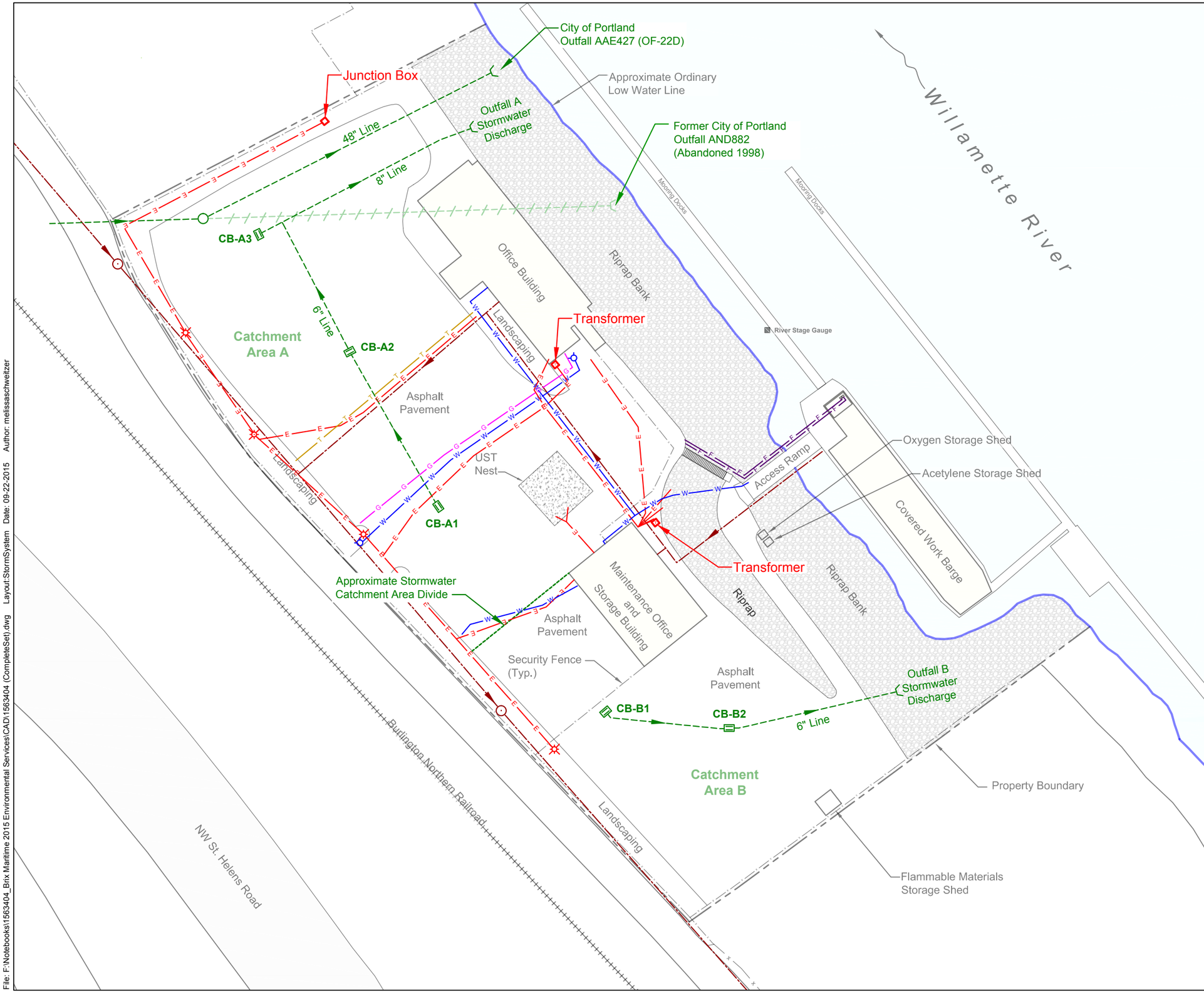
USTs and Product Lines

15634-04 9/15

HARTCROWSER

Figure
3

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:USTs Date: 09-22-2015 Author: melissaschweitzer



N

0 60 120

Scale in Feet

LEGEND

- Product Transfer Line
- Sanitary Sewer Line and Flow Direction
- Stormwater Line and Flow Direction
- Abandoned Stormwater Line
- Water Line
- Electrical Line
- Gas Line
- Telephone Line
- CB-A1 Catch Basin
- Manholes
- Fire Hydrant

Sources:

1. City of Portland survey CAD files.
2. PortlandMaps Detail Report (City of Portland on-line database at www.PortlandMaps.com).
3. Aerial photographs, 1978-2007 (US Army of Corps of Engineers, University of Oregon Map and Aerial Photograph Library, Portland Maps Database).
4. Underground utility marking by the Oregon Utility Notification Center and Locates Down Under, Inc., in 2008.
5. Observations and interviews with Brix personnel by Hart Crowser staff (2007-2008).

Brix Maritime Co.

9030 NW St. Helens Road, Portland, Oregon

Stormwater System and Underground Utility Plan

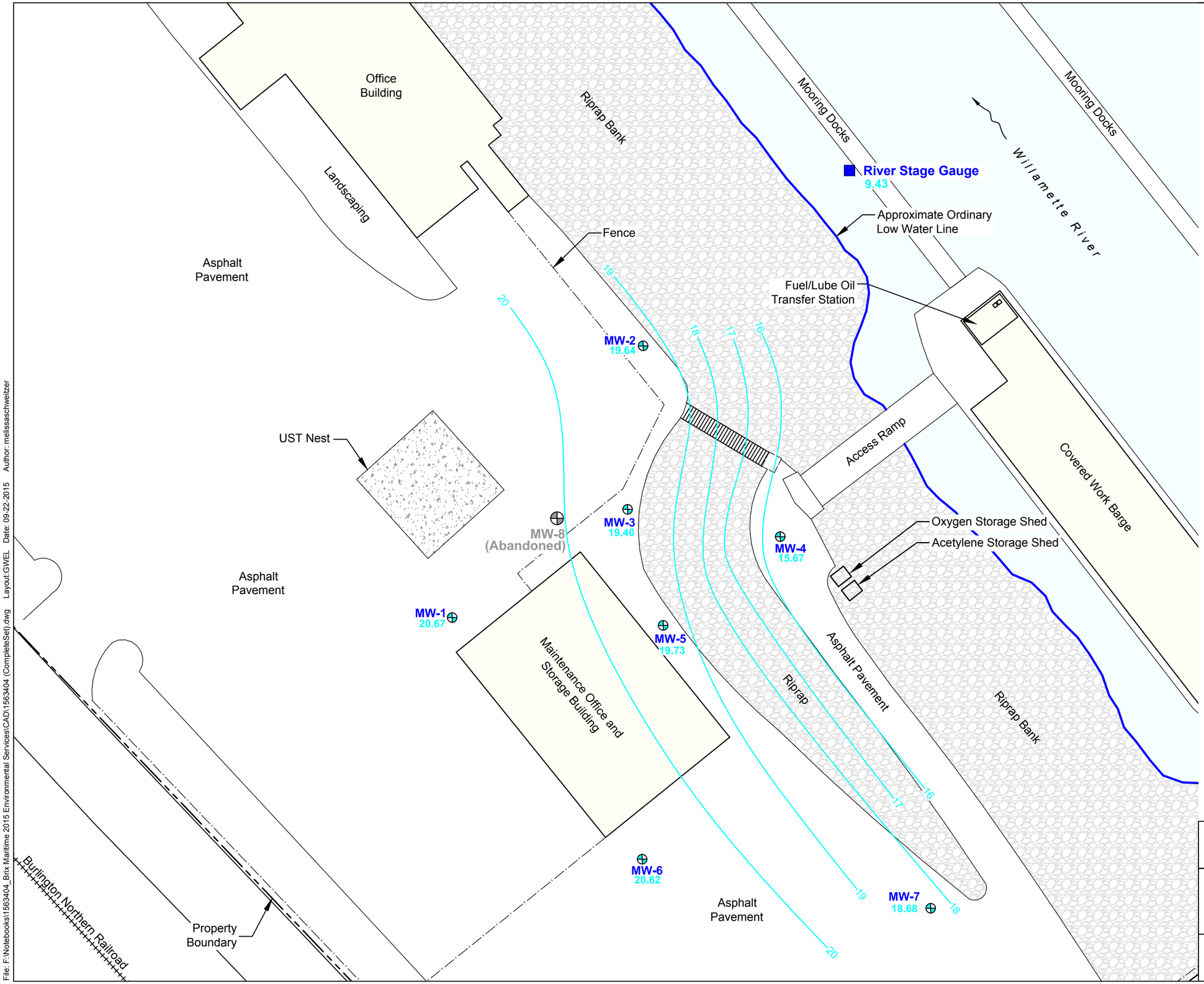
15634-04 9/15

HARTCROWSER

Figure

4

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:StormSystem Date: 09-22-2015 Author: melissaschweitzer



N

0 30 60

Scale in Feet

LEGEND

- River Stage Gauge
- MW-1 20.67 — Monitoring Well Groundwater Elevation in Feet (NAVD 88)
- 20 — Potentiometric Groundwater Surface Contour in Feet

Source: An Anchor Environmental Well Location and Potentiometric Surface Map, dated 2/16/06.

Brix Maritime Co.

9030 NW St. Helens Road, Portland, Oregon

Monitoring Well Locations and Potentiometric Surface (August 21, 2009)

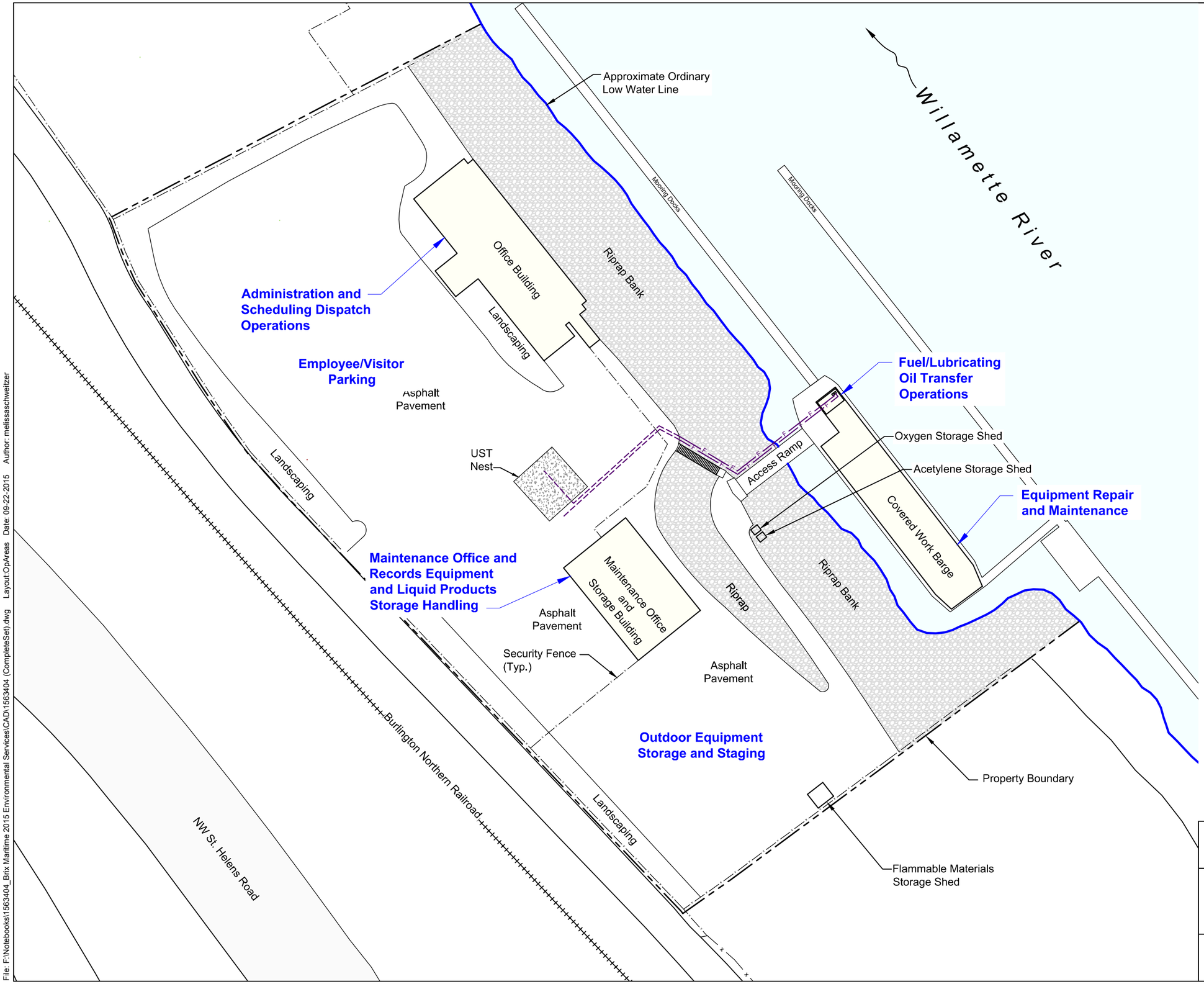
15634-04 9/15

HARTCROWSER

Figure

5

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:GWEL Date: 09-22-2015 Author: melissaschweitzer



N

0 60 120

Scale in Feet

LEGEND

Underground Product Transfer Line

Aboveground Product Transfer Line

Sources:

1. City of Portland survey CAD files.
2. PortlandMaps Detail Report (City of Portland on-line database, www.PortlandMaps.com).
3. Aerial photographs, 1978-2007 (US Army of Corps of Engineers, University of Oregon Map and Aerial Photograph Library, Portland Maps Database).
4. Observations and interviews with Brix personnel by Hart Crowser staff (2007-2008).

Brix Maritime Co.

9030 NW St. Helens Road, Portland, Oregon

Operational Areas

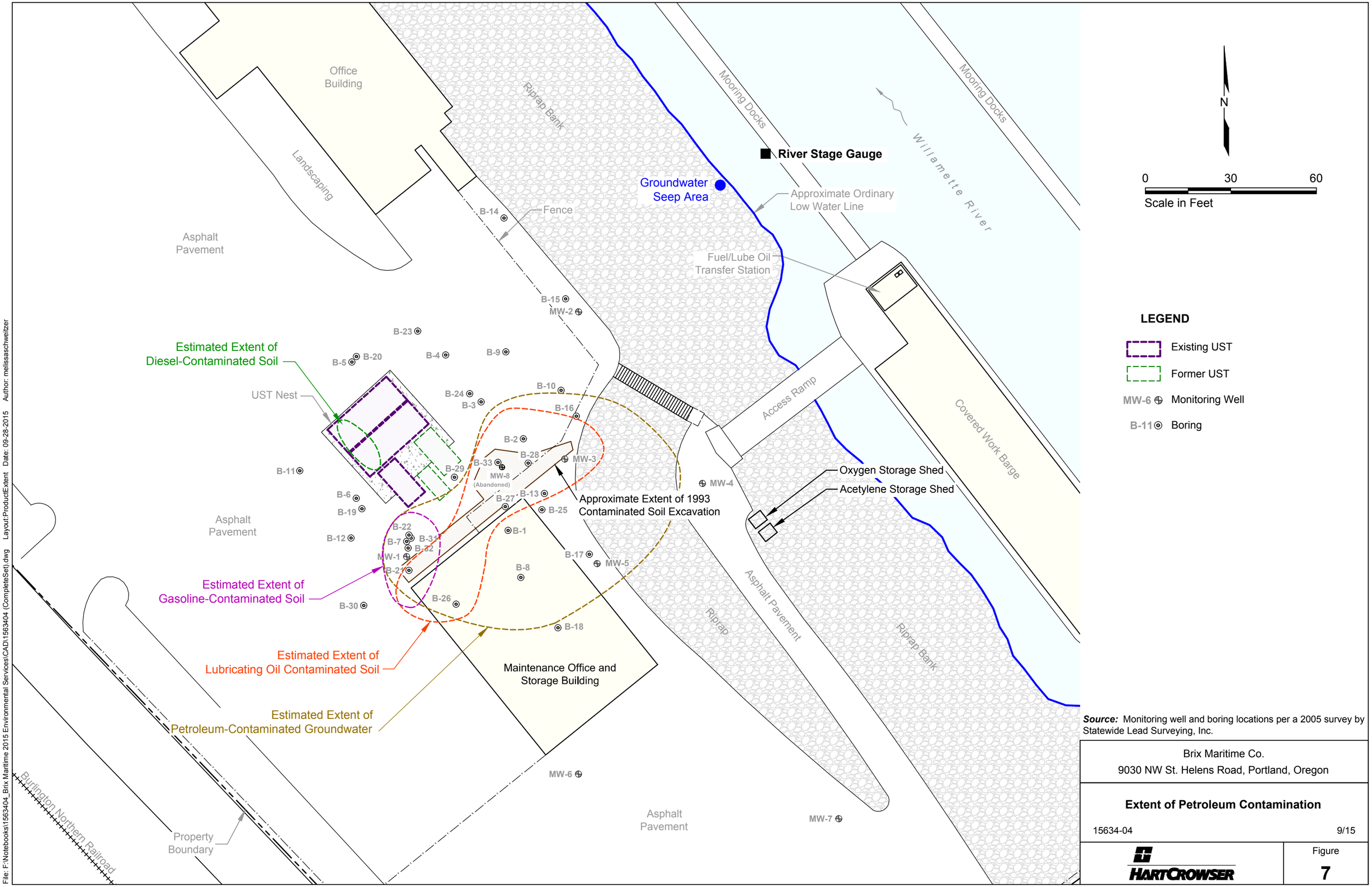
15634-04 9/15

HARTCROWSER

Figure

6

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:OpAreas Date: 09-22-2015 Author: melissaschweitzer



Source: Monitoring well and boring locations per a 2005 survey by Statewide Lead Surveying, Inc.

Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Extent of Petroleum Contamination

15634-04 9/15

HARTCROWSER

Figure
7

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:ProductExtent Date: 09-28-2015 Author: melissaschweitzer

N

0 60 120

Scale in Feet

LEGEND

- Stormwater Line and Flow Direction
- Catch Basin
- Manholes
- Estimated Extent of Petroleum-Contaminated Groundwater
- Estimated Extent of Petroleum-Contaminated Soil
- Groundwater Migration
- Erosion Pathway
- Stormwater Runoff

Sources:

1. USGS High Resolution Orthoimagery for Portland, OR [10TER175475 201007 0x1500m 4B 1]. Available: The National Map Viewer http://nationalmap.gov/ortho.html [July 10th, 2010].
2. Refer to previous figures for more info.

Brix Maritime Co.

9030 NW St. Helens Road, Portland, Oregon

Conceptual Site Model

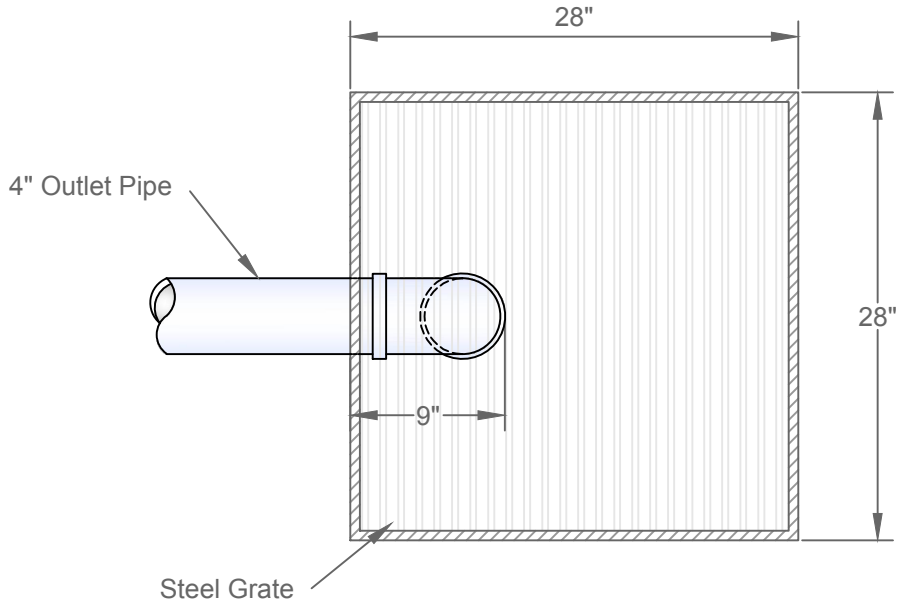
15634-04 9/15

HARTCROWSER

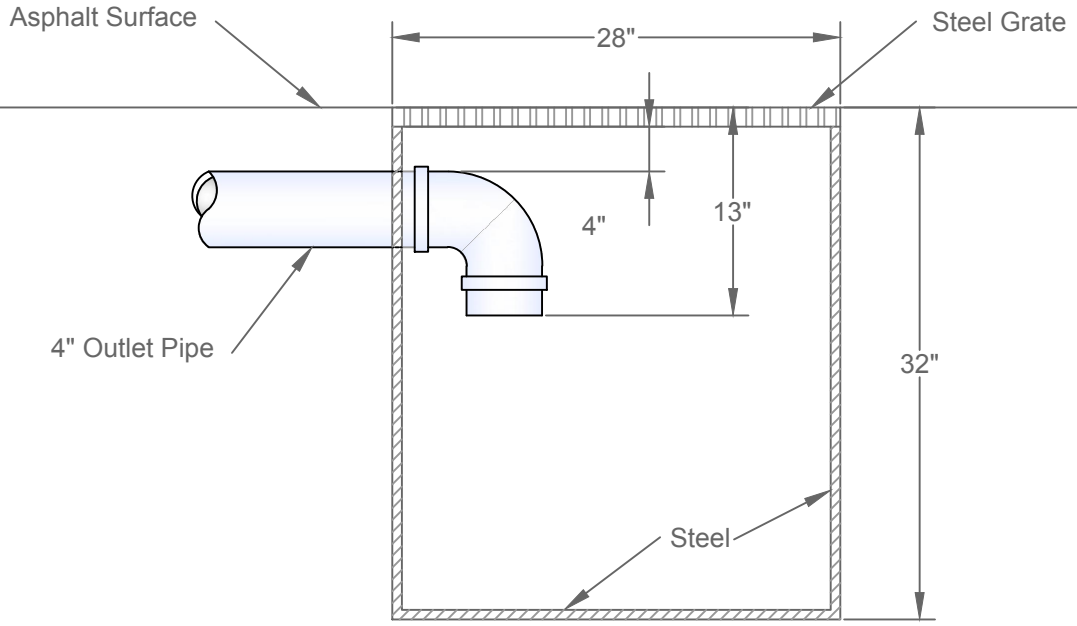
Figure

8

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:CSM Date: 09-22-2015 Author: melissaschweitzer



Plan View



Side View

0 1 2

Scale in Feet

Brix Maritime Co.

9030 NW St. Helens Road, Portland, Oregon

Catch Basin Construction (Typical)

15634-04 9/15

HARTCROWSER

Figure

9

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:CBtyp Date: 09-22-2015 Author: melissaschweitzer

APPENDIX A
Photograph **Log**

Photograph 1 – Office building and parking lot on northern portion of the Property. Note spill kit available in parking lot. Photograph taken facing east.

Photograph 2 – UST nest pad and north side of Maintenance Building. Spill kit available at red arrow. Photograph taken looking east-southeast.

Photograph 3 – Parking lot on southwest side of Maintenance Building and outside storage yard behind security fence. Spill kit available at red arrow. Photograph taken facing southeast.

Photograph 4 – South side of Maintenance Building and portion of outside storage yard. Photograph taken facing northwest.

Photograph 5 – Storage of drummed materials, absorbent pads, equipment, parts, and other materials within the Maintenance Building.

Photograph 6 – Materials stored in outside storage yard (tires used as bumpers on tugboats). Photograph taken looking southwest.

Photograph 7 – Flammable Materials Storage Shed with other materials in outside storage yard. Photograph taken looking south.

Photograph 8 – Two small storage sheds along access road to work barge. These sheds are used for storage of oxygen and acetylene gas cylinders for welding. Photograph taken looking east.

Photograph 9 – Stationary covered work barge moored in the river adjacent to the embankment between the mooring docks and shoreline. Photograph taken looking north.

APPENDIX B
Soil and Groundwater Summary Data Tables

Table B-1 - Hydrology Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Top of Casing Elevation In Feet	Screen Interval Elev. in Feet	Measurement Date	Depth to Groundwater In Feet	Groundwater Elevation In Feet	Comments
MW-1	41.81	34.7 - 19.7	28-Feb-03	18.89	22.92	
			31-Mar-03	19.43	22.38	
			29-Apr-03	19.69	22.12	
			22-May-03	20.22	21.59	
			7-Jul-03	21.08	20.73	
			30-Jul-03	21.13	20.68	
			28-Aug-03	21.24	20.57	
			30-Sep-03	21.15	20.66	
			16-Oct-03	21.10	20.71	
			3-Dec-03	21.06	20.75	
			26-Dec-03	20.46	21.35	
			30-Jan-04	19.01	22.80	
			4-Mar-04	19.60	22.21	
			29-Apr-04	20.91	20.90	
			27-May-04	21.13	20.68	
			6-Jul-04	21.22	20.59	
			26-Jul-04	21.28	20.53	
			29-Oct-04	21.25	20.56	
			25-Feb-05	20.81	21.00	
			5-May-05	20.63	21.18	
			2-Aug-05	21.18	20.63	
			29-Sep-05	21.21	20.60	
			22-Nov-05	20.78	21.03	
			16-Feb-06	18.10	23.71	
			9-May-06	20.71	21.10	
			31-Aug-06	21.22	20.59	
			28-Dec-06	18.36	23.45	
			16-Feb-07	19.70	22.11	
			30-May-07	20.92	20.89	Slight petroleum-like odor
			16-Aug-07	21.19	20.62	Strong petroleum-like odor
			12-Nov-07	20.93	20.88	Strong petroleum-like odor
			28-Feb-08	19.06	22.75	Strong petroleum-like odor
			23-May-08	20.70	21.11	Strong petroleum-like odor w/sheen
			21-Aug-08	21.04	20.77	Slight petroleum-like odor w/sheen
			20-Nov-08	20.66	21.15	Slight petroleum-like odor w/sheen
			25-Feb-09	20.53	21.28	Strong petroleum-like odor w/sheen
			19-May-09	20.55	21.26	Slight petroleum-like odor w/sheen
			21-Aug-09	21.14	20.67	Slight petroleum-like odor w/sheen
MW-2	42.13	32.5 - 17.5	28-Feb-03	19.88	22.25	
			31-Mar-03	20.36	21.77	
			29-Apr-03	20.64	21.49	
			22-May-03	21.06	21.07	
			7-Jul-03	22.17	19.96	
			30-Jul-03	22.50	19.63	
			28-Aug-03	22.84	19.29	
			30-Sep-03	23.07	19.06	
			16-Oct-03	23.06	19.07	
			3-Dec-03	22.54	19.59	
			26-Dec-03	21.58	20.55	

Please refer to notes on the last page of this table.

Table B-1 - Hydrology Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Top of Casing Elevation In Feet	Screen Interval Elev. in Feet	Measurement Date	Depth to Groundwater In Feet	Groundwater Elevation In Feet	Comments
MW-2 (Continued)	42.13	32.5 - 17.5	30-Jan-04	20.05	22.08	
			4-Mar-04	20.57	21.56	
			29-Apr-04	21.89	20.24	
			27-May-04	22.29	19.84	
			6-Jul-04	22.70	19.43	
			26-Jul-04	22.85	19.28	
			29-Oct-04	22.90	19.23	
			25-Feb-05	22.20	19.93	
			5-May-05	21.73	20.40	
			2-Aug-05	22.48	19.65	
			29-Sep-05	22.90	19.23	
			22-Nov-05	22.07	20.06	
			16-Feb-06	19.24	22.89	
			9-May-06	21.65	20.48	
			31-Aug-06	22.88	19.25	
			28-Dec-06	19.56	22.57	
			16-Feb-07	20.48	21.65	
			30-May-07	21.75	20.38	
			16-Aug-07	22.63	19.50	Slight petroleum-like odor
			12-Nov-07	22.65	19.48	Slight petroleum-like sheen
			28-Feb-08	20.56	21.57	
			23-May-08	21.53	20.60	
			21-Aug-08	22.33	19.80	
			20-Nov-08	22.07	20.06	
			25-Feb-09	21.23	20.90	
			19-May-09	21.59	20.54	
			21-Aug-09	22.49	19.64	
MW-3	41.93	32.6 - 17.6	29-Jul-02	22.91	19.02	
			22-Aug-02	23.50	18.43	Estimated 0.02 feet of product
			30-Sep-02	23.37	18.56	Estimated 0.02 feet of product
			30-Oct-02	23.68	18.25	DTP = 23.49 (0.19 foot thick)
			27-Nov-02	23.30	18.63	DTP = 23.16 (0.14 foot thick)
			30-Dec-02	21.99	19.94	Sheen noted on probe
			28-Feb-03	19.75	22.18	Sheen noted on probe
			31-Mar-03	20.24	21.69	No oil noted on probe
			29-Apr-03	20.50	21.43	No oil noted on probe
			22-May-03	20.94	20.99	No oil noted on probe
			7-Jul-03	22.21	19.72	No oil noted on probe
			30-Jul-03	22.62	19.31	No oil noted on probe
			28-Aug-03	22.95	18.98	Sheen noted on probe
			30-Sep-03	23.15	18.78	DTP = 23.04 (0.11 foot thick)
			16-Oct-03	22.40	19.53	No oil noted on probe
			3-Dec-03	22.21	19.72	Sheen noted on probe
			26-Dec-03	21.44	20.49	No oil noted on probe
			30-Jan-04	19.80	22.13	No oil noted on probe
			4-Mar-04	20.41	21.52	No oil noted on probe
			29-Apr-04	21.82	20.11	No oil noted on probe
			27-May-04	22.25	19.68	No oil noted on probe
			6-Jul-04	22.66	19.27	No oil noted on probe
			26-Jul-04	22.91	19.02	DTP = 22.89 (0.02 foot thick)
			29-Oct-04	22.29	19.64	Sheen noted on probe

Please refer to notes on the last page of this table.

Table B-1 - Hydrology Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Top of Casing Elevation In Feet	Screen Interval Elev. in Feet	Measurement Date	Depth to Groundwater In Feet	Groundwater Elevation In Feet	Comments
MW-3 (Continued)	41.93	32.6 - 17.6	25-Feb-05	22.03	19.90	No oil noted on probe
			5-May-05	21.55	20.38	No oil noted on probe
			2-Aug-05	22.32	19.61	DTP = 22.31 (0.01 foot thick)
			29-Sep-05	22.37	19.56	Sheen noted on probe
			22-Nov-05	21.97	19.96	Sheen noted on probe
			16-Feb-06	19.12	22.81	No oil noted on probe
			9-May-06	21.52	20.41	No oil noted on probe
			31-Aug-06	Dry	-	Product present in end cap
			28-Dec-06	19.35	22.58	
			16-Feb-07	20.38	21.55	Sheen/strong petroleum-like odor
			30-May-07	21.75	20.18	
			16-Aug-07	22.70	19.23	Trace of Free Product (<0.01 foot)
			12-Nov-07	23.35	18.58	DTP = 23.34 (0.01 foot thick)
			28-Feb-08	19.93	22.00	Slight petroleum-like sheen
			23-May-08	21.43	20.50	Biological residue observed
			21-Aug-08	22.29	19.64	Sheen/slight petroleum-like odor
			20-Nov-08	22.00	19.93	
			25-Feb-09	21.20	20.73	Sheen/slight petroleum-like odor
			19-May-09	21.58	20.35	Slight organic-like odor
			21-Aug-09	22.55	19.38	Slight organic-like odor and sheen.
MW-4	23.55	19.1 - 9.1	29-Jul-02	11.62	11.93	
			22-Aug-02	11.77	11.78	
			30-Sep-02	11.94	11.61	
			30-Oct-02	12.06	11.49	
			27-Nov-02	11.85	11.70	
			30-Dec-02	10.24	13.31	
			28-Feb-03	4.34	19.21	
			31-Mar-03	4.59	18.96	
			29-Apr-03	5.46	18.09	
			22-May-03	8.59	14.96	
			7-Jul-03	10.69	12.86	
			30-Jul-03	11.03	12.52	
			28-Aug-03	11.40	12.15	
			30-Sep-03	11.74	11.81	
			16-Oct-03	11.40	12.15	
			3-Dec-03	10.59	12.96	
			26-Dec-03	9.50	14.05	
			30-Jan-04	5.41	18.14	
			4-Mar-04	9.05	14.50	
			29-Apr-04	11.00	12.55	
			27-May-04	10.89	12.66	
			6-Jul-04	11.26	12.29	
			26-Jul-04	11.56	11.99	
			29-Oct-04	11.06	12.49	
			25-Feb-05	10.60	12.95	
			5-May-05	9.55	14.00	
			2-Aug-05	10.95	12.60	
			29-Sep-05	11.19	12.36	
			22-Nov-05	10.85	12.70	
			16-Feb-06	8.30	15.25	
			16-Mar-06	8.45	15.10	
			9-May-06	8.13	15.42	

Please refer to notes on the last page of this table.

Table B-1 - Hydrology Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Top of Casing Elevation In Feet	Screen Interval Elev. in Feet	Measurement Date	Depth to Groundwater In Feet	Groundwater Elevation In Feet	Comments
MW-4 (Continued)	23.55	19.1 - 9.1	31-Aug-06	11.47	12.08	
			28-Dec-06	4.64	18.91	
			16-Feb-07	6.71	16.84	Slight petroleum-like odor
			30-May-07	10.01	13.54	
			16-Aug-07	11.10	12.45	Petroleum odor
			12-Nov-07	11.05	12.50	Slight sheen
			28-Feb-08	3.61	19.94	
			23-May-08	3.70	19.85	
			21-Aug-08	7.05	16.50	
			20-Nov-08	8.32	15.23	
			25-Feb-09	4.08	19.47	
			19-May-09	4.38	19.17	
			21-Aug-09	7.88	15.67	
MW-5	41.66	34.6 - 19.6	28-Feb-03	19.45	22.21	
			31-Mar-03	19.99	21.67	
			29-Apr-03	20.25	21.41	
			22-May-03	20.75	20.91	
			7-Jul-03	21.93	19.73	Insufficient water to collect sample
			30-Jul-03	22.08	19.58	Dry
			28-Aug-03	22.08	19.58	Dry
			30-Sep-03	22.13	19.53	Dry
			16-Oct-03	22.10	19.56	Insufficient water to collect sample
			3-Dec-03	22.13	19.53	Dry
			26-Dec-03	21.35	20.31	
			30-Jan-04	19.59	22.07	
			4-Mar-04	20.16	21.50	
			29-Apr-04	21.67	19.99	Insufficient water to collect sample
			27-May-04	21.99	19.67	Water level below screen (dry)
			6-Jul-04	21.98	19.68	Water level below screen (dry)
			26-Jul-04	Dry	-	
			29-Oct-04	22.00	19.66	Water level below screen (dry)
			25-Feb-05	21.85	19.81	Water level below screen (dry)
			5-May-05	21.41	20.25	
			2-Aug-05	22.01	19.65	Water level below screen (dry)
			29-Sep-05	22.01	19.65	Water level below screen (dry)
			22-Nov-05	22.00	19.66	Water level below screen (dry)
			16-Feb-06	18.91	22.75	
			9-May-06	21.35	20.31	
			31-Aug-06	Dry	-	Water level below screen (dry)
			28-Dec-06	19.10	22.56	
			16-Feb-07	20.30	21.36	Strong petroleum-like odor
			30-May-07	21.68	19.98	
			16-Aug-07	21.93	19.73	Water level below screen (dry)
			12-Nov-07	21.95	19.71	Water level below screen (dry)
			28-Feb-08	19.78	21.88	Slight petroleum-like odor
			23-May-08	21.27	20.39	
			21-Aug-08	21.94	19.72	
			20-Nov-08	21.90	19.76	Insufficient water to collect sample
			25-Feb-09	21.17	20.49	
			19-May-09	21.49	20.17	
			21-Aug-09	21.93	19.73	

Please refer to notes on the last page of this table.

Table B-1 - Hydrology Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Top of Casing Elevation In Feet	Screen Interval Elev. in Feet	Measurement Date	Depth to Groundwater In Feet	Groundwater Elevation In Feet	Comments
MW-6	41.21	31.1 - 16.1	7-Jul-03	20.26	20.95	
			30-Jul-03	20.57	20.64	Sheen/slight petroleum-like odor
			28-Aug-03	21.02	20.19	
			30-Sep-03	21.02	20.19	
			16-Oct-03	20.93	20.28	
			3-Dec-03	21.53	19.68	
			26-Dec-03	19.24	21.97	
			30-Jan-04	17.70	23.51	
			4-Mar-04	18.16	23.05	
			29-Apr-04	19.66	21.55	
			27-May-04	20.17	21.04	
			6-Jul-04	20.71	20.50	
			26-Jul-04	21.23	19.98	
			29-Oct-04	21.48	19.73	
			25-Feb-05	19.78	21.43	
			5-May-05	19.19	22.02	
			2-Aug-05	20.57	20.64	
			29-Sep-05	21.25	19.96	
			22-Nov-05	20.58	20.63	
			16-Feb-06	17.45	23.76	
			9-May-06	19.16	22.05	
			31-Aug-06	21.25	19.96	
			28-Dec-06	17.18	24.03	
			16-Feb-07	19.06	22.15	
			30-May-07	19.80	21.41	
			16-Aug-07	21.28	19.93	
			12-Nov-07	21.68	19.53	
			28-Feb-08	20.23	20.98	
			23-May-08	19.43	21.78	
			21-Aug-08	20.61	20.60	
			20-Nov-08	20.41	20.80	
			25-Feb-09	19.74	21.47	
			19-May-09	19.18	22.03	
			21-Aug-09	21.04	20.17	
MW-7	40.95	31.2 - 16.2	7-Jul-03	21.21	19.74	
			30-Jul-03	21.76	19.19	
			28-Aug-03	22.32	18.63	
			30-Sep-03	22.67	18.28	
			16-Oct-03	22.72	18.23	
			3-Dec-03	22.90	18.05	
			26-Dec-03	20.32	20.63	
			30-Jan-04	18.26	22.69	
			4-Mar-04	18.96	21.99	
			29-Apr-04	20.49	20.46	
			27-May-04	21.10	19.85	
			6-Jul-04	21.98	18.97	
			26-Jul-04	22.40	18.55	
			29-Oct-04	22.99	17.96	

Please refer to notes on the last page of this table.

Table B-1 - Hydrology Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Top of Casing Elevation In Feet	Screen Interval Elev. in Feet	Measurement Date	Depth to Groundwater In Feet	Groundwater Elevation In Feet	Comments
MW-7 (Continued)	40.95	31.2 - 16.2	25-Feb-05	20.80	20.15	
			5-May-05	20.20	20.75	
			2-Aug-05	21.60	19.35	
			29-Sep-05	22.47	18.48	
			22-Nov-05	22.05	18.90	
			16-Feb-06	18.31	22.64	
			9-May-06	20.01	20.94	
			31-Aug-06	22.42	18.53	
			28-Dec-06	17.93	23.02	
			16-Feb-07	20.02	20.93	
			30-May-07	20.73	20.22	
			16-Aug-07	22.48	18.47	
			12-Nov-07	23.47	17.48	
			28-Feb-08	21.12	19.83	
			23-May-08	20.21	20.74	
			21-Aug-08	21.86	19.09	
			20-Nov-08	22.07	18.88	
			25-Feb-09	20.66	20.29	
			19-May-09	20.23	20.72	
			21-Aug-09	22.27	18.68	
MW-8	41.73	24.5 - 19.5	25-Feb-05	21.15	20.58	
			5-May-05	21.81	19.92	
			2-Aug-05	21.19	20.54	
			29-Sep-05	21.33	20.40	
			22-Nov-05	20.63	21.10	
			16-Feb-06	19.39	22.34	
			9-May-06	20.17	21.56	
			31-Aug-06	21.34	20.39	
			28-Dec-06	18.74	22.99	
			16-Feb-07	-	-	Not measured - well damaged
			30-May-07	-	-	Not measured - well damaged
			16-Aug-07	-	-	Not measured - well damaged
			12-Nov-07	-	-	Well abandoned

Please refer to notes on the last page of this table.

Table B-1 - Hydrology Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

River Stage Gauge	Measurement Date	Gauge Reading In Feet	River Elevation In Feet	
Elevation 14.33 at 10-foot Mark on Gauge	30-Oct-02	2.8	7.08	
	27-Nov-02	3.1	7.43	
	30-Dec-02	7.5	11.83	
	28-Feb-03	6.1	10.43	
	31-Mar-03	8.0	12.33	
	29-Apr-03	8.0	12.33	
	22-May-03	6.5	10.83	
	7-Jul-03	4.0	8.33	
	30-Jul-03	3.5	7.83	
	28-Aug-03	3.3	7.63	
	30-Sep-03	2.1	6.43	
	16-Oct-03	2.2	6.53	
	3-Dec-03	3.5	7.83	
	26-Dec-03	6.7	11.03	
	30-Jan-04	11.0	15.33	
	4-Mar-04	5.0	9.33	
	29-Apr-04	4.0	8.33	
	27-May-04	6.6	10.93	
	6-Jul-04	5.5	9.83	
	26-Jul-04	2.8	7.08	
	29-Oct-04	3.8	8.08	
	25-Feb-05	4.0	8.33	
	5-May-05	5.0	9.33	
	2-Aug-05	4.4	8.73	
	25-Aug-05	3.6	7.93	
	29-Sep-05	1.0	5.33	
	22-Nov-05	3.4	7.73	
	16-Feb-06	5.9	10.23	
	9-May-06	9.0	13.33	
	31-Aug-06	2.8	7.08	
	28-Dec-06	7.9	12.23	
	16-Feb-07	6.0	10.33	
	30-May-07	6.5	10.83	
	16-Aug-07	5.5	9.83	
	12-Nov-07	4.0	8.33	
	28-Feb-08	5.1	9.43	
	23-May-08	14.8	19.13	
	21-Aug-08	4.8	9.13	No seep/sheen observed in prior seep area
	20-Nov-08	5.0	9.33	No seep/sheen observed in prior seep area
	25-Feb-09	4.9	9.23	No seep/sheen observed in prior seep area
	19-May-09	6.8	11.13	No seep/sheen observed in prior seep area
	21-Aug-09	5.1	9.43	No seep/sheen observed in prior seep area

Notes:
1. Elevations are referenced to North American Vertical Datum 88 (NAVD88).
2. DTP = Depth to Liquid Phase Petroleum Hydrocarbons.
3. - = Not measured or not applicable.
4. The river gauge is marked in 1-foot increments, field measurements are estimated to the nearest 0.1 feet.

Table B-2 - Soil Chemical Analyses Results: TPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample or Location	Date	Depth in Feet	Total Petroleum Hydrocarbons		
			Gasoline	Diesel	Oil
UST Investigation			Concentration in mg/kg (ppm)		
Test Pit (east wall)	26-Jan-93	6.0	20 U	**451***	
Test Pit (floor)	26-Jan-93	12.0	20 U	**39,700***	
Test Pit (north wall)	27-Jan-93	6.0	-	**10,800***	
Test Pit (west wall)	27-Jan-93	6.0	-	**161***	
Test Pit (south wall)	27-Jan-93	6.0	20 U	**58***	
Trench (at dispenser)	27-Jan-93	3.0	20 U	**6,290***	
Trench (20 feet north of dispenser)	27-Jan-93	3.0	20 U	**26,100***	
Trench (40 feet north of dispenser)	27-Jan-93	3.0	20 U	50 U	**53,400***
Trench (60 feet north of dispenser)	27-Jan-93	3.0	20 U	50 U	**49***
Subsurface Explorations					
B-2	15-Apr-93	10.5	20 U	50 U	100 U
	15-Apr-93	20.5	20 U	50 U	100 U
	15-Apr-93	25.5	20 U	50 U	100 U
B-3	15-Apr-93	20.5	20 U	50 U	100 U
	15-Apr-93	25.5	20 U	50 U	100 U
B-4	15-Apr-93	20.5	20 U	50 U	100 U
B-5	15-Apr-93	10.5	20 U	50 U	100 U
	15-Apr-93	20.5	20 U	50 U	100 U
B-6	15-Apr-93	10.5	20 U	50 U	100 U
	15-Apr-93	15.5	20 U	50 U	100 U
B-7	15-Apr-93	10.5	**270**	50 U	100 U
	15-Apr-93	15.5	**2,000**	50 U	100 U
	15-Apr-93	20.5	**13**	-	-
B-9	16-Apr-93	20.5	20 U	50 U	100 U
B-10	16-Apr-93	20.5	20 U	50 U	100 U
B-11	16-Apr-93	15.5	20 U	50 U	100 U
B-12	16-Apr-93	15.5	20 U	50 U	100 U
B-13	16-Apr-93	10.5	20 U	50 U	**200**
B-16	29-May-01	12.0	-	21.7 U	54.3 U
	29-May-01	24.5	0.704 U	28.2 U	**121**
B-17	29-May-01	12.0	-	21.5 U	53.8 U
	29-May-01	23.0	**10.9**	22.0 U	54.9 U
B-18	29-May-01	15.5	0.532 U	21.3 U	53.2 U
	29-May-01	24.0	**1.14**	24.7 U	61.7 U
B-19	24-May-01	15.5	0.500 U	-	-
	24-May-01	21.5	0.617 U	24.7 U	61.7 U
B-20	24-May-01	23.0	0.641 U	26.0 U	64.9 U
B-21	24-May-01	5.0	**1,370**	24.7 U	61.7 U
	24-May-01	18.0	0.543 U	-	-
	24-May-01	23.0	0.667 U	26.7 U	66.7 U
B-22	24-May-01	7.0	-	23.5 U	58.8 U
	24-May-01	15.5	**61.3**	-	-
	24-May-01	22.0	**1.31**	**62.6**	**166**
B-23	24-May-01	23.0	0.617 U	24.7 U	61.7 U

Please refer to notes on the last page of this table.

Table B-2 - Soil Chemical Analyses Results: TPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample or Location	Date	Depth in Feet	Total Petroleum Hydrocarbons		
			Gasoline	Diesel	Oil
Subsurface Explorations (Continued)			Concentration in mg/kg (ppm)		
B-24	25-May-01	23.5	0.649 U	26.0 U	64.9 U
	25-May-01	27.0	0.758 U	30.3 U	75.8 U
B-25	25-May-01	6.0	0.704 U	28.2 U	70.4 U
	25-May-01	12.0	0.595 U	23.8 U	59.5 U
B-26	25-May-01	6.0	0.568 U	**460**	**1,360**
	25-May-01	18.0	0.543 U	21.7 U	54.3 U
	25-May-01	22.0	0.694 U	27.8 U	69.4 U
B-27	25-May-01	3.0	0.562 U	**468**	**6,010**
B-28	25-May-01	6.0	**0.829**	**560**	**8,330**
	25-May-01	12.0	**4.24**	**2,340**	**22,200**
	25-May-01	23.0	**4.61**	**2,070**	**19,900**
B-29	25-May-01	15.0	0.543 U	21.7 U	54.3 U
	25-May-01	23.0	0.617 U	24.7 U	61.7 U
B-30	24-May-01	5.0	0.617 U	-	-
	24-May-01	14.0	0.543 U	-	-
B-32	18-Feb-05	5-6	20 U	50 U	100 U
	18-Feb-05	10-12	**288**	**159**	50 U
B-33	18-Feb-05	20-22	**26.3**	2,500 U	**28,400 J**
Monitoring Well Installations					
MW-1	11-Feb-03	15-16.5	-	**360**	110 U
MW-2	11-Feb-03	10-11.5	-	**40**	130 U
MW-4	17-Jul-02	10-11.5	-	35 U	140 U
MW-5	11-Feb-03	5-6.5	-	28 U	110 U
	11-Feb-03	15-16.5	-	27 U	110 U
	11-Feb-03	22.5-24	-	**96**	**390**
MW-6	19-Jun-03	24.5-26	6.6 U	34 U	140 U
MW-7	19-Jun-03	25-26.5	7.2 U	36 U	150 U
Transformer Soil Samples					
TF-1-N	5-May-05	0	-	23 U	**140 O**
TF-1-N (silica gel treated)	5-May-05	0	-	23 U	**97 O**
TF-2-COM	5-May-05	0	-	**140 Z**	**440 Z**
TF-2-COM (silica gel treated)	5-May-05	0	-	28 U	110 U
UST Piping Assessment					
#1	3-Oct-12	3.5	-	25.0 U	**177**
#2	3-Oct-12	3.5	-	25.8 U	51.6 U
#3	3-Oct-12	3.5	-	25.0 U	50.0 U
#4	3-Oct-12	3.5	-	25.0 U	50.0 U
#5	3-Oct-12	3.5	-	25.0 U	50.0 U
#6	3-Oct-12	3.5	-	25.0 U	50.0 U
#7	3-Oct-12	3.5	-	26.5 U	53.0 U
#8	3-Oct-12	3.5	-	25.0 U	50.0 U

Please refer to notes on the last page of this table.

Table B-2 - Soil Chemical Analyses Results: TPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Notes:

1. Total petroleum hydrocarbons (TPH) by Oregon DEQ Methods TPH-HCID, G, and 418.1 for 1993 samples and Northwest Methods NWTPH-HCID, Gx, and Dx for all other samples. Where HCID results detected fuel types and follow-up analyses were done, the follow-up results (e.g., Dx) are shown.
2. *Analysis by DEQ Method TPH-418.1 which combines diesel and oil ranges.
3. The 1993 results are reported on a wet weight basis. All other results are reported on a dry weight basis.
4. Bolding denotes a detected concentration.
5. - = Not analyzed or not available.
6. J = Estimated concentration.
7. O = The chromatic fingerprint resembles an oil, but does not match the calibration standard.
8. U = Not detected above the indicated laboratory method detection limit.
9. Z = The chromatic fingerprint does not resemble a petroleum product.
10. There are no Joint Source Control Strategy screening level values for TPH.

Table B-3 - Soil Chemical Analyses Results: VPH and EPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location:	B-32	B-33
Date:	18-Feb-05	18-Feb-05
Depth in feet:	10.0-12.0	20.0-22.0
VPH	Concentration in mg/kg (ppm)	
C5-C6 Aliphatics	50.0 U	1.25 U
C6-C8 Aliphatics	50.0 U	**11.5 J**
C8-C10 Aliphatics	50.0 U	1.25 U
C10-C12 Aliphatics	**164 J**	**1.20 J**
C8-C10 Aromatics	**104 J**	**1.69 J**
C10-C12 Aromatics	**136 J**	**2.26 J**
C12-C13 Aromatics	50.0 U	1.25 U
EPH		
C8-C10 Aromatics	5.00	100 U
C10-C12 Aromatics	**18.4 J**	100 U
C12-C16 Aromatics	**27.6**	100 U
C16-C21 Aromatics	9.15 U	100 U
C21-C34 Aromatics	7.67 U	**2,220 J**
C8-C10 Aliphatics	5.00 U	100 U
C10-C12 Aliphatics	**20.3**	100 U
C12-C16 Aliphatics	**19.1**	100 U
C16-C21 Aliphatics	5.00 U	**404**
C21-C34 Aliphatics	5.00 U	**16,200**

Notes:
1. Volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) by Washington State Department of Ecology methods.
2. Carbon range as indicated (e.g. C8-C10 denotes compounds containing 8 to 10 carbons).
3. Bolding denotes a detected concentration.
4. J = estimated concentration.
5. U = Not detected above the indicated laboratory method detection limit.
6. There are no Joint Source Control Strategy screening level values for TPH.

Table B-4 - Soil Chemical Analyses Results: PAHs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

		Subsurface Explorations							Monitoring Well Installations								Shoreline Seep	
	Location:	B-24	B-25	B-27	B-28	B-30	B-32	B-33	MW-1	MW-2	MW-4	MW-5			MW-6	MW-7	Surface	0.5 Deep
	Date:	25-May-01	25-May-01	25-May-01	25-May-01	24-May-01	18-Feb-05	18-Feb-05	11-Feb-03	11-Feb-03	17-Jul-02	11-Feb-03	11-Feb-03	11-Feb-03	19-Jun-03	19-Jun-03	29-Sep-05	29-Sep-05
PAHs	**Depth (ft.):**	27.0	6.0	3.0	6.0	5.0	10-12	20-22	15-16.5	10-11.5	10-11.5	5-6.5	15-16.5	22.5-24	24.5-26	25-26.5	0.0	0.5
LPAHs		Concentration in mg/kg (ppm)																
Acenaphthene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.052**	**0.011**	0.0071 U	**0.052**	0.0048 U	**0.038**	**0.05**	0.005 U	**0.020**	0.0051 U
Acenaphthylene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	0.0048 U	**0.011**	**0.011**	0.005 U	0.0048 U	**0.038**	**0.039**	0.005 U	**0.017**	0.0051 U
Anthracene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.059**	**0.048**	**0.011**	**0.054**	**0.006**	**0.082**	**0.088**	**0.0068**	**0.056**	**0.011**
Dibenzofuran		-	-	-	-	-	-	-	**0.014**	0.005 U	0.0071 U	**0.011**	0.0048 U	**0.017**	**0.01**	0.005 U	**0.0095**	0.0051 U
Fluorene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.11**	**0.01**	**0.007**	**0.053**	0.0048 U	**0.051**	**0.04**	0.005 U	**0.026**	0.0051 U
2-Methylnaphthalene		-	-	-	-	-	-	-	**24**	**0.011**	**0.008**	0.005 U	0.0048 U	**0.91**	**0.029**	0.005 U	**0.016**	0.005 U
Naphthalene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	**2.28**	0.268 U	**22**	**0.026**	**0.041**	0.005 U	0.0048 U	**1.8**	**0.083**	0.005 U	**0.072**	**0.0081**
Phenanthrene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	**0.0791**	0.268 U	**0.24**	**0.15**	**0.055**	**0.44**	**0.009**	**0.49**	**0.34**	**0.013**	**0.21**	**0.046**
Total LPAHs		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	**2.36**	0.268 U	**46**	**0.27**	**0.133**	**0.61**	**0.015**	**3.4**	**0.7**	**0.0198**	**0.43**	**0.065**
HPAHs																		
Benz(a)anthracene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.054**	**0.12**	**0.018**	**0.009**	**0.016**	**0.33**	**0.29**	**0.063**	**0.097**	**0.031**
Benzo(a)pyrene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.036**	**0.15**	**0.034**	**0.014**	**0.023**	**0.92**	**0.44**	**0.066**	**0.15**	**0.039**
Benzo(b)fluoranthene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.032**	**0.94**	**0.023**	**0.012**	**0.016**	**0.83**	**0.19**	**0.037**	**0.097**	**0.024**
Benzo(k)fluoranthene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.039**	**0.95**	**0.020**	**0.013**	**0.018**	**0.65**	**0.28**	**0.054**	**0.079**	**0.022**
Benzo(g,h,i)perylene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.041**	**0.12**	**0.049**	**0.022**	**0.025**	**2.3**	**0.36**	**0.034**	**0.18**	**0.031**
Chrysene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.06**	**0.15**	**0.029**	**0.014**	**0.026**	**0.56**	**0.36**	**0.061**	**0.12**	**0.037**
Dibenzo(a,h)anthracene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	0.0048 U	**0.13**	0.0071 U	0.005 U	0.0048 U	**0.15**	**0.056**	**0.0091**	**0.016**	0.0051 U
Fluoranthene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.12**	**0.22**	**0.066**	**0.078**	**0.029**	**0.72**	**0.50**	**0.086**	**0.22**	**0.047**
Indeno(1,2,3-cd)pyrene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.03**	**0.12**	**0.033**	**0.021**	**0.023**	**2.0**	**0.33**	**0.040**	**0.15**	**0.031**
Pyrene		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.16**	**0.41**	**0.083**	**0.077**	**0.063**	**0.85**	**0.55**	**0.076**	**0.45**	**0.081**
Total HPAHs		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.067 U	0.268 U	**0.57**	**3.31**	**0.355**	**0.26**	**0.239**	**9.3**	**3.36**	**0.526**	**1.56**	**0.343**

Notes:
1. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM.
2. All results reported on a dry weight basis.
3. Bolding denotes a detected concentration.
4. - = Not available.
5. U = Not detected above the indicated laboratory method reporting limit.
6. HPAH = High molecular weight PAH.
7. LPAH = Low molecular weight PAH.
8. No Joint Source Control Strategy screening level values are provided as soils are not considered erodible.

Table B-5 - Soil Chemical Analyses Results: PCBs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

PCBs	Sample Location: / Date: / Depth in feet:	TF-1-N / 5-May-05 / 0	TF-2-COM / 5-May-05 / 0
		Concentration in mg/kg (ppm)	
	Aroclor 1016	0.1 U	0.1 U
	Arorclor 1221	0.2 U	0.2 U
	Arorclor 1232	0.1 U	0.1 U
	Arorclor 1242	0.1 U	0.1 U
	Arorclor 1248	0.1 U	0.1 U
	Arorclor 1254	0.1 U	0.1 U
	Arorclor 1260	0.1 U	0.1 U

Notes:
1. Samples from transformer investigation.
2. Polychlorinated biphenyls (PCBs) by EPA Method 8082A.
3. Results reported on a dry weight basis.
4. U = Not detected above the indicated laboratory method reporting limit.
5. No Joint Source Control Strategy screening level values are provided as these sample locations are not considered erodible.

Table B-6 - Soil Chemical Analyses Results: VOCs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

		Subsurface Explorations										Monitoring Well Installations							
	Location:	B-19	B-21		B-24	B-25	B-27	B-28	B-30	B-32	B-33	MW-1	MW-2	MW-4	MW-5			MW-6	MW-7
	Date:	24-May-01	24-May-01		25-May-01	25-May-01	25-May-01	25-May-01	24-May-01	18-Feb-05	18-Feb-05	11-Feb-03	11-Feb-03	17-Jul-02	11-Feb-03	11-Feb-03	11-Feb-03	19-Jun-03	19-Jun-03
VOCs	**Depth in Feet:**	21.5	5.0	18.0	27.0	6.0	3.0	6.0	5.0	10.0-12.0	20.0-22.0	15-16.5	10-11.5	10-11.5	5-6.5	15-16.5	22.5-24	24.5-26	25-26.5
		Concentration in milligram per kilogram (mg/kg) parts per million (ppm)																	
Benzene		0.00309 U	**5.2**	0.00272 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.1 U	0.1 U	0.110 U	0.00098 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	0.0067 U	0.0072 U
Toluene		0.00309 U	0.025 U	0.00272 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.1 U	0.1 U	0.110 U	0.0011 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	0.0067 U	0.0072 U
Ethylbenzene		0.00309 U	**23.4**	0.00272 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	**0.3**	0.1 U	**1.0**	0.00071 U	0.0068 U	0.0055 U	0.0054 U	**2.5**	0.0067 U	0.0072 U
m,p-Xylene		-	-	-	-	-	-	-	-	-	-	**1.6**	0.0019 U	0.0068 U	0.0055 U	0.0054 U	**2.7**	-	-
o-Xylene		-	-	-	-	-	-	-	-	-	-	**0.4**	0.00086 U	0.0068 U	0.0055 U	0.0054 U	**0.033**	-	-
Total Xylenes		0.00926 U	**134.9**	0.00815 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.714**	0.3 U	**2.0**	0.00276 U	0.0136 U	0.011 U	0.0108 U	**2.733**	0.0067 U	0.0072 U
1,2-Dibromoethane (EDB)		-	0.025 U	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.1 U	0.1 U	0.420 U	0.00098 U	0.027 U	0.022 U	0.022 U	0.03 U	0.0067 U	0.0072 U
1,2-Dichloroethane (EDC)		-	0.025 U	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.1 U	0.1 U	0.110 U	0.00083 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	0.0067 U	0.0072 U
Isopropylbenzene		-	**2.6**	-	0.005 U	**0.0132**	0.005 U	0.005 U	0.005 U	**0.379**	0.2 U	**3.0**	0.00084 U	0.0068 U	0.0055 U	0.0054 U	**7.0**	0.027 U	0.029 U
Methyl tert-butyl ether (MTBE)		-	0.25 U	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.1 U	0.1 U	0.110 U	0.00079 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	0.0067 U	0.0072 U
Naphthalene		-	**11.1**	-	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**6.13**	0.2 U	**64**	0.0011 U	0.027 U	0.022 U	0.022 U	**4.9**	0.027 U	0.029 U
n-Propylbenzene		-	**11.1**	-	0.005 U	**0.0205**	0.005 U	0.005 U	0.005 U	**2.32**	**0.148**	**18**	0.00089 U	0.027 U	0.022 U	0.022 U	0.03 U	0.027 U	0.029 U
1,2,4-Trimethylbenzene		-	**59.8**	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	**14.9**	0.1 U	**59**	0.0011 U	0.027 U	0.022 U	0.022 U	**20**	0.027 U	0.029 U
1,3,5-Trimethylbenzene		-	**18.7**	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	**3.21**	0.1 U	7.8 U	0.0047 U	0.027 U	0.022 U	0.022 U	0.97 U	0.027 U	0.029 U
Acetone		-	-	-	-	-	-	-	-	-	-	4.2 U	0.013 U	**0.070**	0.055 U	0.054 U	**0.085**	-	-
Bromobenzene		-	-	-	-	-	-	-	-	-	-	0.420 U	0.001 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Bromochloromethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00065 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Bromodichloromethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00066 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Bromoform		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00081 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Bromomethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00099 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
2-Butanone (MEK)		-	-	-	-	-	-	-	-	-	-	4.2 U	0.011 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
n-Butylbenzene		-	-	-	-	-	-	-	-	-	-	**29**	0.00093 U	0.027 U	0.022 U	0.022 U	2.5 U	-	-
sec-Butylbenzene		-	-	-	-	-	-	-	-	**0.662**	0.1 U	7.3 U	0.00092 U	0.027 U	0.022 U	0.022 U	**0.18**	-	-
tert-Butylbenzene		-	-	-	-	-	-	-	-	-	-	0.420 U	0.00092 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
Carbon disulfide		-	-	-	-	-	-	-	-	-	-	0.011 U	0.0019 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Carbon tetrachloride		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00074 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Chlorobenzene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00087 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Chloroethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00097 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Chloroform		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00071 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Chloromethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.0013 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
2-Chlorotoluene		-	-	-	-	-	-	-	-	-	-	0.420 U	0.00091 U	0.027 U	0.022 U	0.022 U	0.065 U	-	-
4-Chlorotoluene		-	-	-	-	-	-	-	-	-	-	0.420 U	0.00092 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
1,2-Dibromo-3-chloropropane		-	-	-	-	-	-	-	-	-	-	0.420 U	0.0011 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,2-Dichlorobenzene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00081 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,3-Dichlorobenzene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00088 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,4-Dichlorobenzene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.0011 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,1-Dichloroethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00097 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,1-Dichloroethene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00086 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
cis-1,2-Dichloroethene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.0011 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
trans-1,2-Dichloroethene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00091 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,2-Dichloropropane		-	-	-	-	-	-	-	-	-	-	0.110 UJ	0.00089 UJ	0.0068 U	0.0055 UJ	0.0054 UJ	0.0075 UJ	-	-
1,3-Dichloropropane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00065 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
2,2-Dichloropropane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.001 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,1-Dichloropropene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00091 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
cis-1,3-Dichloropropene		-	-	-	-	-	-	-	-	-	-	0.110 UJ	0.00094 UJ	0.0068 U	0.0055 UJ	0.0054 UJ	0.0075 UJ	-	-
trans-1,3-Dichloropropene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00074 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-

Please refer to notes on the last page of this table.

Table B-6 - Soil Chemical Analyses Results: VOCs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

		Subsurface Explorations										Monitoring Well Installations							
	Location:	B-19	B-21		B-24	B-25	B-27	B-28	B-30	B-32	B-33	MW-1	MW-2	MW-4	MW-5			MW-6	MW-7
	Date:	24-May-01	24-May-01		25-May-01	25-May-01	25-May-01	25-May-01	24-May-01	18-Feb-05	18-Feb-05	11-Feb-03	11-Feb-03	17-Jul-02	11-Feb-03	11-Feb-03	11-Feb-03	19-Jun-03	19-Jun-03
VOCs	**Depth in Feet:**	21.5	5.0	18.0	27.0	6.0	3.0	6.0	5.0	10.0-12.0	20.0-22.0	15-16.5	10-11.5	10-11.5	5-6.5	15-16.5	22.5-24	24.5-26	25-26.5
		Concentration in mg/kg (ppm)																	
Dibromochloromethane		-	-	-	-	-	-	-	-	-	-	0.110 UJ	0.00074 UJ	0.0068 U	0.0055 UJ	0.0054 UJ	0.0075 UJ	-	-
Dibromomethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00089 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Dichlorodifluoromethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00087 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Hexachlorobutadiene		-	-	-	-	-	-	-	-	-	-	0.420 U	0.00093 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
2-Hexanone		-	-	-	-	-	-	-	-	-	-	4.2 U	0.0076 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
4-Isopropyltoluene		-	-	-	-	-	-	-	-	**0.215**	0.2 U	**1.8**	0.00089 U	0.027 U	0.022 U	0.022 U	**0.033**	-	-
4-Methyl-2-pentanone		-	-	-	-	-	-	-	-	-	-	4.2 U	0.0068 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
Methylene chloride		-	-	-	-	-	-	-	-	-	-	0.420 U	0.0012 U	0.014 U	0.011 U	0.011 U	0.015 U	-	-
Styrene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00091 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,1,1,2-Tetrachloroethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00063 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,1,2,2-Tetrachloroethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.091 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Tetrachloroethene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00039 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,2,3-Trichlorobenzene		-	-	-	-	-	-	-	-	-	-	0.420 U	0.0012 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
1,2,4-Trichlorobenzene		-	-	-	-	-	-	-	-	-	-	0.420 U	0.00095 U	0.027 U	0.022 U	0.022 U	0.03 U	-	-
1,2,3-Trichloropropane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00076 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,1,1-Trichloroethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00071 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
1,1,2-Trichloroethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.086 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Trichloroethene		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00035 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Trichlorofluoromethane		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00091 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-
Vinyl chloride		-	-	-	-	-	-	-	-	-	-	0.110 U	0.00077 U	0.0068 U	0.0055 U	0.0054 U	0.0075 U	-	-

Notes:
1. Volatile organic compounds (VOCs) by EPA Method 8260B.
2. All results reported on a dry weight basis.
3. Bolding denotes a detected concentration.
4. - = Not analyzed.
5. J = Estimated concentration.
6. U = Not detected above the indicated laboratory method reporting limit.
7. No Joint Source Control Strategy screening level values are provided as soils are not considered erodible.

Table B-7 - Soil Chemical Analyses Results: Lead
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location	Date	Depth in Feet	**Total Lead**
Subsurface Explorations			Concentration in mg/kg (ppm)
B-21	24-May-01	5.0	**4.4**
B-24	25-May-01	27.0	**3.28**
B-25	25-May-01	6.0	**3.75**
B-28	25-May-01	6.0	**3.03**
B-30	24-May-01	5.0	**5.89**
B-32	18-Feb-05	10-12	2.47 U
B-33	18-Feb-05	20-22	**3.35**
Monitoring Well Installations			
MW-1	11-Feb-03	15-16.5	**4.2**
MW-2	11-Feb-03	10-11.5	**15.9**
MW-4	17-Jul-02	10-11.5	**21.0**
MW-5	11-Feb-03	5-6.5	**5.4**
MW-5	11-Feb-03	15-16.5	**4.0**
MW-5	11-Feb-03	22.5-24	**32.5**
MW-6	19-Jun-03	24.5-26	**16.3**
MW-7	19-Jun-03	25-26.5	**12.8**

Notes:
1. Total lead by EPA Method 6010.
2. All results reported on a dry weight basis.
3. Bolding denotes a detected concentration.
4. U = Not detected above the indicated laboratory method detection limit.
5. No Joint Source Control Strategy screening level values are provided as soils are not considered erodible.

Table B-8 - Groundwater Chemical Analyses Results: TPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Date	Total Petroleum Hydrocarbons		
		Gasoline	Diesel	Oil
		Concentration in milligram per liter (mg/L) (ppm)		
MW-1	7-Jul-03	1.3 H	0.27 L	0.50 U
	16-Oct-03	8.1 H	0.73 L	0.50 U
	30-Jan-04	4.0 H	0.60 L	0.50 U
	29-Apr-04	5.8 H	0.71 L	0.05 U
	26-Jul-04	9.3 Y	0.92 L	0.50 U
	29-Oct-04	8.8 Y	1.10 L	0.50 U
	25-Feb-05	12.0 DY	1.40 L	0.50 U
	5-May-05	12.0 DY	0.88 L	0.54 U
	2-Aug-05	14.0 DY	1.00 L	0.52 U
	22-Nov-05	13.0 D	1.30 Z	0.53 U
	16-Feb-06	12.0 Y	0.73 L	0.53 U
	9-May-06	14.0 DY	0.65 Z	0.53 U
	31-Aug-06	1.1 Y	0.0082 U	0.019 U
	28-Dec-06	1.3 Y	0.22 J	0.02 U
	16-Feb-07	0.45 Y	0.270 U	0.53 U
	30-May-07	3.50 Y	0.350 L	0.019 U
	16-Aug-07	2.30 Y	0.320 L	0.019 U
	12-Nov-07	1.3	0.54	0.30
	28-Feb-08	0.13	0.033 UJ3	0.082 UJ3
	23-May-08	0.033 U	0.11	0.082 U
	21-Aug-08	0.53	0.32 J3	0.16 J
	20-Nov-08	1.3	0.34	0.093 J
	25-Feb-09	0.92	0.16	0.082 U
	19-May-09	1.2	0.14	0.082 U
	21-Aug-09	0.37	0.19 J3	0.082 U
MW-1 Dup	29-Apr-04	5.7 H	0.79 L	0.50 U
	26-Jul-04	9.3 Y	0.93 L	0.50 U
	25-Feb-05	11.0 DY	1.30 L	0.50 U
	5-May-05	12.0 DY	0.85 L	0.52 U
	31-Aug-06	1.5 Y	0.30 L	0.019 U
	28-Dec-06	1.1 Y	0.20 J	0.019 U
	16-Aug-07	1.6 Y	0.41 L	0.019 U
	12-Nov-07	0.86	0.46	0.31
	20-Nov-08	1.0	0.32	0.10 J
	25-Feb-09	0.93	0.16	0.25 U
	19-May-09	1.3	0.097 J	0.08 U
MW-2	7-Jul-03	0.05 U	0.25 U	0.50 U
	16-Oct-03	0.05 U	0.27 U	0.53 U
	30-Jan-04	0.05 U	0.25 U	0.50 U
	29-Apr-04	0.05 U	0.25 U	0.50 U
	26-Jul-04	0.25 U	0.25 U	0.50 U
	29-Oct-04	0.25 U	0.25 U	0.50 U
	5-May-05	0.25 U	0.27 U	0.53 U
	22-Nov-05	0.25 U	0.28 U	0.55 U
	9-May-06	0.25 U	0.28 U	0.56 U
	28-Dec-06	0.013 U	0.025 J	0.042 J
	16-Aug-07	0.013 U	0.011 U	0.019 U
	12-Nov-07	0.050 U	0.059 J	0.17 J
	23-May-08	0.033 U	0.033 U	0.11 J
	20-Nov-08	0.096 J	0.058 J	0.082 U
	19-May-09	0.033 U	0.033 U	0.082 U

Please refer to notes on the last page of this table.

Table B-8 - Groundwater Chemical Analyses Results: TPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Date	Total Petroleum Hydrocarbons		
		Gasoline	Diesel	Oil
		Concentration in milligram per liter (mg/L) (ppm)		
MW-3	30-Jul-02	-	3.4 Y	1.6 O
	7-Jul-03	0.05 U	1.9 Y	8.5 O
	16-Oct-03	0.059 Y	0.92 Y	1.8 O
	30-Jan-04	0.05 U	0.79 Y	0.6 O
	29-Apr-04	0.05 U	0.7 Y	0.77 O
	26-Jul-04	0.25 U	2.5 Y	8.3 O
	29-Oct-04	0.25 U	1.2 Y	3.1 O
	25-Feb-05	0.25 U	1.2 Y	1.8 O
	5-May-05	0.25 U	1.0 Z	1.2 Z
	2-Aug-05	0.25 U	1.2 Y	4.0 OJ
	22-Nov-05	0.25 U	0.78 Z	0.77 Z
	9-May-06	0.25 U	0.34 Z	0.56 U
	28-Dec-06	0.026 J	0.31 Z	0.53 Z
	16-Feb-06	0.25 U	0.56 Z	0.62 Z
	16-Feb-07	0.25 U	0.27 U	0.53 U
	30-May-07	0.013 U	0.680 Z	0.930 Z
	12-Nov-07	0.56 J	3.3	4.4
	28-Feb-08	0.041 J	0.49 J3	0.094 JJ3
	23-May-08	0.033 U	1.1	7.1
	21-Aug-08	0.033 U	1.2 J3	0.16 J
	20-Nov-08	0.22	1.5	0.22 J
	25-Feb-09	0.047 J	0.84	0.21 J
	19-May-09	0.033 U	0.52	0.18 J
	21-Aug-09	0.033 U	0.91 J3	0.29
MW-3-Dup	2-Aug-05	0.25 U	1.1 Z	1.7 OJ
	22-Nov-05	0.25 U	0.67 Z	0.71 Z
	16-Feb-06	0.25 U	0.54 Z	0.55 U
	21-Aug-08	0.033 U	1.1 J3	0.58
MW-4	29-Jul-02	--	0.26 U	0.52 U
	7-Jul-03	0.05 U	0.25 U	0.52 O
	16-Oct-03	0.65 Y	0.25 U	0.50 U
	30-Jan-04	0.05 U	0.25 U	0.50 U
	29-Apr-04	0.05 U	0.25 U	0.50 U
	26-Jul-04	0.082 U	0.25 U	0.50 U
	29-Oct-04	0.082 U	0.73 Z	1.0 Z
	25-Feb-05	0.082 U	0.082 U	0.50 U
	5-May-05	0.082 U	0.26 U	0.51 U
	2-Aug-05	0.082 U	0.28 U	0.55 U
	22-Nov-05	0.082 U	0.27 U	0.53 U
	16-Feb-06	1.1 Y	0.54 Y	0.55 U
	16-Mar-06	0.082 U	0.28 U	0.55 U
	9-May-06	0.25 U	0.082 U	0.50 U
	31-Aug-06	0.013 U	0.082 U	0.019 U
	28-Dec-06	0.032 J	0.043 J	0.035 J
	16-Feb-07	0.082 U	0.25 U	0.50 U
	30-May-07	0.013 U	0.011 U	0.019 U
	16-Aug-07	0.31 Y	0.011 U	0.640 Z
	12-Nov-07	0.62	0.14	0.22 J
	28-Feb-08	0.033 U	0.20 J3	0.082 UJ3
	23-May-08	0.033 U	0.057 J	0.082 U
	21-Aug-08	0.033 U	0.10 J3	0.099 J
	20-Nov-08	0.036 J	0.051 J	0.082 U
	25-Feb-09	0.038 J	0.13	0.082 U
	19-May-09	0.033 U	0.033 U	0.082 U
	21-Aug-09	0.033 U	0.033 U	0.082 U

Please refer to notes on the last page of this table.

Table B-8 - Groundwater Chemical Analyses Results: TPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Monitoring Well	Date	Total Petroleum Hydrocarbons		
		Gasoline	Diesel	Oil
		Concentration in milligram per liter (mg/L) (ppm)		
MW-5	30-Jan-04	**1.4 H**	**0.62 L**	0.50 U
	5-May-05	**5.2 Y**	**1.3 L**	0.55 U
	16-Feb-06	**0.89 H**	0.27 U	0.54 U
	9-May-06	**2.8 Y**	**0.70 Z**	0.59 U
	28-Dec-06	**2.1 Y**	**0.41 Y**	**0.036 J**
	16-Feb-07	**1.8 Y**	**0.44 Z**	0.5 U
	30-May-07	**4.8 Y**	**1.20 L**	0.019 U
	28-Feb-08	**0.35**	**0.25 J3**	0.082 UJ3
	23-May-08	**0.79**	**0.86**	0.082 U
	25-Feb-09	**1.5**	**0.79**	0.082 U
	19-May-09	**2.4**	**0.74**	0.082 U
MW-5-Dup	30-Jan-04	**1.5 H**	**0.63 L**	0.50 U
	9-May-06	**3.0 Y**	**0.68 Z**	0.56 U
MW-6	7-Jul-03	0.05 U	0.25 U	0.50 U
	16-Oct-03	0.05 U	0.27 U	0.53 U
	30-Jan-04	0.05 U	0.25 U	0.50 U
	29-Apr-04	0.05 U	0.25 U	0.50 U
	26-Jul-04	0.25 U	0.25 U	0.50 U
	29-Oct-04	0.25 U	0.25 U	0.50 U
	5-May-05	0.25 U	0.28 U	0.55 U
	22-Nov-05	0.25 U	0.28 U	**0.65 O**
	9-May-06	0.25 U	0.27 U	0.53 U
	28-Dec-06	0.013 U	**0.036 J**	**0.034 J**
	16-Aug-07	0.013 U	0.011 U	0.019 U
	12-Nov-07	0.050 U	0.050 U	0.13 U
	23-May-08	0.033 U	0.033 U	0.082 U
	20-Nov-08	**0.068 J**	0.033 U	0.082 U
	19-May-09	0.033 U	0.033 U	0.082 U
MW-7	7-Jul-03	0.05 U	0.25 U	0.50 U
	16-Oct-03	0.05 U	0.27 U	0.53 U
	30-Jan-04	0.05 U	0.25 U	0.50 U
	29-Apr-04	0.05 U	0.25 U	0.50 U
	26-Jul-04	0.25 U	0.25 U	0.50 U
	29-Oct-04	0.25 U	0.25 U	0.50 U
	5-May-05	0.25 U	0.27 U	0.54 U
	22-Nov-05	0.25 U	0.27 U	0.53 U
	9-May-06	0.25 U	0.27 U	0.53 U
	28-Dec-06	0.013 U	**0.019 J**	**0.036 J**
	16-Aug-07	0.013 U	0.011 U	0.019 U
	12-Nov-07	0.050 U	0.050 U	0.13 U
	23-May-08	0.033 U	0.033 U	0.082 U
	20-Nov-08	**0.046 J**	0.033 U	0.082 U
	19-May-09	0.033 U	0.033 U	0.082 U
MW-8	25-Feb-05	0.25 U	**1.0 Y**	**1.3 O**
	SLV:		1	

Please refer to notes on the last page of this table.

Table B-8 - Groundwater Chemical Analyses Results: TPH
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Notes:
1. Total petroleum hydrocarbons (TPH) by Northwest Methods NWTPH-Gx and Dx.
2. Bolding denotes a detected concentration.
3. - = Not available.
4. D = The reported result is from a dilution.
5. L = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of lighter weight constituents than the calibration standard.
6. H = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of heavier weight constituents than the calibration standard.
7. J = Associated value is below the lowest calibration point and is estimated.
8. J3 = The associated quality control (QC) batch was outside the control range for precision.
9. O = The fingerprint resembles oil, but does not match the calibration standard.
10. U = Not detected above the indicated laboratory method reporting limit (before 2007) or method detection limit (2007 and after).
11. Y = The fingerprint resembles a petroleum product in the correct carbon range, but the elution pattern does not match the calibration standard.
12. Z = The chromatic fingerprint does not resemble a petroleum product.
13. There are no Joint Source Control Strategy screening level values (SLVs) for TPH; however, the DEQ indicated use of a 1 mg/L SLV for TPH (DEQ 2012).
14. Shaded concentrations exceed the SLV. The SLV is also shaded.

Table B-9 - Groundwater Chemical Analyses Results: PAHs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location and Date	Low Molecular Weight PAHs (LPAHs)									High Molecular Weight PAHs (HPAHs)										
	Acenaphthene	Acenaphthylene	Anthracene	Dibenzofuran	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	**Total LPAHs**	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)pyrene	Dibenz(a,h)anthracene	Chrysene	Fluoranthene	Ideno(1,2,3-cd)pyrene	Pyrene	**Total HPAHs**
Borings	Concentration in microgram per liter (µg/L) parts per billion (ppb)																			
B-15, 29-May-01	0.100 U	0.100 U	0.100 U	-	0.100 U	-	0.100 U	0.11	0.11	0.100 U	0.100 U	0.100 U	0.100 U	0.13	0.100 U	0.100 U	0.14	0.100 U	0.26	0.53
B-17, 29-May-01	0.947	0.232	0.326	-	0.674	-	65.1	1.51	68.8	0.295	0.316	0.200	0.221	0.284	0.105 U	0.347	0.811	0.242	1.04	3.76
B-18, 29-May-01	0.189	0.111 U	0.111 U	-	0.111 U	-	0.111 U	0.278	0.467	0.189	0.467	0.311	0.300	0.778	0.111 U	0.300	0.400	0.578	0.611	3.93
B-19, 24-May-01	0.424	0.118 U	0.118 U	-	0.118 U	-	0.118 U	0.165	0.589	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.129	0.118 U	0.306	0.435
B-20, 25-May-01	0.118 U	0.118 U	0.118 U	-	0.118 U	-	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U	0.118 U
MW-1																				
28-Feb-03	0.43	0.19	0.53	0.120	0.36	9.0	23 D	1.8	35	2.1	2.0	1.4	1.1	1.5	0.17	2.7	4.3	1.5	13.0	29.8
7-Jul-03	0.38	0.020 U	0.11	0.067	0.27	7.9	23 D	0.56	32	0.22	0.11	0.088	0.098	0.028	0.020 U	0.27	0.5	0.023	1.2	2.5
16-Oct-03	0.34	0.020 U	0.065	0.085	0.24	42 D	160 D	0.42	203	0.16	0.097	0.073	0.096	0.043	0.020 U	0.24	0.3	0.036	0.9	1.9
30-Jan-04	0.17	0.150 U	0.073	0.032	0.11	40 D	110 D	0.16	151	0.20	0.064	0.047	0.053	0.020 U	0.020 U	0.24	0.39	0.020 U	1.6	2.6
29-Apr-04	0.30	0.020 U	0.079	0.062	0.19	46 D	170 D	0.34	217	0.12	0.066	0.049	0.061	0.021	0.020 U	0.16	0.33	0.020 U	0.76	1.57
26-Jul-04	0.34	0.190 U	0.068	0.073	0.23	51 D	170 D	0.36	222	0.13	0.056	0.044	0.047	0.019 U	0.019 U	0.15	0.31	0.019 U	0.80	1.54
29-Oct-04	0.33	0.020 U	0.070	0.085	0.23	42 D	160 D	0.32	203	0.130	0.110	0.084	0.082	0.055	0.020 U	0.15	0.21	0.044	0.60	1.47
25-Feb-05	0.33	0.10	0.090	0.093	0.28	46 D	150 D	0.44	197	0.096	0.046	0.038	0.034	0.020 U	0.020 U	0.11	0.27	0.020 U	0.50	1.09
5-May-05	0.34	0.083 Ui	0.061	0.075	0.25	56 D	210 D	0.34	267	0.11	0.042	0.036	0.038	0.020 U	0.020 U	0.14	0.38	0.020 U	0.69	1.44
2-Aug-05	0.32	0.071 Ui	0.062	0.084	0.26	46 D	180 D	0.35	227	0.079	0.037	0.034	0.021	0.020 U	0.020 U	0.11	0.26	0.020 UJ	0.54	1.08
22-Nov-05	0.39	0.087 Ui	0.056	0.086	0.29	69 D	200 D	0.43	270	0.079	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.11	0.35	0.020 U	0.65	1.19
16-Feb-06	0.18	0.10 Ui	0.150	0.041	0.21	52 D	200 D	0.61	253	0.14	0.022	0.028	0.022	0.020 U	0.020 U	0.23	1.00	0.020 U	2.70	4.14
9-May-06	0.30	0.073 Ui	0.036	0.048	0.19	57 D	220 D	0.43	278	0.078	0.020 U	0.021	0.022	0.020 U	0.020 U	0.13	0.37	0.020 U	0.79	1.41
31-Aug-06	0.31	0.043 Ui	0.082	0.061	0.25	0.95	2.1	0.46	4.2	0.13	0.051	0.044	0.043	0.020 U	0.020 U	0.17	0.38	0.020 U	0.85	1.67
28-Dec-06	0.098	0.039 Ui	0.12	0.020 U	0.061	1.2	1.3	0.25	3.0	0.19	0.030	0.032	0.029	0.0061 J	0.020 U	0.25	0.85	0.0063 J	2.5	3.89
16-Feb-07	0.10	0.020 U	0.030	0.020 U	0.060	0.70	2.4	0.24	3.5	0.12	0.020 U	0.050	0.051	0.0200 U	0.020 U	0.16	0.27	0.020 U	0.91	1.56
30-May-07	0.37	0.041 Ui	0.13	0.053	0.21	18 D	13 D	0.80	33	0.21	0.19	0.21	0.079	0.099	0.020 U	0.27	0.61	0.087	1.3	3.06
16-Aug-07	0.28	0.037	0.089	0.081	0.24	0.59	0.77	0.51	2.60	0.36	0.36	0.43	0.12	0.20	0.028	0.40	0.59	0.21	1.50	4.20
12-Nov-07	0.30	0.0014 U	0.084	0.050 U	0.26	5.6	2.7 J4	0.39	9.3 J	0.059	0.001 U	0.0021 U	0.001 U	0.0011 U	0.00096 U	0.067	0.26	0.0012 U	0.63	1.02
28-Feb-08	0.023 J	0.010 J	0.040 J	-	0.015 J	0.27	0.65	0.039 J	1.05 J	0.090	0.025 J	0.032 J	0.056	0.0074 J	0.0048 J	0.096	0.10	0.0076 J	0.81	1.23 J
23-May-08	0.25	0.041 J	0.13	-	0.15	5.4	4.0	0.45	10.4	0.10	0.023 J	0.026 J	0.012 J	0.0012 U	0.0011 U	0.11	0.40	0.0013 U	0.74	1.41 J
21-Aug-08	0.31	0.0014 U	0.13	-	0.26	0.96	1.2	0.52	3.4	0.089	0.042 J	0.053	0.018 J	0.013 J	0.011 JJ3	0.11	0.30	0.011 J	0.75	1.40 J
20-Nov-08	0.0018 U	0.0014 UJ3	0.0018 U	-	0.0011 U	0.027 J	0.15 J	0.00073 U	0.18 J	0.0010 U	0.0010 UJ3	0.0010 U	0.0021 U	0.0011 J3	0.00096 UJ3	0.00068 UJ3	0.0011 U	0.0012 UJ3	0.00083 UJ3	0.0021 UJ
25-Feb-09	0.25	0.017 J	0.11	-	0.18	1.6	2.3	0.51	5.0	0.12	0.038 J	0.045 J	0.028 J	0.0088 J	0.0022 J	0.11	0.39	0.0056 J	0.78	1.53 J
21-Aug-09	0.28	0.039 J	0.10	-	0.23	0.72	1.2	0.41	3.0	0.13	0.057	0.062	0.022 J	0.018 U	0.013 U	0.12	0.35	0.015 U	0.76	1.50
MW-1 Dup																				
29-Apr-04	0.23	0.020 U	0.057	0.057	0.14	40 D	150 D	0.27	191	0.084	0.038	0.029	0.036	0.20 U	0.20 U	0.11	0.24	0.20 U	0.57	1.11
26-Jul-04	0.33	0.019 Ui	0.067	0.074	0.24	49 D	170 D	0.36	220	0.13	0.052	0.041	0.043	0.019 U	0.019 U	0.15	0.33	0.019 U	0.85	1.60
25-Feb-05	0.38	0.088 Ui	0.099	0.100	0.32	53 D	170 D	0.53	224	0.11	0.048	0.038	0.044	0.020 U	0.020 U	0.12	0.31	0.020 U	0.57	1.24
5-May-05	0.31	0.072 Ui	0.061	0.060	0.19	49 D	190 D	0.32	240	0.081	0.020	0.020 U	0.021	0.020 U	0.020 U	0.11	0.34	0.020 U	0.64	1.21
31-Aug-06	0.32	0.044 Ui	0.087	0.065	0.26	1.3	1.7	0.50	4.2	0.13	0.039	0.037	0.034	0.020 U	0.020 U	0.16	0.40	0.020 U	0.88	1.68
28-Dec-06	0.091	0.043 Ui	0.12	0.020 U	0.077	1.2	1.3	0.24	3.0	0.18	0.030	0.031	0.030	0.0061 J	0.0051 J	0.24	0.83	0.0066 J	2.4	3.8
16-Aug-07	0.37	0.045	0.12	0.090	0.29	2.4	1.5	0.67	5.5	0.57	0.740	0.800	0.270	0.45	0.057	0.60	0.78	0.45	1.8	6.5
12-Nov-07	0.28	0.0014 U	0.084	0.0010 U	0.19	2.1	1.5	0.37	4.5	0.087	0.0010 U	0.0010 U	0.0012 U	0.0011 U	0.00096 U	0.075	0.28	0.050 U	0.62	1.06
20-Nov-08	0.29	0.029 J	0.087	-	0.21	1.8	1.4	0.45	4.3	0.12	0.022 J	0.035 J	0.0089 J	0.0034 J	0.0016 J	0.120	0.34	0.0026 J	0.82	1.47
19-May-09	0.056 J3	0.017 U	0.033 JJ3	-	0.036 JJ3	0.19 J	0.25 J	0.12	0.69 J	0.035 J	0.023 UJ3	0.024 U	0.020 U	0.018 UJ3	0.013 UJ3	0.040 J	0.16	0.015 UJ3	0.33	0.57 J
MW-2																				
28-Feb-03	0.020 U	0.023	0.032	0.020 U	0.020 U	0.020 U	0.082	0.15	0.29	0.11	0.13	0.19	0.14	0.22	0.020 U	0.17	0.29	0.20	0.42	1.87
7-Jul-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.023	0.031	0.054	0.023	0.035	0.022 U	0.036	0.090	0.022 U	0.042	0.070	0.073	0.091	0.46
30-Jan-04	0.020 U	0.110 UB	0.034	0.020 U	0.020 U	0.022	0.037	0.020 U	0.093	0.020	0.023	0.035	0.020	0.020	0.020 U	0.020 U	0.022	0.022	0.020	0.18
29-Apr-04	0.020 U	0.020 U	0.036	0.019 U	0.020 U	0.020 U	0.023	0.020 U	0.059	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.024	0.13	0.11	0.020 U	0.023	0.030	0.18	0.31	0.81	0.31	0.42	0.73	0.48	1.10 J	0.10	0.48	0.62	0.88	0.87	5.99
29-Oct-04	0.020 U	0.021	0.032	0.020 U	0.020 U	0.020 U	0.026	0.026	0.105	0.043	0.061	0.10	0.080	0.18	0.020 U	0.060	0.084	0.14	0.090	0.84

Please refer to notes on the last page of this table.

Table B-9 - Groundwater Chemical Analyses Results: PAHs
Brix Maritime Co.
Portland, Oregon

Sample Location and Date	Low Molecular Weight PAHs (LPAHs)									High Molecular Weight PAHs (HPAHs)										
	Acenaphthene	Acenaphthylene	Anthracene	Dibenzofuran	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	**Total LPAHs**	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)pyrene	Dibenz(a,h)anthracene	Chrysene	Fluoranthene	Ideno(1,2,3-cd)pyrene	Pyrene	**Total HPAHs**
MW-2 (Continued)	Concentration in microgram per liter (µg/L) parts per billion (ppb)																			
5-May-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	**0.022**	**0.022**	**0.042**	**0.030**	**0.059**	0.020 U	**0.026**	**0.037**	**0.053**	**0.045**	**0.336**
29-Sep-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.029**	**0.029**
22-Nov-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
9-May-06	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
28-Dec-06	0.020 U	**0.0031 J**	0.020 U	0.020 U	0.020 U	**0.025**	**0.041**	**0.0066 J**	**0.076**	**0.0064 J**	0.020 U	**0.0066 J**	**0.0051 J**	**0.0071 J**	**0.0058 J**	**0.0061 J**	**0.012 J**	**0.0064 J**	**0.014 J**	**0.070 J**
16-Aug-07	0.0044 U	0.0034 U	0.0036 U	0.0046 U	0.0038 U	0.0023 U	**0.023**	0.0050 U	**0.023**	0.0026 U	0.0043 U	0.0023 U	0.003 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	**0.077**	**0.077**
12-Nov-07	0.0018 U	0.0014 U	0.00045 U	-	0.0011 U	0.0020 U	0.011 U	0.00073 U	0.011 U	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.0007 U	0.00065 U	0.0012 U	0.00083 U	0.050 U
23-May-08	0.0021 U	0.0017 U	0.00054 U	-	0.0013 U	0.0024 U	**0.029 J**	0.00088 U	**0.029 J**	0.0012 U	0.0013 U	0.0012 U	0.0026 U	0.0013 U	0.0012 U	0.00082 U	0.00079 U	0.0014 U	0.00088 U	0.061 U
20-Nov-08	0.0018 U	0.0014 UJ3	0.00045 U	-	0.0011 U	**0.020 J**	**0.14 J**	0.00073 U	**0.16 J**	0.0010 U	0.0010 UJ3	0.0010 U	0.0021 U	0.0011 UJ3	0.00096 UJ3	0.00068 UJ3	0.00065 U	0.0012 UJ3	**0.018 JJ3**	**0.018 JJ3**
19-May-09	0.013 U	0.017 U	0.012 U	-	**0.018 J**	**0.018 J**	0.023 U	**0.054**	**0.090 J**	0.023 U	0.013 U	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	0.020 U	0.015 U	0.022 U	0.024 U
MW-3																				
30-Jul-02	**0.26**	0.020 U	0.020 U	**0.025**	**0.09**	**0.28**	**0.36**	**0.11**	**1.13**	0.020 U	0.022 U	**0.022**	0.022 U	0.022 U	0.022 U	0.020 U	**0.056**	0.022 U	**0.058**	**0.14**
28-Feb-03	**1.3**	**0.22**	**0.55**	**0.11**	**1.0**	**1.8**	**0.75**	**2.9**	**8.6**	**2.1 D**	**2.3 D**	**1.8 D**	**1.7 D**	**1.9 D**	0.20 U	**2.3 D**	**4.9**	**1.5 D**	**7.6 D**	**26.1**
7-Jul-03	**0.16**	0.020 U	**0.039**	0.020 U	**0.10**	**0.34**	**0.34**	**0.20**	**1.2**	**0.06**	**0.053**	**0.038**	**0.065**	**0.039**	0.20 U	**0.071**	**0.22**	**0.041**	**0.22**	**0.81**
16-Oct-03	**0.21**	0.020 U	**0.022**	**0.021**	**0.11**	**0.31**	**0.34**	**0.14**	**1.15**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.077**	0.020 U	**0.082**	**0.159**
30-Jan-04	**0.04**	0.140 UB	**0.032**	0.020 U	**0.037**	**0.15**	**0.11**	**0.06**	**0.43**	**0.022**	**0.036**	0.020 U	0.020 U	0.020 U	0.020 U	**0.023**	**0.075**	**0.02**	**0.09**	**0.27**
29-Apr-04	**0.13**	0.020 U	**0.034**	**0.035**	**0.082**	**0.34**	**0.35**	**0.12**	**1.09**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.08**	0.020 U	**0.079**	**0.16**
26-Jul-04	**0.89 D**	**0.38 D**	**0.96 D**	0.190 U	**0.84 D**	**1.20 D**	**0.28 D**	**2.3 D**	**6.9**	**2.3 D**	**3.0 D**	1.90 U	1.90 U	**1.90 D**	1.90 U	**2.6 D**	**5.8 D**	1.90 U	**7.2 D**	**22.8**
29-Oct-04	**0.088**	**0.038**	0.020 U	**0.020**	**0.039**	**0.024**	**0.040**	0.020 U	**0.25**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.050**	0.020 U	**0.057**	**0.11**
25-Feb-05	**0.12**	**0.022**	**0.029**	**0.022**	**0.063**	**0.22**	**0.17**	**0.072**	**0.72**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.06**	0.020 U	**0.056**	**0.12**
5-May-05	**0.078**	0.020 U	**0.021**	**0.021**	**0.054**	**0.22**	**0.082**	**0.068**	**0.54**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 UJ	0.020 U	**0.058**	0.020 U	**0.06**	**0.12**
2-Aug-05	**0.110**	**0.0206**	**0.034 J**	**0.024**	**0.071**	**0.17**	**0.086**	**0.092 J**	**0.61 J**	**0.051 J**	**0.050 J**	**0.030 J**	**0.066 J**	**0.055 J**	0.020 UJ	**0.067 J**	**0.18 J**	**0.057 J**	**0.21 J**	**0.77 J**
22-Nov-05	**0.091**	0.020 U	**0.020**	**0.024**	**0.070**	**0.34**	**0.084**	**0.098**	**0.73**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.053**	0.020 U	**0.055**	**0.11**
16-Feb-06	**0.038**	0.020 U	**0.029**	0.020 U	**0.032**	**0.11**	**0.034**	**0.10**	**0.34**	**0.021**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.027**	**0.21**	0.020 U	**0.35**	**0.61**
9-May-06	**0.070**	0.020 U	0.020 U	0.020 U	**0.055**	**0.30**	**0.048**	**0.099**	**0.57**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.058**	0.020 U	**0.061**	**0.119**
28-Dec-06	**0.070**	**0.016 J**	**0.024**	**0.014 J**	**0.043**	**0.21**	**0.047**	**0.058**	**0.48**	0.020 J	0.0048 J	0.020 U	0.020 U	0.020 U	0.0048 J	**0.025**	**0.11**	0.020 U	**0.31**	**0.45**
16-Feb-07	**0.060**	0.020 U	0.020 U	0.020 U	**0.042**	**0.23**	**0.038**	**0.073**	**0.44**	0.020 U	0.0200 U	0.020 U	0.020 U	0.020 U	0.0200 U	0.020 U	**0.083**	0.020 U	**0.11**	**0.193**
30-May-07	**0.076**	0.020 U	0.020 U	0.020 U	**0.054**	**0.39**	**0.061**	**0.12**	**0.70**	0.020 U	0.0200 U	0.020 U	0.020 U	0.020 U	0.0200 U	0.020 U	**0.065**	0.020 U	**0.070**	**0.135**
12-Nov-07	**0.10**	0.0018 U	0.00045 U	-	**0.072**	**0.25 J**	0.011 U	**0.11**	**0.53 J**	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.00068 U	**0.078**	0.0012 U	**0.095**	**0.173**
28-Feb-08	0.0018 U	0.0014 U	**0.031 J**	-	**0.0039 J**	**0.11 J**	**0.17 J**	**0.0031 J**	**0.32 J**	0.0010 U	**0.0028 J**	**0.059 J**	**0.048 JJ3**	**0.0011 J**	**0.0011 J**	**0.025 J**	**0.0099 J**	**0.0029 J**	**0.0092 J**	**0.159 J**
23-May-08	**0.15**	**0.042 J**	**0.087**	-	**0.11**	**0.41**	**0.10 J**	**0.28**	**1.18 J**	**0.16**	**0.16**	**0.064**	**0.072**	**0.098**	**0.014 J**	**0.17**	**0.40**	**0.072**	**0.34**	**1.54**
21-Aug-08	0.0018 U	0.0014 U	**0.060**	-	0.0011 U	**0.28**	**0.11 J**	**0.15**	**0.60 J**	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 UJ3	**0.33**	**0.052**	0.0012 U	**0.049 J**	**0.43 J**
20-Nov-08	**0.086**	**0.050 J3**	**0.021 J**	-	**0.048 J**	**0.27**	**0.19 J**	**0.10**	**0.77 J**	0.0010 U	0.0010 UJ3	0.0010 U	0.0021 U	0.0011 UJ3	0.00096 UJ3	0.00068 UJ3	**0.054**	0.00029 UJ3	0.044 JJ3	**0.054**
25-Feb-09	**0.062**	0.050 U	**0.018 J**	-	**0.055**	**0.33**	**0.078 J**	**0.11**	**0.65 J**	**0.022 J**	**0.0020 J**	**0.0026 J**	0.0021 U	**0.0012 J**	0.00096 U	**0.011 J**	**0.057**	0.0012 U	**0.057**	**0.153 J**
19-May-09	**0.061**	0.017 U	**0.013 J**	-	**0.054**	**0.26**	**0.070 J**	**0.083**	**0.54 J**	0.023 U	0.013 U	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	**0.044 J**	0.015 U	**0.040 J**	**0.084 J**
21-Aug-09	**0.074**	0.017 U	**0.018 J**	-	**0.055**	**0.20 J**	**0.045 J**	**0.11**	**0.50 J**	0.023 U	0.013 U	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	**0.052**	0.015 U	**0.048 J**	**0.100 J**
MW-3 Dup																				
2-Aug-05	**0.11**	**0.025**	**0.024 J**	**0.024**	**0.066**	**0.16**	**0.088**	**0.053 J**	**0.55 J**	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	**0.056 J**	0.020 UJ	**0.064 J**	**0.120 J**
22-Nov-05	**0.10**	0.020 U	**0.025**	**0.027**	**0.072**	**0.43**	**0.086**	**0.11**	**0.85**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.065**	0.020 U	**0.070**	**0.14**
16-Feb-06	**0.038**	0.020 U	**0.03**	0.020 U	**0.033**	**0.12**	**0.035**	**0.11**	**0.37**	**0.021**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.028**	**0.21**	0.020 U	**0.36**	**0.62**
21-Aug-08	0.0018 U	0.0014 U	**0.055**	-	0.0011 U	**0.30**	**0.12 J**	**0.16**	**0.64 J**	0.010 U	0.028 J	**0.0038 J**	**0.0045 J**	**0.0027 J**	**0.0015 JJ3**	**0.37**	**0.053**	**0.0018 J**	**0.052**	**0.49**
21-Aug-09	**0.065**	**0.050 J**	0.012 U	-	**0.052**	**0.22 J**	**0.060 J**	**0.092**	**0.54 J**	0.023 U	0.013 U	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	**0.045 J**	0.015 U	**0.054**	**0.099 J**

Please refer to notes on the last page of this table.

Table B-9 - Groundwater Chemical Analyses Results: PAHs
Brix Maritime Co.
Portland, Oregon

Sample Location and Date	Low Molecular Weight PAHs (LPAHs)									High Molecular Weight PAHs (HPAHs)										
	Acenaphthene	Acenaphthylene	Anthracene	Dibenzofuran	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	**Total LPAHs**	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)pyrene	Dibenz(a,h)anthracene	Chrysene	Fluoranthene	Ideno(1,2,3-cd)pyrene	Pyrene	**Total HPAHs**
MW-4	Concentration in microgram per liter (µg/L) parts per billion (ppb)																			
29-Jul-02	0.022 U	**0.51**	0.022 U	0.022 U	0.022 U	0.022 U	**0.039**	**0.043**	**0.59**	0.022 U	0.02 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	**0.033**	0.022 U	**0.046**	**0.079**
28-Feb-03	0.020 U	**0.60**	0.020 U	0.020 U	0.020 U	**0.80**	**18 D**	0.020 U	**19**	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.024**	0.020 U	**0.055**	**0.079**
7-Jul-03	0.020 U	**0.11**	0.020 U	0.020 U	0.020 U	0.020 U	**0.16**	0.020 U	**0.27**	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.021**	**0.021**
16-Oct-03	0.020 U	**0.36**	0.020 U	0.020 U	0.020 U	0.020 U	**0.11**	0.020 U	**0.47**	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
30-Jan-04	0.053 UB	**0.16**	0.020 U	0.020 U	0.020 U	0.020 U	**0.074**	0.020 U	**0.23**	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
29-Apr-04	0.020 U	**0.061**	0.020 U	0.020 U	0.020 U	0.020 U	**0.093**	0.020 U	**0.15**	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.019 U	**0.096**	0.019 U	0.019 U	0.019 U	0.019 U	**0.024**	0.019 U	**0.12**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
29-Oct-04	**0.027**	**0.86**	**0.024**	0.020 U	0.020 U	0.020 U	**0.054**	0.880 Ui	**0.97**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.020**	0.020 U	**0.038**	**0.058**
25-Feb-05	0.020 U	**0.11**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.11**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
5-May-05	0.020 U	**0.046**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.046**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
2-Aug-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.038**	**0.074**	0.020 U	**0.11**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
22-Nov-05	0.020 U	**0.21**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.21**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.031**	**0.031**
16-Feb-06	0.032 Ui	**0.23**	0.020 U	0.020 U	**0.064**	**12 D**	**72 D**	0.020 U	**84**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Mar-06	0.021 U	**0.087**	0.021 U	0.021 U	0.021 U	**0.21**	**2.8**	0.021 U	**3.10**	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.020 U	0.021 U
9-May-06	0.020 U	**0.076**	0.020 U	0.020 U	0.020 U	**0.093**	**0.84**	0.020 U	**1.01**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
31-Aug-06	0.020 U	**0.029**	0.020 U	0.020 U	0.020 U	**0.034**	**0.10**	0.020 U	**0.16**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.020**	**0.020**
28-Dec-06	**0.044**	0.020 U	0.020 U	0.020 U	**0.0057 J**	**0.010 J**	**0.025**	**0.0045 J**	**0.089 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0097 J**	**0.0097 J**
16-Feb-07	**0.20**	0.0023 U	0.0039 U	0.0038 U	0.0036 U	0.0042 U	**0.30**	0.0032 U	**0.50**	0.0039 U	0.0043 U	0.0046 U	0.0051 U	0.0041 U	0.0036 U	0.0053 U	0.0047 U	0.0033 U	**0.023**	**0.023**
30-May-07	**0.061**	0.0034 U	0.0036 U	0.0046 U	0.0038 U	0.0023 U	**0.02**	0.0050 U	**0.08**	0.0026 U	0.0043 U	0.0023 U	0.0025 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	**0.021**	**0.021**
16-Aug-07	**0.810**	0.0034 U	0.0036 U	**0.030**	0.0038 U	0.0023 U	**0.049**	0.0050 U	**0.89**	0.0026 U	0.0043 U	0.0023 U	0.0025 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	**0.041**	**0.041**
12-Nov-07	**1.0**	0.0014 U	0.00045 U	-	0.0011 U	0.0020 U	0.011 U	0.00073 U	**1.0**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0011 U	0.00096 U	0.00068 U	0.0007 U	0.0012 U	0.00083 U	0.0012 U
28-Feb-08	**0.021 J**	**0.012 J**	**0.0045 J**	-	**0.0047 J**	**0.016 J**	**0.36**	**0.0044 J**	**0.42**	0.0010 U	**0.027 J**	**0.0032 J**	**0.044 J**	0.0011 U	0.00096 U	**0.022 J**	**0.0031 J**	**0.0013 J**	**0.0097 J**	**0.110 J**
23-May-08	**0.016 J**	**0.014 J**	**0.041 J**	-	**0.023 J**	**0.10 J**	**0.037 J**	**0.10**	**0.33**	**0.022 J**	0.0012 U	0.0012 U	0.0024 U	0.0012 U	0.0011 U	**0.012 J**	**0.10**	0.0013 U	**0.071**	**0.205**
21-Aug-08	**0.062**	**0.0086 J**	**0.053**	-	**0.034 J**	**0.024 J**	**0.033 J**	**0.16**	**0.37**	0.0010 U	**0.031 J**	**0.0044 J**	**0.0048 J**	0.0011 U	**0.0046 JJ3**	**0.026 J**	**0.012 J**	**0.0038 J**	**0.040 J**	**0.127 J**
20-Nov-08	**0.064 J3**	**0.0024 JJ3**	**0.012 J**	-	**0.0027 JJ3**	0.0023 UJ3	0.013 UJ3	**0.012 J**	**0.093 J**	**0.022 J**	0.0012 U	**0.0034 J**	**0.0036 J**	**0.0018 J**	0.0011 U	**0.025 J**	**0.0057 J**	**0.0016 J**	**0.027 J**	**0.090**
25-Feb-09	0.0018 U	0.0014 U	0.00045 U	-	0.0011 U	**0.0065 J**	**0.015 J**	0.00073 U	**0.022 J**	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.00068 U	**0.0018 J**	0.0012 U	**0.013 J**	**0.015 J**
19-May-09	0.013 U	0.017 U	0.012 U	-	0.012 U	0.014 U	0.023 U	0.018 U	0.023 U	0.023 U	**0.024 J**	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	0.020 U	0.015 U	0.022 U	**0.024 J**
21-Aug-09	**0.038 J**	0.017 U	0.012 U	-	0.012 U	0.014 U	0.023 U	0.018 U	**0.038 J**	0.023 U	**0.029 J**	0.024 U	0.020 U	0.018 U	0.013 U	0.018 U	0.020 U	0.015 U	0.022 U	**0.029 J**
MW-4 Dup																				
7-Jul-03	**0.11**	0.020 U	0.020 U	0.020 U	0.020 U	0.022 U	**0.12**	0.020 U	**0.23**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	**0.40**	0.020 U	0.020 U	0.020 U	0.020 U	0.022 U	**0.12**	0.020 U	**0.52**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.024**	**0.024**
29-Oct-04	**1.10**	**0.023**	**0.030**	**0.020**	0.020 U	0.020 U	**0.047**	1.100 Ui	**1.22**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.029**	**0.029**
MW-5																				
28-Feb-03	**1.3**	**0.10**	**0.55**	**0.2**	**1.2**	**31 D**	**19 D**	**2.3**	**56**	**0.72 J**	**0.65 J**	**0.44 J**	**0.42 J**	**0.52 J**	**0.044 J**	**0.96 J**	**3.1 J**	**0.49 J**	**4.3 J**	**11.6 J**
30-Jan-04	**0.6**	0.02 U	**0.34**	**0.081**	**0.48**	**1.5**	**2.9**	**1.1**	**7.0**	**0.18**	**0.061**	**0.046**	**0.046**	**0.029**	0.020 U	**0.22**	**1.5**	**0.03**	**1.8 J**	**3.9 J**
5-May-05	**2.1**	0.71 Ui	**1.0**	**0.66**	**3.4**	**1.8 D**	**5.3**	**7.3**	**22**	**0.099**	**0.028**	**0.021**	**0.021**	**0.023**	0.020 U	**0.15**	**2.2**	**0.022**	**2.0**	**4.6**
16-Feb-06	**0.49**	0.77 Ui	**0.24**	**0.056**	**0.28**	**0.30**	**0.40**	**0.75**	**2.52**	**0.14**	**0.032**	**0.033**	**0.032**	0.020 U	0.020 U	**0.2**	**1.3**	0.020 U	**1.9**	**3.6**
9-May-06	**1.7**	0.32 Ui	**0.66**	**0.32**	**1.6**	**0.42**	1.8 Ui	**4.9**	**9.6**	**0.086**	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	**0.14**	**2.8**	0.021 U	**2.7**	**5.7**
28-Dec-06	**0.34**	0.058 Ui	**0.16**	**0.055**	**0.22**	**0.019 J**	0.24 Ui	**0.61**	**1.40**	**0.077**	**0.023**	**0.018 J**	**0.018 J**	**0.0088 J**	**0.0057 J**	**0.11**	**0.85**	**0.0092 J**	**1.0**	**2.1**
16-Feb-07	**1.0**	0.16 Ui	**0.39**	**0.24**	**0.77**	**0.042**	0.38 Ui	**1.8**	**4.2**	**0.21**	**0.057**	**0.058**	**0.045**	**0.023**	0.020 U	**0.30**	**2.4**	0.020 U	**2.8**	**5.9**
30-May-07	**4.4**	0.79 Ui	**1.6**	**1.0**	**4.7**	**0.15**	**1.4**	**8.2**	**21.5**	**0.33**	**0.25**	**0.26**	**0.092**	**0.15**	0.0025 U	**0.45**	**2.8**	**0.13**	**2.7**	**7.2**
28-Feb-08	**0.46**	**0.046 J**	**0.34**	-	**0.46**	**0.023 J**	0.011 U	**0.73**	**2.06**	**0.12**	**0.011 J**	**0.016 J**	**0.044 JJ3**	**0.0037 J**	**0.0024 J**	**0.11**	**1.2**	**0.0019 J**	**1.6**	**3.1 J**
23-May-08	**3.0**	**0.54**	**1.8**	-	**3.9**	0.0022 U	0.012 U	**8.5**	**17.7**	**0.14**	**0.013 J**	**0.016 J**	**0.0085 J**	0.0012 U	0.0011 U	**0.14**	**4.2**	0.0013 U	**3.4**	**7.9**
25-Feb-09	**3.0**	**0.44**	**2.0**	-	**3.8**	**0.52**	**2.5**	**8.8**	**21.1**	**0.17**	**0.026 J**	**0.036 J**	**0.0099 J**	**0.0062 J**	**0.0015 J**	**0.15**	**3.7**	**0.0044 J**	**3.4**	**7.5**
19-May-09	**3.3**	**0.59**	**2.2**	-	**4.0**	0.014 U	**2.3**	**9.9**	**22.3**	**0.11**	**0.025 J**	**0.035 J**	0.020 U	0.018 U	0.013 U	**0.11**	**3.1**	0.015 U	**2.4**	**5.8**
MW-5 Dup																				
28-Feb-03	**1.3**	**0.40**	**0.93**	**0.19**	**1.3**	**31 D**	**17 D**	**3.1**	**55**	**2.8 J**	**3.6 J**	**2.2 J**	**1.9 J**	**2.7 J**	**0.27 J**	**3.4 J**	**6.5 J**	**2.5 J**	**9.1 J**	**35.0 J**
30-Jan-04	**0.5**	0.020 U	**0.24**	**0.057**	**0.32**	**1.1**	**2.1**	**0.8**	**5.1**	**0.14**	**0.050**	**0.035**	**0.041**	**0.024**	0.020 U	**0.17**	**1.1**	**0.022**	**1.4**	**3.0**
9-May-06	**1.7**	0.330 Ui	**0.57**	**0.32**	**1.6**	**0.43**	1.7 Ui	**4.8**	**9.4**	**0.086**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.15**	**2.7**	0.020 U	**2.6**	**5.5**

Please refer to notes on the last page of this table.

Table B-9 - Groundwater Chemical Analyses Results: PAHs
Brix Maritime Co.
Portland, Oregon

Sample Location and Date	Low Molecular Weight PAHs (LPAHs)									High Molecular Weight PAHs (HPAHs)										
	Acenaphthene	Acenaphthylene	Anthracene	Dibenzofuran	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	**Total LPAHs**	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)pyrene	Dibenz(a,h)anthracene	Chrysene	Fluoranthene	Ideno(1,2,3-cd)pyrene	Pyrene	**Total HPAHs**
MW-6	Concentration in microgram per liter (µg/L) parts per billion (ppb)																			
7-Jul-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
30-Jan-04	0.020 U	**0.042**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.025**	**0.067**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
29-Apr-04	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.020 U
29-Oct-04	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.023**	**0.023**
5-May-05	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	**0.027**	**0.082**	0.022 U	**0.109**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
22-Nov-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
9-May-06	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	**0.060**	**0.060**
28-Dec-06	**0.040**	0.020 U	0.020 U	0.020 U	**0.011 J**	**0.016 J**	**0.028**	**0.023**	**0.118**	**0.0051 J**	0.020 U	0.020 U	0.020 U	0.020 U	**0.0045 J**	**0.0053 J**	0.020 U	0.020 U	**0.099**	**0.114 J**
16-Aug-07	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	**0.020**	0.019 U	**0.020**	0.0190 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
12-Nov-07	0.0018 U	0.0014 U	0.00045 U	0.050 U	0.0011 U	0.002 U	0.011 U	0.00073 U	0.011 U	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.00068 U	0.00065 U	0.0012 U	0.00083 U	0.0012 U
23-May-08	0.0021 U	**0.049 J**	**0.023 J**	-	0.0013 U	**0.020 J**	**0.039 J**	**0.020 J**	**0.151 J**	0.0012 U	0.0012 U	0.0012 U	0.0025 U	**0.012 J**	0.0011 U	0.00080 U	0.00077 U	**0.0067 J**	**0.019 J**	**0.0377 J**
20-Nov-08	0.0018 U	0.0014 UJ3	0.00045 U	-	0.0011 U	**0.011 J**	**0.14 J**	0.00073 U	**0.15 J**	0.001 U	0.001 UJ3	0.001 U	0.0021 U	0.0011 UJ3	0.00096 UJ3	0.00068 UJ3	0.00065 U	0.0012 UJ3	**0.0072 JJ3**	**0.0072 J**
19-May-09	0.013 UJ3	0.017 UJ3	0.012 UJ3	-	0.012 UJ3	0.014 U	0.023 U	0.018 U	0.023 U	0.023 U	0.013 UJ3	0.024 U	0.020 U	0.018 UJ3	0.013 UJ3	0.018 U	0.012 U	0.015 UJ3	0.022 U	0.024 U
MW-7																				
7-Jul-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
30-Jan-04	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
29-Apr-04	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.040**	**0.093**	0.020 U	**0.133**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
29-Oct-04	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	**0.041**	**0.083**	0.019 U	**0.124**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
5-May-05	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	**0.047**	0.022 U	**0.047**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
22-Nov-05	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.022 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
9-May-06	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.020 U	0.022 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
28-Dec-06	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.014 J**	**0.028**	0.020 U	**0.042 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.005 J**	**0.005 J**
16-Aug-07	0.0044 U	0.0034 U	0.0036 U	0.0046 U	0.0038 U	0.0023 U	**0.021**	0.0050 U	**0.021**	0.0026 U	0.0043 U	0.0023 U	0.0025 U	0.0029 U	0.0025 U	0.0034 U	0.0044 U	0.0026 U	0.0035 U	0.0044 U
12-Nov-07	0.0018 U	0.0014 U	0.00045 U	-	0.0011 U	0.0020 U	0.011 UJ4	0.00073 U	0.011 U	0.0010 U	0.0010 U	0.0010 U	0.0021 U	0.0011 U	0.00096 U	0.00068 U	0.00065 U	0.0012 U	0.00083 U	0.0021 U
23-May-08	0.0018 U	**0.012 J**	**0.0077 J**	-	0.0011 U	**0.030 J**	**0.060 J**	**0.019 J**	**0.129 J**	0.0011 U	0.0011 U	0.0011 U	0.0022 U	0.0012 U	0.0010 U	0.00071 U	0.00068 U	0.0012 U	0.00087 U	0.0022 U
20-Nov-08	**0.0033 JJ3**	0.0017 U	**0.0025 J**	-	**0.0019 JJ3**	0.0023 UJ3	0.0130 UJ3	**0.0069 J**	**0.015 J**	**0.020 J**	**0.028 J**	0.0012 U	0.0025 U	0.0013 U	0.0011 U	**0.022 J**	**0.0030 J**	0.0014 U	**0.0058 J**	**0.079 J**
19-May-09	0.013 UJ3	0.017 UJ3	0.012 UJ3	-	0.020 UJ3	0.014 U	0.023 U	0.018 U	0.023 U	0.023 U	0.013 UJ3	0.024 U	0.020 U	0.018 UJ3	0.013 UJ3	0.018 U	0.020 U	0.015 UJ3	0.022 U	0.024 U
MW-8																				
25-Feb-05	**0.029**	0.020 U	**0.037**	0.020 U	**0.029**	**0.22**	**0.22**	**0.051**	**0.59**	0.020 U	**0.024**	**0.020**	0.020 U	**0.029**	0.020 U	0.020 U	**0.032**	**0.023**	**0.036**	**0.16**
Seep																				
29-Sep-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.027**	**0.037**	**0.064**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.024**	0.020 U	**0.11**	**0.134**
JSCS SLVs:	0.2	0.2	0.2	3.7	0.2	0.2	0.2	0.2	-	0.018	0.018	0.018	0.018	0.2	0.018	0.018	0.2	0.018	0.2	-

Notes:
1. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270C-SIM.
2. Bolding denotes a detected concentration.
3. - = Not analyzed for or not available.
4. U = Not detected above the indicated laboratory method reporting limit (before 2007) or method detection limit (2007 and after).
5. J = Associated value is below the lowest calibration point and is estimated.
6. J3/J4 = Associated batch quality control (QC) outside the established QC range for precision (J3) or accuracy (J4).
7. Screening levels are Joint Source Control Strategy (JSCS) screening level values (SLVs) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision).
8. Shaded concentrations exceed JSCS SLVs; the associated SLV is also shaded.

Table B-10 - Groundwater Chemical Analyses Results: VOCs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location and Date	BTEX				Other VOCs								
	Benzene	Toluene	Ethylbenzene	Total Xylenes	*n*-Butylbenzene	*sec*-Butylbenzene	*tert*-Butylbenzene	Isopropylbenzene	4-Isopropyltoluene	Naphthalene	*n*-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
Borings	Concentration in microgram per liter (µg/L) parts per billion (ppb)												
B-14 29-May-01*	1.00 U	2.06	1.00 U	2.00 U	-	-	-	1.00 U	-	2.00 U	1.00 U	1.00 U	1.00 U
B-15 29-May-01	1.00 U	1.00 U	1.00 U	2.00 U	-	-	-	1.00 U	-	2.00 U	1.00 U	1.00 U	1.00 U
B-15 Dup. 29-May-01	1.00 U	1.00 U	1.00 U	2.00 U	-	-	-	1.00 U	-	2.00 U	1.00 U	1.00 U	1.00 U
B-17 29-May-01	125	6.2	723	420	-	-	-	115	-	210 D	420	627	190
B-18 29-May-01	1.00 U	1.00 U	1.00 U	2.00 U	-	-	-	1.00 U	-	2.00 U	1.00 U	1.00 U	1.00 U
B-19 24-May-01	1.00 U	1.00 U	1.00 U	2.00 U	-	-	-	1.00 U	-	2.00 U	1.00 U	1.00 U	1.00 U
B-20 25-May-01	1.00 U	1.00 U	1.00 U	2.00 U	-	-	-	1.00 U	-	2.00 U	1.00 U	1.00 U	1.00 U
MW-1													
28-Feb-03	5.7	0.71	37	62	21	10	2.0 U	19	2.0 U	31	65 D	140 D	26
7-Jul-03	1.3	1.1	11	20	14	8.2	2.0 U	31	2.0 U	22	64 D	46	9.3
16-Oct-03	32 D	13 D	270 D	470 D	150 Ui	28 D	10 U	75 D	10 U	460 D	250 D	1,200 D	280 D
30-Jan-04	4.1	0.96	78 D	151	46	17	2.0 U	36	2.0 U	210 D	140 D	510 D	100 D
29-Apr-04	5.3 D	2.1 D	120 D	206 D	43 D	20 D	4.0 U	54 D	4.0 U	250 D	150 D	590 D	150 D
26-Jul-04	4.0 D	1.3 U	93 D	149 D	40 D	18 D	5.0 U	47 D	5.0 U	270 JD	160 D	610 D	130 D
29-Oct-04	4.0 D	1.3 U	82 D	112 D	39 D	16 D	5.0 U	45 D	5.0 U	230 D	140 D	560 D	110 D
25-Feb-05	31 D	2.7	210 D	246 D	90 D	39 D	10 U	89 D	10 U	470 D	350 D	870 D	160 D
5-May-05	16 D	2.2 D	170 D	189 D	140 Ui	32 D	8.0 U	87 D	8.0 U	280 D	260 D	530 D	100 D
2-Aug-05	17	1.9	170 D	200 D	62 D	28 D	2.0 U	69 D	3.2	330 D	220 D	590 D	140 D
22-Nov-05	22	1.7	170 D	190 D	85 D	50	2.2	100 D	4.0	380 D	400 D	780 D	160 D
16-Feb-06	15 D	5.0 U	150 D	173 D	53 D	20 U	20 U	38 D	20 U	340 D	170 D	670 D	150 D
9-May-06	19 D	2.5 U	220 D	251 D	82 D	31 D	10 U	78 D	10 U	440 D	280 D	940 D	210 D
31-Aug-06	0.5 U	0.5 U	2.4	1.7	22	11	2.0 U	18	2.0 U	2.6	36	5.1	2.0 U
28-Dec-06	0.41 J	0.12 J	1.7	0.78	14	5.5	0.26 J	5.3	2.0 U	2.1	22	1.3 J	0.17 J
16-Feb-07	1.1	0.12 J	4.7	1.6 J	5.9	1.9 J	2.0 U	3.6	2.0 U	2.5	12	4.8	0.59 J
30-May-07	0.5 U	0.55	5.0	0.54	45	20	2.0 U	39	2.0 U	19	130 D	2.2	2.0 U
16-Aug-07	0.5 U	0.58	2.1	1.0 U	25	14	2.0 U	23	2.0 U	2.0 U	64	2.0 U	2.0 U
12-Nov-07	0.39 J	0.49 J	6.4	3.2	22	13	0.68 J	27	1.0 U	8.0	65	8.9	1.5
28-Feb-08	0.60 J	5.0 U	2.1	3.0 U	1.1	0.72 J	1.0 U	1.5	1.0 U	2.7 J	5.3	2.5	1.2
23-May-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
21-Aug-08	1.0 U	0.32 J	0.43 J	3.0 U	1.0 U	7.5	0.35 J	14	1.0 U	1.2 J	31	1.0 U	1.0 U
20-Nov-08	1.0 U	0.40 J	3.1	3.0 U	21	13	0.74 J	32	1.0 U	5.0 U	89	0.69 J	1.0 U
25-Feb-09	3.2	0.43 J	15	2.4 J	32	15	0.75 J	36	1.0 U	8.7	140	7.6	1.2
19-May-09	1.0 U	0.38 J	2.0	3.0 U	34	19	1.0 U	31	1.0 U	5.0 U	110	1.0 U	1.1
21-Aug-09	1.0 U	0.35 J	0.60 J	3.0 U	9.7	8.0	0.46 J	16	1.0 U	1.2 J	35	0.42 J	1.0 U
MW-1 Dup.													
29-Apr-04	4.7 D	1.9 D	110 D	192 D	39 D	18 D	4.0 U	52 D	4.0 U	260 D	150 D	570 D	140 D
26-Jul-04	3.9 D	1.3 U	89 D	138 D	40 D	18 D	5.0 U	46 D	5.0 U	280 JD	160 D	640 D	120 D
5-May-05	14 D	2.1 D	160 D	178 D	140 Ui	31 D	8.0 U	88 D	8.0 U	250 D	250 D	490 D	96 D
31-Aug-06	0.5 U	0.5 U	2.0	1.23	17	11	2.0 U	17	2.0 U	2.0 U	37	2.9	2.0 U
28-Dec-06	0.55	0.16 J	2.0	0.8	17	6.7	0.28 J	6.3	2.0 U	2.4	26	1.3 J	0.18 J
16-Aug-07	0.5 U	0.5 U	1.1	1.0 U	20	11	2.0 U	17	2.0 U	2.0 U	44	2.0 U	2.0 U
12-Nov-07	1.0 U	0.35 J	1.7	0.88 J	12	7.2	0.45 J	13	1.0 U	2.8 J	32	3.7	0.65 J
20-Nov-08	1.0 U	5.0 U	1.1	3.0 U	6.1	4.3	1.0 U	10	1.0 U	5.0 U	26	0.32 J	1.0 U
19-May-09	1.0 U	5.0 U	1.9	3.0 U	27	18	0.83 J	30	1.0 U	1.5 JJ3	98	0.59 J	1.0 U

Please refer to notes on the last page of this table

Table B-10 - Groundwater Chemical Analyses Results: VOCs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location and Date	BTEX				Other VOCs								
	Benzene	Toluene	Ethylbenzene	Total Xylenes	*n*-Butylbenzene	*sec*-Butylbenzene	*tert*-Butylbenzene	Isopropyl-benzene	4-Isopropyltoluene	Naphthalene	*n*-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-2	Concentration in microgram per liter (µg/L) parts per billion (ppb)												
28-Feb-03	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Oct-03	0.5 U	0.5 U	0.5 U	**0.86**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
9-May-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
28-Dec-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
23-May-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
20-Nov-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
19-May-09	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
MW-3													
30-Jul-02	**0.73**	**14**	**0.51**	**5.5**	2.0 U	2.0 U	2.0 U	0.5 U	2.0 U	2.0 U	**2.2**	2.0 U	2.0 U
28-Feb-03	0.5 U	**0.63**	0.5 U	**2.4**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
7-Jul-03	0.5 U	**0.80**	0.5 U	**2.3**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Oct-03	0.5 U	**1.9**	**0.51**	**4.0**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
30-Jan-04	0.5 U	0.5 U	0.5 U	**1.36**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Apr-04	0.5 U	0.5 U	0.5 U	**2.3**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
26-Jul-04	0.5 U	**0.50**	0.5 U	**2.0**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Oct-04	0.5 U	0.5 U	0.5 U	**2.1**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
25-Feb-05	0.5 U	0.5 U	0.5 U	**2.3**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
5-May-05	0.5 U	0.5 U	0.5 U	**2.7**	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2-Aug-05	0.5 U	0.5 U	0.5 U	**2.4**	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
22-Nov-05	0.5 U	0.5 U	0.5 U	**2.2**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Jan-06	0.5 U	0.5 U	0.5 U	**1.2**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
9-May-06	0.5 U	0.5 U	0.5 U	**2.3**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
28-Dec-06	0.5 U	**0.11 J**	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Feb-07	0.5 U	0.5 U	0.5 U	**1.5**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	**0.11 J**	**0.35 J**	**0.15 J**
30-May-07	0.5 U	0.5 U	0.5 U	**1.6**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
12-Nov-07	1.0 U	5.0 U	1.0 U	**1.8 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.35 J**	1.0 U	**0.39 J**	1.0 U
28-Feb-08	1.0 U	**0.34 J**	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
23-May-08	1.0 U	5.0 U	1.0 U	**1.8 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.53 J**	1.0 U	**0.57 J**	1.0 U
21-Aug-08	1.0 U	5.0 U	1.0 U	**1.2 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.34 J**	1.0 U	1.0 U	1.0 U
20-Nov-08	1.0 U	5.0 U	1.0 U	**2.0 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	**0.48 J**	1.0 U
25-Feb-09	1.0 U	5.0 U	1.0 U	**1.2 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
19-May-09	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
21-Aug-09	1.0 U	5.0 U	1.0 U	**1.4 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
MW-3 Dup.													
2-Aug-05	0.5 U	0.5 U	0.5 U	**2.4**	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
22-Nov-05	0.5 U	0.5 U	0.5 U	**2.1**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Jan-06	0.5 U	0.5 U	0.5 U	**1.2**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
21-Aug-08	1.0 U	5.0 U	1.0 U	**1.2 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U

Please refer to notes on the last page of this table

Table B-10 - Groundwater Chemical Analyses Results: VOCs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location and Date	BTEX				Other VOCs								
	Benzene	Toluene	Ethylbenzene	Total Xylenes	*n*-Butylbenzene	*sec*-Butylbenzene	*tert*-Butylbenzene	Isopropyl-benzene	4-Isopropyltoluene	Naphthalene	*n*-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-4	Concentration in microgram per liter (µg/L) parts per billion (ppb)												
29-Jul-02	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	**2.3**	2.0 U	2.0 U
28-Feb-03	**0.76**	0.5 U	**2.3**	**2.6**	**3.1**	2.0 U	2.0 U	**29**	2.0 U	**45**	**35**	**3.8**	**2.2**
7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Oct-03	0.5 U	0.5 U	0.5 U	**0.93**	2.0 U	**4.4**	2.0 U	**7.1**	2.0 U	2.0 U	**5.5**	2.0 U	2.0 U
16-Aug-07	0.5 U	0.5 U	0.5 U	**0.94**	2.0 U	**3.9**	2.0 U	**6.2**	2.0 U	2.0 U	**8.7**	2.0 U	2.0 U
30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2-Aug-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Feb-06	**4.0**	0.5 U	**1.4**	**23**	**4.0**	**4.7**	2.0 U	**26**	2.0 U	**100**	**34**	**57**	**8.4**
16-Mar-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	**3.7**	**2.9**	**2.2**	2.0 U
9-May-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
31-Aug-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	**3.8**	2.0 U	**4.7**	2.0 U	2.0 U	**2.1**	2.0 U	2.0 U
28-Dec-06	**0.34 J**	**0.13 J**	**0.18 J**	**4.5**	2.0 U	2.0 U	2.0 U	**0.15 J**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Feb-07	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	**0.23 J**	2.0 U	**0.12 J**	2.0 U	**0.57 J**	2.0 U	2.0 U	2.0 U
30-May-07	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	**3.9**	2.0 U	**6.2**	2.0 U	2.0 U	**8.7**	2.0 U	2.0 U
12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	**0.63 J**	**1.7**	**0.33 J**	**2.5**	1.0 U	5.0 U	**1.7**	**0.79 J**	**0.83 J**
28-Feb-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.65 J**	1.0 U	1.0 U	1.0 U
23-May-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
21-Aug-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
20-Nov-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
25-Feb-09	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
19-May-09	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
21-Aug-09	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
MW-4 Dup.													
7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Oct-03	0.5 U	0.5 U	0.5 U	**0.94**	2.0 U	**4.8**	2.0 U	**7.5**	2.0 U	2.0 U	**6.3**	2.0 U	2.0 U
25-Feb-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
MW-5													
28-Feb-03	0.5 U	0.5 U	**15**	**24**	**87 D**	**27**	2.0 U	**24**	2.0 U	**23**	**110 D**	**75 D**	**26**
30-Jan-04	0.5 U	0.5 U	**1.8**	**9.7**	**82 D**	**38**	2.0 U	**9.7**	2.0 U	**2.9**	**49**	2.0 U	2.0 U
5-May-05	0.5 U	0.5 U	**17**	**50**	120 Ui	**41**	2.0 U	**50**	2.0 U	**8.0**	**140 D**	2.0 U	2.0 U
16-Feb-06	0.5 U	0.5 U	**0.89**	**3.4**	**16**	**5.9**	2.0 U	**3.4**	2.0 U	**3.0**	**16**	2.0 U	2.0 U
9-May-06	0.5 U	0.5 U	**3.7**	**20**	**67**	**23**	2.0 U	**20**	2.0 U	2.0 U	**79 D**	2.0 U	2.0 U
28-Dec-06	0.5 U	0.5 U	**0.31 J**	**9.0**	**41**	**17**	**0.77 J**	**9.0**	2.0 U	**1.1 J**	**34**	2.0 U	2.0 U
16-Feb-07	**0.17 J**	**0.38 J**	**0.61**	**11**	**36**	**12**	**0.53 J**	**11**	2.0 U	2.0 U	**37**	2.0 U	2.0 U
30-May-07	0.5 U	**0.60**	**6.0**	**53**	**95 D**	**40**	2.00 U	**53**	2.0 U	**2.2**	**210 D**	2.0 U	2.0 U
28-Feb-08	1.0 U	**0.34 J**	1.0 U	3.0 U	**6.0**	**2.3**	1.0 U	**1.1**	1.0 U	**0.73 J**	**3.8**	1.0 U	1.0 U
23-May-08	**0.30 J**	**0.63 J**	**1.8**	3.0 U	**64**	**26**	**1.2**	**30**	1.0 U	5.0 U	**93**	**0.47 J**	1.0 U
25-Feb-09	**1.7**	**0.83 J**	**7.6**	3.0 U	**35**	**19**	**0.86 J**	**63**	1.0 U	**6.8**	**170**	**0.67 J**	1.0 U
19-May-09	1.0 U	**0.53 J**	**2.0**	3.0 U	**62**	**34**	**1.3**	**86**	1.0 U	**2.6 JJ3**	**220**	**0.32 J**	1.0 U
MW-5 Dup.													
28-Feb-03	0.5 U	0.5 U	**16**	**25**	**110 D**	**30**	2.0 U	**25**	**2.3**	**25**	**110 D**	**99 D**	**30**
30-Jan-04	0.5 U	0.5 U	**2.0**	**11**	**84 D**	**39**	2.0 U	**11**	2.0 U	**3.4**	**56**	2.0 U	2.0 U
9-May-06	0.5 U	0.5 U	**3.7**	**20**	**66**	**23**	2.0 U	**20**	2.0 U	2.0 U	**73 D**	2.0 U	2.0 U

Please refer to notes on the last page of this table

Table B-10 - Groundwater Chemical Analyses Results: VOCs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location and Date	BTEX				Other VOCs								
	Benzene	Toluene	Ethylbenzene	Total Xylenes	*n*-Butylbenzene	*sec*-Butylbenzene	*tert*-Butylbenzene	Isopropyl-benzene	4-Isopropyltoluene	Naphthalene	*n*-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-6	Concentration in microgram per liter (µg/L) parts per billion (ppb)												
7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Oct-03	0.5 U	0.5 U	0.5 U	**0.74**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
9-May-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
23-May-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
20-Nov-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
19-May-09	1.0 U	5.0 U	1.0 U	3.0 U	**0.40 J**	1.0 U	1.0 U	1.0 U	1.0 U	**0.42 JJ3**	**0.75 J**	1.0 U	1.0 U
MW-7													
7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Oct-03	0.5 U	0.5 U	0.5 U	**0.82**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
9-May-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
28-Dec-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
23-May-08	1.0 U	**0.58 J**	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
20-Nov-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
19-May-09	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
MW-8													
25-Feb-05	**0.54**	**5.8**	0.5 U	**0.86**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
JSCS SLVs:	1.2	9.8	7.3	200	-	-	-	660	-	0.2	-	-	-

Notes:
1. Volatile organic compound (VOCs) by EPA Method 8260B.
2. Only detected VOCs at the site are shown.
3. Bolding denotes a detected concentration.
4. - = Not available.
5. *Methyl-tert-butyl ether also detected at 2.39 µg/L.
6. D = The reported result is from a dilution.
7. i = The reporting limit is elevated due to matrix interference.
8. J = Associated value is below the lowest calibration point and is estimated.
9. J3 = Associated batch quality control (QC) is outside the established QC range for precision.
10. U = Not detected above the indicated laboratory method reporting limit.
11. Shading denotes a detected concentration exceeding a Joint Source Control Strategy (JSCS) screening level values (SLVs) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision). The exceeded SLV is also shaded.

Table B-11 - Groundwater Chemical Analyses Results: Lead
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location	Date	Lead Total	Lead Dissolved
Borings		Concentration in µg/L (ppb)	
B-15	29-May-01	5 U	-
B-17	29-May-01	5 U	-
B-18	29-May-01	5 U	-
B-19	24-May-01	5 U	-
B-20	25-May-01	5 U	-
MW-1	28-Feb-03	**288**	**0.03**
	7-Jul-03	**1.34**	**0.05**
	16-Oct-03	**1.41**	**0.06**
	30-Jan-04	**0.05**	0.02 U
	29-Apr-04	**0.11**	0.02 U
	26-Jul-04	**2.35**	**2.12**
	29-Oct-04	**0.27**	**0.03**
	25-Feb-05	**0.23**	0.02 U
	5-May-05	**0.08**	**0.06**
MW-1 Duplicate	29-Apr-04	**0.11**	**0.04**
	26-Jul-04	**1.81**	**1.93**
	25-Feb-05	**0.22**	**0.02**
	5-May-05	**0.09**	0.02 U
MW-2	28-Feb-03	**57.6**	**0.04**
	7-Jul-03	**0.04**	**0.05**
	16-Oct-03	**25.9**	**0.58**
	13-Jan-04	**0.03**	0.02 U
	29-Apr-04	0.02 U	**0.02**
	26-Jul-04	**13**	**3.39**
	29-Oct-04	**31.9**	**0.11**
	5-May-05	**0.52**	**0.09**
MW-3	30-Jul-02	**0.88**	**0.13**
	28-Feb-03	**65.9**	**0.05**
	7-Jul-03	**0.36**	**0.08**
	16-Oct-03	**0.22**	**0.05**
	13-Jan-04	**0.10**	**0.05**
	29-Apr-04	**0.05**	**0.02**
	26-Jul-04	**0.13**	**1.00**
	29-Oct-04	**0.05**	**0.06**
	25-Feb-05	**0.03**	0.02 U
	5-May-05	**0.02**	**0.05**
MW-4	29-Jul-02	**0.36**	0.02 U
	28-Feb-03	**0.70**	0.02 U
	7-Jul-03	**0.78 J**	**0.02**
	16-Oct-03	**0.46**	**0.03**
	13-Jan-04	**0.08**	**0.03**
	29-Apr-04	**0.47**	**0.09**
	26-Jul-04	**0.04**	**0.03**
	29-Oct-04	**0.16**	0.02 U
	25-Feb-05	**0.12**	**0.02**
	5-May-05	0.02 U	0.02 U
MW-4 Duplicate	7-Jul-03	**0.18 J**	**0.03**
	16-Oct-03	**0.54**	0.02 U
	29-Oct-04	**0.16**	0.02 U

Please refer to notes on the last page of this table.

Table B-11 - Groundwater Chemical Analyses Results: Lead
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location	Date	Lead	
		Total	Dissolved
		Concentration in µg/L (ppb)	
MW-5	28-Feb-03	**131**	**0.06**
	13-Jan-04	**0.06**	**0.02**
	5-May-05	0.02 U	**0.09**
MW-5 Duplicate	28-Feb-03	**116**	**0.03**
	13-Jan-04	**0.08**	**0.02**
MW-6	7-Jul-03	**0.10**	0.02 U
	16-Oct-03	**0.03**	**0.07**
	13-Jan-04	**0.09**	0.02 U
	29-Apr-04	**0.08**	**0.03**
	26-Jul-04	**0.51**	**0.10**
	29-Oct-04	**0.26**	**0.03**
	5-May-05	**0.29**	**0.05**
MW-7	7-Jul-03	**0.17**	0.02 U
	16-Oct-03	0.02 U	**0.03**
	13-Jan-04	**0.10**	0.02 U
	29-Apr-04	0.02 U	**0.02**
	26-Jul-04	**0.18**	**0.04**
	29-Oct-04	**0.04**	**0.03**
	5-May-05	0.02 U	**0.07**
MW-8	25-Feb-05	**0.17**	**0.22**
	JSCS SLV:	0.54	

Notes:
1. Lead by EPA Method 6010.
2. Bolding denotes a detected concentration.
3. - = Not available.
4. U = Not detected above the indicated laboratory method detection limit.
5. J = Estimated concentration.
6. Shading denotes a detected concentration exceeding a Joint Source Control Strategy (JSCS) screening level value (SLV) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision). The exceeded SLV is also shaded.

Table B-12 - Groundwater Chemical Analyses Results: Other Metals
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Sample Location	Date	Arsenic		Barium		Cadmium		Chromium	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
		Concentration in microgram per liter (µg/L) parts per billion (ppb)							
MW-1	25-Feb-05	**12.8**	**12.0**	**190**	**194**	**0.15**	**0.15**	**1.4**	**1.2**
MW-1 Duplicate	25-Feb-05	**12.2**	**12.8**	**194**	**195**	**0.15**	**0.13**	**1.2**	**1.3**
MW-1	5-May-05	**8.9**	**8.8**	**99.8**	**99**	**0.06**	**0.07**	**1.0**	**1.4**
MW-1 Duplicate	5-May-05	**9.1**	**8.7**	**100**	**95.8**	**0.08**	**0.06**	**1.0**	**1.3**
MW-2	5-May-05	**0.7**	**0.5**	**68.1**	**63**	**0.09**	**0.10**	**0.9**	**0.8**
MW-3	25-Feb-05	**4.1**	**4.3**	**53.8**	**54.6**	**0.07**	**0.06**	**0.3**	**0.5**
	5-May-05	**6.0**	**6.4**	**40.6**	**39.6**	**0.04**	**0.04**	**0.7**	**0.7**
MW-4	25-Feb-05	**1.3**	**1.1**	**21.5**	**18.4**	**0.10**	**0.06**	**0.4**	**0.3**
	5-May-05	0.5 U	0.5 U	**24.7**	**24.1**	**0.06**	**0.05**	**0.3**	**0.6**
MW-5	5-May-05	**13.4**	**14.1**	**86.5**	**85.8**	**0.07**	**0.06**	**0.8**	**1.1**
MW-6	5-May-05	**8.4**	**8.5**	**66.7**	**65.7**	**0.11**	**0.07**	**0.8**	**0.9**
MW-7	5-May-05	**9.8**	**9.8**	**40.3**	**39.8**	**0.06**	**0.06**	**0.4**	**0.7**
MW-8	25-Feb-05	**1.3**	**1.1**	**87.2**	**85.1**	**0.12**	**0.10**	**0.8**	**0.4**
	JSCS SLVs:	0.045		-		0.094		100	

Sample Location	Date	Copper		Manganese		Zinc	
		Total	Dissolved	Total	Dissolved	Total	Dissolved
		Concentration in µg/L (ppb)					
MW-1	25-Feb-05	**0.2**	**0.1**	**5,980**	**6,150**	**2.2**	**1.5**
MW-1 Duplicate	25-Feb-05	**0.3**	0.1 U	**5,880**	**6,190**	**2.3**	**1.4**
MW-1	5-May-05	**0.7**	**0.5**	**4,190**	**4,280**	**2.0**	**2.4**
MW-1 Duplicate	5-May-05	**0.9**	**0.6**	**4,250**	**4,140**	**2.2**	**1.7**
MW-2	5-May-05	**3.3**	**2.3**	**905**	**1,270**	**5.9**	**4.4**
MW-3	25-Feb-05	0.1 U	0.1 U	**2,230**	**2,130**	**3.3**	**1.6**
	5-May-05	**0.2**	**0.3**	**1,580**	**1,640**	**3.4**	**1.5**
MW-4	25-Feb-05	**1.1**	**0.1**	**558**	**591**	**5.4**	**1.7**
	5-May-05	**1.1**	**0.8**	**2,160**	**2,330**	**3.8**	**3.4**
MW-5	5-May-05	**0.5**	**0.5**	**5,240**	**5,360**	**3.6**	**2.7**
MW-6	5-May-05	**0.7**	**0.5**	**4,160**	**4,170**	**6.3**	**4.2**
MW-7	5-May-05	**0.6**	**0.7**	**2,300**	**2,200**	**3.8**	**4.3**
MW-8	25-Feb-05	**0.3**	0.1 U	**3,090**	**3,060**	**20.2**	**20.0**
	JSCS SLVs:	2.7		50		36	

Notes:
1. Metals by EPA Method 6010.
2. Bolding denotes a detected concentration.
3. U = Not detected above the indicated laboratory method detection limit.
4. Shading denotes a detected concentration exceeding a Joint Source Control Strategy (JSCS) screening level value (SLV) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision). The exceeded SLV is also shaded.

APPENDIX C
Stormwater Analytical Laboratory Reports

APPENDIX C

Stormwater Analytical Laboratory Reports

1.0 INTRODUCTION

This appendix describes the analytical testing program for evaluating the stormwater pathway and documents the results of the analytical data quality assurance (QA) review. Catch basin sediment samples were submitted to Analytical Resources, Inc. (ARI) in Tukwila, Washington, and Environmental Science Corp. (ESC) in Mt. Juliet, Tennessee. The stormwater outfall samples were submitted to Pace Analytical Services (Pace) in Seattle, Washington; TestAmerica in Beaverton, Oregon, and ESC. The samples were analyzed for the site-specific and selected area-wide Portland Harbor contaminants of interest (COIs). Copies of the analytical laboratory reports are included at the end of this appendix (PDF version) or on the CD in Appendix D (hard copy version).

The QA review included examination and validation of the laboratories' summary reports, including:

- Analytical methods;
- Reporting limits;
- Holding times;
- Surrogates, spikes, and blanks;
- Initial and continuing calibration verification;
- Custody records; and
- Laboratory duplicates.

The QA review did not include a review of raw data.

2.0 ANALYTICAL METHODS

Catch basin sediment and stormwater samples were analyzed using Northwest or Environmental Protection Agency (EPA) SW-846 Methods. The specific analytical methods and analytical laboratories were selected to achieve the Joint Source Control Strategy Screening Level Values or the lowest method reporting limit (MRL) or method detection limit (MDL) to facilitate the data evaluation within the context of both the Property and the Portland Harbor Superfund Site study area.

2.1 Catch Basin Sediment Samples

Catch basin sediment samples were collected on February 19, 2008, and submitted to ARI or ESC for analyses. Four composite sediment samples (CA-A Upper, CB-A Lower, CB-B Upper, and CB-B Lower) were analyzed for the following physical parameters and chemical constituents:

- Polychlorinated biphenyls (PCBs) by EPA Method 8082 – GC/ECD.
- Phthalates and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D-GC/MS;
- Total petroleum hydrocarbons (TPH) as gasoline by Northwest Method NWTPH-Gx;
- TPH as diesel- and oil-range petroleum hydrocarbons by Northwest Method NWTPH-Dx;
- Total organic carbon (TOC) by Plumb 1981;
- Total solids by EPA Method 160.3; and
- Grain size sieve analysis by ASTM Method D-422.

Ten discrete sediment samples (CB-A1 Upper, CB-A1 Lower, CB-A2 Upper, CB A2 Lower, CB-A3 Upper, CB-A3 Lower, CB-B1 Upper, CB-B1 Lower, CB-B2 Upper, and CB-B2 Lower) were analyzed for volatile organic compounds (VOCs) by EPA Method 5035/8260B.

2.2 Stormwater Outfall Samples

Stormwater samples were collected from Outfall A and Outfall B on October 3, 2008; November 20, 2008; May 4, 2009; October 20, 2009; June 4, 2012; and February 22, 2013. These samples were submitted to Pace (2008 and 2009 samples), TestAmerica (2012 samples), and ESC (2012 and 2013 samples). All stormwater outfall samples were analyzed for the following site-specific and area-wide COIs:

- PCBs by EPA Method 8082A (low level);
- VOCs by EPA Method 8260B;
- Phthalates by EPA Method 8270 (low level);
- PAHs by EPA Method 8270 SPE-SIM;
- Gasoline-range TPH by Northwest Method TPH-Gx;
- Diesel- to oil-range TPH by Northwest Method TPH-Dx; and
- Total suspended solids (TSS) by EPA Method 160.2.

3.0 QUALITY ASSURANCE OBJECTIVES AND REVIEW

The general QA objectives for this project are to develop and implement procedures for obtaining and evaluating data of a specified quality that can be used to assess whether the stormwater exposure pathway at the Property poses a concern to the Willamette River and the effectiveness of source control measures completed in 2012. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain of custody procedures. Reporting limits and analytical results are used to assess the quantity of each chemical of concern in media. Precision, accuracy, representativeness, completeness, and comparability parameters are used to evaluate data quality. These parameters are defined and discussed below.

3.1 Reporting Limits

MDLs are the minimum concentration of a chemical compound that can be measured and reported that the compound is present, and is based on instrumentation abilities and sample matrix. Method MRLs are set by the laboratory and are based on the low standard of the initial calibration curve or low-level calibration check standard, and represent the concentration that can be accurately quantified. In some cases, MDLs and MRLs are raised due to high concentrations of analytes in the samples (requiring dilution) or matrix interferences. Detections of chemical compounds between the MDL and MRL are estimated and have been J-flagged in the data summary tables of this SCE Report.

MRLs were consistent with industry standards. MRLs were met for all analytes in the stormwater outfall samples (MDLs were also reported, except by TestAmerica). MRLs in the sediment samples were raised for: PAHs in samples CB-A Lower, CB-B Upper, and CB-B Lower (dilution); PCBs in samples CB-A Upper, CB-A Lower, CB-B Upper, and CB-B Lower (dilution and chromatographic interference); TPH-Dx and TPH-Gx in samples CB-A Upper, CB -A Lower, CB-B Upper, and CB-B Lower (dilution); and toluene in samples CB-A2 Lower, CB-B1 Upper, and CB-B2 Lower (dilution).

3.2 Holding Times

Collection dates for all samples submitted are documented on the chain of custody form. Collection and analysis dates are indicated in the laboratory reports. Holding times required by EPA Contract Laboratory Program protocols were met for all analyses.

3.3 Accuracy

Accuracy is the measure of error between the reported test results and the true sample concentration. “Perfect” accuracy is 100 percent recovery. True sample concentration is never known due to analytical limitations and error. Consequently, accuracy is inferred from the recovery data from surrogates, matrix spike samples, and laboratory samples.

Surrogates. In a surrogate analysis, a known amount of a compound similar to the constituent of interest is added to a sample and measured. The surrogate analysis assesses the accuracy of a chemical measurement by comparing the measured value to the actual spiked value. Surrogate recoveries were within control limits for all analyzed samples. In the phthalate analysis of the June 2012 stormwater samples, TestAmerica added an incorrect volume of surrogate spiking solution to the samples, laboratory control sample (LCS), and method blank. Dilution of these samples was necessary to report surrogates within their calibration range. The associated sample results were reported at their undiluted analysis.

Matrix Spike Samples. Matrix spike (MS) analyses are performed on samples submitted to the laboratory that are of the same matrix as the actual sample. The MS sample is spiked with known levels of the constituents of interest. These analyses are used to assess the potential for matrix interference with recovery or detection of the constituents of interest and the accuracy of the determination. The spiked sample results are compared to the expected result (i.e., sample concentration plus spike amount) and are reported as percent recovery.

All MS analyses for the sediment samples are within control limits. The MS analyses for stormwater samples were all within control limits, except for the MS analyses for oil-range TPH and most of the PAH compounds from the QC batch (Q36503) associated with the November 2008 stormwater samples. In this case, the MS analyses were below the lower control limits. The associated sample data are adequate for assessing the magnitude of PAHs present in the samples. As such, the data are acceptable for the purposes of assessing stormwater quality and have not been flagged.

Laboratory Control Samples. The laboratory also analyzes an LCS to assess the accuracy of the analytical equipment. The sample is prepared from the analyte-free matrix, which is then spiked with known levels of the COI (i.e., a standard). The concentrations are measured, and the results are compared to the known spiked levels. This comparison is expressed as percent recovery.

The percent recoveries of LCS samples for the sediment samples were within control limits except for several VOCs associated with samples CB-A2 Lower, CB-A3 Upper, CB-A3 Lower, CB B1 Lower, CB-B2 Upper, and CNB-B2 Lower. The remaining LCS results and all LCS duplicates are within control limits, and the sample results are acceptable without qualification. All LCS recoveries for the stormwater samples were within control limits.

3.4 Precision

Precision measures the reproducibility of data under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average values. Analytical precision is measured by preparing and analyzing duplicate samples, and comparing the original and duplicate sample results to assess the precision of the analytical method. This comparison is quantitatively expressed as the relative percent difference (RPD) between the original and duplicate samples. Data quality can be evaluated based on RPDs when the sample concentration is at least five times the reporting limit.

Laboratory Duplicates. A laboratory duplicate is a second laboratory sample taken from a submitted sample. The duplicate is then prepared along with the original. It is analyzed and compared to the first to assess the precision of the analytical method and the potential variability of the sample matrix. This comparison is reported as the RPD. All laboratory duplicates were within control limits.

Matrix Spike Duplicates. A second matrix spike sample (i.e., matrix spike duplicate [MSD]) is prepared as above and analyzed. The MSD is compared to the initial matrix spike to assess the precision of the analytical method. For this method, both a percent recovery and an RPD are reported.

Matrix spike duplicates RPDs for several VOCs associated with sediment samples CB-A1 Lower, CB-A3 Upper, CB-B1 Lower, CB-B2 Upper, and CB-B2 Lower were above the method limit. All other MSD RPDs were within control limits for all samples and the associated sediment sample results are acceptable for use without qualification.

All MSD RPDs for the stormwater samples were within control limits except for diesel- and oil-range TPH in QC batch (Q36539) associated with the November 2008 stormwater samples. The associated

sample data are acceptable for assessing the magnitude of TPH present in the sample and have not been flagged.

LCS Duplicates. An LCS duplicate is a second analysis of an LCS. The duplicate is prepared along with the original and analyzed and compared to the first to assess the precision of the analytical method and the potential variability of the sample matrix. For this method, both a percent recovery and an RPD are reported. All results were within control limits except for PCB Aroclor 1016 in QC batch (Q36565) associated with the November 2008 stormwater samples. The other PCB QC batch data are within control limits and the associated sample data are acceptable for use without qualification.

3.5 Representativeness

Representativeness is a measure of how closely the results reflect the actual concentration of the parameters in the medium sampled. It is not possible to measure this directly, so representativeness is controlled and ensured by using standard sampling procedures, as well as sample-handling protocols for storage, preservation, and transportation are designed to preserve the representativeness of the samples collected. Laboratory method blanks are run in accordance with established laboratory protocols.

Sample Handling and Custody. Samples were collected in general accordance with industry standards. This included requirements for collection, containers, labeling, packaging, shipping, and storage. Compliance with these procedures is documented on chain of custody forms. Copies of chain of custody forms are included with the laboratory reports.

Blanks. Blanks are analyzed to check for the possibility of sample contamination during sampling, transport, or analysis. A trip blank was prepared by the laboratory and was kept with the laboratory-supplied containers and stormwater samples at all times. The trip blank serves as a check for potential exposure of the sample containers or the collected samples to chemical constituents during transport and handling. The trip blank was analyzed for VOCs. Acetone was detected in the trip blank associated with the October 2009 stormwater samples. Acetone was also present in the October 2009 samples and has been flagged.

Laboratory method blanks were analyzed for all requested analytical tests. No compounds were detected in the laboratory method blanks, except for 2 methylnaphthalene and fluoranthene associated with the October 2009 stormwater sample analyses. The associated sample data have been flagged.

3.6 Completeness

Completeness is defined as the percentage of measurements made which are judged to be valid measurements. The completeness of the data is the number of acceptable data points divided by the total number of data points multiplied by 100. The completeness goal is essentially that a sufficient amount of valid data be generated to allow for the evaluation of the Property investigation. The data completeness for the samples is 100 percent for all requested analyses.

3.7 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. All samples from this and previous investigations were analyzed in general accordance with accepted methods of the EPA or DEQ. Because similar or the same methods were used, the quality of the data collected are consistent for all data sets and are therefore comparable.

3.8 Conclusion

The overall QA objectives have been met and the data are suitable for the purposes of this source control evaluation.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

March 11, 2008

Mr. Leon Lahiere
Hart Crowser, Inc.
5 Centerpointe Dr #240
Lake Oswego, OR 97035

RE: Project: Brix
ARI Job No: MJ78

Dear Mr. Lahiere:

Please find enclosed the original chain of custody documentation and the analytical results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted four sediment samples on February 21, 2008. The samples were received in good condition at 2.8°. There were no discrepancies between the sample containers' labels and the COC.

The samples were analyzed for PAHs, Phthalates, PCBs, Grain Size and TOC, as requested.

There were no anomalies associated with the samples.

An electronic copy of these reports and the supporting data will remain on file with ARI. If you have any questions or require additional information, please contact me at your convenience.

Respectfully,

ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
kellyb@arilabs.com
206/695-6211

Enclosures

cc: files MJ78

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: MV78	Turn-around Requested: Standard
ARI Client Company: Hart Crowser	Phone: 503-620-7284
Client Contact: Leon Lahiere	971-327-9103
Client Project Name: Brix	
Client Project #: 15634-00/T8	Samplers: LISA GLOWEK

Page: 1	of 1
Date: 2/19/2008	Ice Present? Y
No. of Coolers: 1	Cooler Temps: 2.0

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	TOC EPA 415.1 SW9060	PAHs EPA 8270M-SIM	PCBs EPA 8082	Phthalates EPA 8270M-SIM	Grain Size ASTM D422				Notes/Comments
CB-A Upper Composite	2/19/2008	14:20	S	3	X	X	X	X	X				
CB-A Lower Composite	2/19/2008	14:25	S	3	X	X	X	X	X				
CB-B Upper Composite	2/19/2008	16:40	S	3	X	X	X	X	X				
CB-B Lower Composite	2/19/2008	16:45	S	3	X	X	X	X	X				

Comments/Special Instructions

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
Printed Name: LISA GLOWEK	Printed Name: BRIAN KEUEL	Printed Name:	Printed Name:
Company: Hart Crowser	Company: ARI	Company:	Company:
Date & Time: 2/20/2008 1600	Date & Time: 2/21/08 0930	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Hart Crowser
COC No: —
Assigned ARI Job No: MJ78

Project Name: Brix
Delivered by: UPS
Tracking No:

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO
Record cooler temperature (recommended 2.0-6.0 °C for chemistry	2.8 °C	

Cooler Accepted by: [signature] Date: 2/21/08 Time: 0930

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?	YES	(NO)
What kind of packing material was used?	ICE	
Was sufficient ice used (if appropriate)?	(YES)	NO
Were all bottles sealed in individual plastic bags?	YES	(NO)
Did all bottle arrive in good condition (unbroken)?	(YES)	NO
Were all bottle labels complete and legible?	(YES)	NO
Did all bottle labels and tags agree with custody papers?	(YES)	NO
Were all bottles used correct for the requested analyses?	(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation checklist)	YES	(NO)
Were all VOC vials free of air bubbles? (NA)	YES	NO
Was sufficient amount of sample sent in each bottle?	(YES)	NO

Samples Logged by: Bob Congleton Date: 2/21/08 Time: 1120

***** Notify Project Manager of discrepancies or concerns *****

Explain discrepancies or negative responses:

By: Date:

Data Reporting Qualifiers

Effective 12/28/04

Inorganic Data

U Indicates that the target analyte was not detected at the reported concentration

* Duplicate RPD is not within established control limits

B Reported value is less than the CRDL but ≥ the Reporting Limit

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U Indicates that the target analyte was not detected at the reported concentration

* Flagged value is not within established control limits

B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J Estimated concentration when the value is less than ARI's established reporting limits

D The spiked compound was not detected due to sample extract dilution

NR Spiked compound recovery is not reported due to chromatographic interference

E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: CB-A UPPER COMPOSITE SAMPLE

Lab Sample ID: MJ78A
LIMS ID: 08-3259
Matrix: Sediment
Data Release Authorized:
Reported: 03/13/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/29/08
Date Analyzed: 03/06/08 02:08
Instrument/Analyst: NT6/LJR
GPC Cleanup: No

Sample Amount: 7.61 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 43.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	< 66 U
91-57-6	2-Methylnaphthalene	66	< 66 U
131-11-3	Dimethylphthalate	66	< 66 U
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	**Acenaphthene**	**66**	**39 J**
132-64-9	**Dibenzofuran**	**66**	**43 J**
84-66-2	Diethylphthalate	66	< 66 U
86-73-7	**Fluorene**	**66**	**54 J**
85-01-8	**Phenanthrene**	**66**	**550**
120-12-7	**Anthracene**	**66**	**100**
84-74-2	Di-n-Butylphthalate	66	< 66 U
206-44-0	**Fluoranthene**	**66**	**1,100**
129-00-0	**Pyrene**	**66**	**710**
85-68-7	Butylbenzylphthalate	66	< 66 U
56-55-3	**Benzo(a)anthracene**	**66**	**240**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**66**	**3,000**
218-01-9	**Chrysene**	**66**	**480**
117-84-0	**Di-n-Octyl phthalate**	**66**	**320**
205-99-2	**Benzo(b)fluoranthene**	**66**	**550**
207-08-9	**Benzo(k)fluoranthene**	**66**	**500**
50-32-8	**Benzo(a)pyrene**	**66**	**420**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**66**	**170**
53-70-3	Dibenz(a,h)anthracene	66	< 66 U
191-24-2	**Benzo(g,h,i)perylene**	**66**	**210**
90-12-0	1-Methylnaphthalene	66	< 66 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	59.6%
2-Fluorobiphenyl	56.8%
d14-p-Terphenyl	56.0%
d4-1,2-Dichlorobenzene	54.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: CB-A LOWER COMPOSITE SAMPLE

Lab Sample ID: MJ78B
LIMS ID: 08-3260
Matrix: Sediment
Data Release Authorized:
Reported: 03/13/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/29/08
Date Analyzed: 03/05/08 09:39
Instrument/Analyst: NT6/LJR
GPC Cleanup: No

Sample Amount: 7.59 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 28.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	330	< 330 U
91-57-6	2-Methylnaphthalene	330	< 330 U
131-11-3	Dimethylphthalate	330	< 330 U
208-96-8	Acenaphthylene	330	< 330 U
83-32-9	Acenaphthene	330	< 330 U
132-64-9	Dibenzofuran	330	< 330 U
84-66-2	Diethylphthalate	330	< 330 U
86-73-7	Fluorene	330	< 330 U
85-01-8	**Phenanthrene**	**330**	**1,200**
120-12-7	**Anthracene**	**330**	**220 J**
84-74-2	Di-n-Butylphthalate	330	< 330 U
206-44-0	**Fluoranthene**	**330**	**2,400**
129-00-0	**Pyrene**	**330**	**1,600**
85-68-7	Butylbenzylphthalate	330	< 330 U
56-55-3	**Benzo(a)anthracene**	**330**	**920**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**330**	**5,700**
218-01-9	**Chrysene**	**330**	**1,300**
117-84-0	**Di-n-Octyl phthalate**	**330**	**380**
205-99-2	**Benzo(b)fluoranthene**	**330**	**1,200**
207-08-9	**Benzo(k)fluoranthene**	**330**	**1,800**
50-32-8	**Benzo(a)pyrene**	**330**	**1,400**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**330**	**450**
53-70-3	Dibenz(a,h)anthracene	330	< 330 U
191-24-2	**Benzo(g,h,i)perylene**	**330**	**420**
90-12-0	1-Methylnaphthalene	330	< 330 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.2%
2-Fluorobiphenyl	75.8%
d14-p-Terphenyl	72.4%
d4-1,2-Dichlorobenzene	68.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: CB-B UPPER COMPOSITE SAMPLE

Lab Sample ID: MJ78C
LIMS ID: 08-3261
Matrix: Sediment
Data Release Authorized:
Reported: 03/13/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/29/08
Date Analyzed: 03/05/08 10:14
Instrument/Analyst: NT6/LJR
GPC Cleanup: No

Sample Amount: 7.52 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 42.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	330	< 330 U
91-57-6	2-Methylnaphthalene	330	< 330 U
131-11-3	**Dimethylphthalate**	**330**	**250 J**
208-96-8	Acenaphthylene	330	< 330 U
83-32-9	**Acenaphthene**	**330**	**400**
132-64-9	**Dibenzofuran**	**330**	**180 J**
84-66-2	Diethylphthalate	330	< 330 U
86-73-7	**Fluorene**	**330**	**170 J**
85-01-8	**Phenanthrene**	**330**	**1,600**
120-12-7	**Anthracene**	**330**	**240 J**
84-74-2	**Di-n-Butylphthalate**	**330**	**190 J**
206-44-0	**Fluoranthene**	**330**	**3,300**
129-00-0	**Pyrene**	**330**	**1,800**
85-68-7	**Butylbenzylphthalate**	**330**	**1,000**
56-55-3	**Benzo(a)anthracene**	**330**	**830**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**330**	**14,000**
218-01-9	**Chrysene**	**330**	**1,300**
117-84-0	**Di-n-Octyl phthalate**	**330**	**1,200**
205-99-2	**Benzo(b)fluoranthene**	**330**	**1,200**
207-08-9	**Benzo(k)fluoranthene**	**330**	**1,400**
50-32-8	**Benzo(a)pyrene**	**330**	**940**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**330**	**260 J**
53-70-3	Dibenz(a,h)anthracene	330	< 330 U
191-24-2	**Benzo(g,h,i)perylene**	**330**	**260 J**
90-12-0	1-Methylnaphthalene	330	< 330 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.4%
2-Fluorobiphenyl	68.2%
d14-p-Terphenyl	64.6%
d4-1,2-Dichlorobenzene	64.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: CB-B LOWER COMPOSITE SAMPLE

Lab Sample ID: MJ78D
LIMS ID: 08-3262
Matrix: Sediment
Data Release Authorized:
Reported: 03/13/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/29/08
Date Analyzed: 03/05/08 10:50
Instrument/Analyst: NT6/LJR
GPC Cleanup: No

Sample Amount: 5.92 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 40.9%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	420	< 420 U
91-57-6	2-Methylnaphthalene	420	< 420 U
131-11-3	Dimethylphthalate	420	< 420 U
208-96-8	Acenaphthylene	420	< 420 U
83-32-9	**Acenaphthene**	**420**	**410 J**
132-64-9	**Dibenzofuran**	**420**	**280 J**
84-66-2	Diethylphthalate	420	< 420 U
86-73-7	**Fluorene**	**420**	**580**
85-01-8	**Phenanthrene**	**420**	**4,100**
120-12-7	**Anthracene**	**420**	**650**
84-74-2	**Di-n-Butylphthalate**	**420**	**260 J**
206-44-0	**Fluoranthene**	**420**	**7,500**
129-00-0	**Pyrene**	**420**	**4,500**
85-68-7	**Butylbenzylphthalate**	**420**	**330 J**
56-55-3	**Benzo(a)anthracene**	**420**	**1,800**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**420**	**20,000**
218-01-9	**Chrysene**	**420**	**3,100**
117-84-0	**Di-n-Octyl phthalate**	**420**	**3,500**
205-99-2	**Benzo(b)fluoranthene**	**420**	**3,000**
207-08-9	**Benzo(k)fluoranthene**	**420**	**3,200**
50-32-8	**Benzo(a)pyrene**	**420**	**2,500**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**420**	**700**
53-70-3	Dibenz(a,h)anthracene	420	< 420 U
191-24-2	**Benzo(g,h,i)perylene**	**420**	**710**
90-12-0	1-Methylnaphthalene	420	< 420 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	70.0%
2-Fluorobiphenyl	74.2%
d14-p-Terphenyl	70.6%
d4-1,2-Dichlorobenzene	71.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: MB-022908
METHOD BLANK

Lab Sample ID: MB-022908
LIMS ID: 08-3259
Matrix: Sediment
Data Release Authorized:
Reported: 03/13/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: NA
Date Received: NA

Date Extracted: 02/29/08
Date Analyzed: 03/04/08 16:56
Instrument/Analyst: NT6/LJR
GPC Cleanup: No

Sample Amount: 7.50 g
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
131-11-3	Dimethylphthalate	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U
84-66-2	Diethylphthalate	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
84-74-2	Di-n-Butylphthalate	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
85-68-7	Butylbenzylphthalate	67	< 67 U
56-55-3	Benzo(a)anthracene	67	< 67 U
117-81-7	bis(2-Ethylhexyl)phthalate	67	< 67 U
218-01-9	Chrysene	67	< 67 U
117-84-0	Di-n-Octyl phthalate	67	< 67 U
205-99-2	Benzo(b)fluoranthene	67	< 67 U
207-08-9	Benzo(k)fluoranthene	67	< 67 U
50-32-8	Benzo(a)pyrene	67	< 67 U
193-39-5	Indeno(1,2,3-cd)pyrene	67	< 67 U
53-70-3	Dibenz(a,h)anthracene	67	< 67 U
191-24-2	Benzo(g,h,i)perylene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.8%
2-Fluorobiphenyl	64.4%
d14-p-Terphenyl	70.0%
d4-1,2-Dichlorobenzene	63.2%

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8

Client ID	NBZ	FBP	TPH	DCB	TOT OUT
MB-022908	66.8%	64.4%	70.0%	63.2%	0
LCS-022908	72.0%	71.2%	75.2%	67.6%	0
CB-A UPPER COMPOSI	59.6%	56.8%	56.0%	54.4%	0
CB-A LOWER COMPOSI	67.2%	75.8%	72.4%	68.2%	0
CB-B UPPER COMPOSI	66.4%	68.2%	64.6%	64.4%	0
CB-B LOWER COMPOSI	70.0%	74.2%	70.6%	71.0%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(45-87)	(34-91)
(FBP) = 2-Fluorobiphenyl	(44-91)	(37-94)
(TPH) = d14-p-Terphenyl	(50-111)	(33-106)
(DCB) = d4-1,2-Dichlorobenzene	(38-84)	(35-85)

Prep Method: SW3550B
Log Number Range: 08-3259 to 08-3262

FORM-II SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-022908
LAB CONTROL

Lab Sample ID: LCS-022908
LIMS ID: 08-3259
Matrix: Sediment
Data Release Authorized:
Reported: 03/13/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/29/08
Date Analyzed: 03/04/08 17:32
Instrument/Analyst: NT6/LJR
GPC Cleanup: NO

Sample Amount: 7.50 g
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Naphthalene	1080	1670	64.7%
2-Methylnaphthalene	1130	1670	67.7%
Dimethylphthalate	1210	1670	72.5%
Acenaphthylene	1200	1670	71.9%
Acenaphthene	1110	1670	66.5%
Dibenzofuran	1200	1670	71.9%
Diethylphthalate	1310	1670	78.4%
Fluorene	1260	1670	75.4%
Phenanthrene	1230	1670	73.7%
Anthracene	1260	1670	75.4%
Di-n-Butylphthalate	1430	1670	85.6%
Fluoranthene	1500	1670	89.8%
Pyrene	1130	1670	67.7%
Butylbenzylphthalate	1290	1670	77.2%
Benzo(a)anthracene	1250	1670	74.9%
bis(2-Ethylhexyl)phthalate	1490	1670	89.2%
Chrysene	1240	1670	74.3%
Di-n-Octyl phthalate	1300	1670	77.8%
Benzo(b)fluoranthene	1390	1670	83.2%
Benzo(k)fluoranthene	1430	1670	85.6%
Benzo(a)pyrene	1350	1670	80.8%
Indeno(1,2,3-cd)pyrene	1180	1670	70.7%
Dibenz(a,h)anthracene	1200	1670	71.9%
Benzo(g,h,i)perylene	1100	1670	65.9%
1-Methylnaphthalene	1150	1670	68.9%

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.0%
2-Fluorobiphenyl	71.2%
d14-p-Terphenyl	75.2%
d4-1,2-Dichlorobenzene	67.6%

Results reported in µg/kg

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: CB-A UPPER COMPOSITE SAMPLE

Lab Sample ID: MJ78A
LIMS ID: 08-3259
Matrix: Sediment
Data Release Authorized:
Reported: 03/12/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/22/08
Date Analyzed: 02/27/08 12:35
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.4 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 43.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	8.8	< 8.8 U
53469-21-9	Aroclor 1242	8.8	< 8.8 U
12672-29-6	Aroclor 1248	15	< 15 Y
11097-69-1	Aroclor 1254	24	< 24 Y
11096-82-5	**Aroclor 1260**	**8.8**	**20**
11104-28-2	Aroclor 1221	8.8	< 8.8 U
11141-16-5	Aroclor 1232	8.8	< 8.8 U

Reported in μg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	102%
Tetrachlorometaxylene	109%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: CB-A LOWER COMPOSITE SAMPLE

Lab Sample ID: MJ78B
LIMS ID: 08-3260
Matrix: Sediment
Data Release Authorized:
Reported: 03/12/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/22/08
Date Analyzed: 02/27/08 12:52
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 28.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	8.9	< 8.9 U
53469-21-9	Aroclor 1242	8.9	< 8.9 U
12672-29-6	Aroclor 1248	8.9	< 8.9 U
11097-69-1	Aroclor 1254	8.9	< 8.9 U
11096-82-5	**Aroclor 1260**	**8.9**	**11**
11104-28-2	Aroclor 1221	8.9	< 8.9 U
11141-16-5	Aroclor 1232	8.9	< 8.9 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	116%
Tetrachlorometaxylene	87.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: CB-B UPPER COMPOSITE SAMPLE

Lab Sample ID: MJ78C
LIMS ID: 08-3261
Matrix: Sediment
Data Release Authorized:
Reported: 03/12/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/22/08
Date Analyzed: 02/27/08 13:09
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 42.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	8.9	< 8.9 U
53469-21-9	Aroclor 1242	8.9	< 8.9 U
12672-29-6	Aroclor 1248	18	< 18 Y
11097-69-1	Aroclor 1254	30	< 30 Y
11096-82-5	**Aroclor 1260**	**8.9**	**27**
11104-28-2	Aroclor 1221	8.9	< 8.9 U
11141-16-5	Aroclor 1232	8.9	< 8.9 U

Reported in μg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	88.5%
Tetrachlorometaxylene	88.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: CB-B LOWER COMPOSITE SAMPLE

Lab Sample ID: MJ78D
LIMS ID: 08-3262
Matrix: Sediment
Data Release Authorized:
Reported: 03/12/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Date Extracted: 02/22/08
Date Analyzed: 02/27/08 13:26
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 40.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	8.8	< 8.8 U
53469-21-9	Aroclor 1242	8.8	< 8.8 U
12672-29-6	Aroclor 1248	30	< 30 Y
11097-69-1	Aroclor 1254	88	< 88 Y
11096-82-5	**Aroclor 1260**	**8.8**	**38**
11104-28-2	Aroclor 1221	8.8	< 8.8 U
11141-16-5	Aroclor 1232	8.8	< 8.8 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	97.5%
Tetrachlorometaxylene	75.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: MB-022208
METHOD BLANK

Lab Sample ID: MB-022208
LIMS ID: 08-3259
Matrix: Sediment
Data Release Authorized:
Reported: 03/12/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: NA
Date Received: NA

Date Extracted: 02/22/08
Date Analyzed: 02/27/08 12:00
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.0 g
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	10	< 10 U
53469-21-9	Aroclor 1242	10	< 10 U
12672-29-6	Aroclor 1248	10	< 10 U
11097-69-1	Aroclor 1254	10	< 10 U
11096-82-5	Aroclor 1260	10	< 10 U
11104-28-2	Aroclor 1221	10	< 10 U
11141-16-5	Aroclor 1232	10	< 10 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	84.0%
Tetrachlorometaxylene	71.5%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOLIDS SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-022208	84.0%	36-130	71.5%	30-119	0
LCS-022208	90.5%	36-130	79.2%	30-119	0
CB-A UPPER COMPOSITE	102%	33-149	109%	32-121	0
CB-A LOWER COMPOSITE	116%	33-149	87.0%	32-121	0
CB-B UPPER COMPOSITE	88.5%	33-149	88.5%	32-121	0
CB-B LOWER COMPOSITE	97.5%	33-149	75.0%	32-121	0

Prep Method: SW3550B
Log Number Range: 08-3259 to 08-3262

FORM-II SW8082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: LCS-022208
LAB CONTROL

Lab Sample ID: LCS-022208
LIMS ID: 08-3259
Matrix: Sediment
Data Release Authorized:
Reported: 03/12/08

QC Report No: MJ78-Hart Crowser, Inc.
Project: Brix
15634-00/T8
Date Sampled: NA
Date Received: NA

Date Extracted: 02/22/08
Date Analyzed: 02/27/08 12:17
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.0 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	34.4	50.0	68.8%
Aroclor 1260	46.5	50.0	93.0%

PCB Surrogate Recovery

Decachlorobiphenyl	90.5%
Tetrachlorometaxylene	79.2%

Results reported in µg/kg (ppb)

SAMPLE RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Client ID: CB-A UPPER COMPOSITE
ARI ID: 08-3259 MJ78A

Analyte	Date	Method	Units	RL	Sample
Total Solids	02/21/08 022108#1	EPA 160.3	Percent	0.01	51.10
Total Organic Carbon	02/25/08 022508#1	Plumb,1981	Percent	0.194	10.9

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Client ID: CB-A LOWER COMPOSITE
ARI ID: 08-3260 MJ78B

Analyte	Date	Method	Units	RL	Sample
Total Solids	02/21/08 022108#1	EPA 160.3	Percent	0.01	67.20
Total Organic Carbon	02/25/08 022508#1	Plumb,1981	Percent	0.020	5.35

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Client ID: CB-B UPPER COMPOSITE
ARI ID: 08-3261 MJ78C

Analyte	Date	Method	Units	RL	Sample
Total Solids	02/21/08 022108#1	EPA 160.3	Percent	0.01	56.90
Total Organic Carbon	02/25/08 022508#1	Plumb,1981	Percent	0.020	13.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: MJ
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Client ID: CB-B LOWER COMPOSITE
ARI ID: 08-3262 MJ78D

Analyte	Date	Method	Units	RL	Sample
Total Solids	02/21/08 022108#1	EPA 160.3	Percent	0.01	46.70
Total Organic Carbon	02/25/08 022508#1	Plumb,1981	Percent	0.020	7.43

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Solids	02/21/08	Percent	< 0.01 U
Total Organic Carbon	02/25/08	Percent	< 0.020 U

LAB CONTROL RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon	02/25/08	Percent	0.530	0.500	106.0%

STANDARD REFERENCE RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST #8704	02/25/08	Percent	3.46	3.35	103.3%

REPLICATE RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: MJ78A Client ID: CB-A UPPER COMPOSITE					
Total Solids	02/21/08	Percent	51.10	52.60 50.90	1.8%
Total Organic Carbon	02/25/08	Percent	10.9	9.78 8.77	10.9%

MS/MSD RESULTS-CONVENTIONALS
MJ78-Hart Crowser, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 02/27/08

Project: Brix
Event: 15634-00/T8
Date Sampled: 02/19/08
Date Received: 02/21/08

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: MJ78A Client ID: CB-A UPPER COMPOSITE						
Total Organic Carbon	02/25/08	Percent	10.9	21.1	11.1	92.2%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Hart Crowser, Inc.	Project No.: MJ78
Client Project: Brix 15634-00/T8	

Case Narrative

1. Four samples were submitted for grain size analysis according to PSEP methodology.
2. The samples were run in a single batch and one sample from the batch was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. All of the samples contained organic matter, which may have broken down during the sieving process, affecting grain size analysis.
4. Samples CB-a LOWER COMPOSITE and CB-B UPPER COMPOSITE had an oily sheen.
5. The data is provided in summary tables and plots.
6. There were no other noted anomalies in this project.

Approved by: Taylor McKenzie Date: 3-3-08
Title: Lead Technician

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Hart Crowser, Inc.
Brix 15634-00/T8

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (62)	31.00	15.60	7.80	3.90	2.00	1.00
WE-C(10-12)	100.0	97.1	95.0	93.4	90.9	86.9	79.7	67.0	52.3	37.5	27.7	21.6	16.7	12.5
WE-C(10-12)	100.0	99.5	98.0	95.9	93.3	89.2	81.4	68.3	53.4	37.8	28.4	21.9	17.0	12.9
WE-C(10-12)	100.0	97.3	95.9	93.5	90.2	85.8	77.9	64.5	51.5	36.9	26.8	21.0	16.3	12.0
CB-A UPPER COMPOSITE	100.0	98.5	88.7	64.2	44.0	25.5	17.8	13.6	8.3	3.8	2.1	1.2	0.6	0.5
CB-A LOWER COMPOSITE	100.0	92.2	82.6	69.6	53.1	29.2	19.6	14.2	12.4	7.2	3.8	2.0	1.1	0.6
CB-B UPPER COMPOSITE	100.0	98.9	91.7	69.8	46.1	27.1	17.7	12.7	8.0	3.3	1.8	1.0	0.5	0.4
CB-B LOWER COMPOSITE	100.0	95.1	83.1	64.2	48.1	35.1	26.6	20.6	11.8	5.6	2.6	1.3	0.8	0.5

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

MJ78

Hart Crowser, Inc.
Brix 15634-00/T8

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	> -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	< 10	<4
Sieve Size (microns)	> #10 (2000)	10 to 18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15.6	15.6-7.8	7.8-3.9	3.9-2.0	2.0-1.0	<1.0	<230 (<62)
WE-C(10-12)	5.0	1.6	2.6	4.0	7.2	12.6	14.7	14.9	9.8	6.1	4.9	4.2	12.5	67.0
WE-C(10-12)	2.0	2.1	2.6	4.2	7.8	13.1	14.8	15.6	9.4	6.5	4.9	4.1	12.9	68.3
WE-C(10-12)	4.1	2.4	3.3	4.4	7.8	13.5	13.0	14.6	10.1	5.8	4.6	4.3	12.0	64.5
CB-A UPPER COMPOSITE	11.3	24.5	20.2	18.5	7.7	4.2	5.2	4.5	1.8	0.9	0.5	0.1	0.5	13.6
CB-A LOWER COMPOSITE	17.4	12.9	16.5	24.0	9.6	5.4	1.8	5.2	3.4	1.8	0.9	0.5	0.6	14.2
CB-B UPPER COMPOSITE	8.3	22.0	23.7	19.0	9.4	5.0	4.7	4.7	1.6	0.7	0.5	0.1	0.4	12.7
CB-B LOWER COMPOSITE	16.9	18.9	16.2	13.0	8.5	6.0	8.8	6.2	2.9	1.3	0.5	0.2	0.5	20.6

Notes to the Testing:
1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

MJ78

QA SUMMARY

PROJECT:	Hart Crowser, Inc.	Project No.:	Brix 15634-00/T8
ARI Triplicate Sample ID:	MJ24 D	Batch No.:	MJ78 -1
Client Triplicate Sample ID:	WE-C(10-12)	Page:	1 of 1

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
WE-C(10-12)	100.0	97.1	95.0	93.4	90.9	86.9	79.7	67.0	52.3	37.5	27.7	21.6	16.7	12.5
WE-C(10-12)	100.0	99.5	98.0	95.9	93.3	89.2	81.4	68.3	53.4	37.8	28.4	21.9	17.0	12.9
WE-C(10-12)	100.0	97.3	95.9	93.5	90.2	85.8	77.9	64.5	51.5	36.9	26.8	21.0	16.3	12.0
AVE	NA	97.98	96.31	94.28	91.47	87.28	79.68	66.60	52.43	37.40	27.64	21.47	16.67	12.46
STDEV	NA	1.35	1.55	1.41	1.65	1.74	1.73	1.93	0.95	0.43	0.81	0.46	0.34	0.41
%RSD	NA	1.38	1.61	1.49	1.81	1.99	2.17	2.90	1.82	1.14	2.94	2.16	2.04	3.29

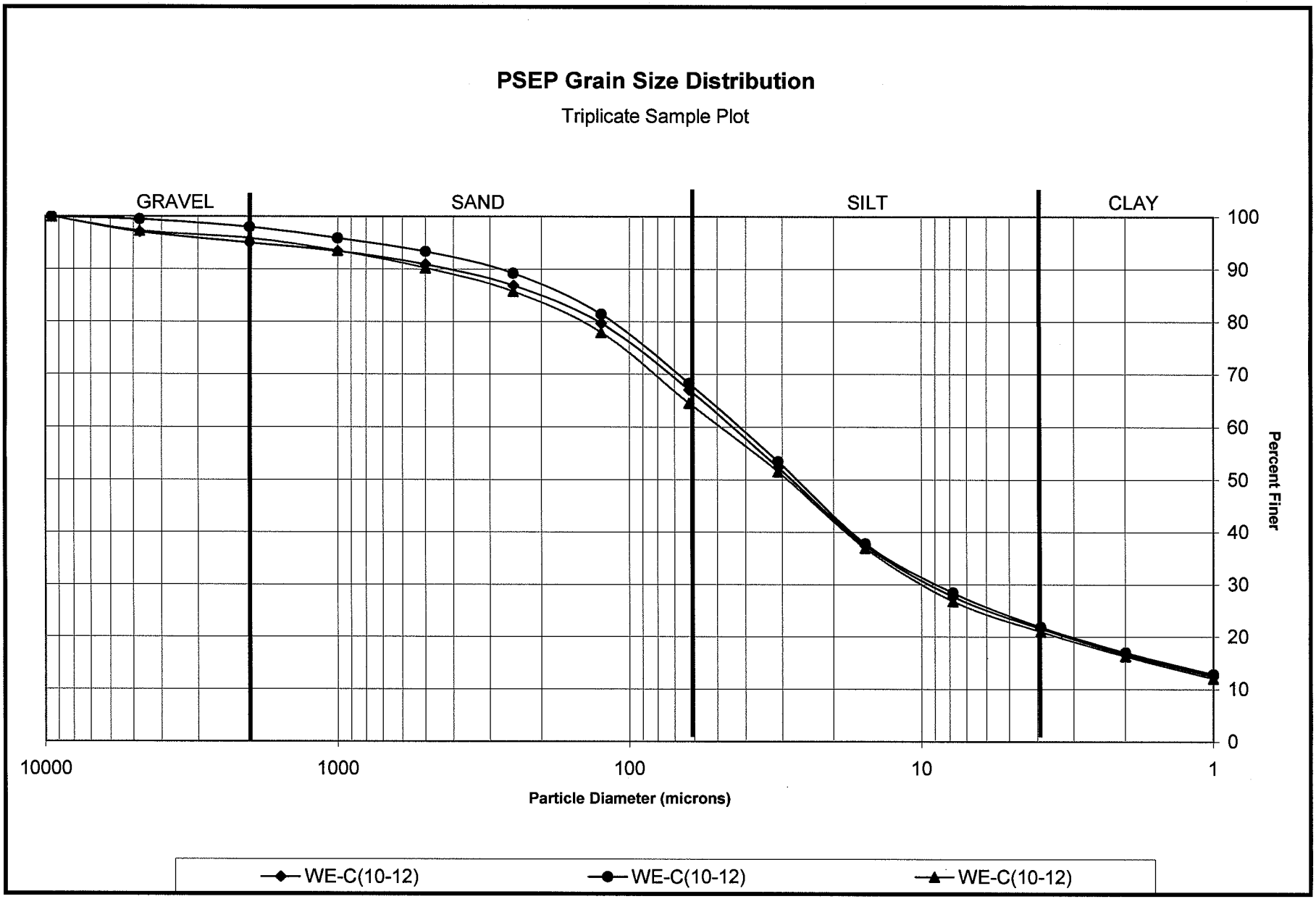
The Triplicate Applies To The Following Samples

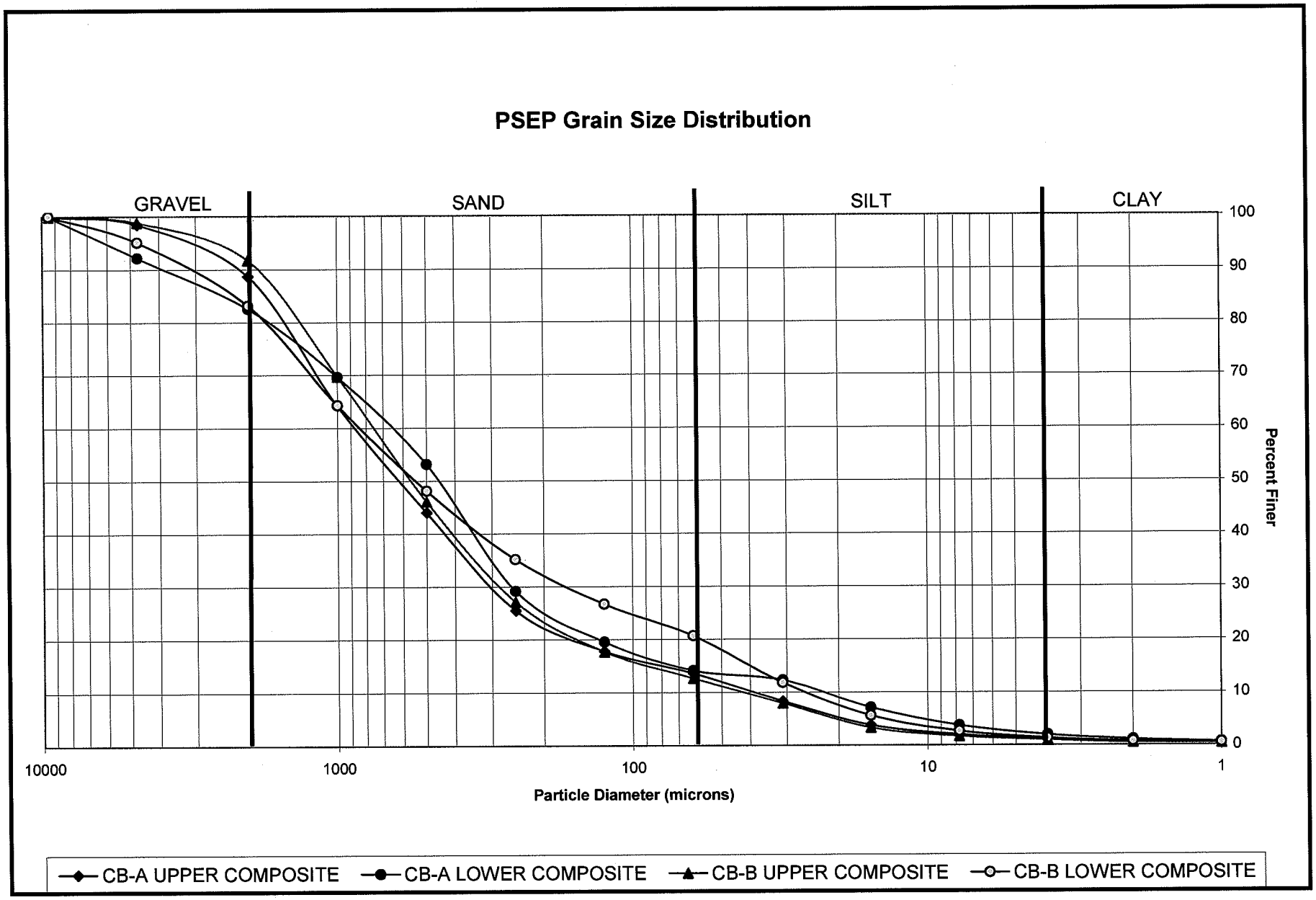
Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
WE-C(10-12)	2/12/2008	2/20/2008	2/27/2008	99.9		20.8
WE-C(10-12)	2/12/2008	2/20/2008	2/27/2008	101.0		20.9
WE-C(10-12)	2/12/2008	2/20/2008	2/27/2008	99.0		18.9
CB-A UPPER COMPOSITE	2/19/2008	2/26/2008	2/29/2008	100.8		6.1
CB-A LOWER COMPOSITE	2/19/2008	2/26/2008	2/29/2008	97.7		6.3
CB-B UPPER COMPOSITE	2/19/2008	2/26/2008	2/29/2008	101.2		5.4
CB-B LOWER COMPOSITE	2/19/2008	2/26/2008	2/29/2008	100.5		6.6

* ARI Internal QA limits = 95-105%

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.


PSEP Grain Size Distribution
Triplicate Sample Plot
GRAVEL
SAND
SILT
CLAY
100
90
80
70
60
50
40
30
20
10
0
Percent Finer
10000
1000
100
10
1
Particle Diameter (microns)
WE-C(10-12)
WE-C(10-12)
WE-C(10-12)


PSEP Grain Size Distribution
GRAVEL
SAND
SILT
CLAY
100
90
80
70
60
50
40
30
20
10
0
Percent Finer
10000
1000
100
10
1
Particle Diameter (microns)
CB-A UPPER COMPOSITE
CB-A LOWER COMPOSITE
CB-B UPPER COMPOSITE
CB-B LOWER COMPOSITE

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Report Summary

Monday March 03, 2008

Report Number: L332816
Samples Received: 02/21/08
Client Project: 15634-00/T8

Description: Brix Maritime

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

This report may not be reproduced, except in full, without written approval from Environmental Science Corp.

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-01

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A1 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 10:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/kg	8260B	02/24/08	1
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/24/08	1
Benzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromoform	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromomethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
n-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chloroethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/kg	8260B	02/24/08	1
Chloroform	BDL	0.0050	mg/kg	8260B	02/24/08	1
Chloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Ethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
p-Isopropyltoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
2-Butanone (MEK)	BDL	0.010	mg/kg	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-01

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A1 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 10:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0050	mg/kg	8260B	02/24/08	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/kg	8260B	02/24/08	1
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Naphthalene	BDL	0.0050	mg/kg	8260B	02/24/08	1
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Styrene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/24/08	1
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Toluene	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Xylenes, Total	BDL	0.0030	mg/kg	8260B	02/24/08	1
Surrogate Recovery						
Toluene-d8	93.8		% Rec.	8260B	02/24/08	1
Dibromofluoromethane	104.		% Rec.	8260B	02/24/08	1
4-Bromofluorobenzene	82.1		% Rec.	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-02

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A1 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 10:36

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/kg	8260B	02/26/08	1
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/26/08	1
Benzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromoform	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromomethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
n-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/26/08	1
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Chloroethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/kg	8260B	02/26/08	1
Chloroform	BDL	0.0050	mg/kg	8260B	02/26/08	1
Chloromethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/26/08	1
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/kg	8260B	02/26/08	1
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/26/08	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/26/08	1
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/26/08	1
Ethylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
p-Isopropyltoluene	BDL	0.0010	mg/kg	8260B	02/26/08	1
2-Butanone (MEK)	BDL	0.010	mg/kg	8260B	02/26/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-02

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A1 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 10:36

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0050	mg/kg	8260B	02/26/08	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/kg	8260B	02/26/08	1
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/26/08	1
Naphthalene	BDL	0.0050	mg/kg	8260B	02/26/08	1
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Styrene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/26/08	1
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Toluene	BDL	0.0050	mg/kg	8260B	02/26/08	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/26/08	1
Xylenes, Total	BDL	0.0030	mg/kg	8260B	02/26/08	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	02/26/08	1
Dibromofluoromethane	125.		% Rec.	8260B	02/26/08	1
4-Bromofluorobenzene	81.9		% Rec.	8260B	02/26/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-03

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A2 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 13:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/kg	8260B	02/24/08	1
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/24/08	1
Benzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromoform	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromomethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
n-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chloroethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/kg	8260B	02/24/08	1
Chloroform	BDL	0.0050	mg/kg	8260B	02/24/08	1
Chloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Ethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
p-Isopropyltoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
2-Butanone (MEK)	BDL	0.010	mg/kg	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-03

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A2 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 13:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0050	mg/kg	8260B	02/24/08	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/kg	8260B	02/24/08	1
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Naphthalene	BDL	0.0050	mg/kg	8260B	02/24/08	1
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Styrene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/24/08	1
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Toluene	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Xylenes, Total	BDL	0.0030	mg/kg	8260B	02/24/08	1
Surrogate Recovery						
Toluene-d8	92.9		% Rec.	8260B	02/24/08	1
Dibromofluoromethane	103.		% Rec.	8260B	02/24/08	1
4-Bromofluorobenzene	76.2		% Rec.	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-04

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A2 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 13:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	0.087	0.050	mg/kg	8260B	02/29/08	1
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/29/08	1
Benzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
Bromoform	BDL	0.0010	mg/kg	8260B	02/29/08	1
Bromomethane	BDL	0.0050	mg/kg	8260B	02/29/08	1
n-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/29/08	1
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
Chloroethane	BDL	0.0050	mg/kg	8260B	02/29/08	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/kg	8260B	02/29/08	1
Chloroform	BDL	0.0050	mg/kg	8260B	02/29/08	1
Chloromethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/29/08	1
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/kg	8260B	02/29/08	1
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	02/29/08	1
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/29/08	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/29/08	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/29/08	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/29/08	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/29/08	1
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/29/08	1
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/29/08	1
Ethylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
p-Isopropyltoluene	0.013	0.0010	mg/kg	8260B	02/29/08	1
2-Butanone (MEK)	0.024	0.010	mg/kg	8260B	02/29/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-04

Site ID :

Project # : 15634-00/T8

Date Received : February 21, 2008
Description : Brix

Sample ID : CB-A2 LOWER

Collected By : Lisa Glonek
Collection Date : 02/19/08 13:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0050	mg/kg	8260B	02/29/08	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/kg	8260B	02/29/08	1
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/29/08	1
Naphthalene	BDL	0.0050	mg/kg	8260B	02/29/08	1
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Styrene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/29/08	1
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Toluene	1.4	0.28	mg/kg	8260B	02/29/08	56.5
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/29/08	1
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	02/29/08	1
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/29/08	1
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/29/08	1
Xylenes, Total	BDL	0.0030	mg/kg	8260B	02/29/08	1
Surrogate Recovery						
Toluene-d8	99.8		% Rec.	8260B	02/29/08	1
Dibromofluoromethane	101.		% Rec.	8260B	02/29/08	1
4-Bromofluorobenzene	96.0		% Rec.	8260B	02/29/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-05

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A3 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	6.0	mg/kg	8260B	02/24/08	119
Acrylonitrile	BDL	1.2	mg/kg	8260B	02/24/08	119
Benzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Bromobenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Bromodichloromethane	BDL	0.12	mg/kg	8260B	02/24/08	119
Bromoform	BDL	0.12	mg/kg	8260B	02/24/08	119
Bromomethane	BDL	0.60	mg/kg	8260B	02/24/08	119
n-Butylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
sec-Butylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
tert-Butylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Carbon tetrachloride	BDL	0.12	mg/kg	8260B	02/24/08	119
Chlorobenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Chlorodibromomethane	BDL	0.12	mg/kg	8260B	02/24/08	119
Chloroethane	BDL	0.60	mg/kg	8260B	02/24/08	119
2-Chloroethyl vinyl ether	BDL	6.0	mg/kg	8260B	02/24/08	119
Chloroform	BDL	0.60	mg/kg	8260B	02/24/08	119
Chloromethane	BDL	0.12	mg/kg	8260B	02/24/08	119
2-Chlorotoluene	BDL	0.12	mg/kg	8260B	02/24/08	119
4-Chlorotoluene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,2-Dibromo-3-Chloropropane	BDL	0.60	mg/kg	8260B	02/24/08	119
1,2-Dibromoethane	BDL	0.12	mg/kg	8260B	02/24/08	119
Dibromomethane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,2-Dichlorobenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,3-Dichlorobenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,4-Dichlorobenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Dichlorodifluoromethane	BDL	0.60	mg/kg	8260B	02/24/08	119
1,1-Dichloroethane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,2-Dichloroethane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,1-Dichloroethene	BDL	0.12	mg/kg	8260B	02/24/08	119
cis-1,2-Dichloroethene	BDL	0.12	mg/kg	8260B	02/24/08	119
trans-1,2-Dichloroethene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,2-Dichloropropane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,1-Dichloropropene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,3-Dichloropropane	BDL	0.12	mg/kg	8260B	02/24/08	119
cis-1,3-Dichloropropene	BDL	0.12	mg/kg	8260B	02/24/08	119
trans-1,3-Dichloropropene	BDL	0.12	mg/kg	8260B	02/24/08	119
2,2-Dichloropropane	BDL	0.12	mg/kg	8260B	02/24/08	119
Di-isopropyl ether	BDL	0.12	mg/kg	8260B	02/24/08	119
Ethylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Hexachlorobutadiene	BDL	0.12	mg/kg	8260B	02/24/08	119
Isopropylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
p-Isopropyltoluene	BDL	0.12	mg/kg	8260B	02/24/08	119
2-Butanone (MEK)	BDL	1.2	mg/kg	8260B	02/24/08	119

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L332816-05 (V8260) - Target compounds too high to run at a lower dilution.

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-05

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A3 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.60	mg/kg	8260B	02/24/08	119
4-Methyl-2-pentanone (MIBK)	BDL	1.2	mg/kg	8260B	02/24/08	119
Methyl tert-butyl ether	BDL	0.12	mg/kg	8260B	02/24/08	119
Naphthalene	BDL	0.60	mg/kg	8260B	02/24/08	119
n-Propylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Styrene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,1,1,2-Tetrachloroethane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,1,2,2-Tetrachloroethane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.12	mg/kg	8260B	02/24/08	119
Tetrachloroethene	BDL	0.12	mg/kg	8260B	02/24/08	119
Toluene	5.5	0.60	mg/kg	8260B	02/24/08	119
1,2,3-Trichlorobenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,2,4-Trichlorobenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,1,1-Trichloroethane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,1,2-Trichloroethane	BDL	0.12	mg/kg	8260B	02/24/08	119
Trichloroethene	BDL	0.12	mg/kg	8260B	02/24/08	119
Trichlorofluoromethane	BDL	0.60	mg/kg	8260B	02/24/08	119
1,2,3-Trichloropropane	BDL	0.12	mg/kg	8260B	02/24/08	119
1,2,4-Trimethylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,2,3-Trimethylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
1,3,5-Trimethylbenzene	BDL	0.12	mg/kg	8260B	02/24/08	119
Vinyl chloride	BDL	0.12	mg/kg	8260B	02/24/08	119
Xylenes, Total	BDL	0.36	mg/kg	8260B	02/24/08	119
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	02/24/08	119
Dibromofluoromethane	102.		% Rec.	8260B	02/24/08	119
4-Bromofluorobenzene	93.3		% Rec.	8260B	02/24/08	119

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32
L332816-05 (V8260) - Target compounds too high to run at a lower dilution.

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-06

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A3 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 14:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/kg	8260B	02/24/08	1
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/24/08	1
Benzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromoform	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromomethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
n-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chloroethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/kg	8260B	02/24/08	1
Chloroform	BDL	0.0050	mg/kg	8260B	02/24/08	1
Chloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Ethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
p-Isopropyltoluene	0.0018	0.0010	mg/kg	8260B	02/24/08	1
2-Butanone (MEK)	BDL	0.010	mg/kg	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-06

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-A3 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 14:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0050	mg/kg	8260B	02/24/08	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/kg	8260B	02/24/08	1
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Naphthalene	BDL	0.0050	mg/kg	8260B	02/24/08	1
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Styrene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/24/08	1
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Toluene	0.0060	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Xylenes, Total	BDL	0.0030	mg/kg	8260B	02/24/08	1
Surrogate Recovery						
Toluene-d8	97.2		% Rec.	8260B	02/24/08	1
Dibromofluoromethane	107.		% Rec.	8260B	02/24/08	1
4-Bromofluorobenzene	84.1		% Rec.	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-07

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B1 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 15:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	0.50	0.050	mg/kg	8260B	02/26/08	1
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/26/08	1
Benzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromoform	BDL	0.0010	mg/kg	8260B	02/26/08	1
Bromomethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
n-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/26/08	1
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Chloroethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/kg	8260B	02/26/08	1
Chloroform	BDL	0.0050	mg/kg	8260B	02/26/08	1
Chloromethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/26/08	1
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/kg	8260B	02/26/08	1
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/26/08	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/26/08	1
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/26/08	1
Ethylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
p-Isopropyltoluene	0.0039	0.0010	mg/kg	8260B	02/26/08	1
2-Butanone (MEK)	0.21	0.010	mg/kg	8260B	02/26/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-07

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B1 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 15:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0050	mg/kg	8260B	02/26/08	1
4-Methyl-2-pentanone (MIBK)	0.012	0.010	mg/kg	8260B	02/26/08	1
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/26/08	1
Naphthalene	0.0055	0.0050	mg/kg	8260B	02/26/08	1
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Styrene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/26/08	1
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Toluene	1.3	0.27	mg/kg	8260B	02/28/08	54
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/26/08	1
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	02/26/08	1
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,2,4-Trimethylbenzene	0.0013	0.0010	mg/kg	8260B	02/26/08	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/26/08	1
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/26/08	1
Xylenes, Total	BDL	0.0030	mg/kg	8260B	02/26/08	1
Surrogate Recovery						
Toluene-d8	96.8		% Rec.	8260B	02/26/08	1
Dibromofluoromethane	124.		% Rec.	8260B	02/26/08	1
4-Bromofluorobenzene	87.4		% Rec.	8260B	02/26/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-08

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B1 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	0.24	0.050	mg/kg	8260B	02/24/08	1
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/24/08	1
Benzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromoform	BDL	0.0010	mg/kg	8260B	02/24/08	1
Bromomethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
n-Butylbenzene	0.0014	0.0010	mg/kg	8260B	02/24/08	1
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Chloroethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/kg	8260B	02/24/08	1
Chloroform	BDL	0.0050	mg/kg	8260B	02/24/08	1
Chloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Ethylbenzene	0.0014	0.0010	mg/kg	8260B	02/24/08	1
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
p-Isopropyltoluene	0.0022	0.0010	mg/kg	8260B	02/24/08	1
2-Butanone (MEK)	0.012	0.010	mg/kg	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-08

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B1 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0050	mg/kg	8260B	02/24/08	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/kg	8260B	02/24/08	1
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1
Naphthalene	0.0067	0.0050	mg/kg	8260B	02/24/08	1
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Styrene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/24/08	1
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Toluene	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	02/24/08	1
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1
1,2,4-Trimethylbenzene	0.0078	0.0010	mg/kg	8260B	02/24/08	1
1,2,3-Trimethylbenzene	0.0089	0.0010	mg/kg	8260B	02/24/08	1
1,3,5-Trimethylbenzene	0.0024	0.0010	mg/kg	8260B	02/24/08	1
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/24/08	1
Xylenes, Total	0.0043	0.0030	mg/kg	8260B	02/24/08	1
Surrogate Recovery						
Toluene-d8	94.3		% Rec.	8260B	02/24/08	1
Dibromofluoromethane	121.		% Rec.	8260B	02/24/08	1
4-Bromofluorobenzene	58.5		% Rec.	8260B	02/24/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-09

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B2 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	0.42	0.051	mg/kg	8260B	02/24/08	1.01
Acrylonitrile	BDL	0.010	mg/kg	8260B	02/24/08	1.01
Benzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Bromobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Bromodichloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Bromoform	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Bromomethane	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
n-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
sec-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
tert-Butylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Carbon tetrachloride	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Chlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Chlorodibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Chloroethane	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
2-Chloroethyl vinyl ether	BDL	0.051	mg/kg	8260B	02/24/08	1.01
Chloroform	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
Chloromethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
2-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
4-Chlorotoluene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,2-Dibromo-3-Chloropropane	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
1,2-Dibromoethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Dibromomethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,2-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,3-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,4-Dichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Dichlorodifluoromethane	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
1,1-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,2-Dichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,1-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
cis-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
trans-1,2-Dichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,1-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,3-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
cis-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
trans-1,3-Dichloropropene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
2,2-Dichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Di-isopropyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Ethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Hexachlorobutadiene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Isopropylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
p-Isopropyltoluene	0.0065	0.0010	mg/kg	8260B	02/24/08	1.01
2-Butanone (MEK)	0.099	0.010	mg/kg	8260B	02/24/08	1.01

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03, 2008

ESC Sample # : L332816-09

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B2 UPPER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
4-Methyl-2-pentanone (MIBK)	0.011	0.010	mg/kg	8260B	02/24/08	1.01
Methyl tert-butyl ether	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Naphthalene	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
n-Propylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Styrene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Tetrachloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Toluene	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
1,2,3-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,2,4-Trichlorobenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,1,1-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,1,2-Trichloroethane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Trichloroethene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Trichlorofluoromethane	BDL	0.0051	mg/kg	8260B	02/24/08	1.01
1,2,3-Trichloropropane	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,2,4-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
1,2,3-Trimethylbenzene	0.0069	0.0010	mg/kg	8260B	02/24/08	1.01
1,3,5-Trimethylbenzene	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Vinyl chloride	BDL	0.0010	mg/kg	8260B	02/24/08	1.01
Xylenes, Total	0.0085	0.0030	mg/kg	8260B	02/24/08	1.01
Surrogate Recovery						
Toluene-d8	93.9		% Rec.	8260B	02/24/08	1.01
Dibromofluoromethane	116.		% Rec.	8260B	02/24/08	1.01
4-Bromofluorobenzene	65.1		% Rec.	8260B	02/24/08	1.01

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03,2008

ESC Sample # : L332816-10

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B2 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	0.12	0.058	mg/kg	8260B	02/24/08	1.15
Acrylonitrile	BDL	0.012	mg/kg	8260B	02/24/08	1.15
Benzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Bromobenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Bromodichloromethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Bromoform	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Bromomethane	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
n-Butylbenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
sec-Butylbenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
tert-Butylbenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Carbon tetrachloride	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Chlorobenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Chlorodibromomethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Chloroethane	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
2-Chloroethyl vinyl ether	BDL	0.058	mg/kg	8260B	02/24/08	1.15
Chloroform	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
Chloromethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
2-Chlorotoluene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
4-Chlorotoluene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,2-Dibromo-3-Chloropropane	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
1,2-Dibromoethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Dibromomethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,2-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,3-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,4-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Dichlorodifluoromethane	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
1,1-Dichloroethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,2-Dichloroethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,1-Dichloroethene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
cis-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
trans-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,1-Dichloropropene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,3-Dichloropropane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
cis-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
trans-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
2,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Di-isopropyl ether	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Ethylbenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Hexachlorobutadiene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Isopropylbenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
p-Isopropyltoluene	0.0095	0.0012	mg/kg	8260B	02/24/08	1.15
2-Butanone (MEK)	BDL	0.012	mg/kg	8260B	02/24/08	1.15

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03,2008

ESC Sample # : L332816-10

Date Received : February 21, 2008
Description : Brix

Site ID :

Sample ID : CB-B2 LOWER

Project # : 15634-00/T8

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methylene Chloride	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
4-Methyl-2-pentanone (MIBK)	BDL	0.012	mg/kg	8260B	02/24/08	1.15
Methyl tert-butyl ether	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Naphthalene	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
n-Propylbenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Styrene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,1,1,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,1,2,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Tetrachloroethene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Toluene	3.0	0.29	mg/kg	8260B	02/26/08	58
1,2,3-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,2,4-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,1,1-Trichloroethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,1,2-Trichloroethane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Trichloroethene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Trichlorofluoromethane	BDL	0.0058	mg/kg	8260B	02/24/08	1.15
1,2,3-Trichloropropane	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
1,2,4-Trimethylbenzene	0.0028	0.0012	mg/kg	8260B	02/24/08	1.15
1,2,3-Trimethylbenzene	0.0054	0.0012	mg/kg	8260B	02/24/08	1.15
1,3,5-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Vinyl chloride	BDL	0.0012	mg/kg	8260B	02/24/08	1.15
Xylenes, Total	0.0035	0.0035	mg/kg	8260B	02/24/08	1.15
Surrogate Recovery						
Toluene-d8	88.8		% Rec.	8260B	02/24/08	1.15
Dibromofluoromethane	100.		% Rec.	8260B	02/24/08	1.15
4-Bromofluorobenzene	62.5		% Rec.	8260B	02/24/08	1.15

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03,2008

ESC Sample # : L332816-11

Site ID :

Project # : 15634-00/T8

Date Received : February 21, 2008
Description : Brix

Sample ID : CB-A UPPER COMP

Collected By : Lisa Glonek
Collection Date : 02/19/08 14:20

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	54.7		%	2540G	02/23/08	1
Gasoline Range Organics-NWTPH	3.9	0.91	mg/kg	NWTPHGX	02/22/08	5
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	95.5		% Rec.	NWTPHGX	02/22/08	5
Diesel Range Organics (DRO)	120	73.	mg/kg	NWTPHDX	02/27/08	10
Residual Range Organics (RRO)	440	180	mg/kg	NWTPHDX	02/27/08	10
Surrogate Recovery						
o-Terphenyl	74.3		% Rec.	NWTPHDX	02/27/08	10

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03,2008

ESC Sample # : L332816-12

Site ID :

Project # : 15634-00/T8

Date Received : February 21, 2008
Description : Brix

Sample ID : CB-A LOWER COMP

Collected By : Lisa Glonek
Collection Date : 02/19/08 14:25

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	71.1		%	2540G	02/23/08	1
Gasoline Range Organics-NWTPH	BDL	0.70	mg/kg	NWTPHGX	02/22/08	5
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	97.3		% Rec.	NWTPHGX	02/22/08	5
Diesel Range Organics (DRO)	110	56.	mg/kg	NWTPHDX	02/27/08	10
Residual Range Organics (RRO)	1200	140	mg/kg	NWTPHDX	02/27/08	10
Surrogate Recovery						
o-Terphenyl	124.		% Rec.	NWTPHDX	02/27/08	10

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03,2008

ESC Sample # : L332816-13

Site ID :

Project # : 15634-00/T8

Date Received : February 21, 2008
Description : Brix

Sample ID : CB-B UPPER COMP

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:40

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	56.4		%	2540G	02/23/08	1
Gasoline Range Organics-NWTPH	3.5	0.89	mg/kg	NWTPHGX	02/22/08	5
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	NWTPHGX	02/22/08	5
Diesel Range Organics (DRO)	190	71.	mg/kg	NWTPHDX	02/27/08	10
Residual Range Organics (RRO)	850	180	mg/kg	NWTPHDX	02/27/08	10
Surrogate Recovery						
o-Terphenyl	99.0		% Rec.	NWTPHDX	02/27/08	10

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 03,2008

ESC Sample # : L332816-14

Site ID :

Project # : 15634-00/T8

Date Received : February 21, 2008
Description : Brix

Sample ID : CB-B LOWER COMP

Collected By : Lisa Glonek
Collection Date : 02/19/08 16:45

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	55.3		%	2540G	02/23/08	1
Gasoline Range Organics-NWTPH	27.	9.0	mg/kg	NWTPHGX	02/22/08	50
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.1		% Rec.	NWTPHGX	02/22/08	50
Diesel Range Organics (DRO)	220	36.	mg/kg	NWTPHDX	02/29/08	5
Residual Range Organics (RRO)	2000	90.	mg/kg	NWTPHDX	02/29/08	5
Surrogate Recovery						
o-Terphenyl	53.7		% Rec.	NWTPHDX	02/29/08	5

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 03/03/08 13:31 Printed: 03/03/08 13:32

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L332816-02	Methyl tert-butyl ether	J3
L332816-04	Carbon tetrachloride	J4
	cis-1,3-Dichloropropene	J4
L332816-05	Trichlorofluoromethane	J4J3
L332816-06	Trichlorofluoromethane	J4J3
L332816-08	n-Butylbenzene	J8
	Naphthalene	J8
	Trichlorofluoromethane	J4J3
	1,2,3-Trimethylbenzene	J8
	4-Bromofluorobenzene	J2
L332816-09	Trichlorofluoromethane	J4J3
	1,2,3-Trimethylbenzene	J8
L332816-10	Trichlorofluoromethane	J4J3
	1,2,3-Trimethylbenzene	J8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J8	The internal standard associated with this data responded abnormally low. The data is likely to show a high bias concerning the result.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
03/03/08 at 13:32:29

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L332816-01 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-02 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-03 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-04 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-05 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-06 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-07 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-08 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-09 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-10 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31

Sample: L332816-11 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31
Silica Gel Cleanup
Sample: L332816-12 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31
Silica Gel Cleanup
Sample: L332816-13 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31
Silica Gel Cleanup
Sample: L332816-14 Account: HARCROPOR Received: 02/21/08 09:00 Due Date: 02/28/08 00:00 RPT Date: 03/03/08 13:31
Silica Gel Cleanup

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Laboratory Blank

Analyte	Result	Units	Date Analyzed	Batch
Total Solids	< .1	%	02/23/08 09:46	WG346421
Gasoline Range Organics-NWTPH	< .1	mg/kg	02/22/08 13:53	WG346451
1,1,1,2-Tetrachloroethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,1,1-Trichloroethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,1,2,2-Tetrachloroethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,1,2-Trichloroethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,1-Dichloroethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,1-Dichloroethene	< .001	mg/kg	02/24/08 12:53	WG346688
1,1-Dichloropropene	< .001	mg/kg	02/24/08 12:53	WG346688
1,2,3-Trichlorobenzene	< .001	mg/kg	02/24/08 12:53	WG346688
1,2,3-Trichloropropane	< .001	mg/kg	02/24/08 12:53	WG346688
1,2,3-Trimethylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
1,2,4-Trichlorobenzene	< .001	mg/kg	02/24/08 12:53	WG346688
1,2,4-Trimethylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
1,2-Dibromo-3-Chloropropane	< .005	mg/kg	02/24/08 12:53	WG346688
1,2-Dibromoethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,2-Dichlorobenzene	< .001	mg/kg	02/24/08 12:53	WG346688
1,2-Dichloroethane	< .001	mg/kg	02/24/08 12:53	WG346688
1,2-Dichloropropane	< .001	mg/kg	02/24/08 12:53	WG346688
1,3,5-Trimethylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
1,3-Dichlorobenzene	< .001	mg/kg	02/24/08 12:53	WG346688
1,3-Dichloropropane	< .001	mg/kg	02/24/08 12:53	WG346688
1,4-Dichlorobenzene	< .001	mg/kg	02/24/08 12:53	WG346688
2,2-Dichloropropane	< .001	mg/kg	02/24/08 12:53	WG346688
2-Butanone (MEK)	< .01	mg/kg	02/24/08 12:53	WG346688
2-Chloroethyl vinyl ether	< .001	mg/kg	02/24/08 12:53	WG346688
2-Chlorotoluene	< .001	mg/kg	02/24/08 12:53	WG346688
4-Chlorotoluene	< .001	mg/kg	02/24/08 12:53	WG346688
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg	02/24/08 12:53	WG346688
Acetone	< .05	mg/kg	02/24/08 12:53	WG346688
Acrylonitrile	< .01	mg/kg	02/24/08 12:53	WG346688
Benzene	< .001	mg/kg	02/24/08 12:53	WG346688
Bromobenzene	< .001	mg/kg	02/24/08 12:53	WG346688
Bromodichloromethane	< .001	mg/kg	02/24/08 12:53	WG346688
Bromoform	< .001	mg/kg	02/24/08 12:53	WG346688
Bromomethane	< .005	mg/kg	02/24/08 12:53	WG346688
Carbon tetrachloride	< .001	mg/kg	02/24/08 12:53	WG346688
Chlorobenzene	< .001	mg/kg	02/24/08 12:53	WG346688
Chlorodibromomethane	< .001	mg/kg	02/24/08 12:53	WG346688
Chloroethane	< .005	mg/kg	02/24/08 12:53	WG346688
Chloroform	< .005	mg/kg	02/24/08 12:53	WG346688
Chloromethane	< .001	mg/kg	02/24/08 12:53	WG346688
cis-1,2-Dichloroethene	< .001	mg/kg	02/24/08 12:53	WG346688
cis-1,3-Dichloropropene	< .001	mg/kg	02/24/08 12:53	WG346688
Di-isopropyl ether	< .001	mg/kg	02/24/08 12:53	WG346688
Dibromomethane	< .001	mg/kg	02/24/08 12:53	WG346688
Dichlorodifluoromethane	< .005	mg/kg	02/24/08 12:53	WG346688
Ethylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
Hexachlorobutadiene	< .001	mg/kg	02/24/08 12:53	WG346688
Isopropylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
Methyl tert-butyl ether	< .001	mg/kg	02/24/08 12:53	WG346688
Methylene Chloride	< .005	mg/kg	02/24/08 12:53	WG346688
n-Butylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
n-Propylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
Naphthalene	< .005	mg/kg	02/24/08 12:53	WG346688
p-Isopropyltoluene	< .001	mg/kg	02/24/08 12:53	WG346688
sec-Butylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Styrene	< .001	mg/kg	02/24/08 12:53	WG346688

Laboratory Blank

Analyte	Result	Units	Date Analyzed	Batch
tert-Butylbenzene	< .001	mg/kg	02/24/08 12:53	WG346688
Tetrachloroethene	< .001	mg/kg	02/24/08 12:53	WG346688
Toluene	< .005	mg/kg	02/24/08 12:53	WG346688
trans-1,2-Dichloroethene	< .001	mg/kg	02/24/08 12:53	WG346688
trans-1,3-Dichloropropene	< .001	mg/kg	02/24/08 12:53	WG346688
Trichloroethene	< .001	mg/kg	02/24/08 12:53	WG346688
Trichlorofluoromethane	< .005	mg/kg	02/24/08 12:53	WG346688
Vinyl chloride	< .001	mg/kg	02/24/08 12:53	WG346688
Xylenes, Total	< .003	mg/kg	02/24/08 12:53	WG346688
1,1,1,2-Tetrachloroethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,1,1-Trichloroethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,1,2,2-Tetrachloroethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,1,2-Trichloroethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,1-Dichloroethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,1-Dichloroethene	< .001	mg/kg	02/24/08 14:23	WG346689
1,1-Dichloropropene	< .001	mg/kg	02/24/08 14:23	WG346689
1,2,3-Trichlorobenzene	< .001	mg/kg	02/24/08 14:23	WG346689
1,2,3-Trichloropropane	< .001	mg/kg	02/24/08 14:23	WG346689
1,2,3-Trimethylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
1,2,4-Trichlorobenzene	< .001	mg/kg	02/24/08 14:23	WG346689
1,2,4-Trimethylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
1,2-Dibromo-3-Chloropropane	< .005	mg/kg	02/24/08 14:23	WG346689
1,2-Dibromoethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,2-Dichlorobenzene	< .001	mg/kg	02/24/08 14:23	WG346689
1,2-Dichloroethane	< .001	mg/kg	02/24/08 14:23	WG346689
1,2-Dichloropropane	< .001	mg/kg	02/24/08 14:23	WG346689
1,3,5-Trimethylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
1,3-Dichlorobenzene	< .001	mg/kg	02/24/08 14:23	WG346689
1,3-Dichloropropane	< .001	mg/kg	02/24/08 14:23	WG346689
1,4-Dichlorobenzene	< .001	mg/kg	02/24/08 14:23	WG346689
2,2-Dichloropropane	< .001	mg/kg	02/24/08 14:23	WG346689
2-Butanone (MEK)	< .01	mg/kg	02/24/08 14:23	WG346689
2-Chloroethyl vinyl ether	< .001	mg/kg	02/24/08 14:23	WG346689
2-Chlorotoluene	< .001	mg/kg	02/24/08 14:23	WG346689
4-Chlorotoluene	< .001	mg/kg	02/24/08 14:23	WG346689
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg	02/24/08 14:23	WG346689
Acetone	< .05	mg/kg	02/24/08 14:23	WG346689
Acrylonitrile	< .01	mg/kg	02/24/08 14:23	WG346689
Benzene	< .001	mg/kg	02/24/08 14:23	WG346689
Bromobenzene	< .001	mg/kg	02/24/08 14:23	WG346689
Bromodichloromethane	< .001	mg/kg	02/24/08 14:23	WG346689
Bromoform	< .001	mg/kg	02/24/08 14:23	WG346689
Bromomethane	< .005	mg/kg	02/24/08 14:23	WG346689
Carbon tetrachloride	< .001	mg/kg	02/24/08 14:23	WG346689
Chlorobenzene	< .001	mg/kg	02/24/08 14:23	WG346689
Chlorodibromomethane	< .001	mg/kg	02/24/08 14:23	WG346689
Chloroethane	< .005	mg/kg	02/24/08 14:23	WG346689
Chloroform	< .005	mg/kg	02/24/08 14:23	WG346689
Chloromethane	< .001	mg/kg	02/24/08 14:23	WG346689
cis-1,2-Dichloroethene	< .001	mg/kg	02/24/08 14:23	WG346689
cis-1,3-Dichloropropene	< .001	mg/kg	02/24/08 14:23	WG346689
Di-isopropyl ether	< .001	mg/kg	02/24/08 14:23	WG346689
Dibromomethane	< .001	mg/kg	02/24/08 14:23	WG346689
Dichlorodifluoromethane	< .005	mg/kg	02/24/08 14:23	WG346689
Ethylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
Hexachlorobutadiene	< .001	mg/kg	02/24/08 14:23	WG346689
Isopropylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Methyl tert-butyl ether	< .001	mg/kg	02/24/08 14:23	WG346689

Laboratory Blank

Analyte	Result	Units	Date Analyzed	Batch
Methylene Chloride	< .005	mg/kg	02/24/08 14:23	WG346689
n-Butylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
n-Propylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
Naphthalene	< .005	mg/kg	02/24/08 14:23	WG346689
p-Isopropyltoluene	< .001	mg/kg	02/24/08 14:23	WG346689
sec-Butylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
Styrene	< .001	mg/kg	02/24/08 14:23	WG346689
tert-Butylbenzene	< .001	mg/kg	02/24/08 14:23	WG346689
Tetrachloroethene	< .001	mg/kg	02/24/08 14:23	WG346689
Toluene	< .005	mg/kg	02/24/08 14:23	WG346689
trans-1,2-Dichloroethene	< .001	mg/kg	02/24/08 14:23	WG346689
trans-1,3-Dichloropropene	< .001	mg/kg	02/24/08 14:23	WG346689
Trichloroethene	< .001	mg/kg	02/24/08 14:23	WG346689
Trichlorofluoromethane	< .005	mg/kg	02/24/08 14:23	WG346689
Vinyl chloride	< .001	mg/kg	02/24/08 14:23	WG346689
Xylenes, Total	< .003	mg/kg	02/24/08 14:23	WG346689
Diesel Range Organics (DRO)	< 25	mg/kg	02/25/08 08:50	WG346741
Diesel Range Organics (DRO)	< 4	ppm	02/25/08 08:50	WG346741
Residual Range Organics (RRO)	< 100	mg/kg	02/25/08 08:50	WG346741
1,1,1,2-Tetrachloroethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,1,1-Trichloroethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,1,2,2-Tetrachloroethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,1,2-Trichloroethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,1-Dichloroethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,1-Dichloroethene	< .001	mg/kg	02/26/08 11:02	WG346950
1,1-Dichloropropene	< .001	mg/kg	02/26/08 11:02	WG346950
1,2,3-Trichlorobenzene	< .001	mg/kg	02/26/08 11:02	WG346950
1,2,3-Trichloropropane	< .001	mg/kg	02/26/08 11:02	WG346950
1,2,3-Trimethylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
1,2,4-Trichlorobenzene	< .001	mg/kg	02/26/08 11:02	WG346950
1,2,4-Trimethylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
1,2-Dibromo-3-Chloropropane	< .005	mg/kg	02/26/08 11:02	WG346950
1,2-Dibromoethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,2-Dichlorobenzene	< .001	mg/kg	02/26/08 11:02	WG346950
1,2-Dichloroethane	< .001	mg/kg	02/26/08 11:02	WG346950
1,2-Dichloropropane	< .001	mg/kg	02/26/08 11:02	WG346950
1,3,5-Trimethylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
1,3-Dichlorobenzene	< .001	mg/kg	02/26/08 11:02	WG346950
1,3-Dichloropropane	< .001	mg/kg	02/26/08 11:02	WG346950
1,4-Dichlorobenzene	< .001	mg/kg	02/26/08 11:02	WG346950
2,2-Dichloropropane	< .001	mg/kg	02/26/08 11:02	WG346950
2-Butanone (MEK)	< .01	mg/kg	02/26/08 11:02	WG346950
2-Chloroethyl vinyl ether	< .001	mg/kg	02/26/08 11:02	WG346950
2-Chlorotoluene	< .001	mg/kg	02/26/08 11:02	WG346950
4-Chlorotoluene	< .001	mg/kg	02/26/08 11:02	WG346950
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg	02/26/08 11:02	WG346950
Acetone	< .05	mg/kg	02/26/08 11:02	WG346950
Acrylonitrile	< .01	mg/kg	02/26/08 11:02	WG346950
Benzene	< .001	mg/kg	02/26/08 11:02	WG346950
Bromobenzene	< .001	mg/kg	02/26/08 11:02	WG346950
Bromodichloromethane	< .001	mg/kg	02/26/08 11:02	WG346950
Bromoform	< .001	mg/kg	02/26/08 11:02	WG346950
Bromomethane	< .005	mg/kg	02/26/08 11:02	WG346950
Carbon tetrachloride	< .001	mg/kg	02/26/08 11:02	WG346950
Chlorobenzene	< .001	mg/kg	02/26/08 11:02	WG346950
Chlorodibromomethane	< .001	mg/kg	02/26/08 11:02	WG346950

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Chloroethane	< .005	mg/kg	02/26/08 11:02	WG346950

Laboratory Blank

Analyte	Result	Units	Date Analyzed	Batch
Chloroform	< .005	mg/kg	02/26/08 11:02	WG346950
Chloromethane	< .001	mg/kg	02/26/08 11:02	WG346950
cis-1,2-Dichloroethene	< .001	mg/kg	02/26/08 11:02	WG346950
cis-1,3-Dichloropropene	< .001	mg/kg	02/26/08 11:02	WG346950
Di-isopropyl ether	< .001	mg/kg	02/26/08 11:02	WG346950
Dibromomethane	< .001	mg/kg	02/26/08 11:02	WG346950
Dichlorodifluoromethane	< .005	mg/kg	02/26/08 11:02	WG346950
Ethylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
Hexachlorobutadiene	< .001	mg/kg	02/26/08 11:02	WG346950
Isopropylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
Methyl tert-butyl ether	< .001	mg/kg	02/26/08 11:02	WG346950
Methylene Chloride	< .005	mg/kg	02/26/08 11:02	WG346950
n-Butylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
n-Propylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
Naphthalene	< .005	mg/kg	02/26/08 11:02	WG346950
p-Isopropyltoluene	< .001	mg/kg	02/26/08 11:02	WG346950
sec-Butylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
Styrene	< .001	mg/kg	02/26/08 11:02	WG346950
tert-Butylbenzene	< .001	mg/kg	02/26/08 11:02	WG346950
Tetrachloroethene	< .001	mg/kg	02/26/08 11:02	WG346950
Toluene	< .005	mg/kg	02/26/08 11:02	WG346950
trans-1,2-Dichloroethene	< .001	mg/kg	02/26/08 11:02	WG346950
trans-1,3-Dichloropropene	< .001	mg/kg	02/26/08 11:02	WG346950
Trichloroethene	< .001	mg/kg	02/26/08 11:02	WG346950
Trichlorofluoromethane	< .005	mg/kg	02/26/08 11:02	WG346950
Vinyl chloride	< .001	mg/kg	02/26/08 11:02	WG346950
Xylenes, Total	< .003	mg/kg	02/26/08 11:02	WG346950
1,1,1,2-Tetrachloroethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,1,1-Trichloroethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,1,2,2-Tetrachloroethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,1,2-Trichloroethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,1-Dichloroethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,1-Dichloroethene	< .001	mg/kg	02/26/08 16:35	WG347089
1,1-Dichloropropene	< .001	mg/kg	02/26/08 16:35	WG347089
1,2,3-Trichlorobenzene	< .001	mg/kg	02/26/08 16:35	WG347089
1,2,3-Trichloropropane	< .001	mg/kg	02/26/08 16:35	WG347089
1,2,3-Trimethylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
1,2,4-Trichlorobenzene	< .001	mg/kg	02/26/08 16:35	WG347089
1,2,4-Trimethylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
1,2-Dibromo-3-Chloropropane	< .005	mg/kg	02/26/08 16:35	WG347089
1,2-Dibromoethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,2-Dichlorobenzene	< .001	mg/kg	02/26/08 16:35	WG347089
1,2-Dichloroethane	< .001	mg/kg	02/26/08 16:35	WG347089
1,2-Dichloropropane	< .001	mg/kg	02/26/08 16:35	WG347089
1,3,5-Trimethylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
1,3-Dichlorobenzene	< .001	mg/kg	02/26/08 16:35	WG347089
1,3-Dichloropropane	< .001	mg/kg	02/26/08 16:35	WG347089
1,4-Dichlorobenzene	< .001	mg/kg	02/26/08 16:35	WG347089
2,2-Dichloropropane	< .001	mg/kg	02/26/08 16:35	WG347089
2-Butanone (MEK)	< .01	mg/kg	02/26/08 16:35	WG347089
2-Chloroethyl vinyl ether	< .001	mg/kg	02/26/08 16:35	WG347089
2-Chlorotoluene	< .001	mg/kg	02/26/08 16:35	WG347089
4-Chlorotoluene	< .001	mg/kg	02/26/08 16:35	WG347089
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg	02/26/08 16:35	WG347089
Acetone	< .05	mg/kg	02/26/08 16:35	WG347089
Acrylonitrile	< .01	mg/kg	02/26/08 16:35	WG347089
Benzene	< .001	mg/kg	02/26/08 16:35	WG347089

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Bromobenzene	< .001	mg/kg	02/26/08 16:35	WG347089

Laboratory Blank

Analyte	Result	Units	Date Analyzed	Batch
Bromodichloromethane	< .001	mg/kg	02/26/08 16:35	WG347089
Bromoform	< .001	mg/kg	02/26/08 16:35	WG347089
Bromomethane	< .005	mg/kg	02/26/08 16:35	WG347089
Carbon tetrachloride	< .001	mg/kg	02/26/08 16:35	WG347089
Chlorobenzene	< .001	mg/kg	02/26/08 16:35	WG347089
Chlorodibromomethane	< .001	mg/kg	02/26/08 16:35	WG347089
Chloroethane	< .005	mg/kg	02/26/08 16:35	WG347089
Chloroform	< .005	mg/kg	02/26/08 16:35	WG347089
Chloromethane	< .001	mg/kg	02/26/08 16:35	WG347089
cis-1,2-Dichloroethene	< .001	mg/kg	02/26/08 16:35	WG347089
cis-1,3-Dichloropropene	< .001	mg/kg	02/26/08 16:35	WG347089
Di-isopropyl ether	< .001	mg/kg	02/26/08 16:35	WG347089
Dibromomethane	< .001	mg/kg	02/26/08 16:35	WG347089
Dichlorodifluoromethane	< .005	mg/kg	02/26/08 16:35	WG347089
Ethylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
Hexachlorobutadiene	< .001	mg/kg	02/26/08 16:35	WG347089
Isopropylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
Methyl tert-butyl ether	< .001	mg/kg	02/26/08 16:35	WG347089
Methylene Chloride	< .005	mg/kg	02/26/08 16:35	WG347089
n-Butylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
n-Propylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
Naphthalene	< .005	mg/kg	02/26/08 16:35	WG347089
p-Isopropyltoluene	< .001	mg/kg	02/26/08 16:35	WG347089
sec-Butylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
Styrene	< .001	mg/kg	02/26/08 16:35	WG347089
tert-Butylbenzene	< .001	mg/kg	02/26/08 16:35	WG347089
Tetrachloroethene	< .001	mg/kg	02/26/08 16:35	WG347089
Toluene	< .005	mg/kg	02/26/08 16:35	WG347089
trans-1,2-Dichloroethene	< .001	mg/kg	02/26/08 16:35	WG347089
trans-1,3-Dichloropropene	< .001	mg/kg	02/26/08 16:35	WG347089
Trichloroethene	< .001	mg/kg	02/26/08 16:35	WG347089
Trichlorofluoromethane	< .005	mg/kg	02/26/08 16:35	WG347089
Vinyl chloride	< .001	mg/kg	02/26/08 16:35	WG347089
Xylenes, Total	< .003	mg/kg	02/26/08 16:35	WG347089
Toluene	< .005	mg/kg	02/28/08 10:21	WG347350
1,1,1,2-Tetrachloroethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,1,1-Trichloroethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,1,2,2-Tetrachloroethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,1,2-Trichloroethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,1-Dichloroethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,1-Dichloroethene	< .001	mg/kg	02/29/08 11:07	WG347625
1,1-Dichloropropene	< .001	mg/kg	02/29/08 11:07	WG347625
1,2,3-Trichlorobenzene	< .001	mg/kg	02/29/08 11:07	WG347625
1,2,3-Trichloropropane	< .001	mg/kg	02/29/08 11:07	WG347625
1,2,3-Trimethylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
1,2,4-Trichlorobenzene	< .001	mg/kg	02/29/08 11:07	WG347625
1,2,4-Trimethylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
1,2-Dibromo-3-Chloropropane	< .005	mg/kg	02/29/08 11:07	WG347625
1,2-Dibromoethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,2-Dichlorobenzene	< .001	mg/kg	02/29/08 11:07	WG347625
1,2-Dichloroethane	< .001	mg/kg	02/29/08 11:07	WG347625
1,2-Dichloropropane	< .001	mg/kg	02/29/08 11:07	WG347625
1,3,5-Trimethylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
1,3-Dichlorobenzene	< .001	mg/kg	02/29/08 11:07	WG347625
1,3-Dichloropropane	< .001	mg/kg	02/29/08 11:07	WG347625
1,4-Dichlorobenzene	< .001	mg/kg	02/29/08 11:07	WG347625

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

March 03, 2008

L332816

2,2-Dichloropropane	< .001	mg/kg	02/29/08 11:07	WG347625

Laboratory Blank

Analyte	Result	Units	Date Analyzed	Batch
2-Butanone (MEK)	< .01	mg/kg	02/29/08 11:07	WG347625
2-Chloroethyl vinyl ether	< .001	mg/kg	02/29/08 11:07	WG347625
2-Chlorotoluene	< .001	mg/kg	02/29/08 11:07	WG347625
4-Chlorotoluene	< .001	mg/kg	02/29/08 11:07	WG347625
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg	02/29/08 11:07	WG347625
Acetone	< .05	mg/kg	02/29/08 11:07	WG347625
Acrylonitrile	< .01	mg/kg	02/29/08 11:07	WG347625
Benzene	< .001	mg/kg	02/29/08 11:07	WG347625
Bromobenzene	< .001	mg/kg	02/29/08 11:07	WG347625
Bromodichloromethane	< .001	mg/kg	02/29/08 11:07	WG347625
Bromoform	< .001	mg/kg	02/29/08 11:07	WG347625
Bromomethane	< .005	mg/kg	02/29/08 11:07	WG347625
Carbon tetrachloride	< .001	mg/kg	02/29/08 11:07	WG347625
Chlorobenzene	< .001	mg/kg	02/29/08 11:07	WG347625
Chlorodibromomethane	< .001	mg/kg	02/29/08 11:07	WG347625
Chloroethane	< .005	mg/kg	02/29/08 11:07	WG347625
Chloroform	< .005	mg/kg	02/29/08 11:07	WG347625
Chloromethane	< .001	mg/kg	02/29/08 11:07	WG347625
cis-1,2-Dichloroethene	< .001	mg/kg	02/29/08 11:07	WG347625
cis-1,3-Dichloropropene	< .001	mg/kg	02/29/08 11:07	WG347625
Di-isopropyl ether	< .001	mg/kg	02/29/08 11:07	WG347625
Dibromomethane	< .001	mg/kg	02/29/08 11:07	WG347625
Dichlorodifluoromethane	< .005	mg/kg	02/29/08 11:07	WG347625
Ethylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
Hexachlorobutadiene	< .001	mg/kg	02/29/08 11:07	WG347625
Isopropylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
Methyl tert-butyl ether	< .001	mg/kg	02/29/08 11:07	WG347625
Methylene Chloride	< .005	mg/kg	02/29/08 11:07	WG347625
n-Butylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
n-Propylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
Naphthalene	< .005	mg/kg	02/29/08 11:07	WG347625
p-Isopropyltoluene	< .001	mg/kg	02/29/08 11:07	WG347625
sec-Butylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
Styrene	< .001	mg/kg	02/29/08 11:07	WG347625
tert-Butylbenzene	< .001	mg/kg	02/29/08 11:07	WG347625
Tetrachloroethene	< .001	mg/kg	02/29/08 11:07	WG347625
Toluene	< .005	mg/kg	02/29/08 11:07	WG347625
trans-1,2-Dichloroethene	< .001	mg/kg	02/29/08 11:07	WG347625
trans-1,3-Dichloropropene	< .001	mg/kg	02/29/08 11:07	WG347625
Trichloroethene	< .001	mg/kg	02/29/08 11:07	WG347625
Trichlorofluoromethane	< .005	mg/kg	02/29/08 11:07	WG347625
Vinyl chloride	< .001	mg/kg	02/29/08 11:07	WG347625
Xylenes, Total	< .003	mg/kg	02/29/08 11:07	WG347625

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	80.2	80.1	0.153	5	L332823-06	WG346421

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Total Solids	%	50	50.0	100.	85-115	WG346421
Gasoline Range Organics-NWTPH	mg/kg	5.5	4.88	88.7	67-135	WG346451
1,1,1,2-Tetrachloroethane	mg/kg	.05	0.0485	97.0	73-134	WG346688
1,1,1-Trichloroethane	mg/kg	.05	0.0493	98.7	62-135	WG346688
1,1,2,2-Tetrachloroethane	mg/kg	.05	0.0478	95.5	74-129	WG346688

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

1,1,2-Trichloroethane	mg/kg	.05	0.0472	94.4	77-124	WG346688

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	.05	0.0402	80.3	49-155	WG346688
1,1-Dichloroethane	mg/kg	.05	0.0481	96.2	61-134	WG346688
1,1-Dichloroethene	mg/kg	.05	0.0492	98.4	53-136	WG346688
1,1-Dichloropropene	mg/kg	.05	0.0480	95.9	63-132	WG346688
1,2,3-Trichlorobenzene	mg/kg	.05	0.0451	90.2	62-146	WG346688
1,2,3-Trichloropropane	mg/kg	.05	0.0488	97.6	70-133	WG346688
1,2,3-Trimethylbenzene	mg/kg	.05	0.0490	98.1	73-126	WG346688
1,2,4-Trichlorobenzene	mg/kg	.05	0.0453	90.6	61-148	WG346688
1,2,4-Trimethylbenzene	mg/kg	.05	0.0496	99.2	68-135	WG346688
1,2-Dibromo-3-Chloropropane	mg/kg	.05	0.0513	103.	61-134	WG346688
1,2-Dibromoethane	mg/kg	.05	0.0466	93.1	76-127	WG346688
1,2-Dichlorobenzene	mg/kg	.05	0.0481	96.3	77-123	WG346688
1,2-Dichloroethane	mg/kg	.05	0.0467	93.5	58-141	WG346688
1,2-Dichloropropane	mg/kg	.05	0.0485	97.0	71-128	WG346688
1,3,5-Trimethylbenzene	mg/kg	.05	0.0505	101.	71-133	WG346688
1,3-Dichlorobenzene	mg/kg	.05	0.0470	93.9	71-132	WG346688
1,3-Dichloropropane	mg/kg	.05	0.0464	92.8	76-120	WG346688
1,4-Dichlorobenzene	mg/kg	.05	0.0473	94.5	72-123	WG346688
2,2-Dichloropropane	mg/kg	.05	0.0431	86.1	50-147	WG346688
2-Butanone (MEK)	mg/kg	.25	0.238	95.2	51-131	WG346688
2-Chloroethyl vinyl ether	mg/kg	.25	0.157	62.7	0-188	WG346688
2-Chlorotoluene	mg/kg	.05	0.0491	98.1	73-128	WG346688
4-Chlorotoluene	mg/kg	.05	0.0476	95.3	72-129	WG346688
4-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.258	103.	61-143	WG346688
Acetone	mg/kg	.25	0.244	97.7	44-140	WG346688
Acrylonitrile	mg/kg	.25	0.236	94.3	55-143	WG346688
Benzene	mg/kg	.05	0.0450	90.0	65-128	WG346688
Bromobenzene	mg/kg	.05	0.0472	94.5	75-123	WG346688
Bromodichloromethane	mg/kg	.05	0.0487	97.5	66-126	WG346688
Bromoform	mg/kg	.05	0.0516	103.	64-139	WG346688
Bromomethane	mg/kg	.05	0.0633	127.	41-175	WG346688
Carbon tetrachloride	mg/kg	.05	0.0487	97.4	60-140	WG346688
Chlorobenzene	mg/kg	.05	0.0478	95.6	75-125	WG346688
Chlorodibromomethane	mg/kg	.05	0.0482	96.5	72-137	WG346688
Chloroethane	mg/kg	.05	0.0495	99.0	44-159	WG346688
Chloroform	mg/kg	.05	0.0469	93.8	63-123	WG346688
Chloromethane	mg/kg	.05	0.0422	84.4	42-149	WG346688
cis-1,2-Dichloroethene	mg/kg	.05	0.0464	92.7	71-129	WG346688
cis-1,3-Dichloropropene	mg/kg	.05	0.0483	96.6	73-132	WG346688
Di-isopropyl ether	mg/kg	.05	0.0484	96.9	59-143	WG346688
Dibromomethane	mg/kg	.05	0.0438	87.6	70-130	WG346688
Dichlorodifluoromethane	mg/kg	.05	0.0424	84.9	26-186	WG346688
Ethylbenzene	mg/kg	.05	0.0498	99.7	74-128	WG346688
Hexachlorobutadiene	mg/kg	.05	0.0461	92.3	65-137	WG346688
Isopropylbenzene	mg/kg	.05	0.0505	101.	73-130	WG346688
Methyl tert-butyl ether	mg/kg	.05	0.0464	92.8	44-148	WG346688
Methylene Chloride	mg/kg	.05	0.0431	86.3	57-129	WG346688
n-Butylbenzene	mg/kg	.05	0.0506	101.	60-145	WG346688
n-Propylbenzene	mg/kg	.05	0.0514	103.	71-132	WG346688
Naphthalene	mg/kg	.05	0.0460	92.0	61-142	WG346688
p-Isopropyltoluene	mg/kg	.05	0.0509	102.	67-138	WG346688
sec-Butylbenzene	mg/kg	.05	0.0510	102.	71-134	WG346688
Styrene	mg/kg	.05	0.0516	103.	76-133	WG346688
tert-Butylbenzene	mg/kg	.05	0.0508	102.	72-132	WG346688
Tetrachloroethene	mg/kg	.05	0.0463	92.6	65-135	WG346688
Toluene	mg/kg	.05	0.0472	94.4	70-120	WG346688
trans-1,2-Dichloroethene	mg/kg	.05	0.0449	89.8	61-133	WG346688
trans-1,3-Dichloropropene	mg/kg	.05	0.0501	100.	70-135	WG346688
Trichloroethene	mg/kg	.05	0.0461	92.1	71-126	WG346688

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Trichlorofluoromethane	mg/kg	.05	0.0475	95.1	52-147	WG346688

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Vinyl chloride	mg/kg	.05	0.0465	93.0	50-151	WG346688
Xylenes, Total	mg/kg	.15	0.148	98.4	74-127	WG346688
1,1,1,2-Tetrachloroethane	mg/kg	.05	0.0454	90.8	73-134	WG346689
1,1,1-Trichloroethane	mg/kg	.05	0.0408	81.6	62-135	WG346689
1,1,2,2-Tetrachloroethane	mg/kg	.05	0.0459	91.9	74-129	WG346689
1,1,2-Trichloroethane	mg/kg	.05	0.0457	91.3	77-124	WG346689
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	.05	0.0365	73.0	49-155	WG346689
1,1-Dichloroethane	mg/kg	.05	0.0456	91.1	61-134	WG346689
1,1-Dichloroethene	mg/kg	.05	0.0421	84.3	53-136	WG346689
1,1-Dichloropropene	mg/kg	.05	0.0429	85.9	63-132	WG346689
1,2,3-Trichlorobenzene	mg/kg	.05	0.0483	96.7	62-146	WG346689
1,2,3-Trichloropropane	mg/kg	.05	0.0470	93.9	70-133	WG346689
1,2,3-Trimethylbenzene	mg/kg	.05	0.0433	86.6	73-126	WG346689
1,2,4-Trichlorobenzene	mg/kg	.05	0.0435	86.9	61-148	WG346689
1,2,4-Trimethylbenzene	mg/kg	.05	0.0476	95.1	68-135	WG346689
1,2-Dibromo-3-Chloropropane	mg/kg	.05	0.0449	89.8	61-134	WG346689
1,2-Dibromoethane	mg/kg	.05	0.0440	88.0	76-127	WG346689
1,2-Dichlorobenzene	mg/kg	.05	0.0443	88.6	77-123	WG346689
1,2-Dichloroethane	mg/kg	.05	0.0426	85.1	58-141	WG346689
1,2-Dichloropropane	mg/kg	.05	0.0498	99.7	71-128	WG346689
1,3,5-Trimethylbenzene	mg/kg	.05	0.0510	102.	71-133	WG346689
1,3-Dichlorobenzene	mg/kg	.05	0.0487	97.4	71-132	WG346689
1,3-Dichloropropane	mg/kg	.05	0.0461	92.2	76-120	WG346689
1,4-Dichlorobenzene	mg/kg	.05	0.0496	99.2	72-123	WG346689
2,2-Dichloropropane	mg/kg	.05	0.0412	82.5	50-147	WG346689
2-Butanone (MEK)	mg/kg	.25	0.253	101.	51-131	WG346689
2-Chloroethyl vinyl ether	mg/kg	.25	0.244	97.6	0-188	WG346689
2-Chlorotoluene	mg/kg	.05	0.0510	102.	73-128	WG346689
4-Chlorotoluene	mg/kg	.05	0.0428	85.6	72-129	WG346689
4-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.246	98.4	61-143	WG346689
Acetone	mg/kg	.25	0.212	85.0	44-140	WG346689
Acrylonitrile	mg/kg	.25	0.225	90.0	55-143	WG346689
Benzene	mg/kg	.05	0.0433	86.7	65-128	WG346689
Bromobenzene	mg/kg	.05	0.0503	101.	75-123	WG346689
Bromodichloromethane	mg/kg	.05	0.0450	90.0	66-126	WG346689
Bromoform	mg/kg	.05	0.0439	87.8	64-139	WG346689
Bromomethane	mg/kg	.05	0.0488	97.5	41-175	WG346689
Carbon tetrachloride	mg/kg	.05	0.0417	83.4	60-140	WG346689
Chlorobenzene	mg/kg	.05	0.0512	102.	75-125	WG346689
Chlorodibromomethane	mg/kg	.05	0.0462	92.3	72-137	WG346689
Chloroethane	mg/kg	.05	0.0485	97.1	44-159	WG346689
Chloroform	mg/kg	.05	0.0437	87.5	63-123	WG346689
Chloromethane	mg/kg	.05	0.0380	75.9	42-149	WG346689
cis-1,2-Dichloroethene	mg/kg	.05	0.0444	88.7	71-129	WG346689
cis-1,3-Dichloropropene	mg/kg	.05	0.0445	89.0	73-132	WG346689
Di-isopropyl ether	mg/kg	.05	0.0466	93.2	59-143	WG346689
Dibromomethane	mg/kg	.05	0.0452	90.4	70-130	WG346689
Dichlorodifluoromethane	mg/kg	.05	0.0470	94.1	26-186	WG346689
Ethylbenzene	mg/kg	.05	0.0451	90.2	74-128	WG346689
Hexachlorobutadiene	mg/kg	.05	0.0415	83.1	65-137	WG346689
Isopropylbenzene	mg/kg	.05	0.0453	90.6	73-130	WG346689
Methyl tert-butyl ether	mg/kg	.05	0.0428	85.7	44-148	WG346689
Methylene Chloride	mg/kg	.05	0.0445	89.1	57-129	WG346689
n-Butylbenzene	mg/kg	.05	0.0475	95.0	60-145	WG346689
n-Propylbenzene	mg/kg	.05	0.0442	88.3	71-132	WG346689
Naphthalene	mg/kg	.05	0.0444	88.8	61-142	WG346689
p-Isopropyltoluene	mg/kg	.05	0.0440	88.0	67-138	WG346689
sec-Butylbenzene	mg/kg	.05	0.0458	91.5	71-134	WG346689

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Styrene	mg/kg	.05	0.0453	90.7	76-133	WG346689

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
tert-Butylbenzene	mg/kg	.05	0.0452	90.4	72-132	WG346689
Tetrachloroethene	mg/kg	.05	0.0444	88.8	65-135	WG346689
Toluene	mg/kg	.05	0.0443	88.7	70-120	WG346689
trans-1,2-Dichloroethene	mg/kg	.05	0.0427	85.4	61-133	WG346689
trans-1,3-Dichloropropene	mg/kg	.05	0.0456	91.1	70-135	WG346689
Trichloroethene	mg/kg	.05	0.0464	92.8	71-126	WG346689
Trichlorofluoromethane	mg/kg	.05	0.0174	34.8	52-147	WG346689
Vinyl chloride	mg/kg	.05	0.0401	80.2	50-151	WG346689
Xylenes, Total	mg/kg	.15	0.135	90.1	74-127	WG346689
Diesel Range Organics (DRO)	mg/kg	30	15.7	52.4	50-150	WG346741
Residual Range Organics (RRO)	mg/kg	30	20.0	66.8	50-150	WG346741
1,1,1,2-Tetrachloroethane	mg/kg	.05	0.0498	99.6	73-134	WG346950
1,1,1-Trichloroethane	mg/kg	.05	0.0528	106.	62-135	WG346950
1,1,2,2-Tetrachloroethane	mg/kg	.05	0.0514	103.	74-129	WG346950
1,1,2-Trichloroethane	mg/kg	.05	0.0487	97.3	77-124	WG346950
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	.05	0.0404	80.9	49-155	WG346950
1,1-Dichloroethane	mg/kg	.05	0.0522	104.	61-134	WG346950
1,1-Dichloroethene	mg/kg	.05	0.0503	101.	53-136	WG346950
1,1-Dichloropropene	mg/kg	.05	0.0526	105.	63-132	WG346950
1,2,3-Trichlorobenzene	mg/kg	.05	0.0427	85.3	62-146	WG346950
1,2,3-Trichloropropane	mg/kg	.05	0.0522	104.	70-133	WG346950
1,2,3-Trimethylbenzene	mg/kg	.05	0.0502	100.	73-126	WG346950
1,2,4-Trichlorobenzene	mg/kg	.05	0.0426	85.3	61-148	WG346950
1,2,4-Trimethylbenzene	mg/kg	.05	0.0465	93.1	68-135	WG346950
1,2-Dibromo-3-Chloropropane	mg/kg	.05	0.0498	99.5	61-134	WG346950
1,2-Dibromoethane	mg/kg	.05	0.0492	98.3	76-127	WG346950
1,2-Dichlorobenzene	mg/kg	.05	0.0480	96.1	77-123	WG346950
1,2-Dichloroethane	mg/kg	.05	0.0521	104.	58-141	WG346950
1,2-Dichloropropane	mg/kg	.05	0.0509	102.	71-128	WG346950
1,3,5-Trimethylbenzene	mg/kg	.05	0.0484	96.7	71-133	WG346950
1,3-Dichlorobenzene	mg/kg	.05	0.0516	103.	71-132	WG346950
1,3-Dichloropropane	mg/kg	.05	0.0481	96.2	76-120	WG346950
1,4-Dichlorobenzene	mg/kg	.05	0.0465	93.1	72-123	WG346950
2,2-Dichloropropane	mg/kg	.05	0.0518	104.	50-147	WG346950
2-Butanone (MEK)	mg/kg	.25	0.270	108.	51-131	WG346950
2-Chloroethyl vinyl ether	mg/kg	.25	0.159	63.8	0-188	WG346950
2-Chlorotoluene	mg/kg	.05	0.0516	103.	73-128	WG346950
4-Chlorotoluene	mg/kg	.05	0.0508	102.	72-129	WG346950
4-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.277	111.	61-143	WG346950
Acetone	mg/kg	.25	0.258	103.	44-140	WG346950
Acrylonitrile	mg/kg	.25	0.266	107.	55-143	WG346950
Benzene	mg/kg	.05	0.0511	102.	65-128	WG346950
Bromobenzene	mg/kg	.05	0.0499	99.8	75-123	WG346950
Bromodichloromethane	mg/kg	.05	0.0520	104.	66-126	WG346950
Bromoform	mg/kg	.05	0.0460	92.0	64-139	WG346950
Bromomethane	mg/kg	.05	0.0549	110.	41-175	WG346950
Carbon tetrachloride	mg/kg	.05	0.0542	108.	60-140	WG346950
Chlorobenzene	mg/kg	.05	0.0505	101.	75-125	WG346950
Chlorodibromomethane	mg/kg	.05	0.0500	100.	72-137	WG346950
Chloroethane	mg/kg	.05	0.0546	109.	44-159	WG346950
Chloroform	mg/kg	.05	0.0520	104.	63-123	WG346950
Chloromethane	mg/kg	.05	0.0514	103.	42-149	WG346950
cis-1,2-Dichloroethene	mg/kg	.05	0.0526	105.	71-129	WG346950
cis-1,3-Dichloropropene	mg/kg	.05	0.0521	104.	73-132	WG346950
Di-isopropyl ether	mg/kg	.05	0.0514	103.	59-143	WG346950
Dibromomethane	mg/kg	.05	0.0467	93.5	70-130	WG346950
Dichlorodifluoromethane	mg/kg	.05	0.0485	97.1	26-186	WG346950

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Ethylbenzene	mg/kg	.05	0.0500	100.	74-128	WG346950

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexachlorobutadiene	mg/kg	.05	0.0488	97.6	65-137	WG346950
Isopropylbenzene	mg/kg	.05	0.0515	103.	73-130	WG346950
Methyl tert-butyl ether	mg/kg	.05	0.0513	103.	44-148	WG346950
Methylene Chloride	mg/kg	.05	0.0491	98.1	57-129	WG346950
n-Butylbenzene	mg/kg	.05	0.0437	87.4	60-145	WG346950
n-Propylbenzene	mg/kg	.05	0.0502	100.	71-132	WG346950
Naphthalene	mg/kg	.05	0.0412	82.4	61-142	WG346950
p-Isopropyltoluene	mg/kg	.05	0.0453	90.6	67-138	WG346950
sec-Butylbenzene	mg/kg	.05	0.0472	94.5	71-134	WG346950
Styrene	mg/kg	.05	0.0474	94.8	76-133	WG346950
tert-Butylbenzene	mg/kg	.05	0.0462	92.4	72-132	WG346950
Tetrachloroethene	mg/kg	.05	0.0491	98.2	65-135	WG346950
Toluene	mg/kg	.05	0.0495	98.9	70-120	WG346950
trans-1,2-Dichloroethene	mg/kg	.05	0.0522	104.	61-133	WG346950
trans-1,3-Dichloropropene	mg/kg	.05	0.0515	103.	70-135	WG346950
Trichloroethene	mg/kg	.05	0.0497	99.5	71-126	WG346950
Trichlorofluoromethane	mg/kg	.05	0.0536	107.	52-147	WG346950
Vinyl chloride	mg/kg	.05	0.0527	105.	50-151	WG346950
Xylenes, Total	mg/kg	.15	0.151	101.	74-127	WG346950
1,1,1,2-Tetrachloroethane	mg/kg	.05	0.0545	109.	73-134	WG347089
1,1,1-Trichloroethane	mg/kg	.05	0.0521	104.	62-135	WG347089
1,1,2,2-Tetrachloroethane	mg/kg	.05	0.0470	93.9	74-129	WG347089
1,1,2-Trichloroethane	mg/kg	.05	0.0509	102.	77-124	WG347089
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	.05	0.0448	89.7	49-155	WG347089
1,1-Dichloroethane	mg/kg	.05	0.0504	101.	61-134	WG347089
1,1-Dichloroethene	mg/kg	.05	0.0574	115.	53-136	WG347089
1,1-Dichloropropene	mg/kg	.05	0.0570	114.	63-132	WG347089
1,2,3-Trichlorobenzene	mg/kg	.05	0.0485	97.1	62-146	WG347089
1,2,3-Trichloropropane	mg/kg	.05	0.0502	100.	70-133	WG347089
1,2,3-Trimethylbenzene	mg/kg	.05	0.0514	103.	73-126	WG347089
1,2,4-Trichlorobenzene	mg/kg	.05	0.0456	91.3	61-148	WG347089
1,2,4-Trimethylbenzene	mg/kg	.05	0.0537	107.	68-135	WG347089
1,2-Dibromo-3-Chloropropane	mg/kg	.05	0.0522	104.	61-134	WG347089
1,2-Dibromoethane	mg/kg	.05	0.0572	114.	76-127	WG347089
1,2-Dichlorobenzene	mg/kg	.05	0.0487	97.5	77-123	WG347089
1,2-Dichloroethane	mg/kg	.05	0.0439	87.7	58-141	WG347089
1,2-Dichloropropane	mg/kg	.05	0.0508	102.	71-128	WG347089
1,3,5-Trimethylbenzene	mg/kg	.05	0.0559	112.	71-133	WG347089
1,3-Dichlorobenzene	mg/kg	.05	0.0481	96.1	71-132	WG347089
1,3-Dichloropropane	mg/kg	.05	0.0540	108.	76-120	WG347089
1,4-Dichlorobenzene	mg/kg	.05	0.0461	92.3	72-123	WG347089
2,2-Dichloropropane	mg/kg	.05	0.0515	103.	50-147	WG347089
2-Butanone (MEK)	mg/kg	.25	0.248	99.2	51-131	WG347089
2-Chloroethyl vinyl ether	mg/kg	.25	0.237	94.7	0-188	WG347089
2-Chlorotoluene	mg/kg	.05	0.0550	110.	73-128	WG347089
4-Chlorotoluene	mg/kg	.05	0.0535	107.	72-129	WG347089
4-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.226	90.6	61-143	WG347089
Acetone	mg/kg	.25	0.215	85.9	44-140	WG347089
Acrylonitrile	mg/kg	.25	0.242	96.7	55-143	WG347089
Benzene	mg/kg	.05	0.0500	100.	65-128	WG347089
Bromobenzene	mg/kg	.05	0.0516	103.	75-123	WG347089
Bromodichloromethane	mg/kg	.05	0.0502	100.	66-126	WG347089
Bromoform	mg/kg	.05	0.0470	94.0	64-139	WG347089
Bromomethane	mg/kg	.05	0.0429	85.8	41-175	WG347089
Carbon tetrachloride	mg/kg	.05	0.0574	115.	60-140	WG347089
Chlorobenzene	mg/kg	.05	0.0568	114.	75-125	WG347089
Chlorodibromomethane	mg/kg	.05	0.0564	113.	72-137	WG347089
Chloroethane	mg/kg	.05	0.0437	87.5	44-159	WG347089

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Chloroform	mg/kg	.05	0.0478	95.7	63-123	WG347089

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chloromethane	mg/kg	.05	0.0497	99.4	42-149	WG347089
cis-1,2-Dichloroethene	mg/kg	.05	0.0515	103.	71-129	WG347089
cis-1,3-Dichloropropene	mg/kg	.05	0.0500	100.	73-132	WG347089
Di-isopropyl ether	mg/kg	.05	0.0460	92.0	59-143	WG347089
Dibromomethane	mg/kg	.05	0.0472	94.5	70-130	WG347089
Dichlorodifluoromethane	mg/kg	.05	0.0509	102.	26-186	WG347089
Ethylbenzene	mg/kg	.05	0.0567	113.	74-128	WG347089
Hexachlorobutadiene	mg/kg	.05	0.0578	116.	65-137	WG347089
Isopropylbenzene	mg/kg	.05	0.0592	118.	73-130	WG347089
Methyl tert-butyl ether	mg/kg	.05	0.0459	91.7	44-148	WG347089
Methylene Chloride	mg/kg	.05	0.0506	101.	57-129	WG347089
n-Butylbenzene	mg/kg	.05	0.0543	109.	60-145	WG347089
n-Propylbenzene	mg/kg	.05	0.0559	112.	71-132	WG347089
Naphthalene	mg/kg	.05	0.0479	95.8	61-142	WG347089
p-Isopropyltoluene	mg/kg	.05	0.0540	108.	67-138	WG347089
sec-Butylbenzene	mg/kg	.05	0.0570	114.	71-134	WG347089
Styrene	mg/kg	.05	0.0549	110.	76-133	WG347089
tert-Butylbenzene	mg/kg	.05	0.0527	105.	72-132	WG347089
Tetrachloroethene	mg/kg	.05	0.0631	126.	65-135	WG347089
Toluene	mg/kg	.05	0.0538	108.	70-120	WG347089
trans-1,2-Dichloroethene	mg/kg	.05	0.0553	111.	61-133	WG347089
trans-1,3-Dichloropropene	mg/kg	.05	0.0465	93.0	70-135	WG347089
Trichloroethene	mg/kg	.05	0.0539	108.	71-126	WG347089
Trichlorofluoromethane	mg/kg	.05	0.0486	97.3	52-147	WG347089
Vinyl chloride	mg/kg	.05	0.0509	102.	50-151	WG347089
Xylenes, Total	mg/kg	.15	0.174	116.	74-127	WG347089
Toluene	mg/kg	.05	0.0485	97.1	70-120	WG347350
1,1,1,2-Tetrachloroethane	mg/kg	.05	0.0548	110.	73-134	WG347625
1,1,1-Trichloroethane	mg/kg	.05	0.0564	113.	62-135	WG347625
1,1,2,2-Tetrachloroethane	mg/kg	.05	0.0509	102.	74-129	WG347625
1,1,2-Trichloroethane	mg/kg	.05	0.0510	102.	77-124	WG347625
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	.05	0.0429	85.7	49-155	WG347625
1,1-Dichloroethane	mg/kg	.05	0.0527	105.	61-134	WG347625
1,1-Dichloroethene	mg/kg	.05	0.0531	106.	53-136	WG347625
1,1-Dichloropropene	mg/kg	.05	0.0515	103.	63-132	WG347625
1,2,3-Trichlorobenzene	mg/kg	.05	0.0570	114.	62-146	WG347625
1,2,3-Trichloropropane	mg/kg	.05	0.0535	107.	70-133	WG347625
1,2,3-Trimethylbenzene	mg/kg	.05	0.0542	108.	73-126	WG347625
1,2,4-Trichlorobenzene	mg/kg	.05	0.0566	113.	61-148	WG347625
1,2,4-Trimethylbenzene	mg/kg	.05	0.0520	104.	68-135	WG347625
1,2-Dibromo-3-Chloropropane	mg/kg	.05	0.0531	106.	61-134	WG347625
1,2-Dibromoethane	mg/kg	.05	0.0513	103.	76-127	WG347625
1,2-Dichlorobenzene	mg/kg	.05	0.0542	108.	77-123	WG347625
1,2-Dichloroethane	mg/kg	.05	0.0504	101.	58-141	WG347625
1,2-Dichloropropane	mg/kg	.05	0.0522	104.	71-128	WG347625
1,3,5-Trimethylbenzene	mg/kg	.05	0.0515	103.	71-133	WG347625
1,3-Dichlorobenzene	mg/kg	.05	0.0516	103.	71-132	WG347625
1,3-Dichloropropane	mg/kg	.05	0.0502	100.	76-120	WG347625
1,4-Dichlorobenzene	mg/kg	.05	0.0530	106.	72-123	WG347625
2,2-Dichloropropane	mg/kg	.05	0.0655	131.	50-147	WG347625
2-Butanone (MEK)	mg/kg	.25	0.244	97.7	51-131	WG347625
2-Chloroethyl vinyl ether	mg/kg	.25	0.0470	18.8	0-188	WG347625
2-Chlorotoluene	mg/kg	.05	0.0506	101.	73-128	WG347625
4-Chlorotoluene	mg/kg	.05	0.0515	103.	72-129	WG347625
4-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.254	102.	61-143	WG347625
Acetone	mg/kg	.25	0.241	96.5	44-140	WG347625
Acrylonitrile	mg/kg	.25	0.251	100.	55-143	WG347625

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Benzene	mg/kg	.05	0.0516	103.	65-128	WG347625

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Bromobenzene	mg/kg	.05	0.0519	104.	75-123	WG347625
Bromodichloromethane	mg/kg	.05	0.0534	107.	66-126	WG347625
Bromoform	mg/kg	.05	0.0588	118.	64-139	WG347625
Bromomethane	mg/kg	.05	0.0564	113.	41-175	WG347625
Carbon tetrachloride	mg/kg	.05	0.0666	133.	60-140	WG347625
Chlorobenzene	mg/kg	.05	0.0508	102.	75-125	WG347625
Chlorodibromomethane	mg/kg	.05	0.0554	111.	72-137	WG347625
Chloroethane	mg/kg	.05	0.0664	133.	44-159	WG347625
Chloroform	mg/kg	.05	0.0527	105.	63-123	WG347625
Chloromethane	mg/kg	.05	0.0456	91.3	42-149	WG347625
cis-1,2-Dichloroethene	mg/kg	.05	0.0506	101.	71-129	WG347625
cis-1,3-Dichloropropene	mg/kg	.05	0.0614	123.	73-132	WG347625
Di-isopropyl ether	mg/kg	.05	0.0548	110.	59-143	WG347625
Dibromomethane	mg/kg	.05	0.0508	102.	70-130	WG347625
Dichlorodifluoromethane	mg/kg	.05	0.0584	117.	26-186	WG347625
Ethylbenzene	mg/kg	.05	0.0503	101.	74-128	WG347625
Hexachlorobutadiene	mg/kg	.05	0.0531	106.	65-137	WG347625
Isopropylbenzene	mg/kg	.05	0.0506	101.	73-130	WG347625
Methyl tert-butyl ether	mg/kg	.05	0.0433	86.6	44-148	WG347625
Methylene Chloride	mg/kg	.05	0.0543	109.	57-129	WG347625
n-Butylbenzene	mg/kg	.05	0.0538	108.	60-145	WG347625
n-Propylbenzene	mg/kg	.05	0.0511	102.	71-132	WG347625
Naphthalene	mg/kg	.05	0.0528	106.	61-142	WG347625
p-Isopropyltoluene	mg/kg	.05	0.0514	103.	67-138	WG347625
sec-Butylbenzene	mg/kg	.05	0.0511	102.	71-134	WG347625
Styrene	mg/kg	.05	0.0512	102.	76-133	WG347625
tert-Butylbenzene	mg/kg	.05	0.0507	101.	72-132	WG347625
Tetrachloroethene	mg/kg	.05	0.0497	99.4	65-135	WG347625
Toluene	mg/kg	.05	0.0528	106.	70-120	WG347625
trans-1,2-Dichloroethene	mg/kg	.05	0.0510	102.	61-133	WG347625
trans-1,3-Dichloropropene	mg/kg	.05	0.0600	120.	70-135	WG347625
Trichloroethene	mg/kg	.05	0.0502	100.	71-126	WG347625
Trichlorofluoromethane	mg/kg	.05	0.0514	103.	52-147	WG347625
Vinyl chloride	mg/kg	.05	0.0482	96.4	50-151	WG347625
Xylenes, Total	mg/kg	.15	0.152	101.	74-127	WG347625

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
Gasoline Range Organics-NWTPH	mg/kg	4.96	4.88	1.69	20	90	WG346451
1,1,1,2-Tetrachloroethane	mg/kg	0.0505	0.0485	4.00	20	101	WG346688
1,1,1-Trichloroethane	mg/kg	0.0502	0.0493	1.66	20	100	WG346688
1,1,2,2-Tetrachloroethane	mg/kg	0.0496	0.0478	3.86	20	99	WG346688
1,1,2-Trichloroethane	mg/kg	0.0489	0.0472	3.46	20	98	WG346688
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.0403	0.0402	0.487	20	81	WG346688
1,1-Dichloroethane	mg/kg	0.0489	0.0481	1.67	20	98	WG346688
1,1-Dichloroethene	mg/kg	0.0481	0.0492	2.27	20	96	WG346688
1,1-Dichloropropene	mg/kg	0.0488	0.0480	1.84	20	98	WG346688
1,2,3-Trichlorobenzene	mg/kg	0.0493	0.0451	8.81	20	99	WG346688
1,2,3-Trichloropropane	mg/kg	0.0506	0.0488	3.64	20	101	WG346688
1,2,3-Trimethylbenzene	mg/kg	0.0515	0.0490	4.81	20	103	WG346688
1,2,4-Trichlorobenzene	mg/kg	0.0488	0.0453	7.41	20	98	WG346688
1,2,4-Trimethylbenzene	mg/kg	0.0529	0.0496	6.51	20	106	WG346688
1,2-Dibromo-3-Chloropropane	mg/kg	0.0539	0.0513	4.90	21	108	WG346688
1,2-Dibromoethane	mg/kg	0.0492	0.0466	5.62	20	98	WG346688
1,2-Dichlorobenzene	mg/kg	0.0502	0.0481	4.29	20	100	WG346688
1,2-Dichloroethane	mg/kg	0.0476	0.0467	1.84	20	95	WG346688
1,2-Dichloropropane	mg/kg	0.0488	0.0485	0.592	20	98	WG346688

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

1,3,5-Trimethylbenzene	mg/kg	0.0541	0.0505	6.92	20	108	WG346688

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
1,3-Dichlorobenzene	mg/kg	0.0502	0.0470	6.67	20	100	WG346688
1,3-Dichloropropane	mg/kg	0.0485	0.0464	4.36	20	97	WG346688
1,4-Dichlorobenzene	mg/kg	0.0494	0.0473	4.48	20	99	WG346688
2,2-Dichloropropane	mg/kg	0.0420	0.0431	2.53	20	84	WG346688
2-Butanone (MEK)	mg/kg	0.237	0.238	0.291	25	95	WG346688
2-Chloroethyl vinyl ether	mg/kg	0.115	0.157	31.0	39	46	WG346688
2-Chlorotoluene	mg/kg	0.0517	0.0491	5.22	20	103	WG346688
4-Chlorotoluene	mg/kg	0.0501	0.0476	5.05	20	100	WG346688
4-Methyl-2-pentanone (MIBK)	mg/kg	0.262	0.258	1.60	23	105	WG346688
Acetone	mg/kg	0.241	0.244	1.37	25	96	WG346688
Acrylonitrile	mg/kg	0.241	0.236	2.08	20	96	WG346688
Benzene	mg/kg	0.0459	0.0450	1.94	20	92	WG346688
Bromobenzene	mg/kg	0.0497	0.0472	4.97	20	99	WG346688
Bromodichloromethane	mg/kg	0.0500	0.0487	2.48	20	100	WG346688
Bromoform	mg/kg	0.0549	0.0516	6.21	20	110	WG346688
Bromomethane	mg/kg	0.0628	0.0633	0.780	20	126	WG346688
Carbon tetrachloride	mg/kg	0.0494	0.0487	1.55	20	99	WG346688
Chlorobenzene	mg/kg	0.0504	0.0478	5.23	20	101	WG346688
Chlorodibromomethane	mg/kg	0.0509	0.0482	5.30	20	102	WG346688
Chloroethane	mg/kg	0.0479	0.0495	3.27	20	96	WG346688
Chloroform	mg/kg	0.0480	0.0469	2.22	20	96	WG346688
Chloromethane	mg/kg	0.0426	0.0422	0.956	20	85	WG346688
cis-1,2-Dichloroethene	mg/kg	0.0482	0.0464	3.88	20	96	WG346688
cis-1,3-Dichloropropene	mg/kg	0.0498	0.0483	2.92	20	100	WG346688
Di-isopropyl ether	mg/kg	0.0489	0.0484	1.00	20	98	WG346688
Dibromomethane	mg/kg	0.0455	0.0438	3.86	20	91	WG346688
Dichlorodifluoromethane	mg/kg	0.0425	0.0424	0.256	22	85	WG346688
Ethylbenzene	mg/kg	0.0520	0.0498	4.20	20	104	WG346688
Hexachlorobutadiene	mg/kg	0.0497	0.0461	7.52	20	99	WG346688
Isopropylbenzene	mg/kg	0.0529	0.0505	4.67	20	106	WG346688
Methyl tert-butyl ether	mg/kg	0.0476	0.0464	2.60	20	95	WG346688
Methylene Chloride	mg/kg	0.0452	0.0431	4.54	20	90	WG346688
n-Butylbenzene	mg/kg	0.0526	0.0506	3.88	20	105	WG346688
n-Propylbenzene	mg/kg	0.0538	0.0514	4.60	20	108	WG346688
Naphthalene	mg/kg	0.0508	0.0460	9.86	20	102	WG346688
p-Isopropyltoluene	mg/kg	0.0545	0.0509	6.91	20	109	WG346688
sec-Butylbenzene	mg/kg	0.0544	0.0510	6.41	20	109	WG346688
Styrene	mg/kg	0.0544	0.0516	5.29	20	109	WG346688
tert-Butylbenzene	mg/kg	0.0533	0.0508	4.84	20	107	WG346688
Tetrachloroethene	mg/kg	0.0492	0.0463	6.11	20	98	WG346688
Toluene	mg/kg	0.0488	0.0472	3.42	20	98	WG346688
trans-1,2-Dichloroethene	mg/kg	0.0466	0.0449	3.78	20	93	WG346688
trans-1,3-Dichloropropene	mg/kg	0.0516	0.0501	3.03	20	103	WG346688
Trichloroethene	mg/kg	0.0477	0.0461	3.41	20	95	WG346688
Trichlorofluoromethane	mg/kg	0.0462	0.0475	2.79	20	92	WG346688
Vinyl chloride	mg/kg	0.0463	0.0465	0.464	20	93	WG346688
Xylenes, Total	mg/kg	0.156	0.148	5.63	20	104	WG346688
1,1,1,2-Tetrachloroethane	mg/kg	0.0462	0.0454	1.70	20	92	WG346689
1,1,1-Trichloroethane	mg/kg	0.0455	0.0408	11.0	20	91	WG346689
1,1,2,2-Tetrachloroethane	mg/kg	0.0461	0.0459	0.292	20	92	WG346689
1,1,2-Trichloroethane	mg/kg	0.0459	0.0457	0.436	20	92	WG346689
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.0354	0.0365	3.20	20	71	WG346689
1,1-Dichloroethane	mg/kg	0.0465	0.0456	2.02	20	93	WG346689
1,1-Dichloroethene	mg/kg	0.0425	0.0421	0.910	20	85	WG346689
1,1-Dichloropropene	mg/kg	0.0450	0.0429	4.61	20	90	WG346689
1,2,3-Trichlorobenzene	mg/kg	0.0530	0.0483	9.15	20	106	WG346689
1,2,3-Trichloropropane	mg/kg	0.0514	0.0470	8.97	20	103	WG346689
1,2,3-Trimethylbenzene	mg/kg	0.0461	0.0433	6.27	20	92	WG346689

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

1,2,4-Trichlorobenzene	mg/kg	0.0447	0.0435	2.83	20	89	WG346689

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
1,2,4-Trimethylbenzene	mg/kg	0.0475	0.0476	0.222	20	95	WG346689
1,2-Dibromo-3-Chloropropane	mg/kg	0.0484	0.0449	7.46	21	97	WG346689
1,2-Dibromoethane	mg/kg	0.0439	0.0440	0.196	20	88	WG346689
1,2-Dichlorobenzene	mg/kg	0.0465	0.0443	4.74	20	93	WG346689
1,2-Dichloroethane	mg/kg	0.0454	0.0426	6.52	20	91	WG346689
1,2-Dichloropropane	mg/kg	0.0538	0.0498	7.61	20	108	WG346689
1,3,5-Trimethylbenzene	mg/kg	0.0519	0.0510	1.60	20	104	WG346689
1,3-Dichlorobenzene	mg/kg	0.0495	0.0487	1.59	20	99	WG346689
1,3-Dichloropropane	mg/kg	0.0454	0.0461	1.51	20	91	WG346689
1,4-Dichlorobenzene	mg/kg	0.0515	0.0496	3.84	20	103	WG346689
2,2-Dichloropropane	mg/kg	0.0479	0.0412	15.0	20	96	WG346689
2-Butanone (MEK)	mg/kg	0.297	0.253	15.8	25	119	WG346689
2-Chloroethyl vinyl ether	mg/kg	0.259	0.244	5.87	39	103	WG346689
2-Chlorotoluene	mg/kg	0.0513	0.0510	0.660	20	103	WG346689
4-Chlorotoluene	mg/kg	0.0437	0.0428	2.04	20	87	WG346689
4-Methyl-2-pentanone (MIBK)	mg/kg	0.263	0.246	6.49	23	105	WG346689
Acetone	mg/kg	0.237	0.212	11.1	25	95	WG346689
Acrylonitrile	mg/kg	0.246	0.225	9.08	20	99	WG346689
Benzene	mg/kg	0.0458	0.0433	5.57	20	92	WG346689
Bromobenzene	mg/kg	0.0510	0.0503	1.36	20	102	WG346689
Bromodichloromethane	mg/kg	0.0484	0.0450	7.21	20	97	WG346689
Bromoform	mg/kg	0.0457	0.0439	3.91	20	91	WG346689
Bromomethane	mg/kg	0.0531	0.0488	8.44	20	106	WG346689
Carbon tetrachloride	mg/kg	0.0452	0.0417	8.05	20	90	WG346689
Chlorobenzene	mg/kg	0.0504	0.0512	1.48	20	101	WG346689
Chlorodibromomethane	mg/kg	0.0479	0.0462	3.61	20	96	WG346689
Chloroethane	mg/kg	0.0556	0.0485	13.5	20	111	WG346689
Chloroform	mg/kg	0.0458	0.0437	4.52	20	92	WG346689
Chloromethane	mg/kg	0.0396	0.0380	4.36	20	79	WG346689
cis-1,2-Dichloroethene	mg/kg	0.0470	0.0444	5.76	20	94	WG346689
cis-1,3-Dichloropropene	mg/kg	0.0471	0.0445	5.66	20	94	WG346689
Di-isopropyl ether	mg/kg	0.0469	0.0466	0.578	20	94	WG346689
Dibromomethane	mg/kg	0.0491	0.0452	8.24	20	98	WG346689
Dichlorodifluoromethane	mg/kg	0.0525	0.0470	11.0	22	105	WG346689
Ethylbenzene	mg/kg	0.0444	0.0451	1.62	20	89	WG346689
Hexachlorobutadiene	mg/kg	0.0458	0.0415	9.79	20	92	WG346689
Isopropylbenzene	mg/kg	0.0448	0.0453	1.15	20	90	WG346689
Methyl tert-butyl ether	mg/kg	0.0469	0.0428	9.06	20	94	WG346689
Methylene Chloride	mg/kg	0.0459	0.0445	3.08	20	92	WG346689
n-Butylbenzene	mg/kg	0.0484	0.0475	1.90	20	97	WG346689
n-Propylbenzene	mg/kg	0.0432	0.0442	2.14	20	86	WG346689
Naphthalene	mg/kg	0.0487	0.0444	9.34	20	97	WG346689
p-Isopropyltoluene	mg/kg	0.0447	0.0440	1.53	20	89	WG346689
sec-Butylbenzene	mg/kg	0.0458	0.0458	0.0821	20	92	WG346689
Styrene	mg/kg	0.0442	0.0453	2.53	20	88	WG346689
tert-Butylbenzene	mg/kg	0.0460	0.0452	1.62	20	92	WG346689
Tetrachloroethene	mg/kg	0.0437	0.0444	1.71	20	87	WG346689
Toluene	mg/kg	0.0464	0.0443	4.43	20	93	WG346689
trans-1,2-Dichloroethene	mg/kg	0.0440	0.0427	2.92	20	88	WG346689
trans-1,3-Dichloropropene	mg/kg	0.0482	0.0456	5.55	20	96	WG346689
Trichloroethene	mg/kg	0.0494	0.0464	6.33	20	99	WG346689
Trichlorofluoromethane	mg/kg	0.0488	0.0174	94.8	20	98	WG346689
Vinyl chloride	mg/kg	0.0408	0.0401	1.77	20	82	WG346689
Xylenes, Total	mg/kg	0.133	0.135	1.84	20	89	WG346689
Diesel Range Organics (DRO)	mg/kg	14.8	15.7	5.83	20	49	WG346741
Residual Range Organics (RRO)	mg/kg	17.8	20.0	11.6	0	59	WG346741
1,1,1,2-Tetrachloroethane	mg/kg	0.0535	0.0498	7.05	20	107	WG346950

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

1,1,1-Trichloroethane	mg/kg	0.0567	0.0528	7.00	20	113	WG346950

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
1,1,2,2-Tetrachloroethane	mg/kg	0.0548	0.0514	6.33	20	110	WG346950
1,1,2-Trichloroethane	mg/kg	0.0534	0.0487	9.21	20	107	WG346950
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.0433	0.0404	6.87	20	87	WG346950
1,1-Dichloroethane	mg/kg	0.0562	0.0522	7.49	20	112	WG346950
1,1-Dichloroethene	mg/kg	0.0554	0.0503	9.75	20	111	WG346950
1,1-Dichloropropene	mg/kg	0.0567	0.0526	7.49	20	113	WG346950
1,2,3-Trichlorobenzene	mg/kg	0.0475	0.0427	10.8	20	95	WG346950
1,2,3-Trichloropropane	mg/kg	0.0550	0.0522	5.13	20	110	WG346950
1,2,3-Trimethylbenzene	mg/kg	0.0542	0.0502	7.56	20	108	WG346950
1,2,4-Trichlorobenzene	mg/kg	0.0482	0.0426	12.2	20	96	WG346950
1,2,4-Trimethylbenzene	mg/kg	0.0499	0.0465	6.96	20	100	WG346950
1,2-Dibromo-3-Chloropropane	mg/kg	0.0535	0.0498	7.20	21	107	WG346950
1,2-Dibromoethane	mg/kg	0.0533	0.0492	8.04	20	107	WG346950
1,2-Dichlorobenzene	mg/kg	0.0519	0.0480	7.81	20	104	WG346950
1,2-Dichloroethane	mg/kg	0.0548	0.0521	5.21	20	110	WG346950
1,2-Dichloropropane	mg/kg	0.0540	0.0509	6.02	20	108	WG346950
1,3,5-Trimethylbenzene	mg/kg	0.0518	0.0484	6.80	20	104	WG346950
1,3-Dichlorobenzene	mg/kg	0.0555	0.0516	7.25	20	111	WG346950
1,3-Dichloropropane	mg/kg	0.0512	0.0481	6.25	20	102	WG346950
1,4-Dichlorobenzene	mg/kg	0.0496	0.0465	6.44	20	99	WG346950
2,2-Dichloropropane	mg/kg	0.0554	0.0518	6.83	20	111	WG346950
2-Butanone (MEK)	mg/kg	0.291	0.270	7.42	25	116	WG346950
2-Chloroethyl vinyl ether	mg/kg	0.161	0.159	0.810	39	64	WG346950
2-Chlorotoluene	mg/kg	0.0551	0.0516	6.61	20	110	WG346950
4-Chlorotoluene	mg/kg	0.0554	0.0508	8.59	20	111	WG346950
4-Methyl-2-pentanone (MIBK)	mg/kg	0.300	0.277	7.99	23	120	WG346950
Acetone	mg/kg	0.272	0.258	5.30	25	109	WG346950
Acrylonitrile	mg/kg	0.285	0.266	6.77	20	114	WG346950
Benzene	mg/kg	0.0549	0.0511	7.25	20	110	WG346950
Bromobenzene	mg/kg	0.0530	0.0499	5.99	20	106	WG346950
Bromodichloromethane	mg/kg	0.0554	0.0520	6.19	20	111	WG346950
Bromoform	mg/kg	0.0491	0.0460	6.58	20	98	WG346950
Bromomethane	mg/kg	0.0576	0.0549	4.83	20	115	WG346950
Carbon tetrachloride	mg/kg	0.0580	0.0542	6.85	20	116	WG346950
Chlorobenzene	mg/kg	0.0542	0.0505	7.19	20	108	WG346950
Chlorodibromomethane	mg/kg	0.0536	0.0500	6.84	20	107	WG346950
Chloroethane	mg/kg	0.0586	0.0546	7.11	20	117	WG346950
Chloroform	mg/kg	0.0553	0.0520	6.18	20	111	WG346950
Chloromethane	mg/kg	0.0540	0.0514	4.87	20	108	WG346950
cis-1,2-Dichloroethene	mg/kg	0.0566	0.0526	7.21	20	113	WG346950
cis-1,3-Dichloropropene	mg/kg	0.0555	0.0521	6.26	20	111	WG346950
Di-isopropyl ether	mg/kg	0.0548	0.0514	6.44	20	110	WG346950
Dibromomethane	mg/kg	0.0504	0.0467	7.66	20	101	WG346950
Dichlorodifluoromethane	mg/kg	0.0523	0.0485	7.46	22	105	WG346950
Ethylbenzene	mg/kg	0.0540	0.0500	7.60	20	108	WG346950
Hexachlorobutadiene	mg/kg	0.0555	0.0488	12.9	20	111	WG346950
Isopropylbenzene	mg/kg	0.0559	0.0515	8.22	20	112	WG346950
Methyl tert-butyl ether	mg/kg	0.0536	0.0513	4.45	20	107	WG346950
Methylene Chloride	mg/kg	0.0517	0.0491	5.31	20	103	WG346950
n-Butylbenzene	mg/kg	0.0481	0.0437	9.54	20	96	WG346950
n-Propylbenzene	mg/kg	0.0541	0.0502	7.62	20	108	WG346950
Naphthalene	mg/kg	0.0469	0.0412	13.0	20	94	WG346950
p-Isopropyltoluene	mg/kg	0.0488	0.0453	7.45	20	98	WG346950
sec-Butylbenzene	mg/kg	0.0510	0.0472	7.72	20	102	WG346950
Styrene	mg/kg	0.0507	0.0474	6.77	20	101	WG346950
tert-Butylbenzene	mg/kg	0.0493	0.0462	6.51	20	99	WG346950
Tetrachloroethene	mg/kg	0.0532	0.0491	7.99	20	106	WG346950
Toluene	mg/kg	0.0540	0.0495	8.69	20	108	WG346950
trans-1,2-Dichloroethene	mg/kg	0.0558	0.0522	6.81	20	112	WG346950

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

trans-1,3-Dichloropropene	mg/kg	0.0556	0.0515	7.74	20	111	WG346950

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
Trichloroethene	mg/kg	0.0550	0.0497	10.0	20	110	WG346950
Trichlorofluoromethane	mg/kg	0.0569	0.0536	5.95	20	114	WG346950
Vinyl chloride	mg/kg	0.0558	0.0527	5.75	20	112	WG346950
Xylenes, Total	mg/kg	0.162	0.151	7.11	20	108	WG346950
1,1,1,2-Tetrachloroethane	mg/kg	0.0525	0.0545	3.80	20	105	WG347089
1,1,1-Trichloroethane	mg/kg	0.0530	0.0521	1.84	20	106	WG347089
1,1,2,2-Tetrachloroethane	mg/kg	0.0485	0.0470	3.33	20	97	WG347089
1,1,2-Trichloroethane	mg/kg	0.0495	0.0509	2.77	20	99	WG347089
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.0424	0.0448	5.55	20	85	WG347089
1,1-Dichloroethane	mg/kg	0.0541	0.0504	7.13	20	108	WG347089
1,1-Dichloroethene	mg/kg	0.0567	0.0574	1.21	20	113	WG347089
1,1-Dichloropropene	mg/kg	0.0560	0.0570	1.85	20	112	WG347089
1,2,3-Trichlorobenzene	mg/kg	0.0554	0.0485	13.2	20	111	WG347089
1,2,3-Trichloropropane	mg/kg	0.0518	0.0502	3.17	20	104	WG347089
1,2,3-Trimethylbenzene	mg/kg	0.0489	0.0514	5.05	20	98	WG347089
1,2,4-Trichlorobenzene	mg/kg	0.0549	0.0456	18.4	20	110	WG347089
1,2,4-Trimethylbenzene	mg/kg	0.0533	0.0537	0.699	20	107	WG347089
1,2-Dibromo-3-Chloropropane	mg/kg	0.0467	0.0522	11.1	21	93	WG347089
1,2-Dibromoethane	mg/kg	0.0552	0.0572	3.46	20	110	WG347089
1,2-Dichlorobenzene	mg/kg	0.0472	0.0487	3.30	20	94	WG347089
1,2-Dichloroethane	mg/kg	0.0518	0.0439	16.6	20	104	WG347089
1,2-Dichloropropane	mg/kg	0.0497	0.0508	2.14	20	99	WG347089
1,3,5-Trimethylbenzene	mg/kg	0.0526	0.0559	6.21	20	105	WG347089
1,3-Dichlorobenzene	mg/kg	0.0508	0.0481	5.51	20	102	WG347089
1,3-Dichloropropane	mg/kg	0.0523	0.0540	3.15	20	105	WG347089
1,4-Dichlorobenzene	mg/kg	0.0469	0.0461	1.57	20	94	WG347089
2,2-Dichloropropane	mg/kg	0.0595	0.0515	14.3	20	119	WG347089
2-Butanone (MEK)	mg/kg	0.258	0.248	4.04	25	103	WG347089
2-Chloroethyl vinyl ether	mg/kg	0.252	0.237	6.12	39	101	WG347089
2-Chlorotoluene	mg/kg	0.0527	0.0550	4.23	20	105	WG347089
4-Chlorotoluene	mg/kg	0.0543	0.0535	1.50	20	109	WG347089
4-Methyl-2-pentanone (MIBK)	mg/kg	0.227	0.226	0.357	23	91	WG347089
Acetone	mg/kg	0.212	0.215	1.17	25	85	WG347089
Acrylonitrile	mg/kg	0.253	0.242	4.42	20	101	WG347089
Benzene	mg/kg	0.0520	0.0500	3.97	20	104	WG347089
Bromobenzene	mg/kg	0.0519	0.0516	0.478	20	104	WG347089
Bromodichloromethane	mg/kg	0.0533	0.0502	6.00	20	107	WG347089
Bromoform	mg/kg	0.0488	0.0470	3.81	20	98	WG347089
Bromomethane	mg/kg	0.0436	0.0429	1.70	20	87	WG347089
Carbon tetrachloride	mg/kg	0.0541	0.0574	5.92	20	108	WG347089
Chlorobenzene	mg/kg	0.0526	0.0568	7.63	20	105	WG347089
Chlorodibromomethane	mg/kg	0.0557	0.0564	1.35	20	111	WG347089
Chloroethane	mg/kg	0.0450	0.0437	2.85	20	90	WG347089
Chloroform	mg/kg	0.0531	0.0478	10.5	20	106	WG347089
Chloromethane	mg/kg	0.0486	0.0497	2.18	20	97	WG347089
cis-1,2-Dichloroethene	mg/kg	0.0560	0.0515	8.52	20	112	WG347089
cis-1,3-Dichloropropene	mg/kg	0.0529	0.0500	5.59	20	106	WG347089
Di-isopropyl ether	mg/kg	0.0535	0.0460	15.1	20	107	WG347089
Dibromomethane	mg/kg	0.0524	0.0472	10.4	20	105	WG347089
Dichlorodifluoromethane	mg/kg	0.0463	0.0509	9.52	22	93	WG347089
Ethylbenzene	mg/kg	0.0489	0.0567	14.7	20	98	WG347089
Hexachlorobutadiene	mg/kg	0.0503	0.0578	13.9	20	101	WG347089
Isopropylbenzene	mg/kg	0.0506	0.0592	15.8	20	101	WG347089
Methyl tert-butyl ether	mg/kg	0.0565	0.0459	20.9	20	113	WG347089
Methylene Chloride	mg/kg	0.0561	0.0506	10.4	20	112	WG347089
n-Butylbenzene	mg/kg	0.0487	0.0543	11.0	20	97	WG347089
n-Propylbenzene	mg/kg	0.0508	0.0559	9.64	20	102	WG347089
Naphthalene	mg/kg	0.0495	0.0479	3.28	20	99	WG347089

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

p-Isopropyltoluene	mg/kg	0.0503	0.0540	7.14	20	101	WG347089

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
sec-Butylbenzene	mg/kg	0.0486	0.0570	15.9	20	97	WG347089
Styrene	mg/kg	0.0537	0.0549	2.15	20	107	WG347089
tert-Butylbenzene	mg/kg	0.0447	0.0527	16.5	20	89	WG347089
Tetrachloroethene	mg/kg	0.0538	0.0631	16.0	20	108	WG347089
Toluene	mg/kg	0.0512	0.0538	4.89	20	102	WG347089
trans-1,2-Dichloroethene	mg/kg	0.0569	0.0553	2.87	20	114	WG347089
trans-1,3-Dichloropropene	mg/kg	0.0529	0.0465	12.9	20	106	WG347089
Trichloroethene	mg/kg	0.0514	0.0539	4.77	20	103	WG347089
Trichlorofluoromethane	mg/kg	0.0463	0.0486	4.93	20	93	WG347089
Vinyl chloride	mg/kg	0.0495	0.0509	2.84	20	99	WG347089
Xylenes, Total	mg/kg	0.153	0.174	12.7	20	102	WG347089
Toluene	mg/kg	0.0490	0.0485	0.852	20	98	WG347350
1,1,1,2-Tetrachloroethane	mg/kg	0.0612	0.0548	11.1	20	122	WG347625
1,1,1-Trichloroethane	mg/kg	0.0634	0.0564	11.7	20	127	WG347625
1,1,2,2-Tetrachloroethane	mg/kg	0.0572	0.0509	11.5	20	114	WG347625
1,1,2-Trichloroethane	mg/kg	0.0576	0.0510	12.3	20	115	WG347625
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.0475	0.0429	10.4	20	95	WG347625
1,1-Dichloroethane	mg/kg	0.0583	0.0527	10.1	20	117	WG347625
1,1-Dichloroethene	mg/kg	0.0594	0.0531	11.1	20	119	WG347625
1,1-Dichloropropene	mg/kg	0.0567	0.0515	9.74	20	113	WG347625
1,2,3-Trichlorobenzene	mg/kg	0.0596	0.0570	4.43	20	119	WG347625
1,2,3-Trichloropropane	mg/kg	0.0575	0.0535	7.36	20	115	WG347625
1,2,3-Trimethylbenzene	mg/kg	0.0591	0.0542	8.63	20	118	WG347625
1,2,4-Trichlorobenzene	mg/kg	0.0606	0.0566	6.79	20	121	WG347625
1,2,4-Trimethylbenzene	mg/kg	0.0575	0.0520	10.1	20	115	WG347625
1,2-Dibromo-3-Chloropropane	mg/kg	0.0575	0.0531	8.05	21	115	WG347625
1,2-Dibromoethane	mg/kg	0.0586	0.0513	13.3	20	117	WG347625
1,2-Dichlorobenzene	mg/kg	0.0587	0.0542	7.86	20	117	WG347625
1,2-Dichloroethane	mg/kg	0.0568	0.0504	11.9	20	114	WG347625
1,2-Dichloropropane	mg/kg	0.0580	0.0522	10.4	20	116	WG347625
1,3,5-Trimethylbenzene	mg/kg	0.0576	0.0515	11.1	20	115	WG347625
1,3-Dichlorobenzene	mg/kg	0.0576	0.0516	11.0	20	115	WG347625
1,3-Dichloropropane	mg/kg	0.0570	0.0502	12.7	20	114	WG347625
1,4-Dichlorobenzene	mg/kg	0.0578	0.0530	8.67	20	116	WG347625
2,2-Dichloropropane	mg/kg	0.0719	0.0655	9.30	20	144	WG347625
2-Butanone (MEK)	mg/kg	0.270	0.244	10.1	25	108	WG347625
2-Chloroethyl vinyl ether	mg/kg	0.0501	0.0470	6.42	39	20	WG347625
2-Chlorotoluene	mg/kg	0.0566	0.0506	11.2	20	113	WG347625
4-Chlorotoluene	mg/kg	0.0577	0.0515	11.5	20	115	WG347625
4-Methyl-2-pentanone (MIBK)	mg/kg	0.280	0.254	9.47	23	112	WG347625
Acetone	mg/kg	0.263	0.241	8.52	25	105	WG347625
Acrylonitrile	mg/kg	0.278	0.251	10.3	20	111	WG347625
Benzene	mg/kg	0.0572	0.0516	10.3	20	114	WG347625
Bromobenzene	mg/kg	0.0583	0.0519	11.5	20	117	WG347625
Bromodichloromethane	mg/kg	0.0592	0.0534	10.4	20	118	WG347625
Bromoform	mg/kg	0.0648	0.0588	9.64	20	130	WG347625
Bromomethane	mg/kg	0.0567	0.0564	0.501	20	113	WG347625
Carbon tetrachloride	mg/kg	0.0757	0.0666	12.9	20	151	WG347625
Chlorobenzene	mg/kg	0.0569	0.0508	11.2	20	114	WG347625
Chlorodibromomethane	mg/kg	0.0621	0.0554	11.3	20	124	WG347625
Chloroethane	mg/kg	0.0664	0.0664	0.141	20	133	WG347625
Chloroform	mg/kg	0.0581	0.0527	9.78	20	116	WG347625
Chloromethane	mg/kg	0.0463	0.0456	1.42	20	93	WG347625
cis-1,2-Dichloroethene	mg/kg	0.0561	0.0506	10.2	20	112	WG347625
cis-1,3-Dichloropropene	mg/kg	0.0682	0.0614	10.4	20	136	WG347625
Di-isopropyl ether	mg/kg	0.0601	0.0548	9.25	20	120	WG347625
Dibromomethane	mg/kg	0.0569	0.0508	11.2	20	114	WG347625

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Dichlorodifluoromethane	mg/kg	0.0578	0.0584	1.10	22	116	WG347625

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
Ethylbenzene	mg/kg	0.0558	0.0503	10.4	20	112	WG347625
Hexachlorobutadiene	mg/kg	0.0570	0.0531	7.11	20	114	WG347625
Isopropylbenzene	mg/kg	0.0569	0.0506	11.7	20	114	WG347625
Methyl tert-butyl ether	mg/kg	0.0482	0.0433	10.8	20	96	WG347625
Methylene Chloride	mg/kg	0.0604	0.0543	10.7	20	121	WG347625
n-Butylbenzene	mg/kg	0.0588	0.0538	8.97	20	118	WG347625
n-Propylbenzene	mg/kg	0.0571	0.0511	11.1	20	114	WG347625
Naphthalene	mg/kg	0.0564	0.0528	6.72	20	113	WG347625
p-Isopropyltoluene	mg/kg	0.0571	0.0514	10.4	20	114	WG347625
sec-Butylbenzene	mg/kg	0.0567	0.0511	10.5	20	113	WG347625
Styrene	mg/kg	0.0575	0.0512	11.5	20	115	WG347625
tert-Butylbenzene	mg/kg	0.0563	0.0507	10.6	20	113	WG347625
Tetrachloroethene	mg/kg	0.0555	0.0497	11.0	20	111	WG347625
Toluene	mg/kg	0.0587	0.0528	10.6	20	117	WG347625
trans-1,2-Dichloroethene	mg/kg	0.0561	0.0510	9.53	20	112	WG347625
trans-1,3-Dichloropropene	mg/kg	0.0667	0.0600	10.5	20	133	WG347625
Trichloroethene	mg/kg	0.0560	0.0502	11.0	20	112	WG347625
Trichlorofluoromethane	mg/kg	0.0518	0.0514	0.799	20	104	WG347625
Vinyl chloride	mg/kg	0.0478	0.0482	0.773	20	96	WG347625
Xylenes, Total	mg/kg	0.170	0.152	11.4	20	113	WG347625

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/kg	23.9	0.0648	5.5	86.8	55-109	L332742-02	WG346451
1,1,1,2-Tetrachloroethane	mg/kg	0.251	0.00	.05	100.	29-145	L332799-37	WG346688
1,1,1-Trichloroethane	mg/kg	0.253	0.00	.05	101.	23-147	L332799-37	WG346688
1,1,2,2-Tetrachloroethane	mg/kg	0.233	0.00	.05	93.3	18-150	L332799-37	WG346688
1,1,2-Trichloroethane	mg/kg	0.241	0.00	.05	96.4	35-140	L332799-37	WG346688
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.232	0.00	.05	92.9	10-145	L332799-37	WG346688
1,1-Dichloroethane	mg/kg	0.238	0.00	.05	95.2	24-148	L332799-37	WG346688
1,1-Dichloroethene	mg/kg	0.264	0.00	.05	106.	10-149	L332799-37	WG346688
1,1-Dichloropropene	mg/kg	0.226	0.00	.05	90.5	10-141	L332799-37	WG346688
1,2,3-Trichlorobenzene	mg/kg	0.182	0.00	.05	73.0	10-129	L332799-37	WG346688
1,2,3-Trichloropropane	mg/kg	0.240	0.00	.05	96.2	30-148	L332799-37	WG346688
1,2,3-Trimethylbenzene	mg/kg	0.231	0.00	.05	92.4	10-137	L332799-37	WG346688
1,2,4-Trichlorobenzene	mg/kg	0.158	0.00	.05	63.0	10-119	L332799-37	WG346688
1,2,4-Trimethylbenzene	mg/kg	0.216	0.00	.05	86.4	10-145	L332799-37	WG346688
1,2-Dibromo-3-Chloropropane	mg/kg	0.257	0.00	.05	103.	19-145	L332799-37	WG346688
1,2-Dibromoethane	mg/kg	0.241	0.00	.05	96.3	24-145	L332799-37	WG346688
1,2-Dichlorobenzene	mg/kg	0.218	0.00	.05	87.4	12-130	L332799-37	WG346688
1,2-Dichloroethane	mg/kg	0.239	0.00	.05	95.6	21-155	L332799-37	WG346688
1,2-Dichloropropane	mg/kg	0.246	0.00	.05	98.3	28-144	L332799-37	WG346688
1,3,5-Trimethylbenzene	mg/kg	0.224	0.00	.05	89.7	10-135	L332799-37	WG346688
1,3-Dichlorobenzene	mg/kg	0.196	0.00	.05	78.5	10-129	L332799-37	WG346688
1,3-Dichloropropane	mg/kg	0.240	0.00	.05	96.0	31-137	L332799-37	WG346688
1,4-Dichlorobenzene	mg/kg	0.196	0.00	.05	78.3	10-121	L332799-37	WG346688
2,2-Dichloropropane	mg/kg	0.217	0.00	.05	86.9	18-144	L332799-37	WG346688
2-Butanone (MEK)	mg/kg	1.11	0.00	.25	89.2	21-143	L332799-37	WG346688
2-Chloroethyl vinyl ether	mg/kg	0.851	0.00	.25	68.1	0-176	L332799-37	WG346688
2-Chlorotoluene	mg/kg	0.219	0.00	.05	87.5	10-132	L332799-37	WG346688
4-Chlorotoluene	mg/kg	0.201	0.00	.05	80.3	10-129	L332799-37	WG346688
4-Methyl-2-pentanone (MIBK)	mg/kg	1.25	0.00	.25	99.6	31-151	L332799-37	WG346688
Acetone	mg/kg	1.17	0.00	.25	93.4	13-158	L332799-37	WG346688
Acrylonitrile	mg/kg	1.17	0.00	.25	94.0	20-154	L332799-37	WG346688
Benzene	mg/kg	0.226	0.00	.05	90.3	16-143	L332799-37	WG346688
Bromobenzene	mg/kg	0.219	0.00	.05	87.7	14-135	L332799-37	WG346688
Bromodichloromethane	mg/kg	0.250	0.00	.05	100.	27-139	L332799-37	WG346688

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Bromoform	mg/kg	0.266	0.00	.05	106.	21-144	L332799-37	WG346688

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Bromomethane	mg/kg	0.341	0.00	.05	137.	0-180	L332799-37	WG346688
Carbon tetrachloride	mg/kg	0.246	0.00	.05	98.3	12-149	L332799-37	WG346688
Chlorobenzene	mg/kg	0.230	0.00	.05	92.1	17-134	L332799-37	WG346688
Chlorodibromomethane	mg/kg	0.251	0.00	.05	101.	28-147	L332799-37	WG346688
Chloroethane	mg/kg	0.279	0.00	.05	111.	0-172	L332799-37	WG346688
Chloroform	mg/kg	0.232	0.00	.05	92.7	28-138	L332799-37	WG346688
Chloromethane	mg/kg	0.224	0.00	.05	89.6	10-158	L332799-37	WG346688
cis-1,2-Dichloroethene	mg/kg	0.232	0.00	.05	92.7	21-147	L332799-37	WG346688
cis-1,3-Dichloropropene	mg/kg	0.241	0.00	.05	96.4	17-145	L332799-37	WG346688
Di-isopropyl ether	mg/kg	0.255	0.00	.05	102.	31-153	L332799-37	WG346688
Dibromomethane	mg/kg	0.223	0.00	.05	89.3	24-147	L332799-37	WG346688
Dichlorodifluoromethane	mg/kg	0.200	0.00	.05	80.2	0-192	L332799-37	WG346688
Ethylbenzene	mg/kg	0.232	0.00	.05	92.9	12-137	L332799-37	WG346688
Hexachlorobutadiene	mg/kg	0.172	0.00	.05	68.8	10-123	L332799-37	WG346688
Isopropylbenzene	mg/kg	0.234	0.00	.05	93.7	14-134	L332799-37	WG346688
Methyl tert-butyl ether	mg/kg	0.246	0.00	.05	98.3	21-157	L332799-37	WG346688
Methylene Chloride	mg/kg	0.220	0.00	.05	88.2	12-149	L332799-37	WG346688
n-Butylbenzene	mg/kg	0.179	0.00	.05	71.8	10-130	L332799-37	WG346688
n-Propylbenzene	mg/kg	0.218	0.00	.05	87.1	10-130	L332799-37	WG346688
Naphthalene	mg/kg	0.221	0.00	.05	88.2	0-146	L332799-37	WG346688
p-Isopropyltoluene	mg/kg	0.206	0.00	.05	82.2	10-131	L332799-37	WG346688
sec-Butylbenzene	mg/kg	0.223	0.00	.05	89.3	10-134	L332799-37	WG346688
Styrene	mg/kg	0.245	0.00	.05	97.9	10-140	L332799-37	WG346688
tert-Butylbenzene	mg/kg	0.240	0.00	.05	96.0	11-137	L332799-37	WG346688
Tetrachloroethene	mg/kg	0.202	0.00	.05	81.0	10-131	L332799-37	WG346688
Toluene	mg/kg	0.231	0.00	.05	92.4	12-136	L332799-37	WG346688
trans-1,2-Dichloroethene	mg/kg	0.217	0.00	.05	86.9	10-143	L332799-37	WG346688
trans-1,3-Dichloropropene	mg/kg	0.246	0.00	.05	98.6	16-147	L332799-37	WG346688
Trichloroethene	mg/kg	0.220	0.00	.05	88.2	10-155	L332799-37	WG346688
Trichlorofluoromethane	mg/kg	0.249	0.00	.05	99.5	10-154	L332799-37	WG346688
Vinyl chloride	mg/kg	0.244	0.00	.05	97.6	10-159	L332799-37	WG346688
Xylenes, Total	mg/kg	0.693	0.00	.15	92.4	10-138	L332799-37	WG346688
1,1,1,2-Tetrachloroethane	mg/kg	0.196	0.00	.05	78.6	29-145	L333023-02	WG346689
1,1,1-Trichloroethane	mg/kg	0.192	0.00	.05	76.9	23-147	L333023-02	WG346689
1,1,2,2-Tetrachloroethane	mg/kg	0.178	0.00	.05	71.4	18-150	L333023-02	WG346689
1,1,2-Trichloroethane	mg/kg	0.195	0.00	.05	78.1	35-140	L333023-02	WG346689
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.158	0.00	.05	63.3	10-145	L333023-02	WG346689
1,1-Dichloroethane	mg/kg	0.204	0.00	.05	81.6	24-148	L333023-02	WG346689
1,1-Dichloroethene	mg/kg	0.186	0.00	.05	74.2	10-149	L333023-02	WG346689
1,1-Dichloropropene	mg/kg	0.188	0.00	.05	75.1	10-141	L333023-02	WG346689
1,2,3-Trichlorobenzene	mg/kg	0.133	0.00	.05	53.2	10-129	L333023-02	WG346689
1,2,3-Trichloropropane	mg/kg	0.199	0.00	.05	79.7	30-148	L333023-02	WG346689
1,2,3-Trimethylbenzene	mg/kg	0.221	0.00	.05	88.3	10-137	L333023-02	WG346689
1,2,4-Trichlorobenzene	mg/kg	0.137	0.00	.05	54.6	10-119	L333023-02	WG346689
1,2,4-Trimethylbenzene	mg/kg	0.186	0.00	.05	74.2	10-145	L333023-02	WG346689
1,2-Dibromo-3-Chloropropane	mg/kg	0.201	0.00	.05	80.3	19-145	L333023-02	WG346689
1,2-Dibromoethane	mg/kg	0.180	0.00	.05	71.9	24-145	L333023-02	WG346689
1,2-Dichlorobenzene	mg/kg	0.193	0.00	.05	77.3	12-130	L333023-02	WG346689
1,2-Dichloroethane	mg/kg	0.194	0.00	.05	77.8	21-155	L333023-02	WG346689
1,2-Dichloropropane	mg/kg	0.241	0.00	.05	96.3	28-144	L333023-02	WG346689
1,3,5-Trimethylbenzene	mg/kg	0.202	0.00	.05	80.9	10-135	L333023-02	WG346689
1,3-Dichlorobenzene	mg/kg	0.176	0.00	.05	70.5	10-129	L333023-02	WG346689
1,3-Dichloropropane	mg/kg	0.192	0.00	.05	76.9	31-137	L333023-02	WG346689
1,4-Dichlorobenzene	mg/kg	0.226	0.00	.05	90.2	10-121	L333023-02	WG346689
2,2-Dichloropropane	mg/kg	0.207	0.00	.05	82.7	18-144	L333023-02	WG346689
2-Butanone (MEK)	mg/kg	1.13	0.00	.25	90.7	21-143	L333023-02	WG346689
2-Chloroethyl vinyl ether	mg/kg	1.08	0.00	.25	86.1	0-176	L333023-02	WG346689
2-Chlorotoluene	mg/kg	0.207	0.00	.05	82.8	10-132	L333023-02	WG346689

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

4-Chlorotoluene	mg/kg	0.169	0.00	.05	67.7	10-129	L333023-02	WG346689

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
4-Methyl-2-pentanone (MIBK)	mg/kg	1.10	0.00	.25	88.1	31-151	L333023-02	WG346689
Acetone	mg/kg	0.945	0.00	.25	75.6	13-158	L333023-02	WG346689
Acrylonitrile	mg/kg	0.948	0.00	.25	75.8	20-154	L333023-02	WG346689
Benzene	mg/kg	0.196	0.00	.05	78.3	16-143	L333023-02	WG346689
Bromobenzene	mg/kg	0.198	0.00	.05	79.3	14-135	L333023-02	WG346689
Bromodichloromethane	mg/kg	0.204	0.00	.05	81.8	27-139	L333023-02	WG346689
Bromoform	mg/kg	0.173	0.00	.05	69.1	21-144	L333023-02	WG346689
Bromomethane	mg/kg	0.196	0.00	.05	78.6	0-180	L333023-02	WG346689
Carbon tetrachloride	mg/kg	0.190	0.00	.05	76.0	12-149	L333023-02	WG346689
Chlorobenzene	mg/kg	0.208	0.00	.05	83.2	17-134	L333023-02	WG346689
Chlorodibromomethane	mg/kg	0.193	0.00	.05	77.0	28-147	L333023-02	WG346689
Chloroethane	mg/kg	0.208	0.00	.05	83.4	0-172	L333023-02	WG346689
Chloroform	mg/kg	0.198	0.00	.05	79.2	28-138	L333023-02	WG346689
Chloromethane	mg/kg	0.156	0.00	.05	62.2	10-158	L333023-02	WG346689
cis-1,2-Dichloroethene	mg/kg	0.202	0.00	.05	80.6	21-147	L333023-02	WG346689
cis-1,3-Dichloropropene	mg/kg	0.188	0.00	.05	75.1	17-145	L333023-02	WG346689
Di-isopropyl ether	mg/kg	0.212	0.00	.05	84.9	31-153	L333023-02	WG346689
Dibromomethane	mg/kg	0.208	0.00	.05	83.1	24-147	L333023-02	WG346689
Dichlorodifluoromethane	mg/kg	0.192	0.00	.05	76.8	0-192	L333023-02	WG346689
Ethylbenzene	mg/kg	0.184	0.00	.05	73.4	12-137	L333023-02	WG346689
Hexachlorobutadiene	mg/kg	0.139	0.00	.05	55.4	10-123	L333023-02	WG346689
Isopropylbenzene	mg/kg	0.182	0.00	.05	72.7	14-134	L333023-02	WG346689
Methyl tert-butyl ether	mg/kg	0.208	0.00	.05	83.3	21-157	L333023-02	WG346689
Methylene Chloride	mg/kg	0.203	0.00	.05	81.1	12-149	L333023-02	WG346689
n-Butylbenzene	mg/kg	0.206	0.00	.05	82.4	10-130	L333023-02	WG346689
n-Propylbenzene	mg/kg	0.171	0.00	.05	68.4	10-130	L333023-02	WG346689
Naphthalene	mg/kg	0.140	0.00	.05	56.1	0-146	L333023-02	WG346689
p-Isopropyltoluene	mg/kg	0.168	0.00	.05	67.2	10-131	L333023-02	WG346689
sec-Butylbenzene	mg/kg	0.173	0.00	.05	69.4	10-134	L333023-02	WG346689
Styrene	mg/kg	0.176	0.00	.05	70.2	10-140	L333023-02	WG346689
tert-Butylbenzene	mg/kg	0.180	0.00	.05	71.9	11-137	L333023-02	WG346689
Tetrachloroethene	mg/kg	0.183	0.00	.05	73.3	10-131	L333023-02	WG346689
Toluene	mg/kg	0.200	0.00	.05	79.9	12-136	L333023-02	WG346689
trans-1,2-Dichloroethene	mg/kg	0.188	0.00	.05	75.3	10-143	L333023-02	WG346689
trans-1,3-Dichloropropene	mg/kg	0.197	0.00	.05	78.9	16-147	L333023-02	WG346689
Trichloroethene	mg/kg	0.207	0.00	.05	82.9	10-155	L333023-02	WG346689
Trichlorofluoromethane	mg/kg	0.0722	0.00	.05	28.9	10-154	L333023-02	WG346689
Vinyl chloride	mg/kg	0.175	0.00	.05	70.0	10-159	L333023-02	WG346689
Xylenes, Total	mg/kg	0.562	0.00	.15	74.9	10-138	L333023-02	WG346689
Diesel Range Organics (DRO)	mg/kg	29.5	0.00	30	98.2	50-150	L333145-02	WG346741
Residual Range Organics (RRO)	mg/kg	54.0	0.00	30	180.	50-150	L333145-02	WG346741
1,1,1,2-Tetrachloroethane	mg/kg	0.225	0.00	.05	89.9	29-145	L332799-16	WG346950
1,1,1-Trichloroethane	mg/kg	0.207	0.00	.05	82.8	23-147	L332799-16	WG346950
1,1,2,2-Tetrachloroethane	mg/kg	0.236	0.00	.05	94.5	18-150	L332799-16	WG346950
1,1,2-Trichloroethane	mg/kg	0.223	0.00	.05	89.1	35-140	L332799-16	WG346950
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.189	0.00	.05	75.6	10-145	L332799-16	WG346950
1,1-Dichloroethane	mg/kg	0.209	0.00	.05	83.8	24-148	L332799-16	WG346950
1,1-Dichloroethene	mg/kg	0.196	0.00	.05	78.3	10-149	L332799-16	WG346950
1,1-Dichloropropene	mg/kg	0.205	0.00	.05	82.1	10-141	L332799-16	WG346950
1,2,3-Trichlorobenzene	mg/kg	0.213	0.00	.05	85.1	10-129	L332799-16	WG346950
1,2,3-Trichloropropane	mg/kg	0.230	0.00	.05	92.0	30-148	L332799-16	WG346950
1,2,3-Trimethylbenzene	mg/kg	0.229	0.00	.05	91.4	10-137	L332799-16	WG346950
1,2,4-Trichlorobenzene	mg/kg	0.216	0.00	.05	86.4	10-119	L332799-16	WG346950
1,2,4-Trimethylbenzene	mg/kg	0.208	0.00	.05	83.4	10-145	L332799-16	WG346950
1,2-Dibromo-3-Chloropropane	mg/kg	0.225	0.00	.05	90.1	19-145	L332799-16	WG346950
1,2-Dibromoethane	mg/kg	0.219	0.00	.05	87.7	24-145	L332799-16	WG346950
1,2-Dichlorobenzene	mg/kg	0.232	0.00	.05	92.7	12-130	L332799-16	WG346950

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

March 03, 2008

L332816

1,2-Dichloroethane	mg/kg	0.225	0.00	.05	90.0	21-155	L332799-16	WG346950

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2-Dichloropropane	mg/kg	0.214	0.00	.05	85.6	28-144	L332799-16	WG346950
1,3,5-Trimethylbenzene	mg/kg	0.211	0.00	.05	84.4	10-135	L332799-16	WG346950
1,3-Dichlorobenzene	mg/kg	0.244	0.00	.05	97.6	10-129	L332799-16	WG346950
1,3-Dichloropropane	mg/kg	0.214	0.00	.05	85.8	31-137	L332799-16	WG346950
1,4-Dichlorobenzene	mg/kg	0.221	0.00	.05	88.3	10-121	L332799-16	WG346950
2,2-Dichloropropane	mg/kg	0.207	0.00	.05	82.6	18-144	L332799-16	WG346950
2-Butanone (MEK)	mg/kg	1.12	0.00	.25	90.0	21-143	L332799-16	WG346950
2-Chloroethyl vinyl ether	mg/kg	0.803	0.00	.25	64.2	0-176	L332799-16	WG346950
2-Chlorotoluene	mg/kg	0.226	0.00	.05	90.5	10-132	L332799-16	WG346950
4-Chlorotoluene	mg/kg	0.232	0.00	.05	92.7	10-129	L332799-16	WG346950
4-Methyl-2-pentanone (MIBK)	mg/kg	1.24	0.00	.25	99.0	31-151	L332799-16	WG346950
Acetone	mg/kg	1.07	0.00	.25	85.7	13-158	L332799-16	WG346950
Acrylonitrile	mg/kg	1.13	0.00	.25	90.2	20-154	L332799-16	WG346950
Benzene	mg/kg	0.208	0.00	.05	83.2	16-143	L332799-16	WG346950
Bromobenzene	mg/kg	0.223	0.00	.05	89.3	14-135	L332799-16	WG346950
Bromodichloromethane	mg/kg	0.228	0.00	.05	91.2	27-139	L332799-16	WG346950
Bromoform	mg/kg	0.216	0.00	.05	86.6	21-144	L332799-16	WG346950
Bromomethane	mg/kg	0.233	0.00	.05	93.0	0-180	L332799-16	WG346950
Carbon tetrachloride	mg/kg	0.211	0.00	.05	84.5	12-149	L332799-16	WG346950
Chlorobenzene	mg/kg	0.219	0.00	.05	87.6	17-134	L332799-16	WG346950
Chlorodibromomethane	mg/kg	0.229	0.00	.05	91.7	28-147	L332799-16	WG346950
Chloroethane	mg/kg	0.229	0.00	.05	91.6	0-172	L332799-16	WG346950
Chloroform	mg/kg	0.214	0.00	.05	85.4	28-138	L332799-16	WG346950
Chloromethane	mg/kg	0.218	0.00	.05	87.1	10-158	L332799-16	WG346950
cis-1,2-Dichloroethene	mg/kg	0.215	0.00	.05	86.0	21-147	L332799-16	WG346950
cis-1,3-Dichloropropene	mg/kg	0.235	0.00	.05	94.0	17-145	L332799-16	WG346950
Di-isopropyl ether	mg/kg	0.222	0.00	.05	88.8	31-153	L332799-16	WG346950
Dibromomethane	mg/kg	0.215	0.00	.05	86.1	24-147	L332799-16	WG346950
Dichlorodifluoromethane	mg/kg	0.209	0.00	.05	83.7	0-192	L332799-16	WG346950
Ethylbenzene	mg/kg	0.210	0.00	.05	84.2	12-137	L332799-16	WG346950
Hexachlorobutadiene	mg/kg	0.220	0.00	.05	88.0	10-123	L332799-16	WG346950
Isopropylbenzene	mg/kg	0.218	0.00	.05	87.1	14-134	L332799-16	WG346950
Methyl tert-butyl ether	mg/kg	0.234	0.00	.05	93.5	21-157	L332799-16	WG346950
Methylene Chloride	mg/kg	0.201	0.00	.05	80.5	12-149	L332799-16	WG346950
n-Butylbenzene	mg/kg	0.195	0.00	.05	77.9	10-130	L332799-16	WG346950
n-Propylbenzene	mg/kg	0.212	0.00	.05	85.0	10-130	L332799-16	WG346950
Naphthalene	mg/kg	0.194	0.0350	.05	63.4	0-146	L332799-16	WG346950
p-Isopropyltoluene	mg/kg	0.201	0.00	.05	80.2	10-131	L332799-16	WG346950
sec-Butylbenzene	mg/kg	0.201	0.00	.05	80.2	10-134	L332799-16	WG346950
Styrene	mg/kg	0.214	0.00	.05	85.7	10-140	L332799-16	WG346950
tert-Butylbenzene	mg/kg	0.197	0.00	.05	78.9	11-137	L332799-16	WG346950
Tetrachloroethene	mg/kg	0.202	0.00	.05	80.7	10-131	L332799-16	WG346950
Toluene	mg/kg	0.211	0.00	.05	84.3	12-136	L332799-16	WG346950
trans-1,2-Dichloroethene	mg/kg	0.205	0.00	.05	81.8	10-143	L332799-16	WG346950
trans-1,3-Dichloropropene	mg/kg	0.241	0.00	.05	96.4	16-147	L332799-16	WG346950
Trichloroethene	mg/kg	0.208	0.00	.05	83.3	10-155	L332799-16	WG346950
Trichlorofluoromethane	mg/kg	0.217	0.00	.05	86.6	10-154	L332799-16	WG346950
Vinyl chloride	mg/kg	0.222	0.00	.05	88.8	10-159	L332799-16	WG346950
Xylenes, Total	mg/kg	0.650	0.00	.15	86.6	10-138	L332799-16	WG346950
1,1,1,2-Tetrachloroethane	mg/kg	2.11	0.00	.05	92.8	29-145	L333091-09	WG347089
1,1,1-Trichloroethane	mg/kg	1.40	0.00	.05	61.4	23-147	L333091-09	WG347089
1,1,2,2-Tetrachloroethane	mg/kg	2.10	0.00	.05	92.3	18-150	L333091-09	WG347089
1,1,2-Trichloroethane	mg/kg	2.10	0.00	.05	92.3	35-140	L333091-09	WG347089
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	1.68	0.00	.05	73.7	10-145	L333091-09	WG347089
1,1-Dichloroethane	mg/kg	1.47	0.00	.05	64.8	24-148	L333091-09	WG347089
1,1-Dichloroethene	mg/kg	1.82	0.00	.05	80.2	10-149	L333091-09	WG347089
1,1-Dichloropropene	mg/kg	1.64	0.00	.05	72.2	10-141	L333091-09	WG347089
1,2,3-Trichlorobenzene	mg/kg	2.12	0.00	.05	93.4	10-129	L333091-09	WG347089

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

1,2,3-Trichloropropane	mg/kg	2.36	0.00	.05	104.	30-148	L333091-09	WG347089

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2,3-Trimethylbenzene	mg/kg	2.07	0.00	.05	91.0	10-137	L333091-09	WG347089
1,2,4-Trichlorobenzene	mg/kg	2.20	0.00	.05	96.9	10-119	L333091-09	WG347089
1,2,4-Trimethylbenzene	mg/kg	2.30	0.00	.05	101.	10-145	L333091-09	WG347089
1,2-Dibromo-3-Chloropropane	mg/kg	2.44	0.00	.05	107.	19-145	L333091-09	WG347089
1,2-Dibromoethane	mg/kg	2.31	0.00	.05	102.	24-145	L333091-09	WG347089
1,2-Dichlorobenzene	mg/kg	2.07	0.00	.05	91.1	12-130	L333091-09	WG347089
1,2-Dichloroethane	mg/kg	1.23	0.00	.05	54.1	21-155	L333091-09	WG347089
1,2-Dichloropropane	mg/kg	1.53	0.00	.05	67.3	28-144	L333091-09	WG347089
1,3,5-Trimethylbenzene	mg/kg	2.28	0.00	.05	100.	10-135	L333091-09	WG347089
1,3-Dichlorobenzene	mg/kg	2.21	0.00	.05	97.3	10-129	L333091-09	WG347089
1,3-Dichloropropane	mg/kg	2.11	0.00	.05	92.9	31-137	L333091-09	WG347089
1,4-Dichlorobenzene	mg/kg	2.07	0.00	.05	90.8	10-121	L333091-09	WG347089
2,2-Dichloropropane	mg/kg	1.41	0.00	.05	62.0	18-144	L333091-09	WG347089
2-Butanone (MEK)	mg/kg	9.94	0.00	.25	87.4	21-143	L333091-09	WG347089
2-Chloroethyl vinyl ether	mg/kg	7.56	0.00	.25	66.5	0-176	L333091-09	WG347089
2-Chlorotoluene	mg/kg	2.36	0.00	.05	104.	10-132	L333091-09	WG347089
4-Chlorotoluene	mg/kg	2.41	0.00	.05	106.	10-129	L333091-09	WG347089
4-Methyl-2-pentanone (MIBK)	mg/kg	8.06	0.00	.25	70.8	31-151	L333091-09	WG347089
Acetone	mg/kg	8.22	0.00	.25	72.2	13-158	L333091-09	WG347089
Acrylonitrile	mg/kg	9.08	0.00	.25	79.9	20-154	L333091-09	WG347089
Benzene	mg/kg	1.48	0.00	.05	64.9	16-143	L333091-09	WG347089
Bromobenzene	mg/kg	2.15	0.00	.05	94.3	14-135	L333091-09	WG347089
Bromodichloromethane	mg/kg	1.48	0.00	.05	65.2	27-139	L333091-09	WG347089
Bromoform	mg/kg	1.86	0.00	.05	81.9	21-144	L333091-09	WG347089
Bromomethane	mg/kg	0.794	0.00	.05	34.9	0-180	L333091-09	WG347089
Carbon tetrachloride	mg/kg	1.43	0.00	.05	63.0	12-149	L333091-09	WG347089
Chlorobenzene	mg/kg	2.36	0.00	.05	104.	17-134	L333091-09	WG347089
Chlorodibromomethane	mg/kg	2.12	0.00	.05	93.3	28-147	L333091-09	WG347089
Chloroethane	mg/kg	0.916	0.00	.05	40.3	0-172	L333091-09	WG347089
Chloroform	mg/kg	1.42	0.00	.05	62.3	28-138	L333091-09	WG347089
Chloromethane	mg/kg	1.39	0.00	.05	61.2	10-158	L333091-09	WG347089
cis-1,2-Dichloroethene	mg/kg	1.57	0.00	.05	68.9	21-147	L333091-09	WG347089
cis-1,3-Dichloropropene	mg/kg	1.51	0.00	.05	66.3	17-145	L333091-09	WG347089
Di-isopropyl ether	mg/kg	1.37	0.00	.05	60.2	31-153	L333091-09	WG347089
Dibromomethane	mg/kg	1.47	0.00	.05	64.8	24-147	L333091-09	WG347089
Dichlorodifluoromethane	mg/kg	1.58	0.00	.05	69.5	0-192	L333091-09	WG347089
Ethylbenzene	mg/kg	2.25	0.00	.05	98.9	12-137	L333091-09	WG347089
Hexachlorobutadiene	mg/kg	2.15	0.00	.05	94.5	10-123	L333091-09	WG347089
Isopropylbenzene	mg/kg	2.33	0.00	.05	103.	14-134	L333091-09	WG347089
Methyl tert-butyl ether	mg/kg	1.38	0.00	.05	60.6	21-157	L333091-09	WG347089
Methylene Chloride	mg/kg	1.57	0.00	.05	69.1	12-149	L333091-09	WG347089
n-Butylbenzene	mg/kg	2.22	0.00	.05	97.5	10-130	L333091-09	WG347089
n-Propylbenzene	mg/kg	2.29	0.00	.05	101.	10-130	L333091-09	WG347089
Naphthalene	mg/kg	2.08	0.00	.05	91.3	0-146	L333091-09	WG347089
p-Isopropyltoluene	mg/kg	2.23	0.00	.05	98.2	10-131	L333091-09	WG347089
sec-Butylbenzene	mg/kg	2.13	0.00	.05	93.5	10-134	L333091-09	WG347089
Styrene	mg/kg	2.32	0.00	.05	102.	10-140	L333091-09	WG347089
tert-Butylbenzene	mg/kg	2.00	0.00	.05	87.9	11-137	L333091-09	WG347089
Tetrachloroethene	mg/kg	2.58	0.00	.05	114.	10-131	L333091-09	WG347089
Toluene	mg/kg	1.63	0.00	.05	71.9	12-136	L333091-09	WG347089
trans-1,2-Dichloroethene	mg/kg	1.66	0.00	.05	73.0	10-143	L333091-09	WG347089
trans-1,3-Dichloropropene	mg/kg	1.44	0.00	.05	63.2	16-147	L333091-09	WG347089
Trichloroethene	mg/kg	1.70	0.00	.05	74.7	10-155	L333091-09	WG347089
Trichlorofluoromethane	mg/kg	1.25	0.00	.05	55.0	10-154	L333091-09	WG347089
Vinyl chloride	mg/kg	1.40	0.00	.05	61.4	10-159	L333091-09	WG347089
Xylenes, Total	mg/kg	7.06	0.00	.15	104.	10-138	L333091-09	WG347089
Toluene	mg/kg	2.38	0.00	.05	102.	12-136	L332983-01	WG347350

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

1,1,1,2-Tetrachloroethane	mg/kg	2.09	0.00	.05	95.9	29-145	L333083-01	WG347625

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1-Trichloroethane	mg/kg	1.87	0.00	.05	85.8	23-147	L333083-01	WG347625
1,1,2,2-Tetrachloroethane	mg/kg	2.18	0.00	.05	100.	18-150	L333083-01	WG347625
1,1,2-Trichloroethane	mg/kg	2.04	0.00	.05	93.6	35-140	L333083-01	WG347625
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.626	0.00	.05	28.8	10-145	L333083-01	WG347625
1,1-Dichloroethane	mg/kg	1.81	0.00	.05	83.2	24-148	L333083-01	WG347625
1,1-Dichloroethene	mg/kg	0.618	0.00	.05	28.4	10-149	L333083-01	WG347625
1,1-Dichloropropene	mg/kg	1.63	0.00	.05	75.0	10-141	L333083-01	WG347625
1,2,3-Trichlorobenzene	mg/kg	2.29	0.00	.05	105.	10-129	L333083-01	WG347625
1,2,3-Trichloropropane	mg/kg	2.17	0.00	.05	99.8	30-148	L333083-01	WG347625
1,2,3-Trimethylbenzene	mg/kg	2.13	0.00	.05	97.8	10-137	L333083-01	WG347625
1,2,4-Trichlorobenzene	mg/kg	2.36	0.00	.05	108.	10-119	L333083-01	WG347625
1,2,4-Trimethylbenzene	mg/kg	2.04	0.00	.05	94.0	10-145	L333083-01	WG347625
1,2-Dibromo-3-Chloropropane	mg/kg	2.10	0.00	.05	96.5	19-145	L333083-01	WG347625
1,2-Dibromoethane	mg/kg	1.98	0.00	.05	91.1	24-145	L333083-01	WG347625
1,2-Dichlorobenzene	mg/kg	2.17	0.00	.05	99.7	12-130	L333083-01	WG347625
1,2-Dichloroethane	mg/kg	1.81	0.00	.05	83.0	21-155	L333083-01	WG347625
1,2-Dichloropropane	mg/kg	1.88	0.00	.05	86.5	28-144	L333083-01	WG347625
1,3,5-Trimethylbenzene	mg/kg	2.01	0.00	.05	92.4	10-135	L333083-01	WG347625
1,3-Dichlorobenzene	mg/kg	2.11	0.00	.05	97.0	10-129	L333083-01	WG347625
1,3-Dichloropropane	mg/kg	1.99	0.00	.05	91.5	31-137	L333083-01	WG347625
1,4-Dichlorobenzene	mg/kg	2.13	0.00	.05	97.8	10-121	L333083-01	WG347625
2,2-Dichloropropane	mg/kg	2.31	0.00	.05	106.	18-144	L333083-01	WG347625
2-Butanone (MEK)	mg/kg	9.26	0.00	.25	85.2	21-143	L333083-01	WG347625
2-Chloroethyl vinyl ether	mg/kg	4.30	0.00	.25	39.6	0-176	L333083-01	WG347625
2-Chlorotoluene	mg/kg	2.01	0.00	.05	92.6	10-132	L333083-01	WG347625
4-Chlorotoluene	mg/kg	2.06	0.00	.05	94.8	10-129	L333083-01	WG347625
4-Methyl-2-pentanone (MIBK)	mg/kg	10.5	0.00	.25	96.6	31-151	L333083-01	WG347625
Acetone	mg/kg	8.90	0.00	.25	81.8	13-158	L333083-01	WG347625
Acrylonitrile	mg/kg	7.37	0.00	.25	67.8	20-154	L333083-01	WG347625
Benzene	mg/kg	1.73	0.00	.05	79.7	16-143	L333083-01	WG347625
Bromobenzene	mg/kg	2.07	0.00	.05	95.0	14-135	L333083-01	WG347625
Bromodichloromethane	mg/kg	1.86	0.00	.05	85.3	27-139	L333083-01	WG347625
Bromoform	mg/kg	2.05	0.00	.05	94.5	21-144	L333083-01	WG347625
Bromomethane	mg/kg	1.37	0.00	.05	62.8	0-180	L333083-01	WG347625
Carbon tetrachloride	mg/kg	1.80	0.00	.05	82.8	12-149	L333083-01	WG347625
Chlorobenzene	mg/kg	1.93	0.00	.05	88.8	17-134	L333083-01	WG347625
Chlorodibromomethane	mg/kg	2.02	0.00	.05	92.7	28-147	L333083-01	WG347625
Chloroethane	mg/kg	0.552	0.00	.05	25.4	0-172	L333083-01	WG347625
Chloroform	mg/kg	1.88	0.00	.05	86.4	28-138	L333083-01	WG347625
Chloromethane	mg/kg	1.88	0.00	.05	86.3	10-158	L333083-01	WG347625
cis-1,2-Dichloroethene	mg/kg	1.74	0.00	.05	80.2	21-147	L333083-01	WG347625
cis-1,3-Dichloropropene	mg/kg	2.19	0.00	.05	101.	17-145	L333083-01	WG347625
Di-isopropyl ether	mg/kg	2.08	0.00	.05	95.6	31-153	L333083-01	WG347625
Dibromomethane	mg/kg	1.81	0.00	.05	83.4	24-147	L333083-01	WG347625
Dichlorodifluoromethane	mg/kg	0.982	0.00	.05	45.1	0-192	L333083-01	WG347625
Ethylbenzene	mg/kg	1.86	0.00	.05	85.4	12-137	L333083-01	WG347625
Hexachlorobutadiene	mg/kg	2.15	0.00	.05	98.9	10-123	L333083-01	WG347625
Isopropylbenzene	mg/kg	1.95	0.00	.05	89.7	14-134	L333083-01	WG347625
Methyl tert-butyl ether	mg/kg	2.07	0.00	.05	95.3	21-157	L333083-01	WG347625
Methylene Chloride	mg/kg	1.42	0.00	.05	65.5	12-149	L333083-01	WG347625
n-Butylbenzene	mg/kg	2.13	0.00	.05	97.7	10-130	L333083-01	WG347625
n-Propylbenzene	mg/kg	1.99	0.00	.05	91.3	10-130	L333083-01	WG347625
Naphthalene	mg/kg	2.15	0.00	.05	99.0	0-146	L333083-01	WG347625
p-Isopropyltoluene	mg/kg	2.06	0.00	.05	94.7	10-131	L333083-01	WG347625
sec-Butylbenzene	mg/kg	2.03	0.00	.05	93.3	10-134	L333083-01	WG347625
Styrene	mg/kg	2.04	0.00	.05	93.6	10-140	L333083-01	WG347625
tert-Butylbenzene	mg/kg	2.02	0.00	.05	93.1	11-137	L333083-01	WG347625
Tetrachloroethene	mg/kg	1.67	0.00	.05	76.9	10-131	L333083-01	WG347625
Toluene	mg/kg	1.85	0.00	.05	84.9	12-136	L333083-01	WG347625

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

March 03, 2008

L332816

trans-1,2-Dichloroethene	mg/kg	1.52	0.00	.05	69.8	10-143	L333083-01	WG347625

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
trans-1,3-Dichloropropene	mg/kg	2.24	0.00	.05	103.	16-147	L333083-01	WG347625
Trichloroethene	mg/kg	1.69	0.00	.05	77.5	10-155	L333083-01	WG347625
Trichlorofluoromethane	mg/kg	1.26	0.00	.05	57.9	10-154	L333083-01	WG347625
Vinyl chloride	mg/kg	0.913	0.00	.05	42.0	10-159	L333083-01	WG347625
Xylenes, Total	mg/kg	5.71	0.00	.15	87.5	10-138	L333083-01	WG347625

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/kg	22.7	23.9	5.50	20	82.2	L332742-02	WG346451
1,1,1,2-Tetrachloroethane	mg/kg	0.261	0.251	4.14	31	104.	L332799-37	WG346688
1,1,1-Trichloroethane	mg/kg	0.252	0.253	0.214	32	101.	L332799-37	WG346688
1,1,2,2-Tetrachloroethane	mg/kg	0.237	0.233	1.59	33	94.8	L332799-37	WG346688
1,1,2-Trichloroethane	mg/kg	0.244	0.241	1.39	29	97.8	L332799-37	WG346688
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.229	0.232	1.50	35	91.5	L332799-37	WG346688
1,1-Dichloroethane	mg/kg	0.240	0.238	0.671	31	95.9	L332799-37	WG346688
1,1-Dichloroethene	mg/kg	0.240	0.264	9.72	34	96.0	L332799-37	WG346688
1,1-Dichloropropene	mg/kg	0.230	0.226	1.42	34	91.8	L332799-37	WG346688
1,2,3-Trichlorobenzene	mg/kg	0.185	0.182	1.60	43	74.1	L332799-37	WG346688
1,2,3-Trichloropropane	mg/kg	0.242	0.240	0.563	32	96.7	L332799-37	WG346688
1,2,3-Trimethylbenzene	mg/kg	0.232	0.231	0.316	36	92.7	L332799-37	WG346688
1,2,4-Trichlorobenzene	mg/kg	0.158	0.158	0.360	44	63.3	L332799-37	WG346688
1,2,4-Trimethylbenzene	mg/kg	0.224	0.216	3.80	41	89.8	L332799-37	WG346688
1,2-Dibromo-3-Chloropropane	mg/kg	0.253	0.257	1.53	35	101.	L332799-37	WG346688
1,2-Dibromoethane	mg/kg	0.241	0.241	0.0247	31	96.3	L332799-37	WG346688
1,2-Dichlorobenzene	mg/kg	0.223	0.218	2.15	35	89.3	L332799-37	WG346688
1,2-Dichloroethane	mg/kg	0.233	0.239	2.49	29	93.3	L332799-37	WG346688
1,2-Dichloropropane	mg/kg	0.251	0.246	2.27	30	101.	L332799-37	WG346688
1,3,5-Trimethylbenzene	mg/kg	0.235	0.224	4.79	39	94.1	L332799-37	WG346688
1,3-Dichlorobenzene	mg/kg	0.203	0.196	3.26	38	81.1	L332799-37	WG346688
1,3-Dichloropropane	mg/kg	0.241	0.240	0.246	29	96.2	L332799-37	WG346688
1,4-Dichlorobenzene	mg/kg	0.195	0.196	0.376	36	78.0	L332799-37	WG346688
2,2-Dichloropropane	mg/kg	0.209	0.217	4.03	32	83.5	L332799-37	WG346688
2-Butanone (MEK)	mg/kg	1.04	1.11	7.26	37	82.9	L332799-37	WG346688
2-Chloroethyl vinyl ether	mg/kg	0.672	0.851	23.5	50	53.8	L332799-37	WG346688
2-Chlorotoluene	mg/kg	0.226	0.219	3.12	37	90.2	L332799-37	WG346688
4-Chlorotoluene	mg/kg	0.208	0.201	3.52	38	83.2	L332799-37	WG346688
4-Methyl-2-pentanone (MIBK)	mg/kg	1.18	1.25	5.45	36	94.3	L332799-37	WG346688
Acetone	mg/kg	1.08	1.17	8.21	34	86.0	L332799-37	WG346688
Acrylonitrile	mg/kg	1.08	1.17	8.35	35	86.4	L332799-37	WG346688
Benzene	mg/kg	0.227	0.226	0.620	31	90.9	L332799-37	WG346688
Bromobenzene	mg/kg	0.229	0.219	4.46	39	91.7	L332799-37	WG346688
Bromodichloromethane	mg/kg	0.254	0.250	1.46	30	102.	L332799-37	WG346688
Bromoform	mg/kg	0.269	0.266	1.26	34	108.	L332799-37	WG346688
Bromomethane	mg/kg	0.332	0.341	2.77	41	133.	L332799-37	WG346688
Carbon tetrachloride	mg/kg	0.243	0.246	1.21	34	97.2	L332799-37	WG346688
Chlorobenzene	mg/kg	0.239	0.230	3.69	34	95.6	L332799-37	WG346688
Chlorodibromomethane	mg/kg	0.259	0.251	3.04	32	104.	L332799-37	WG346688
Chloroethane	mg/kg	0.259	0.279	7.14	38	104.	L332799-37	WG346688
Chloroform	mg/kg	0.239	0.232	2.99	30	95.6	L332799-37	WG346688
Chloromethane	mg/kg	0.225	0.224	0.572	35	90.1	L332799-37	WG346688
cis-1,2-Dichloroethene	mg/kg	0.231	0.232	0.413	31	92.3	L332799-37	WG346688
cis-1,3-Dichloropropene	mg/kg	0.246	0.241	2.13	32	98.5	L332799-37	WG346688
Di-isopropyl ether	mg/kg	0.250	0.255	1.66	29	100.	L332799-37	WG346688
Dibromomethane	mg/kg	0.224	0.223	0.388	30	89.6	L332799-37	WG346688
Dichlorodifluoromethane	mg/kg	0.208	0.200	3.61	38	83.1	L332799-37	WG346688
Ethylbenzene	mg/kg	0.242	0.232	4.21	36	96.9	L332799-37	WG346688
Hexachlorobutadiene	mg/kg	0.175	0.172	1.93	50	70.1	L332799-37	WG346688

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Isopropylbenzene	mg/kg	0.246	0.234	4.76	37	98.3	L332799-37	WG346688

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
Methyl tert-butyl ether	mg/kg	0.238	0.246	3.33	31	95.1	L332799-37	WG346688
Methylene Chloride	mg/kg	0.222	0.220	0.582	31	88.7	L332799-37	WG346688
n-Butylbenzene	mg/kg	0.179	0.179	0.105	48	71.7	L332799-37	WG346688
n-Propylbenzene	mg/kg	0.226	0.218	3.86	40	90.5	L332799-37	WG346688
Naphthalene	mg/kg	0.224	0.221	1.58	43	89.6	L332799-37	WG346688
p-Isopropyltoluene	mg/kg	0.212	0.206	3.14	43	84.8	L332799-37	WG346688
sec-Butylbenzene	mg/kg	0.232	0.223	3.63	43	92.6	L332799-37	WG346688
Styrene	mg/kg	0.251	0.245	2.45	35	100.	L332799-37	WG346688
tert-Butylbenzene	mg/kg	0.251	0.240	4.34	39	100.	L332799-37	WG346688
Tetrachloroethene	mg/kg	0.216	0.202	6.32	35	86.3	L332799-37	WG346688
Toluene	mg/kg	0.239	0.231	3.37	32	95.6	L332799-37	WG346688
trans-1,2-Dichloroethene	mg/kg	0.223	0.217	2.57	33	89.1	L332799-37	WG346688
trans-1,3-Dichloropropene	mg/kg	0.247	0.246	0.182	32	98.7	L332799-37	WG346688
Trichloroethene	mg/kg	0.231	0.220	4.88	33	92.6	L332799-37	WG346688
Trichlorofluoromethane	mg/kg	0.236	0.249	5.12	32	94.5	L332799-37	WG346688
Vinyl chloride	mg/kg	0.244	0.244	0.104	36	97.7	L332799-37	WG346688
Xylenes, Total	mg/kg	0.722	0.693	4.12	36	96.3	L332799-37	WG346688
1,1,1,2-Tetrachloroethane	mg/kg	0.210	0.196	6.70	31	84.0	L333023-02	WG346689
1,1,1-Trichloroethane	mg/kg	0.213	0.192	10.3	32	85.3	L333023-02	WG346689
1,1,2,2-Tetrachloroethane	mg/kg	0.191	0.178	6.99	33	76.5	L333023-02	WG346689
1,1,2-Trichloroethane	mg/kg	0.209	0.195	7.02	29	83.8	L333023-02	WG346689
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.165	0.158	4.04	35	66.0	L333023-02	WG346689
1,1-Dichloroethane	mg/kg	0.213	0.204	4.24	31	85.2	L333023-02	WG346689
1,1-Dichloroethene	mg/kg	0.191	0.186	2.96	34	76.5	L333023-02	WG346689
1,1-Dichloropropene	mg/kg	0.201	0.188	6.99	34	80.5	L333023-02	WG346689
1,2,3-Trichlorobenzene	mg/kg	0.124	0.133	7.06	43	49.6	L333023-02	WG346689
1,2,3-Trichloropropane	mg/kg	0.196	0.199	1.52	32	78.5	L333023-02	WG346689
1,2,3-Trimethylbenzene	mg/kg	0.224	0.221	1.50	36	89.7	L333023-02	WG346689
1,2,4-Trichlorobenzene	mg/kg	0.128	0.137	6.68	44	51.1	L333023-02	WG346689
1,2,4-Trimethylbenzene	mg/kg	0.188	0.186	1.56	41	75.4	L333023-02	WG346689
1,2-Dibromo-3-Chloropropane	mg/kg	0.218	0.201	8.24	35	87.2	L333023-02	WG346689
1,2-Dibromoethane	mg/kg	0.190	0.180	5.40	31	75.9	L333023-02	WG346689
1,2-Dichlorobenzene	mg/kg	0.195	0.193	0.691	35	77.9	L333023-02	WG346689
1,2-Dichloroethane	mg/kg	0.214	0.194	9.66	29	85.7	L333023-02	WG346689
1,2-Dichloropropane	mg/kg	0.251	0.241	4.22	30	100.	L333023-02	WG346689
1,3,5-Trimethylbenzene	mg/kg	0.204	0.202	0.916	39	81.6	L333023-02	WG346689
1,3-Dichlorobenzene	mg/kg	0.176	0.176	0.0032	38	70.5	L333023-02	WG346689
1,3-Dichloropropane	mg/kg	0.207	0.192	7.53	29	83.0	L333023-02	WG346689
1,4-Dichlorobenzene	mg/kg	0.235	0.226	4.18	36	94.1	L333023-02	WG346689
2,2-Dichloropropane	mg/kg	0.226	0.207	8.84	32	90.3	L333023-02	WG346689
2-Butanone (MEK)	mg/kg	1.19	1.13	4.43	37	94.8	L333023-02	WG346689
2-Chloroethyl vinyl ether	mg/kg	1.12	1.08	4.09	50	89.7	L333023-02	WG346689
2-Chlorotoluene	mg/kg	0.208	0.207	0.546	37	83.3	L333023-02	WG346689
4-Chlorotoluene	mg/kg	0.170	0.169	0.352	38	68.0	L333023-02	WG346689
4-Methyl-2-pentanone (MIBK)	mg/kg	1.14	1.10	3.36	36	91.2	L333023-02	WG346689
Acetone	mg/kg	0.967	0.945	2.28	34	77.3	L333023-02	WG346689
Acrylonitrile	mg/kg	0.948	0.948	0.0871	35	75.9	L333023-02	WG346689
Benzene	mg/kg	0.206	0.196	4.96	31	82.3	L333023-02	WG346689
Bromobenzene	mg/kg	0.203	0.198	2.56	39	81.4	L333023-02	WG346689
Bromodichloromethane	mg/kg	0.216	0.204	5.71	30	86.6	L333023-02	WG346689
Bromoform	mg/kg	0.182	0.173	5.38	34	73.0	L333023-02	WG346689
Bromomethane	mg/kg	0.224	0.196	12.9	41	89.5	L333023-02	WG346689
Carbon tetrachloride	mg/kg	0.204	0.190	7.04	34	81.5	L333023-02	WG346689
Chlorobenzene	mg/kg	0.221	0.208	5.89	34	88.2	L333023-02	WG346689
Chlorodibromomethane	mg/kg	0.208	0.193	7.52	32	83.0	L333023-02	WG346689
Chloroethane	mg/kg	0.234	0.208	11.6	38	93.6	L333023-02	WG346689
Chloroform	mg/kg	0.219	0.198	9.80	30	87.4	L333023-02	WG346689
Chloromethane	mg/kg	0.175	0.156	11.7	35	70.0	L333023-02	WG346689

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

cis-1,2-Dichloroethene	mg/kg	0.217	0.202	7.42	31	86.8	L333023-02	WG346689

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
cis-1,3-Dichloropropene	mg/kg	0.194	0.188	3.04	32	77.5	L333023-02	WG346689
Di-isopropyl ether	mg/kg	0.221	0.212	4.10	29	88.4	L333023-02	WG346689
Dibromomethane	mg/kg	0.206	0.208	0.753	30	82.5	L333023-02	WG346689
Dichlorodifluoromethane	mg/kg	0.210	0.192	9.22	38	84.2	L333023-02	WG346689
Ethylbenzene	mg/kg	0.198	0.184	7.75	36	79.3	L333023-02	WG346689
Hexachlorobutadiene	mg/kg	0.152	0.139	9.38	50	60.9	L333023-02	WG346689
Isopropylbenzene	mg/kg	0.187	0.182	2.66	37	74.6	L333023-02	WG346689
Methyl tert-butyl ether	mg/kg	0.222	0.208	6.30	31	88.7	L333023-02	WG346689
Methylene Chloride	mg/kg	0.217	0.203	6.70	31	86.7	L333023-02	WG346689
n-Butylbenzene	mg/kg	0.216	0.206	4.59	48	86.3	L333023-02	WG346689
n-Propylbenzene	mg/kg	0.180	0.171	5.07	40	72.0	L333023-02	WG346689
Naphthalene	mg/kg	0.135	0.140	3.41	43	54.2	L333023-02	WG346689
p-Isopropyltoluene	mg/kg	0.166	0.168	1.46	43	66.2	L333023-02	WG346689
sec-Butylbenzene	mg/kg	0.176	0.173	1.25	43	70.3	L333023-02	WG346689
Styrene	mg/kg	0.186	0.176	5.50	35	74.2	L333023-02	WG346689
tert-Butylbenzene	mg/kg	0.180	0.180	0.0245	39	71.9	L333023-02	WG346689
Tetrachloroethene	mg/kg	0.189	0.183	3.00	35	75.5	L333023-02	WG346689
Toluene	mg/kg	0.200	0.200	0.0854	32	80.0	L333023-02	WG346689
trans-1,2-Dichloroethene	mg/kg	0.206	0.188	8.97	33	82.4	L333023-02	WG346689
trans-1,3-Dichloropropene	mg/kg	0.196	0.197	0.842	32	78.3	L333023-02	WG346689
Trichloroethene	mg/kg	0.220	0.207	5.84	33	87.9	L333023-02	WG346689
Trichlorofluoromethane	mg/kg	0.224	0.0722	102.	32	89.6	L333023-02	WG346689
Vinyl chloride	mg/kg	0.181	0.175	3.27	36	72.3	L333023-02	WG346689
Xylenes, Total	mg/kg	0.585	0.562	3.99	36	78.0	L333023-02	WG346689
Diesel Range Organics (DRO)	mg/kg	24.0	29.5	20.6	20	79.9	L333145-02	WG346741
Residual Range Organics (RRO)	mg/kg	54.2	54.0	0.484	20	181.	L333145-02	WG346741
1,1,1,2-Tetrachloroethane	mg/kg	0.231	0.225	2.73	31	92.4	L332799-16	WG346950
1,1,1-Trichloroethane	mg/kg	0.214	0.207	3.28	32	85.5	L332799-16	WG346950
1,1,2,2-Tetrachloroethane	mg/kg	0.257	0.236	8.31	33	103.	L332799-16	WG346950
1,1,2-Trichloroethane	mg/kg	0.235	0.223	5.39	29	94.0	L332799-16	WG346950
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.191	0.189	1.09	35	76.4	L332799-16	WG346950
1,1-Dichloroethane	mg/kg	0.220	0.209	4.89	31	88.0	L332799-16	WG346950
1,1-Dichloroethene	mg/kg	0.204	0.196	4.09	34	81.5	L332799-16	WG346950
1,1-Dichloropropene	mg/kg	0.212	0.205	3.02	34	84.6	L332799-16	WG346950
1,2,3-Trichlorobenzene	mg/kg	0.230	0.213	7.90	43	92.1	L332799-16	WG346950
1,2,3-Trichloropropane	mg/kg	0.254	0.230	9.93	32	102.	L332799-16	WG346950
1,2,3-Trimethylbenzene	mg/kg	0.235	0.229	2.86	36	94.1	L332799-16	WG346950
1,2,4-Trichlorobenzene	mg/kg	0.228	0.216	5.54	44	91.3	L332799-16	WG346950
1,2,4-Trimethylbenzene	mg/kg	0.213	0.208	2.26	41	85.3	L332799-16	WG346950
1,2-Dibromo-3-Chloropropane	mg/kg	0.259	0.225	13.8	35	103.	L332799-16	WG346950
1,2-Dibromoethane	mg/kg	0.235	0.219	6.80	31	93.9	L332799-16	WG346950
1,2-Dichlorobenzene	mg/kg	0.232	0.232	0.135	35	92.8	L332799-16	WG346950
1,2-Dichloroethane	mg/kg	0.234	0.225	4.00	29	93.6	L332799-16	WG346950
1,2-Dichloropropane	mg/kg	0.220	0.214	2.99	30	88.2	L332799-16	WG346950
1,3,5-Trimethylbenzene	mg/kg	0.215	0.211	1.96	39	86.1	L332799-16	WG346950
1,3-Dichlorobenzene	mg/kg	0.250	0.244	2.22	38	99.8	L332799-16	WG346950
1,3-Dichloropropane	mg/kg	0.227	0.214	5.81	29	90.9	L332799-16	WG346950
1,4-Dichlorobenzene	mg/kg	0.222	0.221	0.513	36	88.8	L332799-16	WG346950
2,2-Dichloropropane	mg/kg	0.213	0.207	3.02	32	85.2	L332799-16	WG346950
2-Butanone (MEK)	mg/kg	1.29	1.12	13.4	37	103.	L332799-16	WG346950
2-Chloroethyl vinyl ether	mg/kg	0.805	0.803	0.296	50	64.4	L332799-16	WG346950
2-Chlorotoluene	mg/kg	0.233	0.226	2.71	37	93.0	L332799-16	WG346950
4-Chlorotoluene	mg/kg	0.237	0.232	2.04	38	94.6	L332799-16	WG346950
4-Methyl-2-pentanone (MIBK)	mg/kg	1.39	1.24	11.9	36	112.	L332799-16	WG346950
Acetone	mg/kg	1.20	1.07	11.2	34	95.9	L332799-16	WG346950
Acrylonitrile	mg/kg	1.25	1.13	10.3	35	99.9	L332799-16	WG346950
Benzene	mg/kg	0.217	0.208	4.39	31	87.0	L332799-16	WG346950

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

Bromobenzene	mg/kg	0.234	0.223	4.68	39	93.6	L332799-16	WG346950

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
Bromodichloromethane	mg/kg	0.237	0.228	3.82	30	94.8	L332799-16	WG346950
Bromoform	mg/kg	0.230	0.216	6.13	34	92.0	L332799-16	WG346950
Bromomethane	mg/kg	0.242	0.233	3.77	41	96.6	L332799-16	WG346950
Carbon tetrachloride	mg/kg	0.219	0.211	3.35	34	87.4	L332799-16	WG346950
Chlorobenzene	mg/kg	0.228	0.219	4.11	34	91.3	L332799-16	WG346950
Chlorodibromomethane	mg/kg	0.241	0.229	4.93	32	96.3	L332799-16	WG346950
Chloroethane	mg/kg	0.235	0.229	2.58	38	94.0	L332799-16	WG346950
Chloroform	mg/kg	0.226	0.214	5.63	30	90.4	L332799-16	WG346950
Chloromethane	mg/kg	0.228	0.218	4.71	35	91.3	L332799-16	WG346950
cis-1,2-Dichloroethene	mg/kg	0.229	0.215	6.39	31	91.7	L332799-16	WG346950
cis-1,3-Dichloropropene	mg/kg	0.243	0.235	3.48	32	97.3	L332799-16	WG346950
Di-isopropyl ether	mg/kg	0.229	0.222	3.05	29	91.6	L332799-16	WG346950
Dibromomethane	mg/kg	0.228	0.215	5.78	30	91.2	L332799-16	WG346950
Dichlorodifluoromethane	mg/kg	0.212	0.209	1.51	38	85.0	L332799-16	WG346950
Ethylbenzene	mg/kg	0.217	0.210	2.88	36	86.6	L332799-16	WG346950
Hexachlorobutadiene	mg/kg	0.223	0.220	1.21	50	89.1	L332799-16	WG346950
Isopropylbenzene	mg/kg	0.224	0.218	2.98	37	89.8	L332799-16	WG346950
Methyl tert-butyl ether	mg/kg	0.250	0.234	6.68	31	100.	L332799-16	WG346950
Methylene Chloride	mg/kg	0.209	0.201	3.58	31	83.5	L332799-16	WG346950
n-Butylbenzene	mg/kg	0.196	0.195	0.509	48	78.3	L332799-16	WG346950
n-Propylbenzene	mg/kg	0.218	0.212	2.52	40	87.1	L332799-16	WG346950
Naphthalene	mg/kg	0.226	0.194	15.3	43	76.2	L332799-16	WG346950
p-Isopropyltoluene	mg/kg	0.205	0.201	2.22	43	82.0	L332799-16	WG346950
sec-Butylbenzene	mg/kg	0.207	0.201	2.99	43	82.7	L332799-16	WG346950
Styrene	mg/kg	0.219	0.214	2.11	35	87.6	L332799-16	WG346950
tert-Butylbenzene	mg/kg	0.203	0.197	2.85	39	81.2	L332799-16	WG346950
Tetrachloroethene	mg/kg	0.204	0.202	0.969	35	81.5	L332799-16	WG346950
Toluene	mg/kg	0.218	0.211	3.16	32	87.0	L332799-16	WG346950
trans-1,2-Dichloroethene	mg/kg	0.213	0.205	3.84	33	85.0	L332799-16	WG346950
trans-1,3-Dichloropropene	mg/kg	0.247	0.241	2.61	32	99.0	L332799-16	WG346950
Trichloroethene	mg/kg	0.213	0.208	2.30	33	85.2	L332799-16	WG346950
Trichlorofluoromethane	mg/kg	0.221	0.217	2.07	32	88.4	L332799-16	WG346950
Vinyl chloride	mg/kg	0.232	0.222	4.35	36	92.7	L332799-16	WG346950
Xylenes, Total	mg/kg	0.667	0.650	2.67	36	89.0	L332799-16	WG346950
1,1,1,2-Tetrachloroethane	mg/kg	2.23	2.11	5.61	31	98.2	L333091-09	WG347089
1,1,1-Trichloroethane	mg/kg	1.93	1.40	32.2	32	85.0	L333091-09	WG347089
1,1,2,2-Tetrachloroethane	mg/kg	2.22	2.10	5.36	33	97.4	L333091-09	WG347089
1,1,2-Trichloroethane	mg/kg	2.30	2.10	9.32	29	101.	L333091-09	WG347089
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	2.36	1.68	33.9	35	104.	L333091-09	WG347089
1,1-Dichloroethane	mg/kg	2.07	1.47	33.6	31	90.9	L333091-09	WG347089
1,1-Dichloroethene	mg/kg	2.34	1.82	24.7	34	103.	L333091-09	WG347089
1,1-Dichloropropene	mg/kg	2.12	1.64	25.4	34	93.2	L333091-09	WG347089
1,2,3-Trichlorobenzene	mg/kg	2.36	2.12	10.5	43	104.	L333091-09	WG347089
1,2,3-Trichloropropane	mg/kg	2.39	2.36	1.35	32	105.	L333091-09	WG347089
1,2,3-Trimethylbenzene	mg/kg	2.19	2.07	5.76	36	96.3	L333091-09	WG347089
1,2,4-Trichlorobenzene	mg/kg	2.46	2.20	11.1	44	108.	L333091-09	WG347089
1,2,4-Trimethylbenzene	mg/kg	2.26	2.30	1.66	41	99.3	L333091-09	WG347089
1,2-Dibromo-3-Chloropropane	mg/kg	2.36	2.44	3.36	35	104.	L333091-09	WG347089
1,2-Dibromoethane	mg/kg	2.56	2.31	10.2	31	113.	L333091-09	WG347089
1,2-Dichlorobenzene	mg/kg	2.19	2.07	5.75	35	96.5	L333091-09	WG347089
1,2-Dichloroethane	mg/kg	1.92	1.23	43.7	29	84.5	L333091-09	WG347089
1,2-Dichloropropane	mg/kg	2.16	1.53	33.9	30	94.8	L333091-09	WG347089
1,3,5-Trimethylbenzene	mg/kg	2.22	2.28	2.73	39	97.6	L333091-09	WG347089
1,3-Dichlorobenzene	mg/kg	2.25	2.21	1.50	38	98.7	L333091-09	WG347089
1,3-Dichloropropane	mg/kg	2.35	2.11	10.4	29	103.	L333091-09	WG347089
1,4-Dichlorobenzene	mg/kg	2.17	2.07	4.75	36	95.2	L333091-09	WG347089
2,2-Dichloropropane	mg/kg	2.00	1.41	34.6	32	87.9	L333091-09	WG347089
2-Butanone (MEK)	mg/kg	11.6	9.94	15.2	37	102.	L333091-09	WG347089

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

2-Chloroethyl vinyl ether	mg/kg	11.6	7.56	42.0	50	102.	L333091-09	WG347089

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
2-Chlorotoluene	mg/kg	2.25	2.36	4.62	37	98.9	L333091-09	WG347089
4-Chlorotoluene	mg/kg	2.32	2.41	3.82	38	102.	L333091-09	WG347089
4-Methyl-2-pentanone (MIBK)	mg/kg	10.9	8.06	29.9	36	95.7	L333091-09	WG347089
Acetone	mg/kg	9.01	8.22	9.22	34	79.2	L333091-09	WG347089
Acrylonitrile	mg/kg	11.3	9.08	21.5	35	99.0	L333091-09	WG347089
Benzene	mg/kg	2.10	1.48	35.0	31	92.5	L333091-09	WG347089
Bromobenzene	mg/kg	2.21	2.15	3.20	39	97.4	L333091-09	WG347089
Bromodichloromethane	mg/kg	2.10	1.48	34.5	30	92.4	L333091-09	WG347089
Bromoform	mg/kg	2.07	1.86	10.3	34	90.8	L333091-09	WG347089
Bromomethane	mg/kg	0.889	0.794	11.3	41	39.1	L333091-09	WG347089
Carbon tetrachloride	mg/kg	1.87	1.43	26.6	34	82.3	L333091-09	WG347089
Chlorobenzene	mg/kg	2.36	2.36	0.313	34	104.	L333091-09	WG347089
Chlorodibromomethane	mg/kg	2.35	2.12	9.99	32	103.	L333091-09	WG347089
Chloroethane	mg/kg	0.876	0.916	4.45	38	38.5	L333091-09	WG347089
Chloroform	mg/kg	2.00	1.42	34.1	30	87.9	L333091-09	WG347089
Chloromethane	mg/kg	1.73	1.39	21.7	35	76.1	L333091-09	WG347089
cis-1,2-Dichloroethene	mg/kg	2.20	1.57	33.6	31	96.8	L333091-09	WG347089
cis-1,3-Dichloropropene	mg/kg	2.19	1.51	36.9	32	96.3	L333091-09	WG347089
Di-isopropyl ether	mg/kg	2.19	1.37	46.0	29	96.2	L333091-09	WG347089
Dibromomethane	mg/kg	2.17	1.47	38.1	30	95.3	L333091-09	WG347089
Dichlorodifluoromethane	mg/kg	1.89	1.58	17.9	38	83.2	L333091-09	WG347089
Ethylbenzene	mg/kg	2.21	2.25	1.66	36	97.2	L333091-09	WG347089
Hexachlorobutadiene	mg/kg	2.20	2.15	2.18	50	96.5	L333091-09	WG347089
Isopropylbenzene	mg/kg	2.20	2.33	5.94	37	96.6	L333091-09	WG347089
Methyl tert-butyl ether	mg/kg	2.35	1.38	52.2	31	103.	L333091-09	WG347089
Methylene Chloride	mg/kg	2.26	1.57	35.9	31	99.4	L333091-09	WG347089
n-Butylbenzene	mg/kg	2.17	2.22	2.16	48	95.4	L333091-09	WG347089
n-Propylbenzene	mg/kg	2.17	2.29	5.38	40	95.4	L333091-09	WG347089
Naphthalene	mg/kg	2.19	2.08	5.44	43	96.4	L333091-09	WG347089
p-Isopropyltoluene	mg/kg	2.16	2.23	3.21	43	95.1	L333091-09	WG347089
sec-Butylbenzene	mg/kg	2.08	2.13	2.42	43	91.2	L333091-09	WG347089
Styrene	mg/kg	2.36	2.32	1.90	35	104.	L333091-09	WG347089
tert-Butylbenzene	mg/kg	1.91	2.00	4.44	39	84.1	L333091-09	WG347089
Tetrachloroethene	mg/kg	2.34	2.58	9.74	35	103.	L333091-09	WG347089
Toluene	mg/kg	2.17	1.63	28.2	32	95.5	L333091-09	WG347089
trans-1,2-Dichloroethene	mg/kg	2.27	1.66	31.1	33	99.9	L333091-09	WG347089
trans-1,3-Dichloropropene	mg/kg	2.17	1.44	40.6	32	95.3	L333091-09	WG347089
Trichloroethene	mg/kg	2.11	1.70	21.7	33	92.8	L333091-09	WG347089
Trichlorofluoromethane	mg/kg	1.46	1.25	15.5	32	64.3	L333091-09	WG347089
Vinyl chloride	mg/kg	1.68	1.40	18.6	36	74.0	L333091-09	WG347089
Xylenes, Total	mg/kg	6.79	7.06	3.93	36	99.5	L333091-09	WG347089
Toluene	mg/kg	2.51	2.38	5.09	32	108.	L332983-01	WG347350
1,1,1,2-Tetrachloroethane	mg/kg	2.13	2.09	2.10	31	97.9	L333083-01	WG347625
1,1,1-Trichloroethane	mg/kg	1.96	1.87	4.84	32	90.1	L333083-01	WG347625
1,1,2,2-Tetrachloroethane	mg/kg	2.22	2.18	1.63	33	102.	L333083-01	WG347625
1,1,2-Trichloroethane	mg/kg	2.07	2.04	1.89	29	95.4	L333083-01	WG347625
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.677	0.626	7.80	35	31.1	L333083-01	WG347625
1,1-Dichloroethane	mg/kg	1.89	1.81	4.49	31	87.1	L333083-01	WG347625
1,1-Dichloroethene	mg/kg	0.668	0.618	7.74	34	30.7	L333083-01	WG347625
1,1-Dichloropropene	mg/kg	1.72	1.63	5.49	34	79.3	L333083-01	WG347625
1,2,3-Trichlorobenzene	mg/kg	2.56	2.29	11.1	43	118.	L333083-01	WG347625
1,2,3-Trichloropropane	mg/kg	2.20	2.17	1.28	32	101.	L333083-01	WG347625
1,2,3-Trimethylbenzene	mg/kg	2.23	2.13	4.51	36	102.	L333083-01	WG347625
1,2,4-Trichlorobenzene	mg/kg	2.55	2.36	7.95	44	117.	L333083-01	WG347625
1,2,4-Trimethylbenzene	mg/kg	2.11	2.04	3.12	41	97.0	L333083-01	WG347625
1,2-Dibromo-3-Chloropropane	mg/kg	2.11	2.10	0.769	35	97.2	L333083-01	WG347625
1,2-Dibromoethane	mg/kg	2.02	1.98	2.00	31	92.9	L333083-01	WG347625

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

1,2-Dichlorobenzene	mg/kg	2.31	2.17	6.37	35	106.	L333083-01	WG347625

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
1,2-Dichloroethane	mg/kg	1.92	1.81	5.99	29	88.2	L333083-01	WG347625
1,2-Dichloropropane	mg/kg	2.03	1.88	7.61	30	93.3	L333083-01	WG347625
1,3,5-Trimethylbenzene	mg/kg	2.07	2.01	3.18	39	95.4	L333083-01	WG347625
1,3-Dichlorobenzene	mg/kg	2.17	2.11	2.95	38	99.9	L333083-01	WG347625
1,3-Dichloropropane	mg/kg	2.03	1.99	1.84	29	93.2	L333083-01	WG347625
1,4-Dichlorobenzene	mg/kg	2.21	2.13	3.82	36	102.	L333083-01	WG347625
2,2-Dichloropropane	mg/kg	2.40	2.31	3.54	32	110.	L333083-01	WG347625
2-Butanone (MEK)	mg/kg	9.35	9.26	0.952	37	86.0	L333083-01	WG347625
2-Chloroethyl vinyl ether	mg/kg	5.51	4.30	24.6	50	50.7	L333083-01	WG347625
2-Chlorotoluene	mg/kg	2.07	2.01	2.56	37	95.0	L333083-01	WG347625
4-Chlorotoluene	mg/kg	2.11	2.06	2.59	38	97.2	L333083-01	WG347625
4-Methyl-2-pentanone (MIBK)	mg/kg	10.7	10.5	1.43	36	98.0	L333083-01	WG347625
Acetone	mg/kg	9.00	8.90	1.14	34	82.8	L333083-01	WG347625
Acrylonitrile	mg/kg	7.70	7.37	4.38	35	70.8	L333083-01	WG347625
Benzene	mg/kg	1.84	1.73	5.78	31	84.4	L333083-01	WG347625
Bromobenzene	mg/kg	2.16	2.07	4.35	39	99.2	L333083-01	WG347625
Bromodichloromethane	mg/kg	1.96	1.86	5.68	30	90.3	L333083-01	WG347625
Bromoform	mg/kg	2.09	2.05	1.69	34	96.1	L333083-01	WG347625
Bromomethane	mg/kg	2.06	1.37	40.7	41	94.9	L333083-01	WG347625
Carbon tetrachloride	mg/kg	1.87	1.80	3.80	34	86.0	L333083-01	WG347625
Chlorobenzene	mg/kg	1.99	1.93	3.02	34	91.5	L333083-01	WG347625
Chlorodibromomethane	mg/kg	2.06	2.02	2.34	32	94.9	L333083-01	WG347625
Chloroethane	mg/kg	0.661	0.552	17.9	38	30.4	L333083-01	WG347625
Chloroform	mg/kg	1.97	1.88	4.60	30	90.4	L333083-01	WG347625
Chloromethane	mg/kg	1.95	1.88	3.70	35	89.6	L333083-01	WG347625
cis-1,2-Dichloroethene	mg/kg	1.83	1.74	4.78	31	84.1	L333083-01	WG347625
cis-1,3-Dichloropropene	mg/kg	2.33	2.19	6.41	32	107.	L333083-01	WG347625
Di-isopropyl ether	mg/kg	2.20	2.08	5.61	29	101.	L333083-01	WG347625
Dibromomethane	mg/kg	1.94	1.81	6.85	30	89.3	L333083-01	WG347625
Dichlorodifluoromethane	mg/kg	1.18	0.982	18.4	38	54.3	L333083-01	WG347625
Ethylbenzene	mg/kg	1.92	1.86	3.14	36	88.1	L333083-01	WG347625
Hexachlorobutadiene	mg/kg	2.30	2.15	6.76	50	106.	L333083-01	WG347625
Isopropylbenzene	mg/kg	2.01	1.95	3.04	37	92.5	L333083-01	WG347625
Methyl tert-butyl ether	mg/kg	2.22	2.07	6.89	31	102.	L333083-01	WG347625
Methylene Chloride	mg/kg	1.88	1.42	27.8	31	86.6	L333083-01	WG347625
n-Butylbenzene	mg/kg	2.23	2.13	4.75	48	102.	L333083-01	WG347625
n-Propylbenzene	mg/kg	2.04	1.99	2.70	40	93.8	L333083-01	WG347625
Naphthalene	mg/kg	2.36	2.15	9.22	43	109.	L333083-01	WG347625
p-Isopropyltoluene	mg/kg	2.12	2.06	2.88	43	97.5	L333083-01	WG347625
sec-Butylbenzene	mg/kg	2.10	2.03	3.65	43	96.8	L333083-01	WG347625
Styrene	mg/kg	2.10	2.04	2.84	35	96.4	L333083-01	WG347625
tert-Butylbenzene	mg/kg	2.08	2.02	2.73	39	95.6	L333083-01	WG347625
Tetrachloroethene	mg/kg	1.70	1.67	1.83	35	78.3	L333083-01	WG347625
Toluene	mg/kg	1.96	1.85	5.87	32	90.1	L333083-01	WG347625
trans-1,2-Dichloroethene	mg/kg	1.61	1.52	5.68	33	73.9	L333083-01	WG347625
trans-1,3-Dichloropropene	mg/kg	2.37	2.24	5.71	32	109.	L333083-01	WG347625
Trichloroethene	mg/kg	1.80	1.69	6.66	33	82.8	L333083-01	WG347625
Trichlorofluoromethane	mg/kg	1.31	1.26	4.17	32	60.4	L333083-01	WG347625
Vinyl chloride	mg/kg	1.27	0.913	32.7	36	58.4	L333083-01	WG347625
Xylenes, Total	mg/kg	5.87	5.71	2.68	36	89.9	L333083-01	WG347625

Batch number /Run number / Sample number cross reference

WG346421: R353978: L332816-11 12 13 14
WG346451: R354044: L332816-11 12 13 14
WG346741: R354424: L332816-11 12 13
WG346688: R354483: L332816-01 03
WG346689: R354527: L332816-05 06 08 09 10

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

WG346950: R354590: L332816-07 10
WG347089: R354651: L332816-02
WG347350: R354984: L332816-07
WG346929: R355009: L332816-14
WG347625: R355099: L332816-04

* * Calculations are performed prior to rounding of reported values .

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

Quality Assurance Report
Level II

L332816

March 03, 2008

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

☐ 1910 Fairview Ave., E., Seattle WA 98102
☐ 2250 Denali St., #705, Anchorage, AK 99503
☐ Five Centerpointe Dr., Lake Oswego, OR 97035
☐ 301 E. Ocean Blvd., #1950, Long Beach CA 90802
☐ 120 3rd Ave S., #110, Edmonds, WA 98020
☐ 811 Church Hill Rd., # 236, Cherry Hill, NJ 08002

Sample Custody Record

HARTCROWSER

Samples Shipped To: ESC

1332816

JOB 15634-00 IT8 LAB NUMBER

PROJECT NAME Brix

HART CROWSER CONTACT Leon Lahiere

SAMPLED BY: LISA GLOWSKI

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	VOCs EPA 5035/8260	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
	CB-A1 upper		2/19/08	1010	S	X	3	-01
	CB-A1 Lower		2/19/08	1036	S	X	3	-02
	CB-A2 upper		2/19/08	1310	S	X	3	-03
	CB-A2 under		2/19/08	1320	S	X	3	-04
	CB-A3 upper		2/19/08	1400	S	X	4	-05
	CB-A3 Lower		2/19/08	1425	S	X	4	-06
	CB-B1 upper		2/19/08	1555	S	X	3	-07
	CB-B1 Lower		2/19/08	1610	S	X	3	-08
	CB-B2 upper		2/19/08	1620	S	X	3	-09
	CB-B2 Lower		2/19/08	1625	S	X	3	-10

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE	2/19/08	SIGNATURE	
PRINT NAME LISA GLOWSKI	TIME	PRINT NAME	TIME
COMPANY Hart Crowser	1600	COMPANY	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE		SIGNATURE 2/21/08 @ 0900	
PRINT NAME	TIME	PRINT NAME	TIME
COMPANY		COMPANY	

SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS

COOLER NO.: STORAGE LOCATION:

See Lab Work Order No. _____ for Other Contract Requirements

TOTAL NUMBER OF CONTAINERS

SAMPLE RECEIPT INFORMATION
CUSTODY SEALS ☐ YES ☐ NO ☐ N/A
GOOD CONDITION ☐ YES ☐ NO
TEMPERATURE 4.2°
SHIPMENT METHOD ☐ HAND ☐ COURIER ☐ OVERNIGHT

TURNAROUND TIME:
☐ 24 HOURS ☐ 1 WEEK
☐ 48 HOURS ☐ STANDARD
☐ 72 HOURS OTHER _____

NCF

White and Yellow Copies to Lab — Pink to Project Manager — Lab to Return White Copy to Hart Crowser — Gold to Sample Custodian

8615-3287-9579

40 containers

☐ 1910 Fairview Ave., E., Seattle WA 98102
☐ 2250 Denali St., #705, Anchorage, AK 99503
☐ Five Centerpointe Dr., Lake Oswego, OR 97035
☐ 301 E. Ocean Blvd., #1950, Long Beach CA 90802
☐ 120 3rd Ave S., #110, Edmonds, WA 98020
☐ 811 Church Hill Rd., # 236, Cherry Hill, NJ 08002

Sample Custody Record

HARTCROWSER

Samples Shipped To: ESC

L332816

JOB 15634-00/T8 LAB NUMBER

PROJECT NAME Brix

HART CROWSER CONTACT Leon Lahure

SAMPLED BY: USA GLONEK

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	Gasoline Large NWTPH-Gx	Diesel Oil Large NWTPH-Dx											NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
CB-A	Upper Composite		2/19/08	1420	S	X	X										-11	2	Silica gel Cleanup on Dx+Gx Analyses
CB-A	Lower Composite		2/19/08	1425	S	X	X										-12	2	Silica gel Cleanup on Dx+Gx Analyses
CB-B	Upper Composite		2/19/08	1640	S	X	X										-13	2	Silica gel Cleanup on Dx+Gx Analyses
CB-B	Lower Composite		2/19/08	1645	S	X	X										-14	2	Silica gel Cleanup on Dx+Gx Analyses

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	2/20/2008		
SIGNATURE	TIME	SIGNATURE	TIME
USA Glonek			
PRINT NAME		PRINT NAME	
Hart Crowser	1600		
COMPANY		COMPANY	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
		[signature]	
SIGNATURE	TIME	SIGNATURE 2/21/08 @ 0900	TIME
PRINT NAME		PRINT NAME	
COMPANY		COMPANY	

SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS

COOLER NO.: STORAGE LOCATION:

See Lab Work Order No. _____ for Other Contract Requirements

TOTAL NUMBER OF CONTAINERS

SAMPLE RECEIPT INFORMATION
CUSTODY SEALS ☐ YES ☐ NO ☐ N/A
GOOD CONDITION ☐ YES ☐ NO
TEMPERATURE 4.2°
SHIPMENT METHOD ☐ HAND ☐ COURIER ☐ OVERNIGHT

TURNAROUND TIME:
☐ 24 HOURS ☐ 1 WEEK
☐ 48 HOURS ☒ STANDARD
☐ 72 HOURS OTHER _____

NCF

40 containers

White and Yellow Copies to Lab Pink to Project Manager Lab to Return White Copy to Hart Crowser Gold to Sample Custodian

Mark B.

ENVIRONMENTAL SCIENCE CORP.

SAMPLE NON-CONFORMANCE FORM

Sample No. : 1332716

Date: 2/21/08

Evaluated by: Karen

Client: HARCROPOR

Non-Conformance (check applicable items)

	Chain of Custody is missing	(1)(2)	Login Clarification Needed
	Improper container type		Improper preservation
	Chain of custody is incomplete		Container lid not in tact
	Parameter(s) past holding time		Improper temperature
	Broken container(s) **see below**		Broken container: sufficient sample volume remains for analysis requested

- _____ Insufficient packing material around container
- _____ Insufficient packing material inside cooler
- _____ Improper handling by carrier (FedEx / UPS / Courier)
- _____ Sample was frozen

Comments: (1) Client has only sent STIRBARS/METHENOL VIAL for all the samples on page 1, with the exception of the two CB-A3 samples. For these two, we received a 2-oz soil jar in addition to the STIRBARS.

Login Instructions: **TSR Initials:** MB

Client informed by call / email / fax / voice mail date: 2/21/08 time: 1535

Client contact:

1) Run as rec'd

2) Run as rec'd

(2) Client only sent soil jars for the samples listed on page 2 of the COC.

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Client: Hart Crowser, Inc.
Five Centerpointe Drive, Suite 240
Lake Oswego, OR 97035-8682

ATTN: Leon Lahiere

Project Name: **Brix Maritime-Joint Source Control**

SDG Number: **HCI0801**
Date Received: **10/7/2008 9:00:00AM**
Date Reported: **10/29/2008**

Dear Leon Lahiere,

Enclosed are the analytical results for the sample(s) received by the laboratory on October 7, 2008. The results relate only to the samples included in this report. Unless otherwise instructed all samples with the exception of samples which are consumed during the analysis, such as microbiological samples, will be disposed of on or after January 15, 2009. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

If you have any question concerning the report, please feel free to contact me.

Respectfully submitted,

Pace Analytical Services, Inc.

Kara Godineaux

Kara Godineaux

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Sample Summary

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Sample Identification:

Sample Description	Lab Sample ID	Collection Date/Time		Type
Outfall A	HCI0801-001	10/03/2008	13:55	Water
Outfall B	HCI0801-002	10/03/2008	12:55	Water
Trip Blank A	HCI0801-003	10/03/2008		Water
Trip Blank B	HCI0801-004	10/03/2008		Water

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Test Request Summary

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Pace Project No.:		Project Manager:	Leon Lahiere

Samples	Methods									
Client Sample ID	160.2 1	8260B 2	8270-P 3	NWTPH-4	NWTPH-5	8082A 6	8270 7	8	9	10
Outfall A	X	X	X	X	X	X	X			
Outfall B	X	X	X	X	X	X	X			
Trip Blank A					X					
Trip Blank B					X					

Determinations:

1 = 160.2 Total Suspended Solids, Water

2 = 8260-1 VOAs Water Full list

3 = 8270 SPE SIM level PNA Water (Routine)

4 = NWTPH Dx Water Low Concentration

5 = NWTPH Gx Water

6 = 8082 PCB Aroclors Water -Low

7 = 8270 SVOAs Water Low level Phthalates

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Outfall A**	Matrix:	Water
Collected On:	10/3/08 13:55	Lab Sample ID:	HCI0801-001
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Residue, non-filterable, Gravimetric, Dried at 103 (TSS- total Suspended Solids)				Methods (Preparation | Analysis): **NONE | 160.2**					
Suspended Solids, Total	**8**	mg/L	1		2	Q35298	10/08/2008	10/08/2008	
Polychlorinated Biphenyls by Gas Chromatography				Methods (Preparation | Analysis): **3535 | 8082A**					
Aroclor-1016	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1221	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1232	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1242	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1248	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1254	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1260	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1262	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Aroclor-1268	ND	ug/L	1		0.048	Q35309	10/09/2008	10/14/2008	
Surrogates:									
Decachlorobiphenyl	>250	% Rec	1		32-149	Q35309	10/09/2008	10/14/2008	*
Tetrachloro-m-xylene	192	% Rec	1		10-129	Q35309	10/09/2008	10/14/2008	*
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
Acetone	ND	ug/L	1		20	Q35344	10/10/2008	10/10/2008	
Benzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromochloromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromodichloromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromoform	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromomethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
2-Butanone	ND	ug/L	1		10	Q35344	10/10/2008	10/10/2008	
n-Butylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
sec-Butylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
tert-Butylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Carbon disulfide	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Carbon tetrachloride	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chloroform	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chloromethane	ND	ug/L	1		5.0	Q35344	10/10/2008	10/10/2008	
2-Chlorotoluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
4-Chlorotoluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dibromo-3-chloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Dibromochloromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dibromoethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Dibromomethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,3-Dichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,4-Dichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Dichlorodifluoromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1-Dichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1-Dichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Outfall A**	Matrix:	Water
Collected On:	10/3/08 13:55	Lab Sample ID:	HCI0801-001
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
trans-1,2-Dichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
cis-1,2-Dichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,3-Dichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
2,2-Dichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1-Dichloropropene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
cis-1,3-Dichloropropene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
trans-1,3-Dichloropropene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Ethylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Hexachlorobutadiene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
2-Hexanone	ND	ug/L	1		10	Q35344	10/10/2008	10/10/2008	
Isopropylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
4-Isopropyltoluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Methyl tert-butyl ether	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
4-Methyl-2-pentanone	ND	ug/L	1		10	Q35344	10/10/2008	10/10/2008	
Methylene chloride	ND	ug/L	1		5.0	Q35344	10/10/2008	10/10/2008	
Naphthalene	ND	ug/L	1		5.0	Q35344	10/10/2008	10/10/2008	
n-Propylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Styrene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,1,2-Tetrachloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,2,2-Tetrachloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Tetrachloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Toluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,3-Trichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,4-Trichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,1-Trichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,2-Trichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Trichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Trichlorofluoromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,3-Trichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,4-Trimethylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,3,5-Trimethylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Vinyl chloride	ND	ug/L	1		0.20	Q35344	10/10/2008	10/10/2008	
m,p-Xylene	ND	ug/L	1		2.0	Q35344	10/10/2008	10/10/2008	
o-Xylene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Surrogates:									
4-Bromofluorobenzene	94	% Rec	1		75-120	Q35344	10/10/2008	10/10/2008	
Dibromofluoromethane	109	% Rec	1		85-115	Q35344	10/10/2008	10/10/2008	
1,2-Dichloroethane-d4	116	% Rec	1		70-120	Q35344	10/10/2008	10/10/2008	
Toluene-d8	89	% Rec	1		85-120	Q35344	10/10/2008	10/10/2008	
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Bis(2-ethylhexyl)phthalate	**1.3**	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Butylbenzylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Di-n-butylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Di-n-octylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Diethylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Dimethylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Outfall A**	Matrix:	Water
Collected On:	10/3/08 13:55	Lab Sample ID:	HCI0801-001
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Surrogates:									
2-Fluorobiphenyl	72	% Rec	1		50-110	Q35266	10/08/2008	10/20/2008	
2-Fluorophenol	37	% Rec	1		20-110	Q35266	10/08/2008	10/20/2008	
Nitrobenzene-d5	69	% Rec	1		40-110	Q35266	10/08/2008	10/20/2008	
Phenol-d5	26	% Rec	1		10-115	Q35266	10/08/2008	10/20/2008	
Terphenyl-d14	76	% Rec	1		50-135	Q35266	10/08/2008	10/20/2008	
2,4,6-Tribromophenol	85	% Rec	1		40-125	Q35266	10/08/2008	10/20/2008	
SIM Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3535 | 8270-PNA**					
Naphthalene	**0.053**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
2-Methylnaphthalene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Acenaphthylene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Acenaphthene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Fluorene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Phenanthrene	**0.067**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
Anthracene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Fluoranthene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Pyrene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(a)anthracene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Chrysene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(b)fluoranthene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(k)fluoranthene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(a)pyrene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Dibenzo(a,h)anthracene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(g,h,i)perylene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Surrogates:									
1-Fluoronaphthalene	135	% Rec	1		30-110	Q35310	10/09/2008	10/21/2008	*
Fluorene-d10	163	% Rec	1		45-130	Q35310	10/09/2008	10/21/2008	*
Pyrene-d10	153	% Rec	1		50-140	Q35310	10/09/2008	10/21/2008	*
NWTPH Diesel				Methods (Preparation | Analysis): **3510C | NWTPH-D**					
Diesel Range Organics	**0.27**	mg/L	1		0.050	Q35260	10/08/2008	10/09/2008	
Oil Range Organics	**0.32**	mg/L	1		0.20	Q35260	10/08/2008	10/09/2008	
Surrogates:									
o-Terphenyl	91	% Rec	1		50-150	Q35260	10/08/2008	10/09/2008	
NWTPH Gas				Methods (Preparation | Analysis): **5030B | NWTPH-G**					
Gasoline Range Organics	ND	ug/L	1		25.0	Q35329	10/14/2008	10/14/2008	
Surrogates:									
4-Bromofluorobenzene	96	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	
Trifluorotoluene	100	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Outfall B**	Matrix:	Water
Collected On:	10/3/08 12:55	Lab Sample ID:	HCI0801-002
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Residue, non-filterable, Gravimetric, Dried at 103 (TSS- total Suspended Solids)				Methods (Preparation | Analysis): **NONE | 160.2**					
Suspended Solids, Total	**8**	mg/L	1		2	Q35298	10/08/2008	10/08/2008	
Polychlorinated Biphenyls by Gas Chromatography				Methods (Preparation | Analysis): **3535 | 8082A**					
Aroclor-1016	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1221	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1232	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1242	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1248	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1254	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1260	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1262	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Aroclor-1268	ND	ug/L	1		0.048	Q35309	10/09/2008	10/21/2008	
Surrogates:									
Decachlorobiphenyl	171	% Rec	1		32-149	Q35309	10/09/2008	10/21/2008	*
Tetrachloro-m-xylene	60	% Rec	1		10-129	Q35309	10/09/2008	10/21/2008	
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
Acetone	ND	ug/L	1		20	Q35344	10/10/2008	10/10/2008	
Benzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromochloromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromodichloromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromoform	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Bromomethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
2-Butanone	ND	ug/L	1		10	Q35344	10/10/2008	10/10/2008	
n-Butylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
sec-Butylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
tert-Butylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Carbon disulfide	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Carbon tetrachloride	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chloroform	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Chloromethane	ND	ug/L	1		5.0	Q35344	10/10/2008	10/10/2008	
2-Chlorotoluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
4-Chlorotoluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dibromo-3-chloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Dibromochloromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dibromoethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Dibromomethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,3-Dichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,4-Dichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Dichlorodifluoromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1-Dichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1-Dichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Outfall B**	Matrix:	Water
Collected On:	10/3/08 12:55	Lab Sample ID:	HCI0801-002
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
trans-1,2-Dichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
cis-1,2-Dichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2-Dichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,3-Dichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
2,2-Dichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1-Dichloropropene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
cis-1,3-Dichloropropene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
trans-1,3-Dichloropropene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Ethylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Hexachlorobutadiene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
2-Hexanone	ND	ug/L	1		10	Q35344	10/10/2008	10/10/2008	
Isopropylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
4-Isopropyltoluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Methyl tert-butyl ether	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
4-Methyl-2-pentanone	ND	ug/L	1		10	Q35344	10/10/2008	10/10/2008	
Methylene chloride	ND	ug/L	1		5.0	Q35344	10/10/2008	10/10/2008	
Naphthalene	ND	ug/L	1		5.0	Q35344	10/10/2008	10/10/2008	
n-Propylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Styrene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,1,2-Tetrachloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,2,2-Tetrachloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Tetrachloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Toluene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,3-Trichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,4-Trichlorobenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,1-Trichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,1,2-Trichloroethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Trichloroethene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Trichlorofluoromethane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,3-Trichloropropane	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,2,4-Trimethylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
1,3,5-Trimethylbenzene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Vinyl chloride	ND	ug/L	1		0.20	Q35344	10/10/2008	10/10/2008	
m,p-Xylene	ND	ug/L	1		2.0	Q35344	10/10/2008	10/10/2008	
o-Xylene	ND	ug/L	1		1.0	Q35344	10/10/2008	10/10/2008	
Surrogates:									
4-Bromofluorobenzene	96	% Rec	1		75-120	Q35344	10/10/2008	10/10/2008	
Dibromofluoromethane	112	% Rec	1		85-115	Q35344	10/10/2008	10/10/2008	
1,2-Dichloroethane-d4	118	% Rec	1		70-120	Q35344	10/10/2008	10/10/2008	
Toluene-d8	90	% Rec	1		85-120	Q35344	10/10/2008	10/10/2008	
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Bis(2-ethylhexyl)phthalate	**1.3**	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Butylbenzylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Di-n-butylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Di-n-octylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Diethylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	
Dimethylphthalate	ND	ug/L	1		0.075	Q35266	10/08/2008	10/20/2008	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Outfall B**	Matrix:	Water
Collected On:	10/3/08 12:55	Lab Sample ID:	HCI0801-002
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Surrogates:									
2-Fluorobiphenyl	81	% Rec	1		50-110	Q35266	10/08/2008	10/20/2008	
2-Fluorophenol	42	% Rec	1		20-110	Q35266	10/08/2008	10/20/2008	
Nitrobenzene-d5	80	% Rec	1		40-110	Q35266	10/08/2008	10/20/2008	
Phenol-d5	32	% Rec	1		10-115	Q35266	10/08/2008	10/20/2008	
Terphenyl-d14	112	% Rec	1		50-135	Q35266	10/08/2008	10/20/2008	
2,4,6-Tribromophenol	84	% Rec	1		40-125	Q35266	10/08/2008	10/20/2008	
SIM Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3535 | 8270-PNA**					
Naphthalene	**0.053**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
2-Methylnaphthalene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Acenaphthylene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Acenaphthene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Fluorene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Phenanthrene	**0.091**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
Anthracene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Fluoranthene	**0.16**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Pyrene	**0.12**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(a)anthracene	**0.063**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
Chrysene	**0.087**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
Benzo(b)fluoranthene	**0.11**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(k)fluoranthene	**0.077**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
Benzo(a)pyrene	**0.077**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
Indeno(1,2,3-cd)pyrene	**0.11**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Dibenzo(a,h)anthracene	ND	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	
Benzo(g,h,i)perylene	**0.072**	ug/L	1	0.0087	0.096	Q35310	10/09/2008	10/21/2008	J
Surrogates:									
1-Fluoronaphthalene	146	% Rec	1		30-110	Q35310	10/09/2008	10/21/2008	*
Fluorene-d10	165	% Rec	1		45-130	Q35310	10/09/2008	10/21/2008	*
Pyrene-d10	154	% Rec	1		50-140	Q35310	10/09/2008	10/21/2008	*
NWTPH Diesel				Methods (Preparation | Analysis): **3510C | NWTPH-D**					
Diesel Range Organics	**0.39**	mg/L	1		0.050	Q35260	10/08/2008	10/09/2008	
Oil Range Organics	**0.49**	mg/L	1		0.20	Q35260	10/08/2008	10/09/2008	
Surrogates:									
o-Terphenyl	94	% Rec	1		50-150	Q35260	10/08/2008	10/09/2008	
NWTPH Gas				Methods (Preparation | Analysis): **5030B | NWTPH-G**					
Gasoline Range Organics	ND	ug/L	1		25.0	Q35329	10/14/2008	10/14/2008	
Surrogates:									
4-Bromofluorobenzene	97	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	
Trifluorotoluene	100	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Trip Blank A**	Matrix:	Water
Collected On:	10/3/08 0:00	Lab Sample ID:	HCI0801-003
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
NWTPH Gas				Methods (Preparation | Analysis): **5030B | NWTPH-G**					
Gasoline Range Organics	ND	ug/L	1		25.0	Q35329	10/14/2008	10/14/2008	
Surrogates:									
4-Bromofluorobenzene	91	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	
Trifluorotoluene	99	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**Trip Blank B**	Matrix:	Water
Collected On:	10/3/08 0:00	Lab Sample ID:	HCI0801-004
Received On:	10/7/08 9:00		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
NWTPH Gas				Methods (Preparation | Analysis): **5030B | NWTPH-G**					
Gasoline Range Organics	ND	ug/L	1		25.0	Q35329	10/14/2008	10/14/2008	
Surrogates:									
4-Bromofluorobenzene	93	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	
Trifluorotoluene	105	% Rec	1		50-150	Q35329	10/14/2008	10/14/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35260**	Analysis Method:	**NWTPH-D**
QC Batch Method:	3510C (M8015-LC)	Analysis Description:	NWTPH Diesel
Preparation Started:	10/08/2008		

Blank: B100808GSVWLG

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Diesel Range Organics	ND	mg/L	1			0.025	
Oil Range Organics	ND	mg/L	1			0.1	
Surrogates:					% Rec		
o-Terphenyl			1		88	50-150	

LCS: S100808GSVWLG
LCS Duplicate: S100808GSVWLG2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Diesel Range Organics	0.35	mg/L	1	0.500	70	51-147			
	0.42			0.500	84	51-147	18	50	
Oil Range Organics	0.39	mg/L	1	0.500	78	50-150			
	0.46			0.500	91	50-150	16	50	
Surrogates:									
o-Terphenyl			1		80	50-150			
					87	50-150			

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35266**	Analysis Method:	**8270**
QC Batch Method:	3510C (625)	Analysis Description:	Semivolatile Organic Compounds by GC/MS
Preparation Started:	10/08/2008		

Blank: B100808MSVWLA

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Bis(2-ethylhexyl)phthalat	ND	ug/L	1			1	
Butylbenzylphthalate	ND	ug/L	1			1	
Di-n-butylphthalate	ND	ug/L	1			1	
Di-n-octylphthalate	ND	ug/L	1			1	
Diethylphthalate	ND	ug/L	1			1	
Dimethylphthalate	ND	ug/L	1			1	
Surrogates:					% Rec		
2-Fluorobiphenyl			1		77	50-110	
2-Fluorophenol			1		52	20-110	
Nitrobenzene-d5			1		79	40-110	
Phenol-d5			1		33	10-115	
Terphenyl-d14			1		148	50-135	*
2,4,6-Tribromophenol			1		72	40-125	

LCS: S100808MSVWLA

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Bis(2-ethylhexyl)phthalat	24	ug/L	1	20.0	121	40-125	
Butylbenzylphthalate	21	ug/L	1	20.0	105	45-115	
Di-n-butylphthalate	19	ug/L	1	20.0	97	55-115	
Di-n-octylphthalate	23	ug/L	1	20.0	115	35-135	
Diethylphthalate	17	ug/L	1	20.0	87	40-120	
Dimethylphthalate	18	ug/L	1	20.0	90	25-125	
Surrogates:							
2-Fluorobiphenyl			1		79	50-110	
2-Fluorophenol			1		51	20-110	
Nitrobenzene-d5			1		81	40-110	
Phenol-d5			1		35	10-115	
Terphenyl-d14			1		100	50-135	
2,4,6-Tribromophenol			1		83	40-125	

LCS: S100808MSVWLA2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Bis(2-ethylhexyl)phthalat	25	ug/L	1	20.0	124	40-125	
Butylbenzylphthalate	22	ug/L	1	20.0	109	45-115	
Di-n-butylphthalate	20	ug/L	1	20.0	101	55-115	
Di-n-octylphthalate	23	ug/L	1	20.0	115	35-135	
Diethylphthalate	18	ug/L	1	20.0	90	40-120	
Dimethylphthalate	19	ug/L	1	20.0	93	25-125	
Surrogates:							
2-Fluorobiphenyl			1		83	50-110	
2-Fluorophenol			1		56	20-110	
Nitrobenzene-d5			1		93	40-110	
Phenol-d5			1		36	10-115	
Terphenyl-d14			1		82	50-135	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35266**	Analysis Method:	**8270**
QC Batch Method:	3510C (625)	Analysis Description:	Semivolatile Organic Compounds by GC/MS
Preparation Started:	10/08/2008		

LCS: S100808MSVWLA2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Surrogates:							
2,4,6-Tribromophenol			1		87	40-125	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35298**	Analysis Method:	**160.2**
QC Batch Method:	160.2PR	Analysis Description:	Residue, non-filterable, Gravimetric, Dried at 103
Preparation Started:	10/08/2008		

Blank: B100808TSSW01

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Suspended Solids, Total	ND	mg/L	1		2	

Sample Duplicate: FREE081006-001D Parent Sample: FREE081006-001

Analyte	Duplicate Result	Units	DF	Parent Result	RPD	RPD Limit	Qualifiers
Suspended Solids, Total	**23**	mg/L	1	**28**	19.6	20	

Sample Duplicate: WTOW081002-003D Parent Sample: WTOW081002-003

Analyte	Duplicate Result	Units	DF	Parent Result	RPD	RPD Limit	Qualifiers
Suspended Solids, Total	ND	mg/L	1	ND	0	20	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35309**	Analysis Method:	**8082A**
QC Batch Method:	3535(Pest/PCB)	Analysis Description:	Polychlorinated Biphenyls by Gas Chromatography
Preparation Started:	10/09/2008		

Blank: B100908GPBWLO

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Aroclor-1016	ND	ug/L	1		0.05	
Aroclor-1221	ND	ug/L	1		0.05	
Aroclor-1232	ND	ug/L	1		0.05	
Aroclor-1242	ND	ug/L	1		0.05	
Aroclor-1248	ND	ug/L	1		0.05	
Aroclor-1254	ND	ug/L	1		0.05	
Aroclor-1260	ND	ug/L	1		0.05	
Aroclor-1262	ND	ug/L	1		0.05	
Aroclor-1268	ND	ug/L	1		0.05	
Surrogates:				% Rec		
Decachlorobiphenyl			1	102	32-149	
Tetrachloro-m-xylene			1	56	10-129	

LCS: S100908GPBWLO
LCS Duplicate: S100908GPBWLO2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Aroclor-1016	0.75	ug/L	1	0.500	149	45-150			
	0.72			0.500	145	45-150	3		
Aroclor-1260	0.73	ug/L	1	0.500	145	48-148			
	0.73			0.500	146	48-148	1		
Surrogates:									
Decachlorobiphenyl			1		98	32-149			
					123	32-149			
Tetrachloro-m-xylene			1		47	10-129			
					57	10-129			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35310**	Analysis Method:	**8270-PNA**
QC Batch Method:	3535(PNA)	Analysis Description:	SIM Semivolatile Organic Compounds by GC/MS
Preparation Started:	10/09/2008		

Blank: B100908MPNWLO

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Naphthalene	ND	ug/L	1	0.0090	0.1	
2-Methylnaphthalene	ND	ug/L	1	0.0090	0.1	
Acenaphthylene	ND	ug/L	1	0.0090	0.1	
Acenaphthene	ND	ug/L	1	0.0090	0.1	
Fluorene	ND	ug/L	1	0.0090	0.1	
Phenanthrene	ND	ug/L	1	0.0090	0.1	
Anthracene	ND	ug/L	1	0.0090	0.1	
Fluoranthene	ND	ug/L	1	0.0090	0.1	
Pyrene	ND	ug/L	1	0.0090	0.1	
Benzo(a)anthracene	ND	ug/L	1	0.0090	0.1	
Chrysene	ND	ug/L	1	0.0090	0.1	
Benzo(b)fluoranthene	ND	ug/L	1	0.0090	0.1	
Benzo(k)fluoranthene	ND	ug/L	1	0.0090	0.1	
Benzo(a)pyrene	ND	ug/L	1	0.0090	0.1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1	0.0090	0.1	
Dibenzo(a,h)anthracene	ND	ug/L	1	0.0090	0.1	
Benzo(g,h,i)perylene	ND	ug/L	1	0.0090	0.1	
Surrogates:				% Rec		
1-Fluoronaphthalene			1	75	30-110	
Fluorene-d10			1	76	45-130	
Pyrene-d10			1	73	50-140	

LCS: S100908MPNWLO
LCS Duplicate: S100908MPNWLO2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Naphthalene	1.0	ug/L	1	1.25	82	40-100			
	1.0			1.25	81	40-100	1	30	
2-Methylnaphthalene	1.0	ug/L	1	1.25	80	45-105			
	1.0			1.25	80	45-105	1	30	
Acenaphthylene	0.97	ug/L	1	1.25	77	50-105			
	1.0			1.25	80	50-105	4	30	
Acenaphthene	0.93	ug/L	1	1.25	74	45-110			
	0.89			1.25	71	45-110	4	30	
Fluorene	1.1	ug/L	1	1.25	91	50-110			
	1.1			1.25	88	50-110	3	30	
Phenanthrene	0.96	ug/L	1	1.25	77	50-115			
	0.94			1.25	75	50-115	3	30	
Anthracene	0.98	ug/L	1	1.25	78	55-110			
	0.97			1.25	77	55-110	2	30	
Fluoranthene	1.1	ug/L	1	1.25	84	55-115			
	1.1			1.25	86	55-115	1	30	
Pyrene	0.92	ug/L	1	1.25	74	50-130			
	0.93			1.25	74	50-130	1	30	
Benzo(a)anthracene	1.1	ug/L	1	1.25	86	55-110			
	1.1			1.25	84	55-110	2	30	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35310**	Analysis Method:	**8270-PNA**
QC Batch Method:	3535(PNA)	Analysis Description:	SIM Semivolatile Organic Compounds by GC/MS
Preparation Started:	10/09/2008		

LCS: S100908MPNWLO
LCS Duplicate: S100908MPNWLO2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Chrysene	0.94	ug/L	1	1.25	75	55-110			
	0.93			1.25	74	55-110	1	30	
Benzo(b)fluoranthene	1.0	ug/L	1	1.25	82	45-120			
	1.0			1.25	81	45-120	1	30	
Benzo(k)fluoranthene	1.0	ug/L	1	1.25	80	45-125			
	0.99			1.25	79	45-125	2	30	
Benzo(a)pyrene	1.0	ug/L	1	1.25	83	55-110			
	1.0			1.25	82	55-110	2	30	
Indeno(1,2,3-cd)pyrene	1.1	ug/L	1	1.25	89	45-125			
	1.1			1.25	92	45-125	3	30	
Dibenzo(a,h)anthracene	1.1	ug/L	1	1.25	91	40-125			
	1.2			1.25	93	40-125	3	30	
Benzo(g,h,i)perylene	1.0	ug/L	1	1.25	83	40-125			
	1.1			1.25	86	40-125	3	30	
Surrogates:									
1-Fluoronaphthalene			1		76	30-110			
					74	30-110			
Fluorene-d10			1		80	45-130			
					77	45-130			
Pyrene-d10			1		68	50-140			
					69	50-140			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35329**	Analysis Method:	**NWTPH-G**
QC Batch Method:	5030B-GCVOA	Analysis Description:	NWTPH Gas
Preparation Started:	10/14/2008		

Blank: B101408GVOWI02

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Gasoline Range Organics	ND	ug/L	1			12.5	
Surrogates:					% Rec		
4-Bromofluorobenzene			1		99	50-150	
Trifluorotoluene			1		106	50-150	

LCS: S101408GVOWI01

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Surrogates:							
4-Bromofluorobenzene			1		95	50-150	
Trifluorotoluene			1		101	50-150	

Matrix Spike: ERMP081001-001MS Parent Sample: ERMP081001-001

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	90	ug/L	1	100	ND	77	67-125	
Surrogates:								
4-Bromofluorobenzene			1			98	50-150	
Trifluorotoluene			1			101	50-150	

Sample Duplicate: ERMP081001-001D Parent Sample: ERMP081001-001

Analyte	Duplicate Result	Units	DF	Parent Result			RPD	RPD Limit	Qualifiers
Gasoline Range Organics	ND	ug/L	1	ND				50	
Surrogates:					% Rec				
4-Bromofluorobenzene			1		96	50-150			
Trifluorotoluene			1		106	50-150			

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35344**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	10/10/2008		

Blank: B101008MVOWY1

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Acetone	ND	ug/L	1		20	
Benzene	ND	ug/L	1		1	
Bromobenzene	ND	ug/L	1		1	
Bromochloromethane	ND	ug/L	1		1	
Bromodichloromethane	ND	ug/L	1		1	
Bromoform	ND	ug/L	1		1	
Bromomethane	ND	ug/L	1		1	
2-Butanone	ND	ug/L	1		10	
n-Butylbenzene	ND	ug/L	1		1	
sec-Butylbenzene	ND	ug/L	1		1	
tert-Butylbenzene	ND	ug/L	1		1	
Carbon disulfide	ND	ug/L	1		1	
Carbon tetrachloride	ND	ug/L	1		1	
Chlorobenzene	ND	ug/L	1		1	
Chloroethane	ND	ug/L	1		1	
Chloroform	ND	ug/L	1		1	
Chloromethane	ND	ug/L	1		5	
2-Chlorotoluene	ND	ug/L	1		1	
4-Chlorotoluene	ND	ug/L	1		1	
1,2-Dibromo-3-chloropro	ND	ug/L	1		1	
Dibromochloromethane	ND	ug/L	1		1	
1,2-Dibromoethane	ND	ug/L	1		1	
Dibromomethane	ND	ug/L	1		1	
1,2-Dichlorobenzene	ND	ug/L	1		1	
1,3-Dichlorobenzene	ND	ug/L	1		1	
1,4-Dichlorobenzene	ND	ug/L	1		1	
Dichlorodifluoromethane	ND	ug/L	1		1	
1,1-Dichloroethane	ND	ug/L	1		1	
1,2-Dichloroethane	ND	ug/L	1		1	
1,1-Dichloroethene	ND	ug/L	1		1	
trans-1,2-Dichloroethene	ND	ug/L	1		1	
cis-1,2-Dichloroethene	ND	ug/L	1		1	
1,2-Dichloropropane	ND	ug/L	1		1	
1,3-Dichloropropane	ND	ug/L	1		1	
2,2-Dichloropropane	ND	ug/L	1		1	
1,1-Dichloropropene	ND	ug/L	1		1	
cis-1,3-Dichloropropene	ND	ug/L	1		1	
trans-1,3-Dichloropropene	ND	ug/L	1		1	
Ethylbenzene	ND	ug/L	1		1	
Hexachlorobutadiene	ND	ug/L	1		1	
2-Hexanone	ND	ug/L	1		10	
Isopropylbenzene	ND	ug/L	1		1	
4-Isopropyltoluene	ND	ug/L	1		1	
Methyl tert-butyl ether	ND	ug/L	1		1	
4-Methyl-2-pentanone	ND	ug/L	1		10	
Methylene chloride	ND	ug/L	1		5	
Naphthalene	ND	ug/L	1		5	
n-Propylbenzene	ND	ug/L	1		1	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35344**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	10/10/2008		

Blank: B101008MVOWY1

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Styrene	ND	ug/L	1			1	
1,1,1,2-Tetrachloroethane	ND	ug/L	1			1	
1,1,2,2-Tetrachloroethane	ND	ug/L	1			1	
Tetrachloroethene	ND	ug/L	1			1	
Toluene	ND	ug/L	1			1	
1,2,3-Trichlorobenzene	ND	ug/L	1			1	
1,2,4-Trichlorobenzene	ND	ug/L	1			1	
1,1,1-Trichloroethane	ND	ug/L	1			1	
1,1,2-Trichloroethane	ND	ug/L	1			1	
Trichloroethene	ND	ug/L	1			1	
Trichlorofluoromethane	ND	ug/L	1			1	
1,2,3-Trichloropropane	ND	ug/L	1			1	
1,2,4-Trimethylbenzene	ND	ug/L	1			1	
1,3,5-Trimethylbenzene	ND	ug/L	1			1	
Vinyl chloride	ND	ug/L	1			0.2	
m,p-Xylene	ND	ug/L	1			2	
o-Xylene	ND	ug/L	1			1	
Surrogates:					% Rec		
4-Bromofluorobenzene			1		93	75-120	
Dibromofluoromethane			1		110	85-115	
1,2-Dichloroethane-d4			1		115	70-120	
Toluene-d8			1		88	85-120	

LCS: S101008MVOWY1

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Acetone	54	ug/L	1	50.0	108	40-140	
Benzene	44	ug/L	1	50.0	88	80-120	
Bromobenzene	46	ug/L	1	50.0	91	75-125	
Bromochloromethane	50	ug/L	1	50.0	100	65-130	
Bromodichloromethane	47	ug/L	1	50.0	95	75-120	
Bromoform	51	ug/L	1	50.0	103	70-130	
Bromomethane	51	ug/L	1	50.0	101	30-145	
2-Butanone	41	ug/L	1	50.0	83	30-150	
n-Butylbenzene	47	ug/L	1	50.0	94	70-135	
sec-Butylbenzene	49	ug/L	1	50.0	97	70-125	
tert-Butylbenzene	50	ug/L	1	50.0	101	70-130	
Carbon disulfide	42	ug/L	1	50.0	83	35-160	
Carbon tetrachloride	56	ug/L	1	50.0	112	65-140	
Chlorobenzene	48	ug/L	1	50.0	97	80-120	
Chloroethane	48	ug/L	1	50.0	95	60-135	
Chloroform	51	ug/L	1	50.0	103	65-135	
Chloromethane	49	ug/L	1	50.0	99	40-125	
2-Chlorotoluene	45	ug/L	1	50.0	91	75-125	
4-Chlorotoluene	45	ug/L	1	50.0	91	75-130	
1,2-Dibromo-3-chloropro	53	ug/L	1	50.0	105	50-130	
Dibromochloromethane	52	ug/L	1	50.0	103	60-135	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35344**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	10/10/2008		

LCS: S101008MVOWY1

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane	45	ug/L	1	50.0	89	80-120	
Dibromomethane	44	ug/L	1	50.0	88	75-125	
1,2-Dichlorobenzene	50	ug/L	1	50.0	99	70-120	
1,3-Dichlorobenzene	47	ug/L	1	50.0	95	75-125	
1,4-Dichlorobenzene	48	ug/L	1	50.0	96	75-125	
Dichlorodifluoromethane	57	ug/L	1	50.0	114	30-155	
1,1-Dichloroethane	49	ug/L	1	50.0	97	70-135	
1,2-Dichloroethane	50	ug/L	1	50.0	100	70-130	
1,1-Dichloroethene	52	ug/L	1	50.0	105	70-130	
trans-1,2-Dichloroethene	49	ug/L	1	50.0	99	60-140	
cis-1,2-Dichloroethene	49	ug/L	1	50.0	98	70-125	
1,2-Dichloropropane	41	ug/L	1	50.0	83	75-125	
1,3-Dichloropropane	42	ug/L	1	50.0	84	75-125	
2,2-Dichloropropane	55	ug/L	1	50.0	110	60-135	
1,1-Dichloropropene	50	ug/L	1	50.0	99	75-130	
cis-1,3-Dichloropropene	44	ug/L	1	50.0	89	70-130	
trans-1,3-Dichloropropene	43	ug/L	1	50.0	86	55-140	
Ethylbenzene	47	ug/L	1	50.0	95	75-125	
Hexachlorobutadiene	48	ug/L	1	50.0	95	50-140	
2-Hexanone	40	ug/L	1	50.0	81	55-130	
Isopropylbenzene	55	ug/L	1	50.0	110	75-125	
4-Isopropyltoluene	50	ug/L	1	50.0	99	75-130	
Methyl tert-butyl ether	50	ug/L	1	50.0	101	65-125	
4-Methyl-2-pentanone	41	ug/L	1	50.0	82	60-135	
Methylene chloride	48	ug/L	1	50.0	97	55-140	
Naphthalene	53	ug/L	1	50.0	107	55-140	
n-Propylbenzene	46	ug/L	1	50.0	91	70-130	
Styrene	50	ug/L	1	50.0	99	65-135	
1,1,1,2-Tetrachloroethane	59	ug/L	1	50.0	117	80-130	
1,1,2,2-Tetrachloroethane	44	ug/L	1	50.0	88	65-130	
Tetrachloroethene	53	ug/L	1	50.0	106	45-150	
Toluene	47	ug/L	1	50.0	93	75-120	
1,2,3-Trichlorobenzene	50	ug/L	1	50.0	100	55-140	
1,2,4-Trichlorobenzene	53	ug/L	1	50.0	106	65-135	
1,1,1-Trichloroethane	55	ug/L	1	50.0	110	65-130	
1,1,2-Trichloroethane	44	ug/L	1	50.0	87	75-125	
Trichloroethene	48	ug/L	1	50.0	95	70-125	
Trichlorofluoromethane	55	ug/L	1	50.0	110	60-145	
1,2,3-Trichloropropane	43	ug/L	1	50.0	86	75-125	
1,2,4-Trimethylbenzene	50	ug/L	1	50.0	99	75-130	
1,3,5-Trimethylbenzene	50	ug/L	1	50.0	99	75-130	
Vinyl chloride	48	ug/L	1	50.0	96	50-145	
m,p-Xylene	96	ug/L	1	100	96	75-130	
o-Xylene	52	ug/L	1	50.0	104	80-120	
Surrogates:							
4-Bromofluorobenzene			1		89	75-120	
Dibromofluoromethane			1		105	85-115	
1,2-Dichloroethane-d4			1		107	70-120	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35344**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	10/10/2008		

LCS: S101008MVOWY1

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Surrogates:							
Toluene-d8			1		92	85-120	

Matrix Spike: OU815-004MS — Parent Sample: OU815-004

Matrix Spike Duplicate: OU815-004MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Vinyl chloride	46	ug/L	1	50.0	ND	93	50-145			
	45			50.0		90	50-145	3	30	
1,1-Dichloroethene	53	ug/L	1	50.0	ND	106	70-130			
	50			50.0		100	70-130	5	30	
Benzene	45	ug/L	1	50.0	ND	91	80-120			
	44			50.0		88	80-120	3	30	
1,2-Dichloroethane	52	ug/L	1	50.0	ND	103	70-130			
	49			50.0		99	70-130	4	30	
1,2-Dichloropropane	42	ug/L	1	50.0	ND	83	75-125			
	41			50.0		82	75-125	1	30	
Toluene	46	ug/L	1	50.0	ND	92	75-120			
	46			50.0		92	75-120	0	30	
1,1,2-Trichloroethane	44	ug/L	1	50.0	ND	88	75-125			
	44			50.0		88	75-125	1	30	
1,2-Dibromoethane	44	ug/L	1	50.0	ND	89	80-120			
	46			50.0		91	80-120	3	30	
Ethylbenzene	47	ug/L	1	50.0	ND	95	75-125			
	47			50.0		94	75-125	1	30	
Surrogates:										
Dibromofluoromethane			1			105	85-115			
						103	85-115			
1,2-Dichloroethane-d4			1			111	70-120			
						108	70-120			
Toluene-d8			1			91	85-120			
						92	85-120			
4-Bromofluorobenzene			1			92	75-120			
						93	75-120			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0801
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q35499**	Analysis Method:	**8082A**
QC Batch Method:	3535(Pest/PCB)	Analysis Description:	Polychlorinated Biphenyls by Gas Chromatography
Preparation Started:	10/16/2008		

Blank: B101608GPBWLO

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Aroclor-1016	ND	ug/L	1		0.05	
Aroclor-1221	ND	ug/L	1		0.05	
Aroclor-1232	ND	ug/L	1		0.05	
Aroclor-1242	ND	ug/L	1		0.05	
Aroclor-1248	ND	ug/L	1		0.05	
Aroclor-1254	ND	ug/L	1		0.05	
Aroclor-1260	ND	ug/L	1		0.05	
Aroclor-1262	ND	ug/L	1		0.05	
Aroclor-1268	ND	ug/L	1		0.05	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Notes and Definitions

SDG No: **HCI0801**

Report Specific Notes:

ND	The analyte of interest was not detected, to the limit of detection indicated
J	The value reported is below the routine reporting limit and should be considered an estimate

Laboratory Reporting Conventions:

DF	Dilution factor
Detection Limit Threshold	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value.
MDL	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value. Detection Limit Thresholds are listed on the report only if the data has been evaluated below the Reporting Limit. Results between the Reporting Limit and the Detection Limit Threshold are reported as estimated results.
IDL	Instrument Detection Limit. IDLs are in instrument basis units. Reported results for samples are normalized appropriately using the preparation and analysis steps performed.
Reporting Limit	The minimum detection limit for reporting unqualified results under routine laboratory operating conditions. Typically this is the PQL but it may be a different concentration on a project-specific basis.
QC Batch Group	Quality Control Batch Group. The entity that links analytical results and supporting quality control results.
% Rec	Percent recovery.
Limits	The upper and lower control limits for spike recoveries.
RPD	Relative Percent Difference. The relative difference between duplicate results (matrix spike, blank spike, or sample duplicate) expressed as a percentage.
RPD Limit	The maximum RPD allowed for a set of duplicate measurements (see RPD).
Spike conc.	The measured concentration, in sample basis units, of a spiked sample.
PQL	Practical Quantitation Limit. The quantitation limit achievable by the laboratory under routine operating conditions. The PQL will be normalized for deviations from these conditions such as dilutions, dry weight adjustment, etc.
LCS	Laboratory Control Sample

Pace Analytical®
www.pacelabs.com

HC I0801
LS#8909

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1255418

Section A Required Client Information

Company: Hart Crowser, Inc.
Address: Five Centerpointe #240
Lake Oswego OR 97035
Email To: leon.lahiere@hartcrowser.com
Phone: 971-327-9103 Fax: 503-620-6998
Requested Due Date/TAT: Std

Section B Required Project Information:

Report To: Leon Lahiere
Copy To:
Purchase Order No.: 15684-00/08
Project Name: Brix - Portland
Project Number: 15684-00/08

Section C Invoice Information:

Attention: Leon Lahiere
Company Name: Hart Crowser Inc.
Address: Five Centerpointe Lake Oswego OR
Pace Quote Reference: Seattle-0952208
Pace Project Manager: Lisa Dameighini
Pace Profile #:

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER DSCS-DEQ

Site Location STATE: OR

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ⇓	PCB 8082 - Low	PAH (SIM)	Phthalates 8270 (SIM)	All TPH-Dx	All TPH-Gx	VOCs - 8260B	TCLP	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N ⇒	N	N	N	N	N	N			
1	Outfall A	WT	G	10-6-08	1310	10-6-08	1315	15	3										X	X	X	X	X	X	X		
2	Outfall B	WT	G	10-6-08	1220	10-6-08	1225	15	3										X	X	X	X	X	X	X		
3	Trip Blank A	WT							3														X				
4	Trip Blank B	WT							3														X				
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Use Temp Blank for Cooler Temp.	Hart Crowser	10-6-08	1150		10/6/08	1150	
		10-7	900		10-7-08	900	

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Leon Lahiere
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 10-05-08

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Cooler Receipt Form
Pace Analytical Services, Inc.

SDG: HCI0801 Taken By: Client

Cooler: AAF756 Transferred: Courier

COC #: 1255418

Project: Brix Maritime-Joint Source Control (Hart Crowser, Inc.)

Date samples were received at the laboratory: **10/7/2008**

Date cooler was opened: **10/7/2008 9:00AM**

A. PRELIMINARY EXAMINATION PHASE:

1. Did cooler come with a shipping slip (airbill, etc.)? ..... **NO**
   if YES, record carrier name and airbill number:
2. Were custody seals unbroken and intact at the date and time of arrival? ..... **INTACT**
   Date On Custody Seal: Custody Seals Description: **1 in front**
3. Were custody papers sealed in a plastic bag and taped inside to the lid? ..... **YES**
4. Did you screen samples for radioactivity using the Geiger Counter? ..... **NO**
5. Were custody papers filled out properly (ink, signed, etc.)? ..... **YES**
6. Did you sign custody papers in the appropriate place? ..... **YES**
7. If required, was enough cooling material present? ..... **NO**
8. Have designated person initial here to acknowledge receipt of cooler: RF

B. LOG-IN PHASE:

Date samples were logged-in: **10/7/2008 10:44AM**

Logged-in by Rachel Frank (sign) [signature]

9. Describe type of packing in cooler:

10. Were all bottles sealed in separate plastic bags? ..... **NO**
11. Were labels in good condition? ..... **YES**
12. Were all bottle labels complete (ID,date,time signature,preservative,etc.)? ..... **YES**
13. Did all bottle labels agree with custody papers? ..... **YES**
14. Were correct containers used for the tests indicated? ..... **YES**
15. Were the correct pHs observed? ..... **YES**
16. Was a sufficient amount of sample sent for tests indicated? ..... **YES**
17. Were bubbles absent in VOA samples? ..... **NO**
18. Temperatures: **9.7, 9.8, 10.2**

DISCREPANCIES:

Bubble bags for 1000mL Ambers were not sealed. There was no ice in cooler, just water.

Date Printed: 10/7/2008 10:51

Cooler Receipt Form
Pace Analytical Services, Inc.

SDG: HCI0801 Taken By: Client

Cooler: AAN022 Transferred: Courier

COC #: 1255418

Project: Brix Maritime-Joint Source Control (Hart Crowser, Inc.)

Date samples were received at the laboratory: **10/7/2008**

Date cooler was opened: **10/7/2008 9:00AM**

A. PRELIMINARY EXAMINATION PHASE:

1. Did cooler come with a shipping slip (airbill, etc.)? ..... **NO**
   if YES, record carrier name and airbill number:
2. Were custody seals unbroken and intact at the date and time of arrival? ..... **INTACT**
   Date On Custody Seal: Custody Seals Description: **1 in front**
3. Were custody papers sealed in a plastic bag and taped inside to the lid? ..... **YES**
4. Did you screen samples for radioactivity using the Geiger Counter? ..... **NO**
5. Were custody papers filled out properly (ink, signed, etc.)? ..... **YES**
6. Did you sign custody papers in the appropriate place? ..... **YES**
7. If required, was enough cooling material present? ..... **NO**
8. Have desiguated person initial bere to acknowledge receipt of cooler: _____

B. LOG-IN PHASE:

Date samples were logged-in: **10/7/2008 10:44AM**

Logged-in by Rachel Frank (sign) _____

9. Describe type of packing in cooler:

10. Were all bottles sealed in separate plastic bags? ..... **NO**
11. Were labels in good condition? ..... **YES**
12. Were all bottle labels complete (ID,date,time signature,preservative,etc.)? ..... **YES**
13. Did all bottle labels agree with custody papers? ..... **YES**
14. Were correct containers used for the tests indicated? ..... **YES**
15. Were the correct pHs observed? ..... **YES**
16. Was a sufficient amount of sample sent for tests indicated? ..... **YES**
17. Were bubbles absent in VOA samples? ..... **NO**
18. Temperatures: **12.0, 11.7, 11.5**

DISCREPANCIES:

Bubble bags for 1000mL Ambers were not sealed. There was no ice in cooler, just water.

Date Printed: 10/7/2008 10:54

Supplemental Sample Receipt Log
Pace Analytical Services, Inc.

SDG: HCI0801
Cooler: AAF756
Temperatures: 9.7, 9.8, 10.2
COC #: 1255418

Sample	Bottle #	Bottle Description	pH	Bubbles
HCI0801-001	0001	1000 mL boston round, amber glass	7	N/A
	0002	1000 mL boston round, amber glass	7	N/A
	0003	1000 mL boston round, amber glass	7	N/A
	0004	1000 mL boston round, amber glass	7	N/A
	0005	1000 mL boston round, amber glass, HCl	<2	N/A
	0006	1000 mL boston round, amber glass, HCl	<2	N/A
	0007	1000 mL juice, plastic	7	N/A
	0008	40 ml OTWS, clear glass, HCl	N/C	< 1/4
	0009	40 ml OTWS, clear glass, HCl	N/C	< 1/4
	0010	40 ml OTWS, clear glass, HCl	N/C	None
	0011	40 ml OTWS, clear glass, HCl	N/C	> 1/4
	0012	40 ml OTWS, clear glass, HCl	N/C	< 1/4
	0013	40 ml OTWS, clear glass, HCl	N/C	None
HCI0801-003	0001	40 ml OTWS, clear glass, HCl	N/C	None
	0002	40 ml OTWS, clear glass, HCl	N/C	None
	0003	40 ml OTWS, clear glass, HCl	N/C	None

Allowable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

Temperature	Allowable temperature range is 4+/- 2 degrees Celsius
Acid Preserved pH	pH must be less than 2
Base Preserved pH	pH must be greater than 12
NC	Not Checked for pH

Supplemental Sample Receipt Log
Pace Analytical Services, Inc.

SDG: HCI0801
Cooler: AAN022
Temperatures: 12.0, 11.7, 11.5
COC #: 1255418

Sample	Bottle #	Bottle Description	pH	Bubbles
HCI0801-002	0001	1000 mL boston round, amber glass	7	N/A
	0002	1000 mL boston round, amber glass	7	N/A
	0003	1000 mL boston round, amber glass	7	N/A
	0004	1000 mL boston round, amber glass	7	N/A
	0005	1000 mL boston round, amber glass, HCl	<2	N/A
	0006	1000 mL boston round, amber glass, HCl	<2	N/A
	0007	1000 mL juice, plastic	7	N/A
	0008	40 ml OTWS, clear glass, HCl	N/C	None
	0009	40 ml OTWS, clear glass, HCl	N/C	None
	0010	40 ml OTWS, clear glass, HCl	N/C	None
	0011	40 ml OTWS, clear glass, HCl	N/C	None
	0012	40 ml OTWS, clear glass, HCl	N/C	None
	0013	40 ml OTWS, clear glass, HCl	N/C	None
HCI0801-004	0001	40 ml OTWS, clear glass, HCl	N/C	< 1/4
	0002	40 ml OTWS, clear glass, HCl	N/C	None
	0003	40 ml OTWS, clear glass, HCl	N/C	None

Allowable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

Temperature	Allowable temperature range is 4+/- 2 degrees Celsius
Acid Preserved pH	pH must be less than 2
Base Preserved pH	pH must be greater than 12
NC	Not Checked for pH

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Client: Hart Crowser, Inc.

ATTN: Leon Lahiere

Project Name: **Brix Maritime-Joint Source Control**

SDG Number: **HCI0802**
Date Received: **11/21/2008 8:30:00AM**
Date Reported: **12/09/2008**

Dear Leon Lahiere,

Enclosed are the analytical results for the sample(s) received by the laboratory on November 21, 2008. The results relate only to the samples included in this report. Unless otherwise instructed all samples with the exception of samples which are consumed during the analysis, such as microbiological samples, will be disposed of on or after March 1, 2009. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

If you have any question concerning the report, please feel free to contact me.

Respectfully submitted,
Pace Analytical Services, Inc.

Kara Godineaux

Kara Godineaux

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Sample Summary

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

Sample Identification:

Sample Description	Lab Sample ID	Collection Date/Time		Type
OUTFALL A	HCI0802-001	11/20/2008	09:10	Water
OUTFALL B	HCI0802-002	11/20/2008	08:35	Water

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Test Request Summary

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Pace Project No.:		Project Manager:	Leon Lahiere

Samples	Methods									
Client Sample ID	160.2 1	8260B 2	8270-P 3	NWTPH-4	NWTPH-5	8082A 6	8270 7	8	9	10
OUTFALL A	X	X	X	X	X	X	X			
OUTFALL B	X	X	X	X	X	X	X			

Determinations:

1 = 160.2 Total Suspended Solids, Water

2 = 8260-1 VOAs Water Full list

3 = 8270 SPE SIM level PNA Water (Routine)

4 = NWTPH Dx Water

5 = NWTPH Gx Water

6 = 8082 PCB Aroclors Water -Low

7 = 8270 SVOAs Water Low level Phthalates

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**OUTFALL A**	Matrix:	Water
Collected On:	11/20/08 9:10	Lab Sample ID:	HCI0802-001
Received On:	11/21/08 8:30		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Residue, non-filterable, Gravimetric, Dried at 103 (TSS- total Suspended Solids)				Methods (Preparation | Analysis): **NONE | 160.2**					
Suspended Solids, Total	**7**	mg/L	1		2	Q36542	11/24/2008	11/24/2008	
Polychlorinated Biphenyls by Gas Chromatography				Methods (Preparation | Analysis): **3535 | 8082A**					
Aroclor-1016	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1221	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1232	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1242	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1248	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1254	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1260	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1262	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1268	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Surrogates:									
Decachlorobiphenyl	94	% Rec	1		32-149	Q36565	11/26/2008	11/28/2008	
Tetrachloro-m-xylene	94	% Rec	1		10-129	Q36565	11/26/2008	11/28/2008	
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
Acetone	ND	ug/L	1		20	Q36722	12/03/2008	12/03/2008	
Benzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromochloromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromodichloromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromoform	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromomethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
2-Butanone	ND	ug/L	1		10	Q36722	12/03/2008	12/03/2008	
n-Butylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
sec-Butylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
tert-Butylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Carbon disulfide	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Carbon tetrachloride	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chloroform	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chloromethane	ND	ug/L	1		5.0	Q36722	12/03/2008	12/03/2008	
2-Chlorotoluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
4-Chlorotoluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dibromo-3-chloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Dibromochloromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dibromoethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Dibromomethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,3-Dichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,4-Dichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Dichlorodifluoromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1-Dichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1-Dichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**OUTFALL A**	Matrix:	Water
Collected On:	11/20/08 9:10	Lab Sample ID:	HCI0802-001
Received On:	11/21/08 8:30		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
trans-1,2-Dichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
cis-1,2-Dichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,3-Dichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
2,2-Dichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1-Dichloropropene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
cis-1,3-Dichloropropene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
trans-1,3-Dichloropropene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Ethylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Hexachlorobutadiene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
2-Hexanone	ND	ug/L	1		10	Q36722	12/03/2008	12/03/2008	
Isopropylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
4-Isopropyltoluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Methyl tert-butyl ether	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
4-Methyl-2-pentanone	ND	ug/L	1		10	Q36722	12/03/2008	12/03/2008	
Methylene chloride	ND	ug/L	1		5.0	Q36722	12/03/2008	12/03/2008	
Naphthalene	ND	ug/L	1		5.0	Q36722	12/03/2008	12/03/2008	
n-Propylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Styrene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,1,2-Tetrachloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,2,2-Tetrachloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Tetrachloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Toluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,3-Trichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,4-Trichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,1-Trichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,2-Trichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Trichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Trichlorofluoromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,3-Trichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,4-Trimethylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,3,5-Trimethylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Vinyl chloride	ND	ug/L	1		0.20	Q36722	12/03/2008	12/03/2008	
m,p-Xylene	ND	ug/L	1		2.0	Q36722	12/03/2008	12/03/2008	
o-Xylene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Surrogates:									
4-Bromofluorobenzene	101	% Rec	1		75-120	Q36722	12/03/2008	12/03/2008	
Dibromofluoromethane	104	% Rec	1		85-115	Q36722	12/03/2008	12/03/2008	
1,2-Dichloroethane-d4	96	% Rec	1		70-120	Q36722	12/03/2008	12/03/2008	
Toluene-d8	100	% Rec	1		85-120	Q36722	12/03/2008	12/03/2008	
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Bis(2-ethylhexyl)phthalate	**4.1**	ug/L	1		0.077	Q36561	11/26/2008	12/03/2008	
Butylbenzylphthalate	ND	ug/L	1		0.077	Q36561	11/26/2008	12/03/2008	
Di-n-butylphthalate	**1.4**	ug/L	1		0.077	Q36561	11/26/2008	12/03/2008	
Di-n-octylphthalate	ND	ug/L	1		0.077	Q36561	11/26/2008	12/03/2008	
Diethylphthalate	ND	ug/L	1		0.077	Q36561	11/26/2008	12/03/2008	
Dimethylphthalate	ND	ug/L	1		0.077	Q36561	11/26/2008	12/03/2008	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**OUTFALL A**	Matrix:	Water
Collected On:	11/20/08 9:10	Lab Sample ID:	HCI0802-001
Received On:	11/21/08 8:30		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Surrogates:									
2-Fluorobiphenyl	80	% Rec	1		50-110	Q36561	11/26/2008	12/03/2008	
2-Fluorophenol	48	% Rec	1		20-110	Q36561	11/26/2008	12/03/2008	
Nitrobenzene-d5	83	% Rec	1		40-110	Q36561	11/26/2008	12/03/2008	
Phenol-d5	29	% Rec	1		10-115	Q36561	11/26/2008	12/03/2008	
Terphenyl-d14	104	% Rec	1		50-135	Q36561	11/26/2008	12/03/2008	
2,4,6-Tribromophenol	102	% Rec	1		40-125	Q36561	11/26/2008	12/03/2008	
SIM Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3535 | 8270-PNA**					
Naphthalene	**0.071**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	J
2-Methylnaphthalene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Acenaphthylene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Acenaphthene	**0.076**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	J
Fluorene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Phenanthrene	**0.11**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Anthracene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Fluoranthene	**0.067**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	J
Pyrene	**0.057**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	J
Benzo(a)anthracene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Chrysene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(b)fluoranthene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(k)fluoranthene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(a)pyrene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Dibenzo(a,h)anthracene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(g,h,i)perylene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Surrogates:									
1-Fluoronaphthalene	62	% Rec	1		30-110	Q36503	11/24/2008	12/05/2008	
Fluorene-d10	88	% Rec	1		45-130	Q36503	11/24/2008	12/05/2008	
Pyrene-d10	69	% Rec	1		50-140	Q36503	11/24/2008	12/05/2008	
NWTPH Diesel				Methods (Preparation | Analysis): **3510C | NWTPH-D**					
Diesel Range Organics	**0.11**	mg/L	1		0.052	Q36539	11/25/2008	12/06/2008	
Oil Range Organics	ND	mg/L	1		0.21	Q36539	11/25/2008	12/06/2008	
Surrogates:									
o-Terphenyl	74	% Rec	1		50-150	Q36539	11/25/2008	12/06/2008	
NWTPH Gas				Methods (Preparation | Analysis): **5030B | NWTPH-G**					
Gasoline Range Organics	ND	ug/L	1		25.0	Q36488	11/21/2008	11/21/2008	
Surrogates:									
4-Bromofluorobenzene	92	% Rec	1		50-150	Q36488	11/21/2008	11/21/2008	
Trifluorotoluene	99	% Rec	1		50-150	Q36488	11/21/2008	11/21/2008	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**OUTFALL B**	Matrix:	Water
Collected On:	11/20/08 8:35	Lab Sample ID:	HCI0802-002
Received On:	11/21/08 8:30		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Residue, non-filterable, Gravimetric, Dried at 103 (TSS- total Suspended Solids)				Methods (Preparation | Analysis): **NONE | 160.2**					
Suspended Solids, Total	**27**	mg/L	1		2	Q36542	11/24/2008	11/24/2008	
Polychlorinated Biphenyls by Gas Chromatography				Methods (Preparation | Analysis): **3535 | 8082A**					
Aroclor-1016	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1221	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1232	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1242	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1248	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1254	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1260	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1262	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Aroclor-1268	ND	ug/L	1		0.048	Q36565	11/26/2008	11/28/2008	
Surrogates:									
Decachlorobiphenyl	126	% Rec	1		32-149	Q36565	11/26/2008	11/28/2008	
Tetrachloro-m-xylene	129	% Rec	1		10-129	Q36565	11/26/2008	11/28/2008	
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
Acetone	ND	ug/L	1		20	Q36722	12/03/2008	12/03/2008	
Benzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromochloromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromodichloromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromoform	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Bromomethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
2-Butanone	ND	ug/L	1		10	Q36722	12/03/2008	12/03/2008	
n-Butylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
sec-Butylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
tert-Butylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Carbon disulfide	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Carbon tetrachloride	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chloroform	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Chloromethane	ND	ug/L	1		5.0	Q36722	12/03/2008	12/03/2008	
2-Chlorotoluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
4-Chlorotoluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dibromo-3-chloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Dibromochloromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dibromoethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Dibromomethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,3-Dichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,4-Dichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Dichlorodifluoromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1-Dichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1-Dichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**OUTFALL B**	Matrix:	Water
Collected On:	11/20/08 8:35	Lab Sample ID:	HCI0802-002
Received On:	11/21/08 8:30		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Purgeable Organic Compounds by GC/MS				Methods (Preparation | Analysis): **5030B | 8260B**					
trans-1,2-Dichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
cis-1,2-Dichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2-Dichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,3-Dichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
2,2-Dichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1-Dichloropropene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
cis-1,3-Dichloropropene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
trans-1,3-Dichloropropene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Ethylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Hexachlorobutadiene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
2-Hexanone	ND	ug/L	1		10	Q36722	12/03/2008	12/03/2008	
Isopropylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
4-Isopropyltoluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Methyl tert-butyl ether	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
4-Methyl-2-pentanone	ND	ug/L	1		10	Q36722	12/03/2008	12/03/2008	
Methylene chloride	ND	ug/L	1		5.0	Q36722	12/03/2008	12/03/2008	
Naphthalene	ND	ug/L	1		5.0	Q36722	12/03/2008	12/03/2008	
n-Propylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Styrene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,1,2-Tetrachloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,2,2-Tetrachloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Tetrachloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Toluene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,3-Trichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,4-Trichlorobenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,1-Trichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,1,2-Trichloroethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Trichloroethene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Trichlorofluoromethane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,3-Trichloropropane	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,2,4-Trimethylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
1,3,5-Trimethylbenzene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Vinyl chloride	ND	ug/L	1		0.20	Q36722	12/03/2008	12/03/2008	
m,p-Xylene	ND	ug/L	1		2.0	Q36722	12/03/2008	12/03/2008	
o-Xylene	ND	ug/L	1		1.0	Q36722	12/03/2008	12/03/2008	
Surrogates:									
4-Bromofluorobenzene	100	% Rec	1		75-120	Q36722	12/03/2008	12/03/2008	
Dibromofluoromethane	104	% Rec	1		85-115	Q36722	12/03/2008	12/03/2008	
1,2-Dichloroethane-d4	96	% Rec	1		70-120	Q36722	12/03/2008	12/03/2008	
Toluene-d8	98	% Rec	1		85-120	Q36722	12/03/2008	12/03/2008	
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Bis(2-ethylhexyl)phthalate	**3.6**	ug/L	1		0.076	Q36561	11/26/2008	12/03/2008	
Butylbenzylphthalate	ND	ug/L	1		0.076	Q36561	11/26/2008	12/03/2008	
Di-n-butylphthalate	ND	ug/L	1		0.076	Q36561	11/26/2008	12/03/2008	
Di-n-octylphthalate	ND	ug/L	1		0.076	Q36561	11/26/2008	12/03/2008	
Diethylphthalate	ND	ug/L	1		0.076	Q36561	11/26/2008	12/03/2008	
Dimethylphthalate	ND	ug/L	1		0.076	Q36561	11/26/2008	12/03/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Analytical Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

Client Sample ID:	**OUTFALL B**	Matrix:	Water
Collected On:	11/20/08 8:35	Lab Sample ID:	HCI0802-002
Received On:	11/21/08 8:30		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3510C | 8270**					
Surrogates:									
2-Fluorobiphenyl	79	% Rec	1		50-110	Q36561	11/26/2008	12/03/2008	
2-Fluorophenol	45	% Rec	1		20-110	Q36561	11/26/2008	12/03/2008	
Nitrobenzene-d5	81	% Rec	1		40-110	Q36561	11/26/2008	12/03/2008	
Phenol-d5	28	% Rec	1		10-115	Q36561	11/26/2008	12/03/2008	
Terphenyl-d14	103	% Rec	1		50-135	Q36561	11/26/2008	12/03/2008	
2,4,6-Tribromophenol	100	% Rec	1		40-125	Q36561	11/26/2008	12/03/2008	
SIM Semivolatile Organic Compounds by GC/MS				Methods (Preparation | Analysis): **3535 | 8270-PNA**					
Naphthalene	**0.095**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
2-Methylnaphthalene	**0.048**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	J
Acenaphthylene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Acenaphthene	**0.14**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Fluorene	**0.10**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Phenanthrene	**0.49**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Anthracene	**0.067**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	J
Fluoranthene	**0.79**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Pyrene	**0.65**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(a)anthracene	**0.25**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Chrysene	**0.43**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(b)fluoranthene	**0.50**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(k)fluoranthene	**0.32**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(a)pyrene	**0.36**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Indeno(1,2,3-cd)pyrene	**0.39**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Dibenzo(a,h)anthracene	ND	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Benzo(g,h,i)perylene	**0.31**	ug/L	1	0.0086	0.095	Q36503	11/24/2008	12/05/2008	
Surrogates:									
1-Fluoronaphthalene	58	% Rec	1		30-110	Q36503	11/24/2008	12/05/2008	
Fluorene-d10	81	% Rec	1		45-130	Q36503	11/24/2008	12/05/2008	
Pyrene-d10	70	% Rec	1		50-140	Q36503	11/24/2008	12/05/2008	
NWTPH Diesel				Methods (Preparation | Analysis): **3510C | NWTPH-D**					
Diesel Range Organics	**0.35**	mg/L	1		0.052	Q36539	11/25/2008	12/06/2008	
Oil Range Organics	**0.53**	mg/L	1		0.21	Q36539	11/25/2008	12/06/2008	
Surrogates:									
o-Terphenyl	100	% Rec	1		50-150	Q36539	11/25/2008	12/06/2008	
NWTPH Gas				Methods (Preparation | Analysis): **5030B | NWTPH-G**					
Gasoline Range Organics	ND	ug/L	1		25.0	Q36488	11/21/2008	11/21/2008	
Surrogates:									
4-Bromofluorobenzene	91	% Rec	1		50-150	Q36488	11/21/2008	11/21/2008	
Trifluorotoluene	98	% Rec	1		50-150	Q36488	11/21/2008	11/21/2008	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36488**	Analysis Method:	**NWTPH-G**
QC Batch Method:	5030B-GCVOA	Analysis Description:	NWTPH Gas
Preparation Started:	11/21/2008		

Blank: B112108GVOWI1

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Gasoline Range Organics	ND	ug/L	1			12.5	
Surrogates:					% Rec		
4-Bromofluorobenzene			1		88	50-150	
Trifluorotoluene			1		94	50-150	

LCS: S112108GVOWI1

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	83.1	ug/L	1	100	83	71-122	
Surrogates:							
4-Bromofluorobenzene			1		89	50-150	
Trifluorotoluene			1		93	50-150	

Matrix Spike: HODOT0806-001MS — Parent Sample: HODOT0806-001

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	100	ug/L	1	100	ND	105	67-125	
Surrogates:								
4-Bromofluorobenzene			1			93	50-150	
Trifluorotoluene			1			98	50-150	

Sample Duplicate: HODOT0806-001D — Parent Sample: HODOT0806-001

Analyte	Duplicate Result	Units	DF	Parent Result			RPD	RPD Limit	Qualifiers
Gasoline Range Organics	ND	ug/L	1	ND			23.6	50	
Surrogates:					% Rec				
4-Bromofluorobenzene			1		89	50-150			
Trifluorotoluene			1		98	50-150			

Sample Duplicate: LAQA0802-003D — Parent Sample: LAQA0802-003

Analyte	Duplicate Result	Units	DF	Parent Result			RPD	RPD Limit	Qualifiers
Gasoline Range Organic	**30**	ug/L	1	**29**			2.6	50	
Surrogates:					% Rec				
4-Bromofluorobenzene			1		88	50-150			
Trifluorotoluene			1		89	50-150			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36503**	Analysis Method:	**8270-PNA**
QC Batch Method:	3535(PNA)	Analysis Description:	SIM Semivolatile Organic Compounds by GC/MS
Preparation Started:	11/24/2008		

Blank: B112408MPNWLG

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Naphthalene	ND	ug/L	1	0.0090		0.1	
2-Methylnaphthalene	ND	ug/L	1	0.0090		0.1	
Acenaphthylene	ND	ug/L	1	0.0090		0.1	
Acenaphthene	ND	ug/L	1	0.0090		0.1	
Fluorene	ND	ug/L	1	0.0090		0.1	
Phenanthrene	ND	ug/L	1	0.0090		0.1	
Anthracene	ND	ug/L	1	0.0090		0.1	
Fluoranthene	ND	ug/L	1	0.0090		0.1	
Pyrene	ND	ug/L	1	0.0090		0.1	
Benzo(a)anthracene	ND	ug/L	1	0.0090		0.1	
Chrysene	ND	ug/L	1	0.0090		0.1	
Benzo(b)fluoranthene	ND	ug/L	1	0.0090		0.1	
Benzo(k)fluoranthene	ND	ug/L	1	0.0090		0.1	
Benzo(a)pyrene	ND	ug/L	1	0.0090		0.1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1	0.0090		0.1	
Dibenzo(a,h)anthracene	ND	ug/L	1	0.0090		0.1	
Benzo(g,h,i)perylene	ND	ug/L	1	0.0090		0.1	
Surrogates:					% Rec		
1-Fluoronaphthalene			1		46	30-110	
Fluorene-d10			1		66	45-130	
Pyrene-d10			1		50	50-140	

LCS: S112408MPNWLG

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Naphthalene	0.78	ug/L	1	1.25	62	40-100	
2-Methylnaphthalene	0.75	ug/L	1	1.25	60	45-105	
Acenaphthylene	0.80	ug/L	1	1.25	64	50-105	
Acenaphthene	0.77	ug/L	1	1.25	62	45-110	
Fluorene	0.78	ug/L	1	1.25	62	50-110	
Phenanthrene	0.77	ug/L	1	1.25	62	50-115	
Anthracene	0.80	ug/L	1	1.25	64	55-110	
Fluoranthene	0.82	ug/L	1	1.25	66	55-115	
Pyrene	0.79	ug/L	1	1.25	63	50-130	
Benzo(a)anthracene	0.84	ug/L	1	1.25	67	55-110	
Chrysene	0.86	ug/L	1	1.25	68	55-110	
Benzo(b)fluoranthene	0.92	ug/L	1	1.25	74	45-120	
Benzo(k)fluoranthene	0.88	ug/L	1	1.25	70	45-125	
Benzo(a)pyrene	0.90	ug/L	1	1.25	72	55-110	
Indeno(1,2,3-cd)pyrene	0.92	ug/L	1	1.25	74	45-125	
Dibenzo(a,h)anthracene	0.91	ug/L	1	1.25	73	40-125	
Benzo(g,h,i)perylene	0.89	ug/L	1	1.25	71	40-125	
Surrogates:							
1-Fluoronaphthalene			1		57	30-110	
Fluorene-d10			1		77	45-130	
Pyrene-d10			1		59	50-140	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36503**	Analysis Method:	**8270-PNA**
QC Batch Method:	3535(PNA)	Analysis Description:	SIM Semivolatile Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: HODOT0806-001MS — Parent Sample: HODOT0806-001
Matrix Spike Duplicate: HODOT0806-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Acenaphthene	0.44	ug/L	1	1.19	ND	37	45-110			*
	0.94			1.30		72	45-110	65	30	#
Acenaphthylene	0.46	ug/L	1	1.19	ND	33	50-105			*
	1.0			1.30		72	50-105	67	30	#
Anthracene	0.41	ug/L	1	1.19	ND	34	55-110			*
	0.92			1.30		71	55-110	69	30	#
Benzo(a)anthracene	0.45	ug/L	1	1.19	ND	38	55-110			*
	0.97			1.30		74	55-110	66	30	#
Benzo(a)pyrene	0.55	ug/L	1	1.19	ND	46	55-110			*
	1.1			1.30		82	55-110	56	30	#
Benzo(b)fluoranthene	0.63	ug/L	1	1.19	ND	53	45-120			
	1.2			1.30		95	45-120	57	30	#
Benzo(g,h,i)perylene	0.48	ug/L	1	1.19	ND	40	40-125			
	0.80			1.30		61	40-125	41	30	#
Benzo(k)fluoranthene	0.48	ug/L	1	1.19	ND	40	45-125			*
	0.95			1.30		73	45-125	59	30	#
Chrysene	0.47	ug/L	1	1.19	ND	39	55-110			*
	1.0			1.30		77	55-110	65	30	#
Dibenzo(a,h)anthracene	0.48	ug/L	1	1.19	ND	40	40-125			
	0.91			1.30		70	40-125	54	30	#
Fluoranthene	0.48	ug/L	1	1.19	ND	35	55-115			*
	0.97			1.30		70	55-115	61	30	#
Fluorene	0.45	ug/L	1	1.19	ND	38	50-110			*
	1.0			1.30		78	50-110	69	30	#
Indeno(1,2,3-cd)pyrene	0.55	ug/L	1	1.19	ND	46	45-125			
	0.97			1.30		74	45-125	46	30	#
2-Methylnaphthalene	0.40	ug/L	1	1.19	ND	33	45-105			*
	0.92			1.30		70	45-105	72	30	#
1-Methylnaphthalene	0.38	ug/L	1	1.19	ND	32	45-105			*
	0.89			1.30		68	45-105	74	30	#
Naphthalene	0.66	ug/L	1	1.19	**0.10**	46	40-100			
	1.1			1.30		73	40-100	38	30	#
Phenanthrene	0.46	ug/L	1	1.19	ND	34	50-115			*
	0.96			1.30		70	50-115	62	30	#
Pyrene	0.53	ug/L	1	1.19	ND	37	50-130			*
	1.1			1.30		75	50-130	60	30	#
Surrogates:										
Fluorene-d10			1			67	45-130			
						76	45-130			
1-Fluoronaphthalene			1			55	30-110			
						67	30-110			
Pyrene-d10			1			63	50-140			
						72	50-140			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36539**	Analysis Method:	**NWTPH-D**
QC Batch Method:	3510C (M8015-LC)	Analysis Description:	NWTPH Diesel
Preparation Started:	11/25/2008		

Blank: B112508GSVWLT

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Diesel Range Organics	ND	mg/L	1			0.025	
Oil Range Organics	ND	mg/L	1			0.1	
Surrogates:					% Rec		
o-Terphenyl			1		105	50-150	

LCS: S112508GSVWLT

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Diesel Range Organics	0.93	mg/L	1	1.01	92	51-147	
Oil Range Organics	1.0	mg/L	1	1.03	97	50-150	
Surrogates:							
o-Terphenyl			1		115	50-150	

Matrix Spike: HODOT0806-001MS — Parent Sample: HODOT0806-001

Matrix Spike Duplicate: HODOT0806-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Diesel Range Organics	2.6	mg/L	4	1.04	**1.5**	108	50-150			
	3.3			1.04		176	50-150	24	50	*
Oil Range Organics	8.0	mg/L	4	1.07	**5.9**	191	50-150			*
	8.0			1.07		194	50-150	0	50	*
Surrogates:										
o-Terphenyl			4			111	50-150			
						96	50-150			
n-Octacosane			4			102	50-150			
						97	50-150			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36542**	Analysis Method:	**160.2**
QC Batch Method:	160.2PR	Analysis Description:	Residue, non-filterable, Gravimetric, Dried at 103 (TSS- total Suspended Solids)
Preparation Started:	11/24/2008		

Blank: B112408TSSW01

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Suspended Solids, Total	ND	mg/L	1		2	

Sample Duplicate: HCI0802-002D Parent Sample: HCI0802-002

Analyte	Duplicate Result	Units	DF	Parent Result	RPD	RPD Limit	Qualifiers
Suspended Solids, Total	**28**	mg/L	1	**27**	3.6	20	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36561**	Analysis Method:	**8270**
QC Batch Method:	3510C (625)	Analysis Description:	Semivolatile Organic Compounds by GC/MS
Preparation Started:	11/26/2008		

Blank: B112608MSVWLS

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Bis(2-ethylhexyl)phthalat	ND	ug/L	1			1	
Butylbenzylphthalate	ND	ug/L	1			1	
Di-n-butylphthalate	ND	ug/L	1			1	
Di-n-octylphthalate	ND	ug/L	1			1	
Diethylphthalate	ND	ug/L	1			1	
Dimethylphthalate	ND	ug/L	1			1	
Surrogates:					% Rec		
2-Fluorobiphenyl			1		83	50-110	
2-Fluorophenol			1		59	20-110	
Nitrobenzene-d5			1		93	40-110	
Phenol-d5			1		38	10-115	
Terphenyl-d14			1		126	50-135	
2,4,6-Tribromophenol			1		106	40-125	

LCS: S112608MSVWLS

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Bis(2-ethylhexyl)phthalat	21	ug/L	1	20.0	105	40-125	
Butylbenzylphthalate	21	ug/L	1	20.0	104	45-115	
Di-n-butylphthalate	20	ug/L	1	20.0	102	55-115	
Di-n-octylphthalate	21	ug/L	1	20.0	104	35-135	
Diethylphthalate	20	ug/L	1	20.0	102	40-120	
Dimethylphthalate	22	ug/L	1	20.0	108	25-125	
Surrogates:							
2-Fluorobiphenyl			1		89	50-110	
2-Fluorophenol			1		60	20-110	
Nitrobenzene-d5			1		98	40-110	
Phenol-d5			1		39	10-115	
Terphenyl-d14			1		110	50-135	
2,4,6-Tribromophenol			1		108	40-125	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36561**	Analysis Method:	**8270**
QC Batch Method:	3520C (ABN)	Analysis Description:	Semivolatile Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: LAQA0805-001MS — Parent Sample: LAQA0805-001

Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
N-Nitrosodiphenylamine	15	ug/L	1	18.9	ND	82	20-160			
	16			18.9		83	20-160	1	30	
N-Nitrosodimethylamine	7.8	ug/L	1	18.9	ND	42	25-110			
	7.2			18.9		38	25-110	9	30	
Phenol	7.0	ug/L	1	18.9	ND	37	0-115			
	6.5			18.9		35	0-115	7	30	
Bis(2-Chloroethyl)ether	17	ug/L	1	18.9	ND	91	35-110			
	16			18.9		85	35-110	7	30	
2-Chlorophenol	16	ug/L	1	18.9	ND	86	35-105			
	15			18.9		81	35-105	6	30	
1,3-Dichlorobenzene	13	ug/L	1	18.9	ND	71	30-100			
	13			18.9		70	30-100	2	30	
1,4-Dichlorobenzene	13	ug/L	1	18.9	ND	71	30-100			
	13			18.9		70	30-100	2	30	
Benzyl alcohol	12	ug/L	1	18.9	ND	63	30-110			
	11			18.9		57	30-110	10	30	
1,2-Dichlorobenzene	15	ug/L	1	18.9	ND	77	35-100			
	14			18.9		74	35-100	4	30	
2-Methylphenol	14	ug/L	1	18.9	ND	75	40-110			
	14			18.9		74	40-110	2	30	
2,2'-oxybis(1-chloropropa	18	ug/L	1	18.9	ND	94	35-110			
	17			18.9		89	35-110	6	30	
4-Methylphenol	14	ug/L	1	18.9	ND	76	30-110			
	13			18.9		67	30-110	13	30	
N-Nitroso-di-n-propylami	19	ug/L	1	18.9	ND	98	35-130			
	17			18.9		91	35-130	8	30	
Hexachloroethane	12	ug/L	1	18.9	ND	63	30-95			
	12			18.9		63	30-95	0	30	
Nitrobenzene	17	ug/L	1	18.9	ND	93	45-110			
	17			18.9		91	45-110	2	30	
Isophorone	17	ug/L	1	18.9	ND	89	50-110			
	16			18.9		86	50-110	3	30	
2-Nitrophenol	19	ug/L	1	18.9	ND	99	40-115			
	18			18.9		97	40-115	2	30	
2,4-Dimethylphenol	12	ug/L	1	18.9	ND	62	30-110			
	17			18.9		92	30-110	40	30	P5
Benzoic acid	12	ug/L	1	18.9	ND	62	0-125			
	11			18.9		57	0-125	8	30	
Bis(2-chloroethoxy)metha	19	ug/L	1	18.9	ND	99	45-105			
	18			18.9		94	45-105	5	30	
2,4-Dichlorophenol	18	ug/L	1	18.9	ND	96	50-105			
	18			18.9		95	50-105	2	30	
1,2,4-Trichlorobenzene	14	ug/L	1	18.9	ND	75	35-105			
	14			18.9		75	35-105	1	30	
Naphthalene	16	ug/L	1	18.9	ND	87	40-100			
	16			18.9		85	40-100	2	30	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36561**	Analysis Method:	**8270**
QC Batch Method:	3520C (ABN)	Analysis Description:	Semivolatile Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: LAQA0805-001MS — Parent Sample: LAQA0805-001

Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
4-Chloroaniline	ND	ug/L	1	18.9	ND	6	15-110			*
	ND			18.9		5	15-110	12	30	*
Hexachlorobutadiene	12	ug/L	1	18.9	ND	63	25-105			
	12			18.9		65	25-105	4	30	
4-Chloro-3-methylphenol	18	ug/L	1	18.9	ND	95	45-110			
	18			18.9		96	45-110	2	30	
2-Methylnaphthalene	17	ug/L	1	18.9	ND	89	45-105			
	16			18.9		87	45-105	3	30	
Hexachlorocyclopentadien	15	ug/L	1	18.9	ND	78	10-85			
	16			18.9		82	10-85	5	30	
2,4,6-Trichlorophenol	20	ug/L	1	18.9	ND	104	50-115			
	19			18.9		102	50-115	2	30	
2,4,5-Trichlorophenol	19	ug/L	1	18.9	ND	103	50-110			
	19			18.9		100	50-110	4	30	
2-Chloronaphthalene	17	ug/L	1	18.9	ND	92	50-105			
	17			18.9		91	50-105	1	30	
2-Nitroaniline	18	ug/L	1	18.9	ND	95	50-115			
	18			18.9		97	50-115	2	30	
Dimethylphthalate	19	ug/L	1	18.9	ND	101	25-125			
	19			18.9		98	25-125	3	30	
2,6-Dinitrotoluene	18	ug/L	1	18.9	ND	96	50-115			
	18			18.9		98	50-115	2	30	
Acenaphthylene	18	ug/L	1	18.9	ND	95	50-105			
	18			18.9		94	50-105	1	30	
3-Nitroaniline	11	ug/L	1	18.9	ND	56	20-125			
	9.9			18.9		52	20-125	7	30	
Acenaphthene	17	ug/L	1	18.9	ND	91	45-110			
	17			18.9		90	45-110	1	30	
2,4-Dinitrophenol	23	ug/L	1	18.9	ND	120	15-140			
	22			18.9		118	15-140	2	30	
4-Nitrophenol	7.4	ug/L	1	18.9	ND	39	0-125			
	7.2			18.9		38	0-125	4	30	
Dibenzofuran	17	ug/L	1	18.9	ND	93	55-105			
	18			18.9		94	55-105	2	30	
2,4-Dinitrotoluene	18	ug/L	1	18.9	ND	95	50-120			
	17			18.9		92	50-120	3	30	
2,3,4,6-Tetrachlorophenol	19	ug/L	1	18.9	ND	102	20-160			
	19			18.9		100	20-160	2	30	
Diethylphthalate	18	ug/L	1	18.9	ND	97	40-120			
	18			18.9		94	40-120	4	30	
Fluorene	18	ug/L	1	18.9	ND	93	50-110			
	18			18.9		93	50-110	0	30	
4-Chlorophenyl-phenylet	18	ug/L	1	18.9	ND	95	50-110			
	18			18.9		93	50-110	2	30	
4-Nitroaniline	16	ug/L	1	18.9	ND	85	35-120			
	15			18.9		80	35-120	6	30	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36561**	Analysis Method:	**8270**
QC Batch Method:	3520C (ABN)	Analysis Description:	Semivolatile Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: LAQA0805-001MS — Parent Sample: LAQA0805-001
Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
4,6-Dinitro-2-methylphen	21	ug/L	1	18.9	ND	112	40-130			
	21			18.9		111	40-130	1	30	
4-Bromophenyl-phenyl et	19	ug/L	1	18.9	ND	102	50-115			
	19			18.9		100	50-115	2	30	
Hexachlorobenzene	19	ug/L	1	18.9	ND	101	50-110			
	19			18.9		103	50-110	2	30	
Pentachlorophenol	23	ug/L	1	18.9	ND	124	40-115			*
	24			18.9		125	40-115	1	30	*
Phenanthrene	19	ug/L	1	18.9	ND	100	50-115			
	18			18.9		97	50-115	4	30	
Anthracene	19	ug/L	1	18.9	ND	101	55-110			
	18			18.9		97	55-110	4	30	
Carbazole	19	ug/L	1	18.9	ND	100	50-115			
	18			18.9		97	50-115	2	30	
Di-n-butylphthalate	19	ug/L	1	18.9	ND	103	55-115			
	19			18.9		101	55-115	2	30	
Fluoranthene	19	ug/L	1	18.9	ND	102	55-115			
	18			18.9		96	55-115	6	30	
Benzidine	ND	ug/L	1	18.9	ND	0	0-125			
	ND			18.9		0	0-125	0	30	
Pyrene	22	ug/L	1	18.9	ND	118	50-130			
	21			18.9		111	50-130	6	30	
Butylbenzylphthalate	21	ug/L	1	18.9	ND	109	45-115			
	19			18.9		103	45-115	6	30	
3,3'-Dichlorobenzidine	11	ug/L	1	18.9	ND	61	20-110			
	12			18.9		62	20-110	2	30	
Benzo(a)anthracene	22	ug/L	1	18.9	ND	114	55-110			*
	20			18.9		108	55-110	6	30	
Bis(2-ethylhexyl)phthal	22	ug/L	1	18.9	**2.0**	105	40-125			
	22			18.9		104	40-125	1	30	
Chrysene	22	ug/L	1	18.9	ND	114	55-110			*
	20			18.9		104	55-110	9	30	
Di-n-octylphthalate	20	ug/L	1	18.9	ND	106	35-135			
	20			18.9		106	35-135	0	30	
Benzo(b)fluoranthene	20	ug/L	1	18.9	ND	104	45-120			
	19			18.9		101	45-120	3	30	
Benzo(k)fluoranthene	20	ug/L	1	18.9	ND	105	45-125			
	20			18.9		103	45-125	1	30	
Benzo(a)pyrene	20	ug/L	1	18.9	ND	108	55-110			
	19			18.9		100	55-110	7	30	
Indeno(1,2,3-cd)pyrene	19	ug/L	1	18.9	ND	100	45-125			
	19			18.9		101	45-125	1	30	
Dibenzo(a,h)anthracene	19	ug/L	1	18.9	ND	101	40-125			
	18			18.9		96	40-125	5	30	
Benzo(g,h,i)perylene	20	ug/L	1	18.9	ND	106	40-125			
	19			18.9		100	40-125	6	30	

Surrogates:

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36561**	Analysis Method:	**8270**
QC Batch Method:	3520C (ABN)	Analysis Description:	Semivolatile Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: LAQA0805-001MS — Parent Sample: LAQA0805-001
Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Surrogates:										
2-Fluorophenol			1			58	20-110			
						53	20-110			
Phenol-d5			1			36	10-115			
						33	10-115			
Nitrobenzene-d5			1			96	40-110			
						93	40-110			
2-Fluorobiphenyl			1			90	50-110			
						86	50-110			
2,4,6-Tribromophenol			1			110	40-125			
						108	40-125			
Terphenyl-d14			1			114	50-135			
						106	50-135			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36565**	Analysis Method:	**8082A**
QC Batch Method:	3535(Pest/PCB)	Analysis Description:	Polychlorinated Biphenyls by Gas Chromatography
Preparation Started:	11/26/2008		

Blank: B112608GPBWLH

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Aroclor-1016	ND	ug/L	1			0.05	
Aroclor-1221	ND	ug/L	1			0.05	
Aroclor-1232	ND	ug/L	1			0.05	
Aroclor-1242	ND	ug/L	1			0.05	
Aroclor-1248	ND	ug/L	1			0.05	
Aroclor-1254	ND	ug/L	1			0.05	
Aroclor-1260	ND	ug/L	1			0.05	
Aroclor-1262	ND	ug/L	1			0.05	
Aroclor-1268	ND	ug/L	1			0.05	
Surrogates:					% Rec		
Decachlorobiphenyl			1		89	32-149	
Tetrachloro-m-xylene			1		61	10-129	

LCS: S112608GPBWLH
LCS Duplicate: S112608GPBWLH2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Aroclor-1016	0.64	ug/L	1	0.500	129	45-150			
	0.51			0.500	102	45-150	23	20	#
Aroclor-1260	0.62	ug/L	1	0.500	124	48-148			
	0.52			0.500	105	48-148	17	20	
Surrogates:									
Decachlorobiphenyl			1		129	32-149			
					101	32-149			
Tetrachloro-m-xylene			1		86	10-129			
					72	10-129			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36722**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	12/03/2008		

Blank: B120308MVOWY1

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Acetone	ND	ug/L	1		20	
Benzene	ND	ug/L	1		1	
Bromobenzene	ND	ug/L	1		1	
Bromochloromethane	ND	ug/L	1		1	
Bromodichloromethane	ND	ug/L	1		1	
Bromoform	ND	ug/L	1		1	
Bromomethane	ND	ug/L	1		1	
2-Butanone	ND	ug/L	1		10	
n-Butylbenzene	ND	ug/L	1		1	
sec-Butylbenzene	ND	ug/L	1		1	
tert-Butylbenzene	ND	ug/L	1		1	
Carbon disulfide	ND	ug/L	1		1	
Carbon tetrachloride	ND	ug/L	1		1	
Chlorobenzene	ND	ug/L	1		1	
Chloroethane	ND	ug/L	1		1	
Chloroform	ND	ug/L	1		1	
Chloromethane	ND	ug/L	1		5	
2-Chlorotoluene	ND	ug/L	1		1	
4-Chlorotoluene	ND	ug/L	1		1	
1,2-Dibromo-3-chloropro	ND	ug/L	1		1	
Dibromochloromethane	ND	ug/L	1		1	
1,2-Dibromoethane	ND	ug/L	1		1	
Dibromomethane	ND	ug/L	1		1	
1,2-Dichlorobenzene	ND	ug/L	1		1	
1,3-Dichlorobenzene	ND	ug/L	1		1	
1,4-Dichlorobenzene	ND	ug/L	1		1	
Dichlorodifluoromethane	ND	ug/L	1		1	
1,1-Dichloroethane	ND	ug/L	1		1	
1,2-Dichloroethane	ND	ug/L	1		1	
1,1-Dichloroethene	ND	ug/L	1		1	
trans-1,2-Dichloroethene	ND	ug/L	1		1	
cis-1,2-Dichloroethene	ND	ug/L	1		1	
1,2-Dichloropropane	ND	ug/L	1		1	
1,3-Dichloropropane	ND	ug/L	1		1	
2,2-Dichloropropane	ND	ug/L	1		1	
1,1-Dichloropropene	ND	ug/L	1		1	
cis-1,3-Dichloropropene	ND	ug/L	1		1	
trans-1,3-Dichloropropene	ND	ug/L	1		1	
Ethylbenzene	ND	ug/L	1		1	
Hexachlorobutadiene	ND	ug/L	1		1	
2-Hexanone	ND	ug/L	1		10	
Isopropylbenzene	ND	ug/L	1		1	
4-Isopropyltoluene	ND	ug/L	1		1	
Methyl tert-butyl ether	ND	ug/L	1		1	
4-Methyl-2-pentanone	ND	ug/L	1		10	
Methylene chloride	ND	ug/L	1		5	
Naphthalene	ND	ug/L	1		5	
n-Propylbenzene	ND	ug/L	1		1	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36722**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	12/03/2008		

Blank: B120308MVOWY1

Analyte	Blank Result	Units	DF	Detection Limit Threshold		Control Limit	Qualifiers
Styrene	ND	ug/L	1			1	
1,1,1,2-Tetrachloroethane	ND	ug/L	1			1	
1,1,2,2-Tetrachloroethane	ND	ug/L	1			1	
Tetrachloroethene	ND	ug/L	1			1	
Toluene	ND	ug/L	1			1	
1,2,3-Trichlorobenzene	ND	ug/L	1			1	
1,2,4-Trichlorobenzene	ND	ug/L	1			1	
1,1,1-Trichloroethane	ND	ug/L	1			1	
1,1,2-Trichloroethane	ND	ug/L	1			1	
Trichloroethene	ND	ug/L	1			1	
Trichlorofluoromethane	ND	ug/L	1			1	
1,2,3-Trichloropropane	ND	ug/L	1			1	
1,2,4-Trimethylbenzene	ND	ug/L	1			1	
1,3,5-Trimethylbenzene	ND	ug/L	1			1	
Vinyl chloride	ND	ug/L	1			0.2	
m,p-Xylene	ND	ug/L	1			2	
o-Xylene	ND	ug/L	1			1	
Surrogates:					% Rec		
4-Bromofluorobenzene			1		99	75-120	
Dibromofluoromethane			1		104	85-115	
1,2-Dichloroethane-d4			1		101	70-120	
Toluene-d8			1		98	85-120	

LCS: S120308MVOWY1

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Acetone	46	ug/L	1	50.0	92	40-140	
Benzene	51	ug/L	1	50.0	103	80-120	
Bromobenzene	53	ug/L	1	50.0	107	75-125	
Bromochloromethane	49	ug/L	1	50.0	98	65-130	
Bromodichloromethane	51	ug/L	1	50.0	102	75-120	
Bromoform	49	ug/L	1	50.0	97	70-130	
Bromomethane	52	ug/L	1	50.0	103	30-145	
2-Butanone	47	ug/L	1	50.0	94	30-150	
n-Butylbenzene	55	ug/L	1	50.0	111	70-135	
sec-Butylbenzene	51	ug/L	1	50.0	102	70-125	
tert-Butylbenzene	50	ug/L	1	50.0	99	70-130	
Carbon disulfide	45	ug/L	1	50.0	91	35-160	
Carbon tetrachloride	54	ug/L	1	50.0	108	65-140	
Chlorobenzene	52	ug/L	1	50.0	105	80-120	
Chloroethane	51	ug/L	1	50.0	102	60-135	
Chloroform	50	ug/L	1	50.0	101	65-135	
Chloromethane	53	ug/L	1	50.0	105	40-125	
2-Chlorotoluene	53	ug/L	1	50.0	106	75-125	
4-Chlorotoluene	53	ug/L	1	50.0	106	75-130	
1,2-Dibromo-3-chloropro	49	ug/L	1	50.0	99	50-130	
Dibromochloromethane	52	ug/L	1	50.0	104	60-135	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36722**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	12/03/2008		

LCS: S120308MVOWY1

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane	48	ug/L	1	50.0	97	80-120	
Dibromomethane	50	ug/L	1	50.0	99	75-125	
1,2-Dichlorobenzene	52	ug/L	1	50.0	103	70-120	
1,3-Dichlorobenzene	52	ug/L	1	50.0	104	75-125	
1,4-Dichlorobenzene	50	ug/L	1	50.0	100	75-125	
Dichlorodifluoromethane	55	ug/L	1	50.0	109	30-155	
1,1-Dichloroethane	52	ug/L	1	50.0	104	70-135	
1,2-Dichloroethane	50	ug/L	1	50.0	100	70-130	
1,1-Dichloroethene	57	ug/L	1	50.0	114	70-130	
trans-1,2-Dichloroethene	52	ug/L	1	50.0	103	60-140	
cis-1,2-Dichloroethene	51	ug/L	1	50.0	102	70-125	
1,2-Dichloropropane	52	ug/L	1	50.0	105	75-125	
1,3-Dichloropropane	47	ug/L	1	50.0	95	75-125	
2,2-Dichloropropane	51	ug/L	1	50.0	103	60-135	
1,1-Dichloropropene	56	ug/L	1	50.0	113	75-130	
cis-1,3-Dichloropropene	56	ug/L	1	50.0	111	70-130	
trans-1,3-Dichloropropene	48	ug/L	1	50.0	95	55-140	
Ethylbenzene	51	ug/L	1	50.0	102	75-125	
Hexachlorobutadiene	52	ug/L	1	50.0	104	50-140	
2-Hexanone	52	ug/L	1	50.0	105	55-130	
Isopropylbenzene	55	ug/L	1	50.0	111	75-125	
4-Isopropyltoluene	57	ug/L	1	50.0	113	75-130	
Methyl tert-butyl ether	49	ug/L	1	50.0	97	65-125	
4-Methyl-2-pentanone	52	ug/L	1	50.0	105	60-135	
Methylene chloride	49	ug/L	1	50.0	98	55-140	
Naphthalene	52	ug/L	1	50.0	104	55-140	
n-Propylbenzene	54	ug/L	1	50.0	108	70-130	
Styrene	53	ug/L	1	50.0	106	65-135	
1,1,1,2-Tetrachloroethane	50	ug/L	1	50.0	101	80-130	
1,1,2,2-Tetrachloroethane	51	ug/L	1	50.0	101	65-130	
Tetrachloroethene	55	ug/L	1	50.0	110	45-150	
Toluene	50	ug/L	1	50.0	100	75-120	
1,2,3-Trichlorobenzene	51	ug/L	1	50.0	102	55-140	
1,2,4-Trichlorobenzene	51	ug/L	1	50.0	102	65-135	
1,1,1-Trichloroethane	54	ug/L	1	50.0	108	65-130	
1,1,2-Trichloroethane	48	ug/L	1	50.0	95	75-125	
Trichloroethene	54	ug/L	1	50.0	109	70-125	
Trichlorofluoromethane	53	ug/L	1	50.0	107	60-145	
1,2,3-Trichloropropane	47	ug/L	1	50.0	94	75-125	
1,2,4-Trimethylbenzene	53	ug/L	1	50.0	107	75-130	
1,3,5-Trimethylbenzene	55	ug/L	1	50.0	111	75-130	
Vinyl chloride	53	ug/L	1	50.0	106	50-145	
m,p-Xylene	100	ug/L	1	100	101	75-130	
o-Xylene	50	ug/L	1	50.0	100	80-120	
Surrogates:							
4-Bromofluorobenzene			1		105	75-120	
Dibromofluoromethane			1		99	85-115	
1,2-Dichloroethane-d4			1		100	70-120	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36722**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	12/03/2008		

LCS: S120308MVOWY1

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Surrogates:							
Toluene-d8			1		99	85-120	

Matrix Spike: LAQA0805-001MS Parent Sample: LAQA0805-001

Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Acetone	44	ug/L	1	50.0	ND	86	40-140			
	45			50.0		86	40-140	0	30	
Benzene	51	ug/L	1	50.0	ND	103	80-120			
	49			50.0		99	80-120	4	30	
Bromobenzene	52	ug/L	1	50.0	ND	105	75-125			
	51			50.0		102	75-125	2	30	
Bromochloromethane	49	ug/L	1	50.0	ND	98	65-130			
	48			50.0		96	65-130	2	30	
Bromodichloromethane	50	ug/L	1	50.0	ND	100	75-120			
	48			50.0		96	75-120	4	30	
Bromoform	45	ug/L	1	50.0	ND	90	70-130			
	45			50.0		89	70-130	1	30	
Bromomethane	51	ug/L	1	50.0	ND	101	30-145			
	50			50.0		99	30-145	2	30	
2-Butanone	44	ug/L	1	50.0	ND	88	30-150			
	41			50.0		83	30-150	6	30	
n-Butylbenzene	54	ug/L	1	50.0	ND	108	70-135			
	53			50.0		106	70-135	2	30	
sec-Butylbenzene	51	ug/L	1	50.0	ND	102	70-125			
	50			50.0		99	70-125	3	30	
tert-Butylbenzene	51	ug/L	1	50.0	ND	102	70-130			
	49			50.0		99	70-130	3	30	
Carbon disulfide	46	ug/L	1	50.0	ND	92	35-160			
	45			50.0		90	35-160	2	30	
Carbon tetrachloride	53	ug/L	1	50.0	ND	105	65-140			
	51			50.0		102	65-140	4	30	
Chlorobenzene	52	ug/L	1	50.0	ND	104	80-120			
	50			50.0		101	80-120	3	30	
Chloroethane	51	ug/L	1	50.0	ND	102	60-135			
	51			50.0		101	60-135	0	30	
Chloroform	49	ug/L	1	50.0	ND	99	65-135			
	49			50.0		97	65-135	2	30	
Chloromethane	51	ug/L	1	50.0	ND	102	40-125			
	50			50.0		100	40-125	2	30	
2-Chlorotoluene	52	ug/L	1	50.0	ND	105	75-125			
	51			50.0		103	75-125	2	30	
4-Chlorotoluene	52	ug/L	1	50.0	ND	103	75-130			
	51			50.0		101	75-130	2	30	
1,2-Dibromo-3-chloropro	48	ug/L	1	50.0	ND	96	50-130			
	49			50.0		98	50-130	2	30	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36722**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: LAQA0805-001MS Parent Sample: LAQA0805-001
Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Chlorodibromomethane	49	ug/L	1	50.0	ND	98	60-135			
	48			50.0		96	60-135	2	30	
1,2-Dibromoethane	47	ug/L	1	50.0	ND	94	80-120			
	46			50.0		92	80-120	2	30	
Dibromomethane	49	ug/L	1	50.0	ND	99	75-125			
	47			50.0		95	75-125	4	30	
1,2-Dichlorobenzene	51	ug/L	1	50.0	ND	101	70-120			
	50			50.0		99	70-120	2	30	
1,3-Dichlorobenzene	51	ug/L	1	50.0	ND	102	75-125			
	50			50.0		101	75-125	1	30	
1,4-Dichlorobenzene	49	ug/L	1	50.0	ND	98	75-125			
	48			50.0		96	75-125	2	30	
Dichlorodifluoromethane	51	ug/L	1	50.0	ND	102	30-155			
	48			50.0		96	30-155	5	30	
1,1-Dichloroethane	52	ug/L	1	50.0	ND	105	70-135			
	51			50.0		101	70-135	4	30	
1,2-Dichloroethane	47	ug/L	1	50.0	ND	95	70-130			
	46			50.0		92	70-130	3	30	
1,1-Dichloroethene	57	ug/L	1	50.0	ND	115	70-130			
	56			50.0		112	70-130	3	30	
trans-1,2-Dichloroethene	51	ug/L	1	50.0	ND	102	60-140			
	50			50.0		101	60-140	2	30	
cis-1,2-Dichloroethene	51	ug/L	1	50.0	ND	102	70-125			
	50			50.0		99	70-125	3	30	
1,2-Dichloropropane	51	ug/L	1	50.0	ND	102	75-125			
	51			50.0		101	75-125	1	30	
1,3-Dichloropropane	46	ug/L	1	50.0	ND	91	75-125			
	44			50.0		88	75-125	4	30	
2,2-Dichloropropane	48	ug/L	1	50.0	ND	96	70-135			
	46			50.0		92	70-135	4	30	
1,1-Dichloropropene	57	ug/L	1	50.0	ND	113	75-130			
	54			50.0		109	75-130	4	30	
cis-1,3-Dichloropropene	52	ug/L	1	50.0	ND	105	70-130			
	51			50.0		102	70-130	3	30	
trans-1,3-Dichloropropene	45	ug/L	1	50.0	ND	89	55-140			
	43			50.0		87	55-140	3	30	
Ethylbenzene	50	ug/L	1	50.0	ND	100	75-125			
	48			50.0		97	75-125	4	30	
Hexachlorobutadiene	49	ug/L	1	50.0	ND	99	50-140			
	48			50.0		97	50-140	2	30	
2-Hexanone	44	ug/L	1	50.0	ND	88	55-130			
	45			50.0		90	55-130	2	30	
Isopropylbenzene	55	ug/L	1	50.0	ND	111	75-125			
	54			50.0		108	75-125	2	30	
4-Isopropyltoluene	56	ug/L	1	50.0	ND	112	75-130			
	55			50.0		110	75-130	2	30	

Pace Analytical Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36722**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: LAQA0805-001MS — Parent Sample: LAQA0805-001

Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Methyl tert-butyl ether	46	ug/L	1	50.0	ND	93	65-125			
	47			50.0		94	65-125	2	30	
4-Methyl-2-pentanone	47	ug/L	1	50.0	ND	94	60-135			
	47			50.0		95	60-135	0	30	
Methylene chloride	49	ug/L	1	50.0	ND	98	55-140			
	48			50.0		97	55-140	1	30	
Naphthalene	52	ug/L	1	50.0	ND	103	55-140			
	51			50.0		102	55-140	1	30	
n-Propylbenzene	54	ug/L	1	50.0	ND	109	70-130			
	54			50.0		107	70-130	1	30	
Styrene	52	ug/L	1	50.0	ND	104	65-135			
	51			50.0		102	65-135	2	30	
1,1,1,2-Tetrachloroethane	50	ug/L	1	50.0	ND	100	80-130			
	50			50.0		99	80-130	1	30	
1,1,2,2-Tetrachloroethane	53	ug/L	1	50.0	ND	105	65-130			
	51			50.0		102	65-130	3	30	
Tetrachloroethene	48	ug/L	1	50.0	ND	96	45-150			
	46			50.0		92	45-150	4	30	
Toluene	50	ug/L	1	50.0	ND	99	75-120			
	48			50.0		96	75-120	4	30	
1,2,3-Trichlorobenzene	50	ug/L	1	50.0	ND	100	55-140			
	50			50.0		100	55-140	0	30	
1,2,4-Trichlorobenzene	50	ug/L	1	50.0	ND	100	65-135			
	51			50.0		101	65-135	1	30	
1,1,1-Trichloroethane	53	ug/L	1	50.0	ND	106	65-130			
	52			50.0		103	65-130	3	30	
1,1,2-Trichloroethane	47	ug/L	1	50.0	ND	93	75-125			
	45			50.0		90	75-125	3	30	
Trichloroethene	53	ug/L	1	50.0	ND	106	70-125			
	51			50.0		101	70-125	5	30	
Trichlorofluoromethane	52	ug/L	1	50.0	ND	104	60-145			
	51			50.0		102	60-145	2	30	
1,2,3-Trichloropropane	45	ug/L	1	50.0	ND	90	75-125			
	45			50.0		90	75-125	0	30	
1,2,4-Trimethylbenzene	54	ug/L	1	50.0	ND	108	75-130			
	53			50.0		106	75-130	2	30	
1,3,5-Trimethylbenzene	55	ug/L	1	50.0	ND	110	75-130			
	54			50.0		108	75-130	2	30	
Vinyl chloride	51	ug/L	1	50.0	ND	103	50-145			
	51			50.0		101	50-145	2	30	
m,p-Xylene	99	ug/L	1	100	ND	99	75-130			
	97			100		97	75-130	2	30	
o-Xylene	51	ug/L	1	50.0	ND	101	80-120			
	49			50.0		99	80-120	3	30	
Xylenes, Total	150	ug/L	1	150	ND	100	75-130			
	150			150		98	75-130	2	30	

Surrogates:

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Quality Control Results

Project:	Brix Maritime-Joint Source Control	SDG Number:	HCI0802
Project Number:		Project Manager:	Leon Lahiere

QC Batch(es):	**Q36722**	Analysis Method:	**8260B**
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:			

Matrix Spike: LAQA0805-001MS Parent Sample: LAQA0805-001
Matrix Spike Duplicate: LAQA0805-001MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Surrogates:										
4-Bromofluorobenzene			1			104	72-128			
						107	72-128			
Dibromofluoromethane			1			103	76-127			
						102	76-127			
1,2-Dichloroethane-d4			1			96	66-133			
						98	66-133			
Toluene-d8			1			100	75-130			
						102	75-130			

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Notes and Definitions

SDG No: **HCI0802**

Report Specific Notes:

ND	The analyte of interest was not detected, to the limit of detection indicated
J	The value reported is below the routine reporting limit and should be considered an estimate
#	RPD outside established control limits
(P5)	One or more results used to calculate RPD less than 5 times the Reporting Limit

Laboratory Reporting Conventions:

DF	Dilution factor
Detection Limit Threshold	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value.
MDL	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value. Detection Limit Thresholds are listed on the report only if the data has been evaluated below the Reporting Limit. Results between the Reporting Limit and the Detection Limit Threshold are reported as estimated results.
IDL	Instrument Detection Limit. IDLs are in instrument basis units. Reported results for samples are normalized appropriately using the preparation and analysis steps performed.
Reporting Limit	The minimum detection limit for reporting unqualified results under routine laboratory operating conditions. Typically this is the PQL but it may be a different concentration on a project-specific basis.
QC Batch Group	Quality Control Batch Group. The entity that links analytical results and supporting quality control results.
% Rec	Percent recovery.
Limits	The upper and lower control limits for spike recoveries.
RPD	Relative Percent Difference. The relative difference between duplicate results (matrix spike, blank spike, or sample duplicate) expressed as a percentage.
RPD Limit	The maximum RPD allowed for a set of duplicate measurements (see RPD).
Spike conc.	The measured concentration, in sample basis units, of a spiked sample.
PQL	Practical Quantitation Limit. The quantitation limit achievable by the laboratory under routine operating conditions. The PQL will be normalized for deviations from these conditions such as dilutions, dry weight adjustment, etc.
LCS	Laboratory Control Sample

PACE ANALYTICAL SERVICES, INC. - SAMPLE CONFIRMATION LOG

Mtx	Sample ID (SDG-#)	VTSR	Collected On	Client ID	160.2 Total Suspended Solids, Water	8082 PCB Aroclors Water -Low	8260-1 VOAs Water Full list	8270 SPE SIM level PNA Water (Routine)	8270 SVOAs Water Low level Phthalates	NWTPH Dx Water Low Concentration	NWTPH Gx Water
WD	HCI0802-001	11/21/2008 08:30 AM	11/20/2008 09:10 AM	OUTFALL A	IN	IN	IN	IN	IN	IN	A-
WD	HCI0802-002	11/21/2008 08:30 AM	11/20/2008 08:35 AM	OUTFALL B	IN	IN	IN	IN	IN	IN	A-

Approved By: **On:**
Notes:

Samples identified with a '*' client has requested QC for

LEGEND: -:Started , +:Completed , IN:Logged In , P:Preparation , A:Analysis , X:Cancelled, PL:Pre-logged
Matrices: Water=WD

FORM LTL-PM-8.0

LS#9548
SDG: HCI0802

Sample Custody Record

HARTCROWSER

Samples Shipped To: PACE

- ☐ 1910 Fairview Ave., E., Seattle WA 98102
- ☐ 2250 Denali St., #705, Anchorage, AK 99503
- ☐ Five Centerpointe Dr., Lake Oswego, OR 97035
- ☐ 301 E. Ocean Blvd., #1950, Long Beach CA 90802
- ☐ 120 3rd Ave S., #110, Edmonds, WA 98020
- ☐ 811 Church Hill Rd., # 236, Cherry Hill, NJ 08002

JOB 15634.00/Task 8 LAB NUMBER

PROJECT NAME Brix Maritime

HART CROWSER CONTACT Loan Lahiere

SAMPLED BY: Chris Martin

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	NW-TPH-Gx	NW TPH-Dx	VOCs 8260B	PAHs 8270M-SIM-LOW	PCBs 8082-LOW	Phthalates 8270-SIM	TSS 160.2							NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
outfall A		Grab	11-20-08	9:10	W	X	X	X	X	X	X	X							10	
outfall B		Grab	11-20-08	8:35	W	X	X	X	X	X	X	X							10	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	11-20-08	[signature]	11/20
SIGNATURE Chris Martin	TIME	SIGNATURE Richard Davis	TIME
PRINT NAME HC	1500	PRINT NAME PCS	3:05PM
COMPANY		COMPANY	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
		[signature]	11/21/08
SIGNATURE	TIME	SIGNATURE	TIME
PRINT NAME		PRINT NAME Natalie Taylor	8:30AM
COMPANY		COMPANY Pace	

SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS

TOTAL NUMBER OF CONTAINERS

SAMPLE RECEIPT INFORMATION
CUSTODY SEALS ☐ YES ☐ NO ☐ N/A
GOOD CONDITION ☐ YES ☐ NO
TEMPERATURE
SHIPMENT METHOD ☐ HAND ☐ COURIER ☐ OVERNIGHT

COOLER NO.: STORAGE LOCATION:

See Lab Work Order No. for Other Contract Requirements

TURNAROUND TIME:
☐ 24 HOURS ☐ 1 WEEK
☐ 48 HOURS ☒ STANDARD
☐ 72 HOURS OTHER

White and Yellow Copies to Lab Pink to Project Manager Lab to Return White Copy to Hart Crowser Gold to Sample Custodian

Cooler Receipt Form
Pace Analytical Services, Inc.

SDG: HCI0802 Taken By: Client

Cooler: AAF697 Transferred: Courier

COC #:

Project: Brix Maritime-Joint Source Control (Hart Crowser, Inc.)

Date samples were received at the laboratory: **11/21/2008**

Date cooler was opened: **11/21/2008 8:30AM**

A. PRELIMINARY EXAMINATION PHASE:

1. Did cooler come with a shipping slip (airbill, etc.)? ..... **NO**
   if YES, record carrier name and airbill number:
2. Were custody seals unbroken and intact at the date and time of arrival? ..... **INTACT**
   Date On Custody Seal: **11/20/2008** Custody Seals Description: **1 in front**
3. Were custody papers sealed in a plastic bag and taped inside to the lid? ..... **YES**
4. Did you screen samples for radioactivity using the Geiger Counter? ..... **NO**
5. Were custody papers filled out properly (ink, signed, etc.)? ..... **YES**
6. Did you sign custody papers in the appropriate place? ..... **YES**
7. If required, was enough cooling material present? ..... **YES**
8. Have designated person initial here to acknowledge receipt of cooler: NAT

B. LOG-IN PHASE:

Date samples were logged-in: **11/21/2008 2:44PM**

Logged-in by Natalie Taylor (sign) Natalie Taylor 11/21/08

9. Describe type of packing in cooler:

10. Were all bottles sealed in separate plastic bags? ..... **YES**
11. Were labels in good condition? ..... **YES**
12. Were all bottle labels complete (ID,date,time signature,preservative,etc.)? ..... **YES**
13. Did all bottle labels agree with custody papers? ..... **YES**
14. Were correct containers used for the tests indicated? ..... **YES**
15. Were the correct pHs observed? ..... **YES**
16. Was a sufficient amount of sample sent for tests indicated? ..... **YES**
17. Were bubbles absent in VOA samples? ..... **YES**
18. Temperatures: **3.5, 3.8, 3.0**

DISCREPANCIES:

Date Printed: 11/21/2008 14:50

Cooler Receipt Form
Pace Analytical Services, Inc.

SDG: HCI0802 Taken By: Client

Cooler: AAD069 Transferred: Courier

COC #:

Project: Brix Maritime-Joint Source Control (Hart Crowser, Inc.)

Date samples were received at the laboratory: **11/21/2008**

Date cooler was opened: **11/21/2008 8:30AM**

A. PRELIMINARY EXAMINATION PHASE:

1. Did cooler come with a shipping slip (airbill, etc.)? ..... **NO**
   if YES, record carrier name and airbill number:
2. Were custody seals unbroken and intact at the date and time of arrival? ..... **INTACT**
   Date On Custody Seal: **11/20/2008** Custody Seals Description: **1 in front**
3. Were custody papers sealed in a plastic bag and taped inside to the lid? ..... **YES**
4. Did you screen samples for radioactivity using the Geiger Counter? ..... **NO**
5. Were custody papers filled out properly (ink, signed, etc.)? ..... **YES**
6. Did you sign custody papers in the appropriate place? ..... **YES**
7. If required, was enough cooling material present? ..... **YES**
8. Have designated person initial here to acknowledge receipt of cooler: KNG

B. LOG-IN PHASE:

KNG Date samples were logged-in: **11/21/2008 3:14PM**

Logged-in by Natalie Taylor for (sign) [signature]

9. Describe type of packing in cooler:

10. Were all bottles sealed in separate plastic bags? ..... **YES**
11. Were labels in good condition? ..... **YES**
12. Were all bottle labels complete (ID,date,time signature,preservative,etc.)? ..... **YES**
13. Did all bottle labels agree with custody papers? ..... **YES**
14. Were correct containers used for the tests indicated? ..... **YES**
15. Were the correct pHs observed? ..... **YES**
16. Was a sufficient amount of sample sent for tests indicated? ..... **YES**
17. Were bubbles absent in VOA samples? ..... **NO**
18. Temperatures: **3.7, 3.1, 3.3**

DISCREPANCIES:

Date Printed: 11/21/2008 15:22

Supplemental Sample Receipt Log
Pace Analytical Services, Inc.

SDG: HCI0802
Cooler: AAD069
Temperatures: 3.7, 3.1, 3.3
COC #:

Sample	Bottle #	Bottle Description	pH	Bubbles
HCI0802-002	0001	1000 mL boston round, amber glass	7	N/A
	0002	1000 mL boston round, amber glass	7	N/A
	0003	1000 mL boston round, amber glass	7	N/A
	0004	1000 mL boston round, amber glass	7	N/A
	0005	1000 mL boston round, amber glass, HCl	<2	N/A
	0006	1000 mL boston round, amber glass, HCl	<2	N/A
	0007	1000 mL cylinder, poly	7	N/A
	0008	40 ml OTWS, clear glass, HCl	N/C	< 1/4
	0009	40 ml OTWS, clear glass, HCl	N/C	None
	0010	40 ml OTWS, clear glass, HCl	N/C	None

Allowable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

Temperature	Allowable temperature range is 4+/- 2 degrees Celsius
Acid Preserved pH	pH must be less than 2
Base Preserved pH	pH must be greater than 12
NC	Not Checked for pH

Supplemental Sample Receipt Log
Pace Analytical Services, Inc.

SDG: HCI0802
Cooler: AAF697
Temperatures: 3.5, 3.8, 3.0
COC #:

Sample	Bottle #	Bottle Description	pH	Bubbles
HCI0802-001	0001	1000 mL boston round, amber glass	7	N/A
	0002	1000 mL boston round, amber glass	7	N/A
	0003	1000 mL boston round, amber glass	7	N/A
	0004	1000 mL boston round, amber glass	7	N/A
	0005	1000 mL boston round, amber glass, HCl	<2	N/A
	0006	1000 mL boston round, amber glass, HCl	<2	N/A
	0007	1000 mL cylinder, poly	7	N/A
	0008	40 ml OTWS, clear glass, HCl	N/C	None
	0009	40 ml OTWS, clear glass, HCl	N/C	None
	0010	40 ml OTWS, clear glass, HCl	N/C	None

Allowable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

Temperature	Allowable temperature range is 4+/- 2 degrees Celsius
Acid Preserved pH	pH must be less than 2
Base Preserved pH	pH must be greater than 12
NC	Not Checked for pH

May 21, 2009

Leon Lahiere
Hart Crowser
8910 SW Gemini Drive
Beaverton, OR 970087123

RE: Project: Brix-Portland
Pace Project No.: 251125

Dear Leon Lahiere:
Enclosed are the analytical results for sample(s) received by the laboratory on May 06, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Natalie Taylor

natalie.taylor@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: Brix-Portland
Pace Project No.: 251125

Washington Certification IDs

Washington Certification #: C1229
Oregon Certification #: WA200007
Florida/NELAP Certification #: E87617
Alaska CS Certification #: UST-025
Alaska Drinking Water Micro Certification #: WA01230
Alaska Drinking Water VOC Certification #: WA01-09
California Certification #: 01153CA

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: Brix-Portland
Pace Project No.: 251125

Lab ID	Sample ID	Matrix	Date Collected	Date Received
251125001	**Outfall A**	Water	05/04/09 16:00	05/06/09 10:30
251125002	**Outfall A**	Water	05/04/09 16:00	05/06/09 10:30
251125003	**Outfall B**	Water	05/04/09 15:25	05/06/09 10:30
251125004	**Outfall B**	Water	05/04/09 15:25	05/06/09 10:30

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: Brix-Portland
Pace Project No.: 251125

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
251125001	**Outfall A**	EPA 5030B/8260	ATH	71	PASI-S
		EPA 8082	JNH	11	PASI-S
		EPA 8270	JMW	12	PASI-S
		NWTPH-Dx	JNH	4	PASI-S
		NWTPH-Gx	JTA	3	PASI-S
		SM 2540D	ALB	1	PASI-S
251125002	**Outfall A**	EPA 8270	JMW	20	PASI-S
251125003	**Outfall B**	EPA 5030B/8260	ATH	71	PASI-S
		EPA 8082	JNH	11	PASI-S
		EPA 8270	JMW	12	PASI-S
		NWTPH-Dx	JNH	4	PASI-S
		NWTPH-Gx	JTA	3	PASI-S
		SM 2540D	ALB	1	PASI-S
251125004	**Outfall B**	EPA 8270	JMW	20	PASI-S

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for NWTPH-Dx. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **NWTPH-Gx**
Description: NWTPH-Gx GCV
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for NWTPH-Gx. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 8270**
Description: 8270 MSSV Semivolatile Organic
Client: Hart Crowser
Date: May 21, 2009

General Information:
4 samples were analyzed for EPA 8270. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/1044

S0: Surrogate recovery outside laboratory control limits.

- BLANK (Lab ID: 1166)
  - Nitrobenzene-d5 (S)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

QC Batch: OEXT/1044

B: Analyte was detected in the associated method blank.

- BLANK (Lab ID: 1166)
  - Fluoranthene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 8270**
Description: 8270 MSSV Semivolatile Organic
Client: Hart Crowser
Date: May 21, 2009

Additional Comments:

Analyte Comments:

QC Batch: OEXT/1044

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- Outfall A (Lab ID: 251125002)
  - 2-Fluorobiphenyl (S)
  - Nitrobenzene-d5 (S)
  - Terphenyl-d14 (S)
- Outfall B (Lab ID: 251125004)
  - 2-Fluorobiphenyl (S)
  - Nitrobenzene-d5 (S)
  - Terphenyl-d14 (S)

QC Batch: OEXT/1057

1n: Surrogate recovery outside control limits (not confirmed by re-analysis). Associated data may be biased low.

- Outfall A (Lab ID: 251125001)
  - Terphenyl-d14 (S)

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **SM 2540D**
Description: 2540D Total Suspended Solids
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125001** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.049	0.0031	1	05/11/09 16:07	05/14/09 04:43	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.049	0.0034	1	05/11/09 16:07	05/14/09 04:43	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/L	0.049		1	05/11/09 16:07	05/14/09 15:08	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/L	0.049		1	05/11/09 16:07	05/14/09 15:08	11100-14-4	
Tetrachloro-m-xylene (S)	68	%	10-129		1	05/11/09 16:07	05/14/09 04:43	877-09-8	
Decachlorobiphenyl (S)	86	%	32-149		1	05/11/09 16:07	05/14/09 04:43	2051-24-3	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Range	ND	mg/L	0.084	0.039	1	05/13/09 12:11	05/14/09 17:55		
Motor Oil Range	ND	mg/L	0.42	0.064	1	05/13/09 12:11	05/14/09 17:55	64742-65-0	
n-Octacosane (S)	91	%	50-150		1	05/13/09 12:11	05/14/09 17:55	630-02-4	
o-Terphenyl (S)	80	%	50-150		1	05/13/09 12:11	05/14/09 17:55	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		05/14/09 17:49		
a,a,a-Trifluorotoluene (S)	86	%	62-129		1		05/14/09 17:49	98-08-8	
4-Bromofluorobenzene (S)	94	%	61-121		1		05/14/09 17:49	460-00-4	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Butylbenzylphthalate	ND	ug/L	1.9	0.34	1	05/11/09 16:27	05/15/09 13:29	85-68-7	
Diethylphthalate	ND	ug/L	1.9	0.43	1	05/11/09 16:27	05/15/09 13:29	84-66-2	
Dimethylphthalate	ND	ug/L	1.9	0.36	1	05/11/09 16:27	05/15/09 13:29	131-11-3	
Di-n-butylphthalate	ND	ug/L	1.9	0.30	1	05/11/09 16:27	05/15/09 13:29	84-74-2	
Di-n-octylphthalate	ND	ug/L	1.9	0.56	1	05/11/09 16:27	05/15/09 13:29	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.9	0.42	1	05/11/09 16:27	05/15/09 13:29	117-81-7	
Nitrobenzene-d5 (S)	53	%	50-110		1	05/11/09 16:27	05/15/09 13:29	4165-60-0	
2-Fluorobiphenyl (S)	45	%	40-110		1	05/11/09 16:27	05/15/09 13:29	321-60-8	
Terphenyl-d14 (S)	48	%	50-135		1	05/11/09 16:27	05/15/09 13:29	1718-51-0	1n
Phenol-d6 (S)	17	%	10-115		1	05/11/09 16:27	05/15/09 13:29	13127-88-3	
2-Fluorophenol (S)	27	%	20-110		1	05/11/09 16:27	05/15/09 13:29	367-12-4	
2,4,6-Tribromophenol (S)	47	%	40-125		1	05/11/09 16:27	05/15/09 13:29	118-79-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**9.4**	ug/L	5.0	0.75	1		05/08/09 23:44	67-64-1	
Benzene	ND	ug/L	1.0	0.12	1		05/08/09 23:44	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.34	1		05/08/09 23:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.11	1		05/08/09 23:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.23	1		05/08/09 23:44	75-25-2	
Bromomethane	ND	ug/L	1.0	0.072	1		05/08/09 23:44	74-83-9	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125001** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
2-Butanone (MEK)	ND	ug/L	5.0	0.52	1		05/08/09 23:44	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.11	1		05/08/09 23:44	98-06-6	
Carbon disulfide	ND	ug/L	1.0	0.16	1		05/08/09 23:44	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		05/08/09 23:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		05/08/09 23:44	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		05/08/09 23:44	75-00-3	
Chloroform	ND	ug/L	1.0	0.15	1		05/08/09 23:44	67-66-3	
Chloromethane	ND	ug/L	1.0	0.20	1		05/08/09 23:44	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.098	1		05/08/09 23:44	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.13	1		05/08/09 23:44	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.38	1		05/08/09 23:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.12	1		05/08/09 23:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.20	1		05/08/09 23:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		05/08/09 23:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.25	1		05/08/09 23:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.20	1		05/08/09 23:44	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.19	1		05/08/09 23:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.23	1		05/08/09 23:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.074	1		05/08/09 23:44	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	0.50	1		05/08/09 23:44	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.12	1		05/08/09 23:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.32	1		05/08/09 23:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.22	1		05/08/09 23:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		05/08/09 23:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.22	1		05/08/09 23:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.27	1		05/08/09 23:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.094	1		05/08/09 23:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.086	1		05/08/09 23:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/08/09 23:44	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.27	1		05/08/09 23:44	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.57	1		05/08/09 23:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		05/08/09 23:44	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.074	1		05/08/09 23:44	99-87-6	
Methylene chloride	ND	ug/L	1.0	1.0	1		05/08/09 23:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.32	1		05/08/09 23:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		05/08/09 23:44	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	103-65-1	
Styrene	ND	ug/L	1.0	0.074	1		05/08/09 23:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		05/08/09 23:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		05/08/09 23:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	127-18-4	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125001** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Toluene	**1.1**	ug/L	1.0	0.21	1		05/08/09 23:44	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.11	1		05/08/09 23:44	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.15	1		05/08/09 23:44	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.20	1		05/08/09 23:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.19	1		05/08/09 23:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.22	1		05/08/09 23:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.24	1		05/08/09 23:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.37	1		05/08/09 23:44	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.086	1		05/08/09 23:44	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.27	1		05/08/09 23:44	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.15	1		05/08/09 23:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.27	1		05/08/09 23:44	1330-20-7	
o-Xylene	ND	ug/L	1.0	0.15	1		05/08/09 23:44	95-47-6	
4-Bromofluorobenzene (S)	107	%	82-116		1		05/08/09 23:44	460-00-4	
Dibromofluoromethane (S)	108	%	86-115		1		05/08/09 23:44	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	77-121		1		05/08/09 23:44	17060-07-0	
Toluene-d8 (S)	115	%	85-117		1		05/08/09 23:44	2037-26-5	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**12.0**	mg/L	2.0	2.0	1		05/11/09 12:00		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125002** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.0096	0.00091	1	05/08/09 15:57	05/14/09 20:38	83-32-9	
Acenaphthylene	ND	ug/L	0.0096	0.00082	1	05/08/09 15:57	05/14/09 20:38	208-96-8	
Anthracene	ND	ug/L	0.0096	0.00091	1	05/08/09 15:57	05/14/09 20:38	120-12-7	
Benzo(a)anthracene	**0.027**	ug/L	0.0096	0.0039	1	05/08/09 15:57	05/14/09 20:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.0096	0.0024	1	05/08/09 15:57	05/14/09 20:38	50-32-8	
Benzo(b)fluoranthene	**0.047**	ug/L	0.0096	0.0024	1	05/08/09 15:57	05/14/09 20:38	205-99-2	
Benzo(g,h,i)perylene	**0.10**	ug/L	0.0096	0.0040	1	05/08/09 15:57	05/14/09 20:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.0096	0.0031	1	05/08/09 15:57	05/14/09 20:38	207-08-9	
Chrysene	**0.038**	ug/L	0.0096	0.0043	1	05/08/09 15:57	05/14/09 20:38	218-01-9	
Dibenz(a,h)anthracene	**0.14**	ug/L	0.0096	0.0038	1	05/08/09 15:57	05/14/09 20:38	53-70-3	
Fluoranthene	**0.096**	ug/L	0.0096	0.0017	1	05/08/09 15:57	05/14/09 20:38	206-44-0	B
Fluorene	**0.13**	ug/L	0.0096	0.0012	1	05/08/09 15:57	05/14/09 20:38	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.099**	ug/L	0.0096	0.0058	1	05/08/09 15:57	05/14/09 20:38	193-39-5	
2-Methylnaphthalene	**0.013**	ug/L	0.0096	0.0019	1	05/08/09 15:57	05/14/09 20:38	91-57-6	B
Naphthalene	ND	ug/L	0.0096	0.0047	1	05/08/09 15:57	05/14/09 20:38	91-20-3	
Phenanthrene	**0.053**	ug/L	0.0096	0.0023	1	05/08/09 15:57	05/14/09 20:38	85-01-8	
Pyrene	**0.039**	ug/L	0.0096	0.0014	1	05/08/09 15:57	05/14/09 20:38	129-00-0	
Nitrobenzene-d5 (S)	96	%	50-110		1	05/08/09 15:57	05/14/09 20:38	4165-60-0	E
2-Fluorobiphenyl (S)	97	%	40-110		1	05/08/09 15:57	05/14/09 20:38	321-60-8	E
Terphenyl-d14 (S)	96	%	50-135		1	05/08/09 15:57	05/14/09 20:38	1718-51-0	E

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125003** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.0048	0.0031	1	05/11/09 16:07	05/14/09 05:16	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.0048	0.0034	1	05/11/09 16:07	05/14/09 05:16	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/L	0.0048		1	05/11/09 16:07	05/14/09 15:41	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/L	0.0048		1	05/11/09 16:07	05/14/09 15:41	11100-14-4	
Tetrachloro-m-xylene (S)	77	%	10-129		1	05/11/09 16:07	05/14/09 05:16	877-09-8	
Decachlorobiphenyl (S)	102	%	32-149		1	05/11/09 16:07	05/14/09 05:16	2051-24-3	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Range	**0.15**	mg/L	0.080	0.037	1	05/13/09 12:11	05/14/09 18:15		
Motor Oil Range	ND	mg/L	0.40	0.061	1	05/13/09 12:11	05/14/09 18:15	64742-65-0	
n-Octacosane (S)	95	%	50-150		1	05/13/09 12:11	05/14/09 18:15	630-02-4	
o-Terphenyl (S)	80	%	50-150		1	05/13/09 12:11	05/14/09 18:15	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		05/14/09 18:21		
a,a,a-Trifluorotoluene (S)	82	%	62-129		1		05/14/09 18:21	98-08-8	
4-Bromofluorobenzene (S)	91	%	61-121		1		05/14/09 18:21	460-00-4	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Butylbenzylphthalate	ND	ug/L	1.9	0.34	1	05/11/09 16:27	05/15/09 14:00	85-68-7	
Diethylphthalate	ND	ug/L	1.9	0.42	1	05/11/09 16:27	05/15/09 14:00	84-66-2	
Dimethylphthalate	ND	ug/L	1.9	0.36	1	05/11/09 16:27	05/15/09 14:00	131-11-3	
Di-n-butylphthalate	ND	ug/L	1.9	0.29	1	05/11/09 16:27	05/15/09 14:00	84-74-2	
Di-n-octylphthalate	ND	ug/L	1.9	0.56	1	05/11/09 16:27	05/15/09 14:00	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.9	0.42	1	05/11/09 16:27	05/15/09 14:00	117-81-7	
Nitrobenzene-d5 (S)	52	%	50-110		1	05/11/09 16:27	05/15/09 14:00	4165-60-0	
2-Fluorobiphenyl (S)	47	%	40-110		1	05/11/09 16:27	05/15/09 14:00	321-60-8	
Terphenyl-d14 (S)	53	%	50-135		1	05/11/09 16:27	05/15/09 14:00	1718-51-0	
Phenol-d6 (S)	15	%	10-115		1	05/11/09 16:27	05/15/09 14:00	13127-88-3	
2-Fluorophenol (S)	27	%	20-110		1	05/11/09 16:27	05/15/09 14:00	367-12-4	
2,4,6-Tribromophenol (S)	56	%	40-125		1	05/11/09 16:27	05/15/09 14:00	118-79-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**9.7**	ug/L	5.0	0.75	1		05/14/09 19:03	67-64-1	
Benzene	ND	ug/L	1.0	0.12	1		05/14/09 19:03	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.34	1		05/14/09 19:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.11	1		05/14/09 19:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.23	1		05/14/09 19:03	75-25-2	
Bromomethane	ND	ug/L	1.0	0.072	1		05/14/09 19:03	74-83-9	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125003** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
2-Butanone (MEK)	ND	ug/L	5.0	0.52	1		05/14/09 19:03	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.11	1		05/14/09 19:03	98-06-6	
Carbon disulfide	ND	ug/L	1.0	0.16	1		05/14/09 19:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		05/14/09 19:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		05/14/09 19:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		05/14/09 19:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.15	1		05/14/09 19:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.20	1		05/14/09 19:03	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.098	1		05/14/09 19:03	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.13	1		05/14/09 19:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.38	1		05/14/09 19:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.12	1		05/14/09 19:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.20	1		05/14/09 19:03	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		05/14/09 19:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.25	1		05/14/09 19:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.20	1		05/14/09 19:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.19	1		05/14/09 19:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.23	1		05/14/09 19:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.074	1		05/14/09 19:03	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	0.50	1		05/14/09 19:03	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.12	1		05/14/09 19:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.32	1		05/14/09 19:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.22	1		05/14/09 19:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		05/14/09 19:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.22	1		05/14/09 19:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.27	1		05/14/09 19:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.094	1		05/14/09 19:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.086	1		05/14/09 19:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/14/09 19:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.27	1		05/14/09 19:03	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.57	1		05/14/09 19:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		05/14/09 19:03	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.074	1		05/14/09 19:03	99-87-6	
Methylene chloride	ND	ug/L	1.0	1.0	1		05/14/09 19:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.32	1		05/14/09 19:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		05/14/09 19:03	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	103-65-1	
Styrene	ND	ug/L	1.0	0.074	1		05/14/09 19:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		05/14/09 19:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		05/14/09 19:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	127-18-4	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125003** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Toluene	ND	ug/L	1.0	0.21	1		05/14/09 19:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.11	1		05/14/09 19:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.15	1		05/14/09 19:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.20	1		05/14/09 19:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.19	1		05/14/09 19:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.22	1		05/14/09 19:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.24	1		05/14/09 19:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.37	1		05/14/09 19:03	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.086	1		05/14/09 19:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.27	1		05/14/09 19:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.15	1		05/14/09 19:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.27	1		05/14/09 19:03	1330-20-7	
o-Xylene	ND	ug/L	1.0	0.15	1		05/14/09 19:03	95-47-6	
4-Bromofluorobenzene (S)	104	%	82-116		1		05/14/09 19:03	460-00-4	
Dibromofluoromethane (S)	106	%	86-115		1		05/14/09 19:03	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	77-121		1		05/14/09 19:03	17060-07-0	
Toluene-d8 (S)	107	%	85-117		1		05/14/09 19:03	2037-26-5	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**15.0**	mg/L	2.0	2.0	1		05/11/09 12:00		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125004** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Acenaphthene	**0.024**	ug/L	0.0095	0.00090	1	05/08/09 15:57	05/14/09 21:00	83-32-9	
Acenaphthylene	ND	ug/L	0.0095	0.00081	1	05/08/09 15:57	05/14/09 21:00	208-96-8	
Anthracene	**0.012**	ug/L	0.0095	0.00090	1	05/08/09 15:57	05/14/09 21:00	120-12-7	
Benzo(a)anthracene	**0.16**	ug/L	0.0095	0.0039	1	05/08/09 15:57	05/14/09 21:00	56-55-3	
Benzo(a)pyrene	**0.27**	ug/L	0.0095	0.0023	1	05/08/09 15:57	05/14/09 21:00	50-32-8	
Benzo(b)fluoranthene	**0.34**	ug/L	0.0095	0.0024	1	05/08/09 15:57	05/14/09 21:00	205-99-2	
Benzo(g,h,i)perylene	**0.29**	ug/L	0.0095	0.0040	1	05/08/09 15:57	05/14/09 21:00	191-24-2	
Benzo(k)fluoranthene	**0.18**	ug/L	0.0095	0.0030	1	05/08/09 15:57	05/14/09 21:00	207-08-9	
Chrysene	**0.24**	ug/L	0.0095	0.0043	1	05/08/09 15:57	05/14/09 21:00	218-01-9	
Dibenz(a,h)anthracene	**0.19**	ug/L	0.0095	0.0038	1	05/08/09 15:57	05/14/09 21:00	53-70-3	
Fluoranthene	**0.50**	ug/L	0.0095	0.0017	1	05/08/09 15:57	05/14/09 21:00	206-44-0	B
Fluorene	**0.15**	ug/L	0.0095	0.0012	1	05/08/09 15:57	05/14/09 21:00	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.30**	ug/L	0.0095	0.0058	1	05/08/09 15:57	05/14/09 21:00	193-39-5	
2-Methylnaphthalene	**0.023**	ug/L	0.0095	0.0019	1	05/08/09 15:57	05/14/09 21:00	91-57-6	B
Naphthalene	ND	ug/L	0.0095	0.0047	1	05/08/09 15:57	05/14/09 21:00	91-20-3	
Phenanthrene	**0.22**	ug/L	0.0095	0.0023	1	05/08/09 15:57	05/14/09 21:00	85-01-8	
Pyrene	**0.33**	ug/L	0.0095	0.0014	1	05/08/09 15:57	05/14/09 21:00	129-00-0	
Nitrobenzene-d5 (S)	89	%	50-110		1	05/08/09 15:57	05/14/09 21:00	4165-60-0	E
2-Fluorobiphenyl (S)	86	%	40-110		1	05/08/09 15:57	05/14/09 21:00	321-60-8	E
Terphenyl-d14 (S)	90	%	50-135		1	05/08/09 15:57	05/14/09 21:00	1718-51-0	E

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1044 | Analysis Method: EPA 8270
QC Batch Method: EPA 3510 | Analysis Description: 8270 Water MSSV
Associated Lab Samples: 251125002, 251125004

METHOD BLANK: 1166 | Matrix: Water
Associated Lab Samples: 251125002, 251125004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	0.015	0.010	05/14/09 15:46	
Acenaphthene	ug/L	ND	0.010	05/14/09 15:46	
Acenaphthylene	ug/L	ND	0.010	05/14/09 15:46	
Anthracene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(a)anthracene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(a)pyrene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(b)fluoranthene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(g,h,i)perylene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(k)fluoranthene	ug/L	ND	0.010	05/14/09 15:46	
Chrysene	ug/L	ND	0.010	05/14/09 15:46	
Dibenz(a,h)anthracene	ug/L	ND	0.010	05/14/09 15:46	
Fluoranthene	ug/L	0.024	0.010	05/14/09 15:46	B
Fluorene	ug/L	ND	0.010	05/14/09 15:46	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.010	05/14/09 15:46	
Naphthalene	ug/L	ND	0.010	05/14/09 15:46	
Phenanthrene	ug/L	ND	0.010	05/14/09 15:46	
Pyrene	ug/L	ND	0.010	05/14/09 15:46	
2-Fluorobiphenyl (S)	%	109	40-110	05/14/09 21:23	
Nitrobenzene-d5 (S)	%	121	50-110	05/14/09 21:23	S0
Terphenyl-d14 (S)	%	117	50-135	05/14/09 21:23	

LABORATORY CONTROL SAMPLE & LCSD: 1167 1168

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Methylnaphthalene	ug/L	1.2	0.85	0.84	68	67	20-98		30	
Acenaphthene	ug/L	1.2	0.97	1.0	77	81	42-91		30	
Acenaphthylene	ug/L	1.2	0.89	0.84	71	68	29-94		30	
Anthracene	ug/L	1.2	0.95	0.90	76	72	42-103		30	
Benzo(a)anthracene	ug/L	1.2	1.1	1.1	85	84	44-107		30	
Benzo(a)pyrene	ug/L	1.2	0.92	0.89	73	71	27-106		30	
Benzo(b)fluoranthene	ug/L	1.2	1.1	1.1	91	92	51-112		30	
Benzo(g,h,i)perylene	ug/L	1.2	0.90	0.86	72	69	28-115		30	
Benzo(k)fluoranthene	ug/L	1.2	0.92	0.88	73	70	50-110		30	
Chrysene	ug/L	1.2	0.93	0.91	74	73	47-110		30	
Dibenz(a,h)anthracene	ug/L	1.2	0.92	0.88	74	71	26-118		30	
Fluoranthene	ug/L	1.2	1.0	1.0	82	80	51-112		30	
Fluorene	ug/L	1.2	1.0	1.1	82	86	54-94		30	
Indeno(1,2,3-cd)pyrene	ug/L	1.2	0.94	0.87	75	70	28-107		30	
Naphthalene	ug/L	1.2	0.81	0.79	65	63	20-99		30	
Phenanthrene	ug/L	1.2	0.96	0.91	76	73	48-109		30	
Pyrene	ug/L	1.2	0.88	0.86	71	69	41-112		30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1167 1168

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Fluorobiphenyl (S)	%				82	75	40-110			
Nitrobenzene-d5 (S)	%				89	89	50-110			
Terphenyl-d14 (S)	%				95	95	50-135			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1057 | Analysis Method: EPA 8270
QC Batch Method: EPA 3510 | Analysis Description: 8270 Water MSSV
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1363 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
bis(2-Ethylhexyl)phthalate	ug/L	ND	2.0	05/15/09 11:58	
Butylbenzylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Di-n-butylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Di-n-octylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Diethylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Dimethylphthalate	ug/L	ND	2.0	05/15/09 11:58	
2,4,6-Tribromophenol (S)	%	52	40-125	05/15/09 11:58	
2-Fluorobiphenyl (S)	%	46	40-110	05/15/09 11:58	
2-Fluorophenol (S)	%	33	20-110	05/15/09 11:58	
Nitrobenzene-d5 (S)	%	58	50-110	05/15/09 11:58	
Phenol-d6 (S)	%	19	10-115	05/15/09 11:58	
Terphenyl-d14 (S)	%	54	50-135	05/15/09 11:58	

LABORATORY CONTROL SAMPLE & LCSD: 1364 1365

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
bis(2-Ethylhexyl)phthalate	ug/L	20	13.0	13.0	65	65	47-146	0	30	
Butylbenzylphthalate	ug/L	20	11.3	12.0	57	60	44-108	5	30	
Di-n-butylphthalate	ug/L	20	13.4	13.7	67	69	53-107	2	30	
Di-n-octylphthalate	ug/L	20	11.0	11.0	55	55	54-109	0	30	
Diethylphthalate	ug/L	20	12.4	13.1	62	66	20-126	6	30	
Dimethylphthalate	ug/L	20	12.0	12.4	60	62	54-99	4	30	
2,4,6-Tribromophenol (S)	%				53	58	40-125			
2-Fluorobiphenyl (S)	%				50	53	40-110			
2-Fluorophenol (S)	%				38	32	20-110			
Nitrobenzene-d5 (S)	%				65	61	50-110			
Phenol-d6 (S)	%				24	20	10-115			
Terphenyl-d14 (S)	%				52	52	50-135			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: GCV/1030 | Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx | Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1686 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	05/14/09 17:17	
4-Bromofluorobenzene (S)	%	101	50-150	05/14/09 17:17	
a,a,a-Trifluorotoluene (S)	%	95	50-150	05/14/09 17:17	

LABORATORY CONTROL SAMPLE: 1687

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	356	142	50-163	
4-Bromofluorobenzene (S)	%			107	50-150	
a,a,a-Trifluorotoluene (S)	%			98	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1688 2017

Parameter	Units	251130005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	250	250	375	400	150	160	50-163	6	30	
4-Bromofluorobenzene (S)	%						99	97	50-150			
a,a,a-Trifluorotoluene (S)	%						92	93	50-150			

SAMPLE DUPLICATE: 1690

Parameter	Units	251130005 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		30	
4-Bromofluorobenzene (S)	%	99	94	5		
a,a,a-Trifluorotoluene (S)	%	91	88	3		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: MSV/1049
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 251125003

METHOD BLANK: 1748
Matrix: Water
Associated Lab Samples: 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1-Dichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1-Dichloroethene	ug/L	ND	1.0	05/14/09 17:06	
1,1-Dichloropropene	ug/L	ND	1.0	05/14/09 17:06	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dichloroethene (Total)	ug/L	ND	2.0	05/14/09 17:06	
1,2-Dichloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	05/14/09 17:06	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,3-Dichloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
2,2-Dichloropropane	ug/L	ND	1.0	05/14/09 17:06	
2-Butanone (MEK)	ug/L	ND	5.0	05/14/09 17:06	
2-Chlorotoluene	ug/L	ND	1.0	05/14/09 17:06	
2-Hexanone	ug/L	ND	5.0	05/14/09 17:06	
4-Chlorotoluene	ug/L	ND	1.0	05/14/09 17:06	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/14/09 17:06	
Acetone	ug/L	ND	5.0	05/14/09 17:06	
Benzene	ug/L	ND	1.0	05/14/09 17:06	
Bromobenzene	ug/L	ND	1.0	05/14/09 17:06	
Bromochloromethane	ug/L	ND	1.0	05/14/09 17:06	
Bromodichloromethane	ug/L	ND	1.0	05/14/09 17:06	
Bromoform	ug/L	ND	1.0	05/14/09 17:06	
Bromomethane	ug/L	ND	1.0	05/14/09 17:06	
Carbon disulfide	ug/L	ND	1.0	05/14/09 17:06	
Carbon tetrachloride	ug/L	ND	1.0	05/14/09 17:06	
Chlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
Chloroethane	ug/L	ND	1.0	05/14/09 17:06	
Chloroform	ug/L	ND	1.0	05/14/09 17:06	
Chloromethane	ug/L	ND	1.0	05/14/09 17:06	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/14/09 17:06	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/14/09 17:06	
Dibromochloromethane	ug/L	ND	1.0	05/14/09 17:06	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

METHOD BLANK: 1748 Matrix: Water

Associated Lab Samples: 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/14/09 17:06	
Dichlorodifluoromethane	ug/L	ND	1.0	05/14/09 17:06	
Ethylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/14/09 17:06	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	05/14/09 17:06	
m&p-Xylene	ug/L	ND	2.0	05/14/09 17:06	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/14/09 17:06	
Methylene chloride	ug/L	ND	1.0	05/14/09 17:06	
n-Butylbenzene	ug/L	ND	1.0	05/14/09 17:06	
n-Propylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Naphthalene	ug/L	ND	1.0	05/14/09 17:06	
o-Xylene	ug/L	ND	1.0	05/14/09 17:06	
p-Isopropyltoluene	ug/L	ND	1.0	05/14/09 17:06	
sec-Butylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Styrene	ug/L	ND	1.0	05/14/09 17:06	
tert-Butylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Tetrachloroethene	ug/L	ND	1.0	05/14/09 17:06	
Toluene	ug/L	ND	1.0	05/14/09 17:06	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/14/09 17:06	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/14/09 17:06	
Trichloroethene	ug/L	ND	1.0	05/14/09 17:06	
Trichlorofluoromethane	ug/L	ND	1.0	05/14/09 17:06	
Vinyl chloride	ug/L	ND	1.0	05/14/09 17:06	
Xylene (Total)	ug/L	ND	3.0	05/14/09 17:06	
1,2-Dichloroethane-d4 (S)	%	104	77-121	05/14/09 17:06	
4-Bromofluorobenzene (S)	%	103	82-116	05/14/09 17:06	
Dibromofluoromethane (S)	%	103	86-115	05/14/09 17:06	
Toluene-d8 (S)	%	107	85-117	05/14/09 17:06	

LABORATORY CONTROL SAMPLE & LCSD: 1749 1750

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.6	8.3	96	83	73-126	15	30	
1,1,1-Trichloroethane	ug/L	10	9.8	8.1	98	81	69-135	19	30	
1,1,2,2-Tetrachloroethane	ug/L	10	10.2	8.9	102	89	69-123	13	30	
1,1,2-Trichloroethane	ug/L	10	9.6	8.4	96	84	76-114	13	30	
1,1-Dichloroethane	ug/L	10	10.1	8.5	101	85	74-124	17	30	
1,1-Dichloroethene	ug/L	10	9.6	8.1	96	81	69-139	17	30	
1,1-Dichloropropene	ug/L	10	10.9	8.8	109	88	77-134	21	30	
1,2,3-Trichlorobenzene	ug/L	10	10.6	9.3	106	93	63-136	13	30	
1,2,3-Trichloropropane	ug/L	10	10.1	8.6	101	86	66-118	15	30	
1,2,4-Trichlorobenzene	ug/L	10	10.6	9.2	106	92	68-129	14	30	
1,2,4-Trimethylbenzene	ug/L	10	10.4	9.0	104	90	72-126	15	30	
1,2-Dibromo-3-chloropropane	ug/L	10	9.7	8.6	97	86	64-124	12	30	
1,2-Dibromoethane (EDB)	ug/L	10	10.0	8.7	100	87	78-117	14	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1749 1750

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dichlorobenzene	ug/L	10	10.2	8.6	102	86	74-118	17	30	
1,2-Dichloroethane	ug/L	10	9.7	8.5	97	85	73-127	14	30	
1,2-Dichloroethene (Total)	ug/L	20	20.4	17.1	102	85	60-140	18	30	
1,2-Dichloropropane	ug/L	10	9.9	8.4	99	84	72-126	16	30	
1,3,5-Trimethylbenzene	ug/L	10	10.5	8.9	105	89	68-129	16	30	
1,3-Dichlorobenzene	ug/L	10	10.1	8.4	101	84	73-119	17	30	
1,3-Dichloropropane	ug/L	10	10.3	8.6	103	86	74-119	17	30	
1,4-Dichlorobenzene	ug/L	10	9.9	8.3	99	83	73-115	17	30	
2,2-Dichloropropane	ug/L	10	10.7	8.8	107	88	46-157	19	30	
2-Butanone (MEK)	ug/L	10	9.6	7.5	96	75	65-138	24	30	
2-Chlorotoluene	ug/L	10	10.4	8.5	104	85	68-122	19	30	
2-Hexanone	ug/L	10	8.9	8.0	89	80	60-135	11	30	
4-Chlorotoluene	ug/L	10	10.6	8.8	106	88	70-122	18	30	
4-Methyl-2-pentanone (MIBK)	ug/L	10	8.9	7.5	89	75	70-135	17	30	
Acetone	ug/L	10	8.2	7.1	82	71	58-146	14	30	
Benzene	ug/L	10	9.9	8.4	99	84	75-124	16	30	
Bromobenzene	ug/L	10	10.2	8.4	102	84	74-116	19	30	
Bromochloromethane	ug/L	10	10	8.6	100	86	75-128	15	30	
Bromodichloromethane	ug/L	10	9.9	8.3	99	83	77-126	18	30	
Bromoform	ug/L	10	9.5	8.3	95	83	61-131	13	30	
Bromomethane	ug/L	10	9.6	7.6	96	76	58-139	23	30	
Carbon disulfide	ug/L	10	7.5	6.4	75	64	39-122	16	30	
Carbon tetrachloride	ug/L	10	10	8.3	100	83	67-136	18	30	
Chlorobenzene	ug/L	10	9.7	8.3	97	83	78-115	15	30	
Chloroethane	ug/L	10	10.1	8.2	101	82	58-137	20	30	
Chloroform	ug/L	10	9.3	7.7	93	77	75-124	19	30	
Chloromethane	ug/L	10	10.5	8.7	105	87	50-129	19	30	
cis-1,2-Dichloroethene	ug/L	10	10.7	8.9	107	89	78-126	18	30	
cis-1,3-Dichloropropene	ug/L	10	10.8	9.3	108	93	78-159	15	30	
Dibromochloromethane	ug/L	10	10.2	8.7	102	87	81-125	16	30	
Dibromomethane	ug/L	10	9.8	8.4	98	84	75-124	15	30	
Dichlorodifluoromethane	ug/L	10	12.2	10.4	122	104	30-140	16	30	
Ethylbenzene	ug/L	10	10.3	8.7	103	87	76-124	17	30	
Hexachloro-1,3-butadiene	ug/L	10	10.7	8.7	107	87	55-132	20	30	
Isopropylbenzene (Cumene)	ug/L	10	10.2	8.8	102	88	73-127	15	30	
m&p-Xylene	ug/L	20	21.6	17.9	108	90	75-124	18	30	
Methyl-tert-butyl ether	ug/L	10	10.0	8.8	100	88	72-130	14	30	
Methylene chloride	ug/L	10	9.3	8.0	93	80	69-124	15	30	
n-Butylbenzene	ug/L	10	10.4	8.7	104	87	65-131	18	30	
n-Propylbenzene	ug/L	10	10.6	8.8	106	88	69-129	19	30	
Naphthalene	ug/L	10	9.3	8.2	93	82	69-135	12	30	
o-Xylene	ug/L	10	9.6	8.3	96	83	76-121	15	30	
p-Isopropyltoluene	ug/L	10	10.6	8.9	106	89	69-133	16	30	
sec-Butylbenzene	ug/L	10	10.3	8.6	103	86	67-132	18	30	
Styrene	ug/L	10	10.3	8.8	103	88	76-121	15	30	
tert-Butylbenzene	ug/L	10	10.1	8.7	101	87	66-132	15	30	
Tetrachloroethene	ug/L	10	10.0	8.6	100	86	70-127	15	30	
Toluene	ug/L	10	9.9	8.4	99	84	75-124	16	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1749 1750

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/L	10	9.7	8.2	97	82	72-129	17	30	
trans-1,3-Dichloropropene	ug/L	10	9.2	8.0	92	80	69-122	15	30	
Trichloroethene	ug/L	10	9.9	8.2	99	82	78-124	19	30	
Trichlorofluoromethane	ug/L	10	9.7	8.0	97	80	60-147	19	30	
Vinyl chloride	ug/L	10	10.3	8.6	103	86	56-136	18	30	
Xylene (Total)	ug/L	30	31.2	26.2	104	87	76-123	17	30	
1,2-Dichloroethane-d4 (S)	%				102	102	77-121			
4-Bromofluorobenzene (S)	%				107	105	82-116			
Dibromofluoromethane (S)	%				104	103	86-115			
Toluene-d8 (S)	%				107	108	85-117			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1068 | Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510 | Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1615 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range	mg/L	ND	0.080	05/14/09 17:17	
Motor Oil Range	mg/L	ND	0.40	05/14/09 17:17	
n-Octacosane (S)	%	92	50-150	05/14/09 17:17	
o-Terphenyl (S)	%	81	50-150	05/14/09 17:17	

LABORATORY CONTROL SAMPLE: 1616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range	mg/L	5	3.6	71	51-147	
Motor Oil Range	mg/L	5	4.5	91	20-160	
n-Octacosane (S)	%			91	50-150	
o-Terphenyl (S)	%			80	50-150	

MATRIX SPIKE SAMPLE: 1617

Parameter	Units	251130005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Diesel Range	mg/L	ND	5.2	3.9	74	50-150	
Motor Oil Range	mg/L	ND	5.2	5.2	100	20-160	
n-Octacosane (S)	%				85	50-150	
o-Terphenyl (S)	%				79	50-150	

SAMPLE DUPLICATE: 1618

Parameter	Units	251130005 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Range	mg/L	ND	ND		50	
Motor Oil Range	mg/L	ND	ND		50	
n-Octacosane (S)	%		91	1		
o-Terphenyl (S)	%		82	2		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: MSV/1038
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 251125001

METHOD BLANK: 1181
Matrix: Water
Associated Lab Samples: 251125001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1-Dichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1-Dichloroethene	ug/L	ND	1.0	05/08/09 14:12	
1,1-Dichloropropene	ug/L	ND	1.0	05/08/09 14:12	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dichloroethene (Total)	ug/L	ND	2.0	05/08/09 14:12	
1,2-Dichloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	05/08/09 14:12	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,3-Dichloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
2,2-Dichloropropane	ug/L	ND	1.0	05/08/09 14:12	
2-Butanone (MEK)	ug/L	ND	5.0	05/08/09 14:12	
2-Chlorotoluene	ug/L	ND	1.0	05/08/09 14:12	
2-Hexanone	ug/L	ND	5.0	05/08/09 14:12	
4-Chlorotoluene	ug/L	ND	1.0	05/08/09 14:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/08/09 14:12	
Acetone	ug/L	ND	5.0	05/08/09 14:12	
Benzene	ug/L	ND	1.0	05/08/09 14:12	
Bromobenzene	ug/L	ND	1.0	05/08/09 14:12	
Bromochloromethane	ug/L	ND	1.0	05/08/09 14:12	
Bromodichloromethane	ug/L	ND	1.0	05/08/09 14:12	
Bromoform	ug/L	ND	1.0	05/08/09 14:12	
Bromomethane	ug/L	ND	1.0	05/08/09 14:12	
Carbon disulfide	ug/L	ND	1.0	05/08/09 14:12	
Carbon tetrachloride	ug/L	ND	1.0	05/08/09 14:12	
Chlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
Chloroethane	ug/L	ND	1.0	05/08/09 14:12	
Chloroform	ug/L	ND	1.0	05/08/09 14:12	
Chloromethane	ug/L	ND	1.0	05/08/09 14:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/08/09 14:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/08/09 14:12	
Dibromochloromethane	ug/L	ND	1.0	05/08/09 14:12	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

METHOD BLANK: 1181 Matrix: Water

Associated Lab Samples: 251125001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/08/09 14:12	
Dichlorodifluoromethane	ug/L	ND	1.0	05/08/09 14:12	
Ethylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/08/09 14:12	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	05/08/09 14:12	
m&p-Xylene	ug/L	ND	2.0	05/08/09 14:12	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/08/09 14:12	
Methylene chloride	ug/L	ND	1.0	05/08/09 14:12	
n-Butylbenzene	ug/L	ND	1.0	05/08/09 14:12	
n-Propylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Naphthalene	ug/L	ND	1.0	05/08/09 14:12	
o-Xylene	ug/L	ND	1.0	05/08/09 14:12	
p-Isopropyltoluene	ug/L	ND	1.0	05/08/09 14:12	
sec-Butylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Styrene	ug/L	ND	1.0	05/08/09 14:12	
tert-Butylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Tetrachloroethene	ug/L	ND	1.0	05/08/09 14:12	
Toluene	ug/L	ND	1.0	05/08/09 14:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/08/09 14:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/08/09 14:12	
Trichloroethene	ug/L	ND	1.0	05/08/09 14:12	
Trichlorofluoromethane	ug/L	ND	1.0	05/08/09 14:12	
Vinyl chloride	ug/L	ND	1.0	05/08/09 14:12	
Xylene (Total)	ug/L	ND	3.0	05/08/09 14:12	
1,2-Dichloroethane-d4 (S)	%	114	77-121	05/08/09 14:12	
4-Bromofluorobenzene (S)	%	108	82-116	05/08/09 14:12	
Dibromofluoromethane (S)	%	113	86-115	05/08/09 14:12	
Toluene-d8 (S)	%	113	85-117	05/08/09 14:12	

LABORATORY CONTROL SAMPLE & LCSD: 1182 1183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.3	10.3	103	103	73-126	.1	30	
1,1,1-Trichloroethane	ug/L	10	11.0	10.8	110	108	69-135	1	30	
1,1,2,2-Tetrachloroethane	ug/L	10	10.6	10.4	106	104	69-123	2	30	
1,1,2-Trichloroethane	ug/L	10	10.2	9.9	102	99	76-114	3	30	
1,1-Dichloroethane	ug/L	10	10.9	10.9	109	109	74-124	.7	30	
1,1-Dichloroethene	ug/L	10	11.9	11.5	119	115	69-139	4	30	
1,1-Dichloropropene	ug/L	10	11.0	10.8	110	108	77-134	2	30	
1,2,3-Trichlorobenzene	ug/L	10	10.1	10.1	101	101	63-136	.2	30	
1,2,3-Trichloropropane	ug/L	10	9.7	9.6	97	96	66-118	2	30	
1,2,4-Trichlorobenzene	ug/L	10	10.1	10.1	101	101	68-129	.07	30	
1,2,4-Trimethylbenzene	ug/L	10	10.1	10.2	101	102	72-126	1	30	
1,2-Dibromo-3-chloropropane	ug/L	10	9.7	10	97	100	64-124	3	30	
1,2-Dibromoethane (EDB)	ug/L	10	10.1	10.4	101	104	78-117	3	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1182 1183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dichlorobenzene	ug/L	10	10.5	10.6	105	106	74-118	1	30	
1,2-Dichloroethane	ug/L	10	10.8	10.3	108	103	73-127	5	30	
1,2-Dichloroethene (Total)	ug/L	20	21.3	21.3	107	106	60-140	.3	30	
1,2-Dichloropropane	ug/L	10	10	9.8	100	98	72-126	2	30	
1,3,5-Trimethylbenzene	ug/L	10	10	10.3	100	103	68-129	3	30	
1,3-Dichlorobenzene	ug/L	10	10.2	10.4	102	104	73-119	2	30	
1,3-Dichloropropane	ug/L	10	10.0	10.1	100	101	74-119	.9	30	
1,4-Dichlorobenzene	ug/L	10	10.3	10.2	103	102	73-115	.7	30	
2,2-Dichloropropane	ug/L	10	9.8	9.8	98	98	46-157	.2	30	
2-Butanone (MEK)	ug/L	10	9.0	8.8	90	88	65-138	3	30	
2-Chlorotoluene	ug/L	10	9.8	10.1	98	101	68-122	3	30	
2-Hexanone	ug/L	10	8.6	8.1	86	81	60-135	5	30	
4-Chlorotoluene	ug/L	10	10.2	10.6	102	106	70-122	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	10	9.2	9.0	92	90	70-135	2	30	
Acetone	ug/L	10	8.9	9.4	89	94	58-146	5	30	
Benzene	ug/L	10	10.5	10.2	105	102	75-124	3	30	
Bromobenzene	ug/L	10	10.2	10.3	102	103	74-116	2	30	
Bromochloromethane	ug/L	10	11.2	11.1	112	111	75-128	1	30	
Bromodichloromethane	ug/L	10	10.5	10.5	105	105	77-126	.5	30	
Bromoform	ug/L	10	10.1	10.0	101	100	61-131	.7	30	
Bromomethane	ug/L	10	11.9	12.1	119	121	58-139	1	30	
Carbon disulfide	ug/L	10	9.2	8.7	92	87	39-122	5	30	
Carbon tetrachloride	ug/L	10	11.3	10.9	113	109	67-136	3	30	
Chlorobenzene	ug/L	10	10.4	10.5	104	105	78-115	1	30	
Chloroethane	ug/L	10	12.3	12.0	123	120	58-137	2	30	
Chloroform	ug/L	10	10.7	10.7	107	107	75-124	.6	30	
Chloromethane	ug/L	10	10.3	10.3	103	103	50-129	.9	30	
cis-1,2-Dichloroethene	ug/L	10	10.8	10.9	108	109	78-126	.7	30	
cis-1,3-Dichloropropene	ug/L	10	10.6	10.6	106	106	78-159	.4	30	
Dibromochloromethane	ug/L	10	10.4	10.6	104	106	81-125	2	30	
Dibromomethane	ug/L	10	10.6	10.6	106	106	75-124	.2	30	
Dichlorodifluoromethane	ug/L	10	8.5	8.2	85	82	30-140	3	30	
Ethylbenzene	ug/L	10	9.8	9.9	98	99	76-124	1	30	
Hexachloro-1,3-butadiene	ug/L	10	10.5	10.5	105	105	55-132	.03	30	
Isopropylbenzene (Cumene)	ug/L	10	10.5	10.5	105	105	73-127	.5	30	
m&p-Xylene	ug/L	20	20.0	20.0	100	100	75-124	.2	30	
Methyl-tert-butyl ether	ug/L	10	7.9	7.7	79	77	72-130	3	30	
Methylene chloride	ug/L	10	10.6	10.1	106	101	69-124	5	30	
n-Butylbenzene	ug/L	10	10.2	10.2	102	102	65-131	.07	30	
n-Propylbenzene	ug/L	10	10.1	10.3	101	103	69-129	2	30	
Naphthalene	ug/L	10	9.0	8.9	90	89	69-135	1	30	
o-Xylene	ug/L	10	9.4	9.7	94	97	76-121	4	30	
p-Isopropyltoluene	ug/L	10	10.4	10.6	104	106	69-133	1	30	
sec-Butylbenzene	ug/L	10	10.4	10.6	104	106	67-132	2	30	
Styrene	ug/L	10	10.5	10.6	105	106	76-121	.8	30	
tert-Butylbenzene	ug/L	10	10.2	10.3	102	103	66-132	1	30	
Tetrachloroethene	ug/L	10	10.8	11.1	108	111	70-127	2	30	
Toluene	ug/L	10	10.6	10.8	106	108	75-124	2	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1182 1183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/L	10	10.6	10.4	106	104	72-129	1	30	
trans-1,3-Dichloropropene	ug/L	10	8.9	9.0	89	90	69-122	1	30	
Trichloroethene	ug/L	10	10.5	10.4	105	104	78-124	1	30	
Trichlorofluoromethane	ug/L	10	11.5	10.9	115	109	60-147	5	30	
Vinyl chloride	ug/L	10	10.8	10.5	108	105	56-136	3	30	
Xylene (Total)	ug/L	30	29.4	29.7	98	99	76-123	1	30	
1,2-Dichloroethane-d4 (S)	%				113	108	77-121			
4-Bromofluorobenzene (S)	%				107	109	82-116			
Dibromofluoromethane (S)	%				115	113	86-115			
Toluene-d8 (S)	%				109	110	85-117			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1053 | Analysis Method: EPA 8082
QC Batch Method: EPA 3510 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1339 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1262 (Aroclor 1262)	ug/L	ND	0.050	05/14/09 14:35	
PCB-1268 (Aroclor 1268)	ug/L	ND	0.050	05/14/09 14:35	
Decachlorobiphenyl (S)	%	110	32-149	05/14/09 14:35	
Decachlorobiphenyl (S)	%	95	32-149	05/14/09 03:04	
Tetrachloro-m-xylene (S)	%	79	10-129	05/14/09 03:04	
Tetrachloro-m-xylene (S)	%	84	10-129	05/14/09 14:35	

LABORATORY CONTROL SAMPLE & LCSD: 1340 1341

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	50	54.4	49.4	109	99	78-117	10	20	
PCB-1221 (Aroclor 1221)	ug/L		ND	ND					20	
PCB-1232 (Aroclor 1232)	ug/L		ND	ND					20	
PCB-1242 (Aroclor 1242)	ug/L		ND	ND					20	
PCB-1248 (Aroclor 1248)	ug/L		ND	ND					20	
PCB-1254 (Aroclor 1254)	ug/L		ND	ND					20	
PCB-1260 (Aroclor 1260)	ug/L	50	61.6	60.7	123	121	53-155	1	20	
Decachlorobiphenyl (S)	%				89	87	32-149			
Tetrachloro-m-xylene (S)	%				69	65	10-129			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: WET/1051 | Analysis Method: SM 2540D
QC Batch Method: SM 2540D | Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1361 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	2.0	05/11/09 12:00	

SAMPLE DUPLICATE: 1362

Parameter	Units	251125001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	12.0	14.0	15	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: Brix-Portland
Pace Project No.: 251125

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-S	Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

1n	Surrogate recovery outside control limits (not confirmed by re-analysis). Associated data may be biased low.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
S0	Surrogate recovery outside laboratory control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Brix-Portland
Pace Project No.: 251125

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
251125002	**Outfall A**	EPA 3510	OEXT/1044	EPA 8270	MSSV/1009
251125004	**Outfall B**	EPA 3510	OEXT/1044	EPA 8270	MSSV/1009
251125001	**Outfall A**	EPA 5030B/8260	MSV/1038		
251125001	**Outfall A**	EPA 3510	OEXT/1053	EPA 8082	GCSV/1034
251125003	**Outfall B**	EPA 3510	OEXT/1053	EPA 8082	GCSV/1034
251125001	**Outfall A**	SM 2540D	WET/1051		
251125003	**Outfall B**	SM 2540D	WET/1051		
251125001	**Outfall A**	EPA 3510	OEXT/1057	EPA 8270	MSSV/1010
251125003	**Outfall B**	EPA 3510	OEXT/1057	EPA 8270	MSSV/1010
251125001	**Outfall A**	EPA 3510	OEXT/1068	NWTPH-Dx	GCSV/1039
251125003	**Outfall B**	EPA 3510	OEXT/1068	NWTPH-Dx	GCSV/1039
251125001	**Outfall A**	NWTPH-Gx	GCV/1030		
251125003	**Outfall B**	NWTPH-Gx	GCV/1030		
251125003	**Outfall B**	EPA 5030B/8260	MSV/1049		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical®
www.pacelabs.com

WO# 251125

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1241388

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Hart Crowser, Inc	Report To: Leon Lahiere	Attention: Leon Lahiere
Address: 8910 SW Gemini Dr. Beaverton, OR 97008	Copy To:	Company Name: Hart Crowser, Inc.
		Address: 8910 SW Gemini, Beaverton OR
Email To: leon.lahiere@hartcrowser.com	Purchase Order No.: 15634-00/Task 08	Pace Quote Reference: Seattle-092208
Phone: 971-327-9103 Fax:	Project Name: Brix - Portland	Pace Project Manager: Lisa Domenighini
Requested Due Date/TAT: STD	Project Number: 15634-00/Task 08	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER Plt SW

Site Location STATE: OR

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	PCBs-8082-Low	PAHs-8270SIM low	Phthalates-Low	NWTPH-Dx	NWTPH-Gx	VOCs 8260	TSS 1602	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Outfall A	WT	G	5-4-09	1600	5-4-09	1615	14	12										X	X	X	X	X	X	X		
2	Outfall B	WT	G	5-4-09	1525	5-4-09	1535	15	13										X	X	X	X	X	X	X		
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	[signature] Hart Crowser	5-5-09	1030	[signature] Brix PCS	5-5-9	1045	
				[signature] Pace	5/6/09	1030	

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brian Block

SIGNATURE of SAMPLER: [signature] For

DATE Signed (MM/DD/YY): 5-5-09

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Instructions for completing Chain of Custody (COC)

1. **Section A and B:** Complete all Client information at top of sheet: company name, address, phone, fax, contact (the person to contact if there are questions, and who will receive the final report.), e-mail address (if available), PO#, Project Name and/or Project Number as you would like to see it appear on the report.

2. **Section C:** Invoice Information: Billing information is included in this section. This information should include the name and address of the person receiving the invoice.

3. Quote Reference should be completed if a quotation was provided by Pace Analytical. The Project Manager, and Profile No. will be completed by Pace Analytical Services.

4. **Site Location:** A separate COC must be filled out for each day of sample collection. Record the two letter postal code for the US state in which the samples were collected.

5. **Regulatory Agency:** List the program that is guiding the work to ensure proper regulations are followed.

6. **Section D:** Complete a Sample Description in the "SAMPLE ID' section as you would like it to appear on the laboratory report. The following information should also be included: the sample matrix, sample type (G (grab) or C (composite). When collecting a composite, the start time and end time should be documented in the respective boxes. The collection time for a grab (G) sample should be entered in the boxes marked 'Composite End/Grab'). Sample temp at collection (if required by state), the total number of containers, and preservative used.

7. Mark if the sample was filtered in the field by marking Y or N in 'Filtered' row by the Analysis requested.

8. Requested Analysis: List the required analysis and methods on the lines provided and place a check in the column for the samples requiring the analysis. Additional comments should be referenced in the bottom left hand corner or include attachments for extended lists of parameters.

9. The sampler should print their name in the space provided and sign their name followed by the date of the sampling event at the bottom of the COC in the spaces designated for 'SAMPLER NAME AND SIGNATURE'.

10. When relinquishing custody of the samples to a representative of the laboratory or other organization, indicate the Item Numbers of those samples being transferred; sign relinquished by, date and time, and include your affiliation.

***Important Note:**

Standard Turnaround Time is 2 Weeks/10 business days. Results will be delivered by end of business on the date due unless other arrangements have been made with your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be included on the chain of custody in the Additional Comments section.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hart-Crowser Project # 251125

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other PCS

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☑ Other Zip lock bags

Thermometer Used Horiba-132013 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature AAF725 4.3,5.3,5.5 AAE955 5.8,6.2,6.1 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 5/6/09 PB

Temp should be above freezing to 6°C

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1. 1241388
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: Water				
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes	☐No		Initial when completed ____ Lot # of added preservative ____
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

May 21, 2009

Leon Lahiere
Hart Crowser
8910 SW Gemini Drive
Beaverton, OR 970087123

RE: Project: Brix-Portland
Pace Project No.: 251125

Dear Leon Lahiere:
Enclosed are the analytical results for sample(s) received by the laboratory on May 06, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Natalie Taylor

natalie.taylor@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: Brix-Portland
Pace Project No.: 251125

Washington Certification IDs

Washington Certification #: C1229
Oregon Certification #: WA200007
Florida/NELAP Certification #: E87617
Alaska CS Certification #: UST-025
Alaska Drinking Water Micro Certification #: WA01230
Alaska Drinking Water VOC Certification #: WA01-09
California Certification #: 01153CA

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: Brix-Portland
Pace Project No.: 251125

Lab ID	Sample ID	Matrix	Date Collected	Date Received
251125001	**Outfall A**	Water	05/04/09 16:00	05/06/09 10:30
251125002	**Outfall A**	Water	05/04/09 16:00	05/06/09 10:30
251125003	**Outfall B**	Water	05/04/09 15:25	05/06/09 10:30
251125004	**Outfall B**	Water	05/04/09 15:25	05/06/09 10:30

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: Brix-Portland
Pace Project No.: 251125

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
251125001	**Outfall A**	EPA 5030B/8260	ATH	71	PASI-S
		EPA 8082	JNH	11	PASI-S
		EPA 8270	JMW	12	PASI-S
		NWTPH-Dx	JNH	4	PASI-S
		NWTPH-Gx	JTA	3	PASI-S
		SM 2540D	ALB	1	PASI-S
251125002	**Outfall A**	EPA 8270	JMW	20	PASI-S
251125003	**Outfall B**	EPA 5030B/8260	ATH	71	PASI-S
		EPA 8082	JNH	11	PASI-S
		EPA 8270	JMW	12	PASI-S
		NWTPH-Dx	JNH	4	PASI-S
		NWTPH-Gx	JTA	3	PASI-S
		SM 2540D	ALB	1	PASI-S
251125004	**Outfall B**	EPA 8270	JMW	20	PASI-S

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for NWTPH-Dx. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **NWTPH-Gx**
Description: NWTPH-Gx GCV
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for NWTPH-Gx. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 8270**
Description: 8270 MSSV Semivolatile Organic
Client: Hart Crowser
Date: May 21, 2009

General Information:
4 samples were analyzed for EPA 8270. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/1044

S0: Surrogate recovery outside laboratory control limits.

- BLANK (Lab ID: 1166)
  - Nitrobenzene-d5 (S)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

QC Batch: OEXT/1044

B: Analyte was detected in the associated method blank.

- BLANK (Lab ID: 1166)
  - Fluoranthene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 8270**
Description: 8270 MSSV Semivolatile Organic
Client: Hart Crowser
Date: May 21, 2009

Additional Comments:

Analyte Comments:

QC Batch: OEXT/1044

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- Outfall A (Lab ID: 251125002)
  - 2-Fluorobiphenyl (S)
  - Nitrobenzene-d5 (S)
  - Terphenyl-d14 (S)
- Outfall B (Lab ID: 251125004)
  - 2-Fluorobiphenyl (S)
  - Nitrobenzene-d5 (S)
  - Terphenyl-d14 (S)

QC Batch: OEXT/1057

1n: Surrogate recovery outside control limits (not confirmed by re-analysis). Associated data may be biased low.

- Outfall A (Lab ID: 251125001)
  - Terphenyl-d14 (S)

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Brix-Portland
Pace Project No.: 251125

Method: **SM 2540D**
Description: 2540D Total Suspended Solids
Client: Hart Crowser
Date: May 21, 2009

General Information:
2 samples were analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125001** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.049	0.0031	1	05/11/09 16:07	05/14/09 04:43	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.049	0.049	1	05/11/09 16:07	05/14/09 04:43	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.049	0.0034	1	05/11/09 16:07	05/14/09 04:43	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/L	0.049		1	05/11/09 16:07	05/14/09 15:08	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/L	0.049		1	05/11/09 16:07	05/14/09 15:08	11100-14-4	
Tetrachloro-m-xylene (S)	68	%	10-129		1	05/11/09 16:07	05/14/09 04:43	877-09-8	
Decachlorobiphenyl (S)	86	%	32-149		1	05/11/09 16:07	05/14/09 04:43	2051-24-3	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Range	ND	mg/L	0.084	0.039	1	05/13/09 12:11	05/14/09 17:55		
Motor Oil Range	ND	mg/L	0.42	0.064	1	05/13/09 12:11	05/14/09 17:55	64742-65-0	
n-Octacosane (S)	91	%	50-150		1	05/13/09 12:11	05/14/09 17:55	630-02-4	
o-Terphenyl (S)	80	%	50-150		1	05/13/09 12:11	05/14/09 17:55	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		05/14/09 17:49		
a,a,a-Trifluorotoluene (S)	86	%	62-129		1		05/14/09 17:49	98-08-8	
4-Bromofluorobenzene (S)	94	%	61-121		1		05/14/09 17:49	460-00-4	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Butylbenzylphthalate	ND	ug/L	1.9	0.34	1	05/11/09 16:27	05/15/09 13:29	85-68-7	
Diethylphthalate	ND	ug/L	1.9	0.43	1	05/11/09 16:27	05/15/09 13:29	84-66-2	
Dimethylphthalate	ND	ug/L	1.9	0.36	1	05/11/09 16:27	05/15/09 13:29	131-11-3	
Di-n-butylphthalate	ND	ug/L	1.9	0.30	1	05/11/09 16:27	05/15/09 13:29	84-74-2	
Di-n-octylphthalate	ND	ug/L	1.9	0.56	1	05/11/09 16:27	05/15/09 13:29	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.9	0.42	1	05/11/09 16:27	05/15/09 13:29	117-81-7	
Nitrobenzene-d5 (S)	53	%	50-110		1	05/11/09 16:27	05/15/09 13:29	4165-60-0	
2-Fluorobiphenyl (S)	45	%	40-110		1	05/11/09 16:27	05/15/09 13:29	321-60-8	
Terphenyl-d14 (S)	48	%	50-135		1	05/11/09 16:27	05/15/09 13:29	1718-51-0	1n
Phenol-d6 (S)	17	%	10-115		1	05/11/09 16:27	05/15/09 13:29	13127-88-3	
2-Fluorophenol (S)	27	%	20-110		1	05/11/09 16:27	05/15/09 13:29	367-12-4	
2,4,6-Tribromophenol (S)	47	%	40-125		1	05/11/09 16:27	05/15/09 13:29	118-79-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**9.4**	ug/L	5.0	0.75	1		05/08/09 23:44	67-64-1	
Benzene	ND	ug/L	1.0	0.12	1		05/08/09 23:44	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.34	1		05/08/09 23:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.11	1		05/08/09 23:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.23	1		05/08/09 23:44	75-25-2	
Bromomethane	ND	ug/L	1.0	0.072	1		05/08/09 23:44	74-83-9	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125001** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
2-Butanone (MEK)	ND	ug/L	5.0	0.52	1		05/08/09 23:44	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.11	1		05/08/09 23:44	98-06-6	
Carbon disulfide	ND	ug/L	1.0	0.16	1		05/08/09 23:44	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		05/08/09 23:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		05/08/09 23:44	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		05/08/09 23:44	75-00-3	
Chloroform	ND	ug/L	1.0	0.15	1		05/08/09 23:44	67-66-3	
Chloromethane	ND	ug/L	1.0	0.20	1		05/08/09 23:44	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.098	1		05/08/09 23:44	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.13	1		05/08/09 23:44	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.38	1		05/08/09 23:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.12	1		05/08/09 23:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.20	1		05/08/09 23:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		05/08/09 23:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.25	1		05/08/09 23:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.20	1		05/08/09 23:44	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.19	1		05/08/09 23:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.23	1		05/08/09 23:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.074	1		05/08/09 23:44	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	0.50	1		05/08/09 23:44	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.12	1		05/08/09 23:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.32	1		05/08/09 23:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.22	1		05/08/09 23:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		05/08/09 23:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.22	1		05/08/09 23:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.27	1		05/08/09 23:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.094	1		05/08/09 23:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.086	1		05/08/09 23:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/08/09 23:44	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.27	1		05/08/09 23:44	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.57	1		05/08/09 23:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		05/08/09 23:44	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.074	1		05/08/09 23:44	99-87-6	
Methylene chloride	ND	ug/L	1.0	1.0	1		05/08/09 23:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.32	1		05/08/09 23:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		05/08/09 23:44	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	103-65-1	
Styrene	ND	ug/L	1.0	0.074	1		05/08/09 23:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		05/08/09 23:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		05/08/09 23:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		05/08/09 23:44	127-18-4	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125001** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Toluene	**1.1**	ug/L	1.0	0.21	1		05/08/09 23:44	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.11	1		05/08/09 23:44	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.15	1		05/08/09 23:44	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.20	1		05/08/09 23:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.19	1		05/08/09 23:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.22	1		05/08/09 23:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.24	1		05/08/09 23:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.37	1		05/08/09 23:44	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.086	1		05/08/09 23:44	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.16	1		05/08/09 23:44	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.27	1		05/08/09 23:44	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.15	1		05/08/09 23:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.27	1		05/08/09 23:44	1330-20-7	
o-Xylene	ND	ug/L	1.0	0.15	1		05/08/09 23:44	95-47-6	
4-Bromofluorobenzene (S)	107	%	82-116		1		05/08/09 23:44	460-00-4	
Dibromofluoromethane (S)	108	%	86-115		1		05/08/09 23:44	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	77-121		1		05/08/09 23:44	17060-07-0	
Toluene-d8 (S)	115	%	85-117		1		05/08/09 23:44	2037-26-5	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**12.0**	mg/L	2.0	2.0	1		05/11/09 12:00		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall A **Lab ID: 251125002** Collected: 05/04/09 16:00 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.0096	0.00091	1	05/08/09 15:57	05/14/09 20:38	83-32-9	
Acenaphthylene	ND	ug/L	0.0096	0.00082	1	05/08/09 15:57	05/14/09 20:38	208-96-8	
Anthracene	ND	ug/L	0.0096	0.00091	1	05/08/09 15:57	05/14/09 20:38	120-12-7	
Benzo(a)anthracene	**0.027**	ug/L	0.0096	0.0039	1	05/08/09 15:57	05/14/09 20:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.0096	0.0024	1	05/08/09 15:57	05/14/09 20:38	50-32-8	
Benzo(b)fluoranthene	**0.047**	ug/L	0.0096	0.0024	1	05/08/09 15:57	05/14/09 20:38	205-99-2	
Benzo(g,h,i)perylene	**0.10**	ug/L	0.0096	0.0040	1	05/08/09 15:57	05/14/09 20:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.0096	0.0031	1	05/08/09 15:57	05/14/09 20:38	207-08-9	
Chrysene	**0.038**	ug/L	0.0096	0.0043	1	05/08/09 15:57	05/14/09 20:38	218-01-9	
Dibenz(a,h)anthracene	**0.14**	ug/L	0.0096	0.0038	1	05/08/09 15:57	05/14/09 20:38	53-70-3	
Fluoranthene	**0.096**	ug/L	0.0096	0.0017	1	05/08/09 15:57	05/14/09 20:38	206-44-0	B
Fluorene	**0.13**	ug/L	0.0096	0.0012	1	05/08/09 15:57	05/14/09 20:38	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.099**	ug/L	0.0096	0.0058	1	05/08/09 15:57	05/14/09 20:38	193-39-5	
2-Methylnaphthalene	**0.013**	ug/L	0.0096	0.0019	1	05/08/09 15:57	05/14/09 20:38	91-57-6	B
Naphthalene	ND	ug/L	0.0096	0.0047	1	05/08/09 15:57	05/14/09 20:38	91-20-3	
Phenanthrene	**0.053**	ug/L	0.0096	0.0023	1	05/08/09 15:57	05/14/09 20:38	85-01-8	
Pyrene	**0.039**	ug/L	0.0096	0.0014	1	05/08/09 15:57	05/14/09 20:38	129-00-0	
Nitrobenzene-d5 (S)	96	%	50-110		1	05/08/09 15:57	05/14/09 20:38	4165-60-0	E
2-Fluorobiphenyl (S)	97	%	40-110		1	05/08/09 15:57	05/14/09 20:38	321-60-8	E
Terphenyl-d14 (S)	96	%	50-135		1	05/08/09 15:57	05/14/09 20:38	1718-51-0	E

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125003** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.0048	0.0031	1	05/11/09 16:07	05/14/09 05:16	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.0048	0.048	1	05/11/09 16:07	05/14/09 05:16	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.0048	0.0034	1	05/11/09 16:07	05/14/09 05:16	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/L	0.0048		1	05/11/09 16:07	05/14/09 15:41	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/L	0.0048		1	05/11/09 16:07	05/14/09 15:41	11100-14-4	
Tetrachloro-m-xylene (S)	77	%	10-129		1	05/11/09 16:07	05/14/09 05:16	877-09-8	
Decachlorobiphenyl (S)	102	%	32-149		1	05/11/09 16:07	05/14/09 05:16	2051-24-3	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Range	**0.15**	mg/L	0.080	0.037	1	05/13/09 12:11	05/14/09 18:15		
Motor Oil Range	ND	mg/L	0.40	0.061	1	05/13/09 12:11	05/14/09 18:15	64742-65-0	
n-Octacosane (S)	95	%	50-150		1	05/13/09 12:11	05/14/09 18:15	630-02-4	
o-Terphenyl (S)	80	%	50-150		1	05/13/09 12:11	05/14/09 18:15	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		05/14/09 18:21		
a,a,a-Trifluorotoluene (S)	82	%	62-129		1		05/14/09 18:21	98-08-8	
4-Bromofluorobenzene (S)	91	%	61-121		1		05/14/09 18:21	460-00-4	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Butylbenzylphthalate	ND	ug/L	1.9	0.34	1	05/11/09 16:27	05/15/09 14:00	85-68-7	
Diethylphthalate	ND	ug/L	1.9	0.42	1	05/11/09 16:27	05/15/09 14:00	84-66-2	
Dimethylphthalate	ND	ug/L	1.9	0.36	1	05/11/09 16:27	05/15/09 14:00	131-11-3	
Di-n-butylphthalate	ND	ug/L	1.9	0.29	1	05/11/09 16:27	05/15/09 14:00	84-74-2	
Di-n-octylphthalate	ND	ug/L	1.9	0.56	1	05/11/09 16:27	05/15/09 14:00	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.9	0.42	1	05/11/09 16:27	05/15/09 14:00	117-81-7	
Nitrobenzene-d5 (S)	52	%	50-110		1	05/11/09 16:27	05/15/09 14:00	4165-60-0	
2-Fluorobiphenyl (S)	47	%	40-110		1	05/11/09 16:27	05/15/09 14:00	321-60-8	
Terphenyl-d14 (S)	53	%	50-135		1	05/11/09 16:27	05/15/09 14:00	1718-51-0	
Phenol-d6 (S)	15	%	10-115		1	05/11/09 16:27	05/15/09 14:00	13127-88-3	
2-Fluorophenol (S)	27	%	20-110		1	05/11/09 16:27	05/15/09 14:00	367-12-4	
2,4,6-Tribromophenol (S)	56	%	40-125		1	05/11/09 16:27	05/15/09 14:00	118-79-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**9.7**	ug/L	5.0	0.75	1		05/14/09 19:03	67-64-1	
Benzene	ND	ug/L	1.0	0.12	1		05/14/09 19:03	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.34	1		05/14/09 19:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.11	1		05/14/09 19:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.23	1		05/14/09 19:03	75-25-2	
Bromomethane	ND	ug/L	1.0	0.072	1		05/14/09 19:03	74-83-9	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125003** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
2-Butanone (MEK)	ND	ug/L	5.0	0.52	1		05/14/09 19:03	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.11	1		05/14/09 19:03	98-06-6	
Carbon disulfide	ND	ug/L	1.0	0.16	1		05/14/09 19:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		05/14/09 19:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		05/14/09 19:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		05/14/09 19:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.15	1		05/14/09 19:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.20	1		05/14/09 19:03	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.098	1		05/14/09 19:03	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.13	1		05/14/09 19:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.38	1		05/14/09 19:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.12	1		05/14/09 19:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.20	1		05/14/09 19:03	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		05/14/09 19:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.25	1		05/14/09 19:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.20	1		05/14/09 19:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.19	1		05/14/09 19:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.23	1		05/14/09 19:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.074	1		05/14/09 19:03	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	0.50	1		05/14/09 19:03	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.12	1		05/14/09 19:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.32	1		05/14/09 19:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.22	1		05/14/09 19:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		05/14/09 19:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.22	1		05/14/09 19:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.27	1		05/14/09 19:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.094	1		05/14/09 19:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.086	1		05/14/09 19:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/14/09 19:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.27	1		05/14/09 19:03	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.57	1		05/14/09 19:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		05/14/09 19:03	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.074	1		05/14/09 19:03	99-87-6	
Methylene chloride	ND	ug/L	1.0	1.0	1		05/14/09 19:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.32	1		05/14/09 19:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		05/14/09 19:03	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	103-65-1	
Styrene	ND	ug/L	1.0	0.074	1		05/14/09 19:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		05/14/09 19:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		05/14/09 19:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		05/14/09 19:03	127-18-4	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125003** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Toluene	ND	ug/L	1.0	0.21	1		05/14/09 19:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.11	1		05/14/09 19:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.15	1		05/14/09 19:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.20	1		05/14/09 19:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.19	1		05/14/09 19:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.22	1		05/14/09 19:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.24	1		05/14/09 19:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.37	1		05/14/09 19:03	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.086	1		05/14/09 19:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.16	1		05/14/09 19:03	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.27	1		05/14/09 19:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.15	1		05/14/09 19:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.27	1		05/14/09 19:03	1330-20-7	
o-Xylene	ND	ug/L	1.0	0.15	1		05/14/09 19:03	95-47-6	
4-Bromofluorobenzene (S)	104	%	82-116		1		05/14/09 19:03	460-00-4	
Dibromofluoromethane (S)	106	%	86-115		1		05/14/09 19:03	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	77-121		1		05/14/09 19:03	17060-07-0	
Toluene-d8 (S)	107	%	85-117		1		05/14/09 19:03	2037-26-5	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**15.0**	mg/L	2.0	2.0	1		05/11/09 12:00		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Brix-Portland
Pace Project No.: 251125

Sample: Outfall B **Lab ID: 251125004** Collected: 05/04/09 15:25 Received: 05/06/09 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Acenaphthene	**0.024**	ug/L	0.0095	0.00090	1	05/08/09 15:57	05/14/09 21:00	83-32-9	
Acenaphthylene	ND	ug/L	0.0095	0.00081	1	05/08/09 15:57	05/14/09 21:00	208-96-8	
Anthracene	**0.012**	ug/L	0.0095	0.00090	1	05/08/09 15:57	05/14/09 21:00	120-12-7	
Benzo(a)anthracene	**0.16**	ug/L	0.0095	0.0039	1	05/08/09 15:57	05/14/09 21:00	56-55-3	
Benzo(a)pyrene	**0.27**	ug/L	0.0095	0.0023	1	05/08/09 15:57	05/14/09 21:00	50-32-8	
Benzo(b)fluoranthene	**0.34**	ug/L	0.0095	0.0024	1	05/08/09 15:57	05/14/09 21:00	205-99-2	
Benzo(g,h,i)perylene	**0.29**	ug/L	0.0095	0.0040	1	05/08/09 15:57	05/14/09 21:00	191-24-2	
Benzo(k)fluoranthene	**0.18**	ug/L	0.0095	0.0030	1	05/08/09 15:57	05/14/09 21:00	207-08-9	
Chrysene	**0.24**	ug/L	0.0095	0.0043	1	05/08/09 15:57	05/14/09 21:00	218-01-9	
Dibenz(a,h)anthracene	**0.19**	ug/L	0.0095	0.0038	1	05/08/09 15:57	05/14/09 21:00	53-70-3	
Fluoranthene	**0.50**	ug/L	0.0095	0.0017	1	05/08/09 15:57	05/14/09 21:00	206-44-0	B
Fluorene	**0.15**	ug/L	0.0095	0.0012	1	05/08/09 15:57	05/14/09 21:00	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.30**	ug/L	0.0095	0.0058	1	05/08/09 15:57	05/14/09 21:00	193-39-5	
2-Methylnaphthalene	**0.023**	ug/L	0.0095	0.0019	1	05/08/09 15:57	05/14/09 21:00	91-57-6	B
Naphthalene	ND	ug/L	0.0095	0.0047	1	05/08/09 15:57	05/14/09 21:00	91-20-3	
Phenanthrene	**0.22**	ug/L	0.0095	0.0023	1	05/08/09 15:57	05/14/09 21:00	85-01-8	
Pyrene	**0.33**	ug/L	0.0095	0.0014	1	05/08/09 15:57	05/14/09 21:00	129-00-0	
Nitrobenzene-d5 (S)	89	%	50-110		1	05/08/09 15:57	05/14/09 21:00	4165-60-0	E
2-Fluorobiphenyl (S)	86	%	40-110		1	05/08/09 15:57	05/14/09 21:00	321-60-8	E
Terphenyl-d14 (S)	90	%	50-135		1	05/08/09 15:57	05/14/09 21:00	1718-51-0	E

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1044 | Analysis Method: EPA 8270
QC Batch Method: EPA 3510 | Analysis Description: 8270 Water MSSV
Associated Lab Samples: 251125002, 251125004

METHOD BLANK: 1166 | Matrix: Water
Associated Lab Samples: 251125002, 251125004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	0.015	0.010	05/14/09 15:46	
Acenaphthene	ug/L	ND	0.010	05/14/09 15:46	
Acenaphthylene	ug/L	ND	0.010	05/14/09 15:46	
Anthracene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(a)anthracene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(a)pyrene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(b)fluoranthene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(g,h,i)perylene	ug/L	ND	0.010	05/14/09 15:46	
Benzo(k)fluoranthene	ug/L	ND	0.010	05/14/09 15:46	
Chrysene	ug/L	ND	0.010	05/14/09 15:46	
Dibenz(a,h)anthracene	ug/L	ND	0.010	05/14/09 15:46	
Fluoranthene	ug/L	0.024	0.010	05/14/09 15:46	B
Fluorene	ug/L	ND	0.010	05/14/09 15:46	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.010	05/14/09 15:46	
Naphthalene	ug/L	ND	0.010	05/14/09 15:46	
Phenanthrene	ug/L	ND	0.010	05/14/09 15:46	
Pyrene	ug/L	ND	0.010	05/14/09 15:46	
2-Fluorobiphenyl (S)	%	109	40-110	05/14/09 21:23	
Nitrobenzene-d5 (S)	%	121	50-110	05/14/09 21:23	S0
Terphenyl-d14 (S)	%	117	50-135	05/14/09 21:23	

LABORATORY CONTROL SAMPLE & LCSD: 1167 1168

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Methylnaphthalene	ug/L	1.2	0.85	0.84	68	67	20-98		30	
Acenaphthene	ug/L	1.2	0.97	1.0	77	81	42-91		30	
Acenaphthylene	ug/L	1.2	0.89	0.84	71	68	29-94		30	
Anthracene	ug/L	1.2	0.95	0.90	76	72	42-103		30	
Benzo(a)anthracene	ug/L	1.2	1.1	1.1	85	84	44-107		30	
Benzo(a)pyrene	ug/L	1.2	0.92	0.89	73	71	27-106		30	
Benzo(b)fluoranthene	ug/L	1.2	1.1	1.1	91	92	51-112		30	
Benzo(g,h,i)perylene	ug/L	1.2	0.90	0.86	72	69	28-115		30	
Benzo(k)fluoranthene	ug/L	1.2	0.92	0.88	73	70	50-110		30	
Chrysene	ug/L	1.2	0.93	0.91	74	73	47-110		30	
Dibenz(a,h)anthracene	ug/L	1.2	0.92	0.88	74	71	26-118		30	
Fluoranthene	ug/L	1.2	1.0	1.0	82	80	51-112		30	
Fluorene	ug/L	1.2	1.0	1.1	82	86	54-94		30	
Indeno(1,2,3-cd)pyrene	ug/L	1.2	0.94	0.87	75	70	28-107		30	
Naphthalene	ug/L	1.2	0.81	0.79	65	63	20-99		30	
Phenanthrene	ug/L	1.2	0.96	0.91	76	73	48-109		30	
Pyrene	ug/L	1.2	0.88	0.86	71	69	41-112		30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1167 1168

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Fluorobiphenyl (S)	%				82	75	40-110			
Nitrobenzene-d5 (S)	%				89	89	50-110			
Terphenyl-d14 (S)	%				95	95	50-135			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1057 | Analysis Method: EPA 8270
QC Batch Method: EPA 3510 | Analysis Description: 8270 Water MSSV
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1363 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
bis(2-Ethylhexyl)phthalate	ug/L	ND	2.0	05/15/09 11:58	
Butylbenzylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Di-n-butylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Di-n-octylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Diethylphthalate	ug/L	ND	2.0	05/15/09 11:58	
Dimethylphthalate	ug/L	ND	2.0	05/15/09 11:58	
2,4,6-Tribromophenol (S)	%	52	40-125	05/15/09 11:58	
2-Fluorobiphenyl (S)	%	46	40-110	05/15/09 11:58	
2-Fluorophenol (S)	%	33	20-110	05/15/09 11:58	
Nitrobenzene-d5 (S)	%	58	50-110	05/15/09 11:58	
Phenol-d6 (S)	%	19	10-115	05/15/09 11:58	
Terphenyl-d14 (S)	%	54	50-135	05/15/09 11:58	

LABORATORY CONTROL SAMPLE & LCSD: 1364 1365

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
bis(2-Ethylhexyl)phthalate	ug/L	20	13.0	13.0	65	65	47-146	0	30	
Butylbenzylphthalate	ug/L	20	11.3	12.0	57	60	44-108	5	30	
Di-n-butylphthalate	ug/L	20	13.4	13.7	67	69	53-107	2	30	
Di-n-octylphthalate	ug/L	20	11.0	11.0	55	55	54-109	0	30	
Diethylphthalate	ug/L	20	12.4	13.1	62	66	20-126	6	30	
Dimethylphthalate	ug/L	20	12.0	12.4	60	62	54-99	4	30	
2,4,6-Tribromophenol (S)	%				53	58	40-125			
2-Fluorobiphenyl (S)	%				50	53	40-110			
2-Fluorophenol (S)	%				38	32	20-110			
Nitrobenzene-d5 (S)	%				65	61	50-110			
Phenol-d6 (S)	%				24	20	10-115			
Terphenyl-d14 (S)	%				52	52	50-135			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: GCV/1030 | Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx | Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1686 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	05/14/09 17:17	
4-Bromofluorobenzene (S)	%	101	50-150	05/14/09 17:17	
a,a,a-Trifluorotoluene (S)	%	95	50-150	05/14/09 17:17	

LABORATORY CONTROL SAMPLE: 1687

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	356	142	50-163	
4-Bromofluorobenzene (S)	%			107	50-150	
a,a,a-Trifluorotoluene (S)	%			98	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1688 2017

Parameter	Units	251130005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	250	250	375	400	150	160	50-163	6	30	
4-Bromofluorobenzene (S)	%						99	97	50-150			
a,a,a-Trifluorotoluene (S)	%						92	93	50-150			

SAMPLE DUPLICATE: 1690

Parameter	Units	251130005 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		30	
4-Bromofluorobenzene (S)	%	99	94	5		
a,a,a-Trifluorotoluene (S)	%	91	88	3		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: MSV/1049
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 251125003

METHOD BLANK: 1748
Matrix: Water
Associated Lab Samples: 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1-Dichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,1-Dichloroethene	ug/L	ND	1.0	05/14/09 17:06	
1,1-Dichloropropene	ug/L	ND	1.0	05/14/09 17:06	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dichloroethane	ug/L	ND	1.0	05/14/09 17:06	
1,2-Dichloroethene (Total)	ug/L	ND	2.0	05/14/09 17:06	
1,2-Dichloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	05/14/09 17:06	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
1,3-Dichloropropane	ug/L	ND	1.0	05/14/09 17:06	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
2,2-Dichloropropane	ug/L	ND	1.0	05/14/09 17:06	
2-Butanone (MEK)	ug/L	ND	5.0	05/14/09 17:06	
2-Chlorotoluene	ug/L	ND	1.0	05/14/09 17:06	
2-Hexanone	ug/L	ND	5.0	05/14/09 17:06	
4-Chlorotoluene	ug/L	ND	1.0	05/14/09 17:06	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/14/09 17:06	
Acetone	ug/L	ND	5.0	05/14/09 17:06	
Benzene	ug/L	ND	1.0	05/14/09 17:06	
Bromobenzene	ug/L	ND	1.0	05/14/09 17:06	
Bromochloromethane	ug/L	ND	1.0	05/14/09 17:06	
Bromodichloromethane	ug/L	ND	1.0	05/14/09 17:06	
Bromoform	ug/L	ND	1.0	05/14/09 17:06	
Bromomethane	ug/L	ND	1.0	05/14/09 17:06	
Carbon disulfide	ug/L	ND	1.0	05/14/09 17:06	
Carbon tetrachloride	ug/L	ND	1.0	05/14/09 17:06	
Chlorobenzene	ug/L	ND	1.0	05/14/09 17:06	
Chloroethane	ug/L	ND	1.0	05/14/09 17:06	
Chloroform	ug/L	ND	1.0	05/14/09 17:06	
Chloromethane	ug/L	ND	1.0	05/14/09 17:06	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/14/09 17:06	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/14/09 17:06	
Dibromochloromethane	ug/L	ND	1.0	05/14/09 17:06	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

METHOD BLANK: 1748 Matrix: Water

Associated Lab Samples: 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/14/09 17:06	
Dichlorodifluoromethane	ug/L	ND	1.0	05/14/09 17:06	
Ethylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/14/09 17:06	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	05/14/09 17:06	
m&p-Xylene	ug/L	ND	2.0	05/14/09 17:06	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/14/09 17:06	
Methylene chloride	ug/L	ND	1.0	05/14/09 17:06	
n-Butylbenzene	ug/L	ND	1.0	05/14/09 17:06	
n-Propylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Naphthalene	ug/L	ND	1.0	05/14/09 17:06	
o-Xylene	ug/L	ND	1.0	05/14/09 17:06	
p-Isopropyltoluene	ug/L	ND	1.0	05/14/09 17:06	
sec-Butylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Styrene	ug/L	ND	1.0	05/14/09 17:06	
tert-Butylbenzene	ug/L	ND	1.0	05/14/09 17:06	
Tetrachloroethene	ug/L	ND	1.0	05/14/09 17:06	
Toluene	ug/L	ND	1.0	05/14/09 17:06	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/14/09 17:06	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/14/09 17:06	
Trichloroethene	ug/L	ND	1.0	05/14/09 17:06	
Trichlorofluoromethane	ug/L	ND	1.0	05/14/09 17:06	
Vinyl chloride	ug/L	ND	1.0	05/14/09 17:06	
Xylene (Total)	ug/L	ND	3.0	05/14/09 17:06	
1,2-Dichloroethane-d4 (S)	%	104	77-121	05/14/09 17:06	
4-Bromofluorobenzene (S)	%	103	82-116	05/14/09 17:06	
Dibromofluoromethane (S)	%	103	86-115	05/14/09 17:06	
Toluene-d8 (S)	%	107	85-117	05/14/09 17:06	

LABORATORY CONTROL SAMPLE & LCSD: 1749 1750

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.6	8.3	96	83	73-126	15	30	
1,1,1-Trichloroethane	ug/L	10	9.8	8.1	98	81	69-135	19	30	
1,1,2,2-Tetrachloroethane	ug/L	10	10.2	8.9	102	89	69-123	13	30	
1,1,2-Trichloroethane	ug/L	10	9.6	8.4	96	84	76-114	13	30	
1,1-Dichloroethane	ug/L	10	10.1	8.5	101	85	74-124	17	30	
1,1-Dichloroethene	ug/L	10	9.6	8.1	96	81	69-139	17	30	
1,1-Dichloropropene	ug/L	10	10.9	8.8	109	88	77-134	21	30	
1,2,3-Trichlorobenzene	ug/L	10	10.6	9.3	106	93	63-136	13	30	
1,2,3-Trichloropropane	ug/L	10	10.1	8.6	101	86	66-118	15	30	
1,2,4-Trichlorobenzene	ug/L	10	10.6	9.2	106	92	68-129	14	30	
1,2,4-Trimethylbenzene	ug/L	10	10.4	9.0	104	90	72-126	15	30	
1,2-Dibromo-3-chloropropane	ug/L	10	9.7	8.6	97	86	64-124	12	30	
1,2-Dibromoethane (EDB)	ug/L	10	10.0	8.7	100	87	78-117	14	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1749 1750

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dichlorobenzene	ug/L	10	10.2	8.6	102	86	74-118	17	30	
1,2-Dichloroethane	ug/L	10	9.7	8.5	97	85	73-127	14	30	
1,2-Dichloroethene (Total)	ug/L	20	20.4	17.1	102	85	60-140	18	30	
1,2-Dichloropropane	ug/L	10	9.9	8.4	99	84	72-126	16	30	
1,3,5-Trimethylbenzene	ug/L	10	10.5	8.9	105	89	68-129	16	30	
1,3-Dichlorobenzene	ug/L	10	10.1	8.4	101	84	73-119	17	30	
1,3-Dichloropropane	ug/L	10	10.3	8.6	103	86	74-119	17	30	
1,4-Dichlorobenzene	ug/L	10	9.9	8.3	99	83	73-115	17	30	
2,2-Dichloropropane	ug/L	10	10.7	8.8	107	88	46-157	19	30	
2-Butanone (MEK)	ug/L	10	9.6	7.5	96	75	65-138	24	30	
2-Chlorotoluene	ug/L	10	10.4	8.5	104	85	68-122	19	30	
2-Hexanone	ug/L	10	8.9	8.0	89	80	60-135	11	30	
4-Chlorotoluene	ug/L	10	10.6	8.8	106	88	70-122	18	30	
4-Methyl-2-pentanone (MIBK)	ug/L	10	8.9	7.5	89	75	70-135	17	30	
Acetone	ug/L	10	8.2	7.1	82	71	58-146	14	30	
Benzene	ug/L	10	9.9	8.4	99	84	75-124	16	30	
Bromobenzene	ug/L	10	10.2	8.4	102	84	74-116	19	30	
Bromochloromethane	ug/L	10	10	8.6	100	86	75-128	15	30	
Bromodichloromethane	ug/L	10	9.9	8.3	99	83	77-126	18	30	
Bromoform	ug/L	10	9.5	8.3	95	83	61-131	13	30	
Bromomethane	ug/L	10	9.6	7.6	96	76	58-139	23	30	
Carbon disulfide	ug/L	10	7.5	6.4	75	64	39-122	16	30	
Carbon tetrachloride	ug/L	10	10	8.3	100	83	67-136	18	30	
Chlorobenzene	ug/L	10	9.7	8.3	97	83	78-115	15	30	
Chloroethane	ug/L	10	10.1	8.2	101	82	58-137	20	30	
Chloroform	ug/L	10	9.3	7.7	93	77	75-124	19	30	
Chloromethane	ug/L	10	10.5	8.7	105	87	50-129	19	30	
cis-1,2-Dichloroethene	ug/L	10	10.7	8.9	107	89	78-126	18	30	
cis-1,3-Dichloropropene	ug/L	10	10.8	9.3	108	93	78-159	15	30	
Dibromochloromethane	ug/L	10	10.2	8.7	102	87	81-125	16	30	
Dibromomethane	ug/L	10	9.8	8.4	98	84	75-124	15	30	
Dichlorodifluoromethane	ug/L	10	12.2	10.4	122	104	30-140	16	30	
Ethylbenzene	ug/L	10	10.3	8.7	103	87	76-124	17	30	
Hexachloro-1,3-butadiene	ug/L	10	10.7	8.7	107	87	55-132	20	30	
Isopropylbenzene (Cumene)	ug/L	10	10.2	8.8	102	88	73-127	15	30	
m&p-Xylene	ug/L	20	21.6	17.9	108	90	75-124	18	30	
Methyl-tert-butyl ether	ug/L	10	10.0	8.8	100	88	72-130	14	30	
Methylene chloride	ug/L	10	9.3	8.0	93	80	69-124	15	30	
n-Butylbenzene	ug/L	10	10.4	8.7	104	87	65-131	18	30	
n-Propylbenzene	ug/L	10	10.6	8.8	106	88	69-129	19	30	
Naphthalene	ug/L	10	9.3	8.2	93	82	69-135	12	30	
o-Xylene	ug/L	10	9.6	8.3	96	83	76-121	15	30	
p-Isopropyltoluene	ug/L	10	10.6	8.9	106	89	69-133	16	30	
sec-Butylbenzene	ug/L	10	10.3	8.6	103	86	67-132	18	30	
Styrene	ug/L	10	10.3	8.8	103	88	76-121	15	30	
tert-Butylbenzene	ug/L	10	10.1	8.7	101	87	66-132	15	30	
Tetrachloroethene	ug/L	10	10.0	8.6	100	86	70-127	15	30	
Toluene	ug/L	10	9.9	8.4	99	84	75-124	16	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1749 1750

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/L	10	9.7	8.2	97	82	72-129	17	30	
trans-1,3-Dichloropropene	ug/L	10	9.2	8.0	92	80	69-122	15	30	
Trichloroethene	ug/L	10	9.9	8.2	99	82	78-124	19	30	
Trichlorofluoromethane	ug/L	10	9.7	8.0	97	80	60-147	19	30	
Vinyl chloride	ug/L	10	10.3	8.6	103	86	56-136	18	30	
Xylene (Total)	ug/L	30	31.2	26.2	104	87	76-123	17	30	
1,2-Dichloroethane-d4 (S)	%				102	102	77-121			
4-Bromofluorobenzene (S)	%				107	105	82-116			
Dibromofluoromethane (S)	%				104	103	86-115			
Toluene-d8 (S)	%				107	108	85-117			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1068 | Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510 | Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1615 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range	mg/L	ND	0.080	05/14/09 17:17	
Motor Oil Range	mg/L	ND	0.40	05/14/09 17:17	
n-Octacosane (S)	%	92	50-150	05/14/09 17:17	
o-Terphenyl (S)	%	81	50-150	05/14/09 17:17	

LABORATORY CONTROL SAMPLE: 1616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range	mg/L	5	3.6	71	51-147	
Motor Oil Range	mg/L	5	4.5	91	20-160	
n-Octacosane (S)	%			91	50-150	
o-Terphenyl (S)	%			80	50-150	

MATRIX SPIKE SAMPLE: 1617

Parameter	Units	251130005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Diesel Range	mg/L	ND	5.2	3.9	74	50-150	
Motor Oil Range	mg/L	ND	5.2	5.2	100	20-160	
n-Octacosane (S)	%				85	50-150	
o-Terphenyl (S)	%				79	50-150	

SAMPLE DUPLICATE: 1618

Parameter	Units	251130005 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Range	mg/L	ND	ND		50	
Motor Oil Range	mg/L	ND	ND		50	
n-Octacosane (S)	%		91	1		
o-Terphenyl (S)	%		82	2		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: MSV/1038
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 251125001

METHOD BLANK: 1181
Matrix: Water
Associated Lab Samples: 251125001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1-Dichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,1-Dichloroethene	ug/L	ND	1.0	05/08/09 14:12	
1,1-Dichloropropene	ug/L	ND	1.0	05/08/09 14:12	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dichloroethane	ug/L	ND	1.0	05/08/09 14:12	
1,2-Dichloroethene (Total)	ug/L	ND	2.0	05/08/09 14:12	
1,2-Dichloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	05/08/09 14:12	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
1,3-Dichloropropane	ug/L	ND	1.0	05/08/09 14:12	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
2,2-Dichloropropane	ug/L	ND	1.0	05/08/09 14:12	
2-Butanone (MEK)	ug/L	ND	5.0	05/08/09 14:12	
2-Chlorotoluene	ug/L	ND	1.0	05/08/09 14:12	
2-Hexanone	ug/L	ND	5.0	05/08/09 14:12	
4-Chlorotoluene	ug/L	ND	1.0	05/08/09 14:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/08/09 14:12	
Acetone	ug/L	ND	5.0	05/08/09 14:12	
Benzene	ug/L	ND	1.0	05/08/09 14:12	
Bromobenzene	ug/L	ND	1.0	05/08/09 14:12	
Bromochloromethane	ug/L	ND	1.0	05/08/09 14:12	
Bromodichloromethane	ug/L	ND	1.0	05/08/09 14:12	
Bromoform	ug/L	ND	1.0	05/08/09 14:12	
Bromomethane	ug/L	ND	1.0	05/08/09 14:12	
Carbon disulfide	ug/L	ND	1.0	05/08/09 14:12	
Carbon tetrachloride	ug/L	ND	1.0	05/08/09 14:12	
Chlorobenzene	ug/L	ND	1.0	05/08/09 14:12	
Chloroethane	ug/L	ND	1.0	05/08/09 14:12	
Chloroform	ug/L	ND	1.0	05/08/09 14:12	
Chloromethane	ug/L	ND	1.0	05/08/09 14:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/08/09 14:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/08/09 14:12	
Dibromochloromethane	ug/L	ND	1.0	05/08/09 14:12	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

METHOD BLANK: 1181 Matrix: Water

Associated Lab Samples: 251125001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/08/09 14:12	
Dichlorodifluoromethane	ug/L	ND	1.0	05/08/09 14:12	
Ethylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/08/09 14:12	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	05/08/09 14:12	
m&p-Xylene	ug/L	ND	2.0	05/08/09 14:12	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/08/09 14:12	
Methylene chloride	ug/L	ND	1.0	05/08/09 14:12	
n-Butylbenzene	ug/L	ND	1.0	05/08/09 14:12	
n-Propylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Naphthalene	ug/L	ND	1.0	05/08/09 14:12	
o-Xylene	ug/L	ND	1.0	05/08/09 14:12	
p-Isopropyltoluene	ug/L	ND	1.0	05/08/09 14:12	
sec-Butylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Styrene	ug/L	ND	1.0	05/08/09 14:12	
tert-Butylbenzene	ug/L	ND	1.0	05/08/09 14:12	
Tetrachloroethene	ug/L	ND	1.0	05/08/09 14:12	
Toluene	ug/L	ND	1.0	05/08/09 14:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/08/09 14:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/08/09 14:12	
Trichloroethene	ug/L	ND	1.0	05/08/09 14:12	
Trichlorofluoromethane	ug/L	ND	1.0	05/08/09 14:12	
Vinyl chloride	ug/L	ND	1.0	05/08/09 14:12	
Xylene (Total)	ug/L	ND	3.0	05/08/09 14:12	
1,2-Dichloroethane-d4 (S)	%	114	77-121	05/08/09 14:12	
4-Bromofluorobenzene (S)	%	108	82-116	05/08/09 14:12	
Dibromofluoromethane (S)	%	113	86-115	05/08/09 14:12	
Toluene-d8 (S)	%	113	85-117	05/08/09 14:12	

LABORATORY CONTROL SAMPLE & LCSD: 1182 1183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.3	10.3	103	103	73-126	.1	30	
1,1,1-Trichloroethane	ug/L	10	11.0	10.8	110	108	69-135	1	30	
1,1,2,2-Tetrachloroethane	ug/L	10	10.6	10.4	106	104	69-123	2	30	
1,1,2-Trichloroethane	ug/L	10	10.2	9.9	102	99	76-114	3	30	
1,1-Dichloroethane	ug/L	10	10.9	10.9	109	109	74-124	.7	30	
1,1-Dichloroethene	ug/L	10	11.9	11.5	119	115	69-139	4	30	
1,1-Dichloropropene	ug/L	10	11.0	10.8	110	108	77-134	2	30	
1,2,3-Trichlorobenzene	ug/L	10	10.1	10.1	101	101	63-136	.2	30	
1,2,3-Trichloropropane	ug/L	10	9.7	9.6	97	96	66-118	2	30	
1,2,4-Trichlorobenzene	ug/L	10	10.1	10.1	101	101	68-129	.07	30	
1,2,4-Trimethylbenzene	ug/L	10	10.1	10.2	101	102	72-126	1	30	
1,2-Dibromo-3-chloropropane	ug/L	10	9.7	10	97	100	64-124	3	30	
1,2-Dibromoethane (EDB)	ug/L	10	10.1	10.4	101	104	78-117	3	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1182 1183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dichlorobenzene	ug/L	10	10.5	10.6	105	106	74-118	1	30	
1,2-Dichloroethane	ug/L	10	10.8	10.3	108	103	73-127	5	30	
1,2-Dichloroethene (Total)	ug/L	20	21.3	21.3	107	106	60-140	.3	30	
1,2-Dichloropropane	ug/L	10	10	9.8	100	98	72-126	2	30	
1,3,5-Trimethylbenzene	ug/L	10	10	10.3	100	103	68-129	3	30	
1,3-Dichlorobenzene	ug/L	10	10.2	10.4	102	104	73-119	2	30	
1,3-Dichloropropane	ug/L	10	10.0	10.1	100	101	74-119	.9	30	
1,4-Dichlorobenzene	ug/L	10	10.3	10.2	103	102	73-115	.7	30	
2,2-Dichloropropane	ug/L	10	9.8	9.8	98	98	46-157	.2	30	
2-Butanone (MEK)	ug/L	10	9.0	8.8	90	88	65-138	3	30	
2-Chlorotoluene	ug/L	10	9.8	10.1	98	101	68-122	3	30	
2-Hexanone	ug/L	10	8.6	8.1	86	81	60-135	5	30	
4-Chlorotoluene	ug/L	10	10.2	10.6	102	106	70-122	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	10	9.2	9.0	92	90	70-135	2	30	
Acetone	ug/L	10	8.9	9.4	89	94	58-146	5	30	
Benzene	ug/L	10	10.5	10.2	105	102	75-124	3	30	
Bromobenzene	ug/L	10	10.2	10.3	102	103	74-116	2	30	
Bromochloromethane	ug/L	10	11.2	11.1	112	111	75-128	1	30	
Bromodichloromethane	ug/L	10	10.5	10.5	105	105	77-126	.5	30	
Bromoform	ug/L	10	10.1	10.0	101	100	61-131	.7	30	
Bromomethane	ug/L	10	11.9	12.1	119	121	58-139	1	30	
Carbon disulfide	ug/L	10	9.2	8.7	92	87	39-122	5	30	
Carbon tetrachloride	ug/L	10	11.3	10.9	113	109	67-136	3	30	
Chlorobenzene	ug/L	10	10.4	10.5	104	105	78-115	1	30	
Chloroethane	ug/L	10	12.3	12.0	123	120	58-137	2	30	
Chloroform	ug/L	10	10.7	10.7	107	107	75-124	.6	30	
Chloromethane	ug/L	10	10.3	10.3	103	103	50-129	.9	30	
cis-1,2-Dichloroethene	ug/L	10	10.8	10.9	108	109	78-126	.7	30	
cis-1,3-Dichloropropene	ug/L	10	10.6	10.6	106	106	78-159	.4	30	
Dibromochloromethane	ug/L	10	10.4	10.6	104	106	81-125	2	30	
Dibromomethane	ug/L	10	10.6	10.6	106	106	75-124	.2	30	
Dichlorodifluoromethane	ug/L	10	8.5	8.2	85	82	30-140	3	30	
Ethylbenzene	ug/L	10	9.8	9.9	98	99	76-124	1	30	
Hexachloro-1,3-butadiene	ug/L	10	10.5	10.5	105	105	55-132	.03	30	
Isopropylbenzene (Cumene)	ug/L	10	10.5	10.5	105	105	73-127	.5	30	
m&p-Xylene	ug/L	20	20.0	20.0	100	100	75-124	.2	30	
Methyl-tert-butyl ether	ug/L	10	7.9	7.7	79	77	72-130	3	30	
Methylene chloride	ug/L	10	10.6	10.1	106	101	69-124	5	30	
n-Butylbenzene	ug/L	10	10.2	10.2	102	102	65-131	.07	30	
n-Propylbenzene	ug/L	10	10.1	10.3	101	103	69-129	2	30	
Naphthalene	ug/L	10	9.0	8.9	90	89	69-135	1	30	
o-Xylene	ug/L	10	9.4	9.7	94	97	76-121	4	30	
p-Isopropyltoluene	ug/L	10	10.4	10.6	104	106	69-133	1	30	
sec-Butylbenzene	ug/L	10	10.4	10.6	104	106	67-132	2	30	
Styrene	ug/L	10	10.5	10.6	105	106	76-121	.8	30	
tert-Butylbenzene	ug/L	10	10.2	10.3	102	103	66-132	1	30	
Tetrachloroethene	ug/L	10	10.8	11.1	108	111	70-127	2	30	
Toluene	ug/L	10	10.6	10.8	106	108	75-124	2	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

LABORATORY CONTROL SAMPLE & LCSD: 1182 1183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/L	10	10.6	10.4	106	104	72-129	1	30	
trans-1,3-Dichloropropene	ug/L	10	8.9	9.0	89	90	69-122	1	30	
Trichloroethene	ug/L	10	10.5	10.4	105	104	78-124	1	30	
Trichlorofluoromethane	ug/L	10	11.5	10.9	115	109	60-147	5	30	
Vinyl chloride	ug/L	10	10.8	10.5	108	105	56-136	3	30	
Xylene (Total)	ug/L	30	29.4	29.7	98	99	76-123	1	30	
1,2-Dichloroethane-d4 (S)	%				113	108	77-121			
4-Bromofluorobenzene (S)	%				107	109	82-116			
Dibromofluoromethane (S)	%				115	113	86-115			
Toluene-d8 (S)	%				109	110	85-117			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: OEXT/1053 | Analysis Method: EPA 8082
QC Batch Method: EPA 3510 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1339 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.050	05/14/09 03:04	
PCB-1262 (Aroclor 1262)	ug/L	ND	0.050	05/14/09 14:35	
PCB-1268 (Aroclor 1268)	ug/L	ND	0.050	05/14/09 14:35	
Decachlorobiphenyl (S)	%	110	32-149	05/14/09 14:35	
Decachlorobiphenyl (S)	%	95	32-149	05/14/09 03:04	
Tetrachloro-m-xylene (S)	%	79	10-129	05/14/09 03:04	
Tetrachloro-m-xylene (S)	%	84	10-129	05/14/09 14:35	

LABORATORY CONTROL SAMPLE & LCSD: 1340 1341

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	50	54.4	49.4	109	99	78-117	10	20	
PCB-1221 (Aroclor 1221)	ug/L		ND	ND					20	
PCB-1232 (Aroclor 1232)	ug/L		ND	ND					20	
PCB-1242 (Aroclor 1242)	ug/L		ND	ND					20	
PCB-1248 (Aroclor 1248)	ug/L		ND	ND					20	
PCB-1254 (Aroclor 1254)	ug/L		ND	ND					20	
PCB-1260 (Aroclor 1260)	ug/L	50	61.6	60.7	123	121	53-155	1	20	
Decachlorobiphenyl (S)	%				89	87	32-149			
Tetrachloro-m-xylene (S)	%				69	65	10-129			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Brix-Portland
Pace Project No.: 251125

QC Batch: WET/1051 | Analysis Method: SM 2540D
QC Batch Method: SM 2540D | Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 251125001, 251125003

METHOD BLANK: 1361 | Matrix: Water
Associated Lab Samples: 251125001, 251125003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	2.0	05/11/09 12:00	

SAMPLE DUPLICATE: 1362

Parameter	Units	251125001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	12.0	14.0	15	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: Brix-Portland
Pace Project No.: 251125

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-S	Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

1n	Surrogate recovery outside control limits (not confirmed by re-analysis). Associated data may be biased low.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
S0	Surrogate recovery outside laboratory control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Brix-Portland
Pace Project No.: 251125

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
251125002	**Outfall A**	EPA 3510	OEXT/1044	EPA 8270	MSSV/1009
251125004	**Outfall B**	EPA 3510	OEXT/1044	EPA 8270	MSSV/1009
251125001	**Outfall A**	EPA 5030B/8260	MSV/1038		
251125001	**Outfall A**	EPA 3510	OEXT/1053	EPA 8082	GCSV/1034
251125003	**Outfall B**	EPA 3510	OEXT/1053	EPA 8082	GCSV/1034
251125001	**Outfall A**	SM 2540D	WET/1051		
251125003	**Outfall B**	SM 2540D	WET/1051		
251125001	**Outfall A**	EPA 3510	OEXT/1057	EPA 8270	MSSV/1010
251125003	**Outfall B**	EPA 3510	OEXT/1057	EPA 8270	MSSV/1010
251125001	**Outfall A**	EPA 3510	OEXT/1068	NWTPH-Dx	GCSV/1039
251125003	**Outfall B**	EPA 3510	OEXT/1068	NWTPH-Dx	GCSV/1039
251125001	**Outfall A**	NWTPH-Gx	GCV/1030		
251125003	**Outfall B**	NWTPH-Gx	GCV/1030		
251125003	**Outfall B**	EPA 5030B/8260	MSV/1049		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical®
www.pacelabs.com

WO# 251125

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1241388

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Hart Crowser, Inc	Report To: Leon Lahiere	Attention: Leon Lahiere
Address: 8910 SW Gemini Dr. Beaverton, OR 97008	Copy To:	Company Name: Hart Crowser, Inc.
		Address: 8910 SW Gemini, Beaverton OR
Email To: leon.lahiere@hartcrowser.com	Purchase Order No.: 15634-00/Task 08	Pace Quote Reference: Seattle-092208
Phone: 971-327-9103 Fax:	Project Name: Brix - Portland	Pace Project Manager: Lisa Domenighini
Requested Due Date/TAT: STD	Project Number: 15634-00/Task 08	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER Plt SW

Site Location STATE: OR

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	PCBs-8082-low	PAHs-8270SIM low	Phthalates-low	NWTPH-Dx	NWTPH-Gx	VOCs 8260	TSS 1602	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Outfall A	WT	G	5-4-09	1600	5-4-09	1615	14	12										X	X	X	X	X	X	X		
2	Outfall B	WT	G	5-4-09	1525	5-4-09	1535	15	13										X	X	X	X	X	X	X		
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	[signature] Hart Crowser	5-5-09	1030	[signature] Brix PCS	5-5-9	1045	
				[signature] Pace	5/6/09	1030	

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brian Block

SIGNATURE of SAMPLER: [signature] For

DATE Signed (MM/DD/YY): 5-5-09

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Instructions for completing Chain of Custody (COC)

1. **Section A and B:** Complete all Client information at top of sheet: company name, address, phone, fax, contact (the person to contact if there are questions, and who will receive the final report.), e-mail address (if available), PO#, Project Name and/or Project Number as you would like to see it appear on the report.

2. **Section C:** Invoice Information: Billing information is included in this section. This information should include the name and address of the person receiving the invoice.

3. Quote Reference should be completed if a quotation was provided by Pace Analytical. The Project Manager, and Profile No. will be completed by Pace Analytical Services.

4. **Site Location:** A separate COC must be filled out for each day of sample collection. Record the two letter postal code for the US state in which the samples were collected.

5. **Regulatory Agency:** List the program that is guiding the work to ensure proper regulations are followed.

6. **Section D:** Complete a Sample Description in the "SAMPLE ID' section as you would like it to appear on the laboratory report. The following information should also be included: the sample matrix, sample type (G (grab) or C (composite). When collecting a composite, the start time and end time should be documented in the respective boxes. The collection time for a grab (G) sample should be entered in the boxes marked 'Composite End/Grab'). Sample temp at collection (if required by state), the total number of containers, and preservative used.

7. Mark if the sample was filtered in the field by marking Y or N in 'Filtered' row by the Analysis requested.

8. Requested Analysis: List the required analysis and methods on the lines provided and place a check in the column for the samples requiring the analysis. Additional comments should be referenced in the bottom left hand corner or include attachments for extended lists of parameters.

9. The sampler should print their name in the space provided and sign their name followed by the date of the sampling event at the bottom of the COC in the spaces designated for 'SAMPLER NAME AND SIGNATURE'.

10. When relinquishing custody of the samples to a representative of the laboratory or other organization, indicate the Item Numbers of those samples being transferred; sign relinquished by, date and time, and include your affiliation.

***Important Note:**

Standard Turnaround Time is 2 Weeks/10 business days. Results will be delivered by end of business on the date due unless other arrangements have been made with your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be included on the chain of custody in the Additional Comments section.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hart-Crowser Project # 251125

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other PCS

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☑ Other Zip lock bags

Thermometer Used Horiba-132013 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature AAF725 4.3,5.3,5.5 AAE955 5.8,6.2,6.1 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 5/6/09 PB

Temp should be above freezing to 6°C

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1. 1241388
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: Water				
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes	☐No		Initial when completed ____ Lot # of added preservative ____
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-3451-1
TestAmerica Sample Delivery Group: 15634.00
Client Project/Site: Brix Maritime

For:
Hart Crowser, Inc.
8910 SW Gemini Drive
Beaverton, Oregon 97008

Attn: Leon Lahiere

Vanessa Frahs

Authorized for release by:
6/13/2012 2:59:50 PM

Vanessa Frahs
Project Manager I
vanessa.frahs@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Sample Summary 3
Case Narrative 4
Definitions 5
Client Sample Results 6
QC Sample Results 13
QC Association 25
Certification Summary 27
Method Summary 28
Chain of Custody 29
Receipt Checklists 30

Sample Summary

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-3451-1	Outfall A	Water	06/04/12 11:05	06/04/12 14:45
250-3451-2	Outfall B	Water	06/04/12 10:26	06/04/12 14:45

Case Narrative

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Job ID: 250-3451-1

Laboratory: TestAmerica Portland

Narrative

Receipt
The samples were received on 6/4/2012 2:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.1º C.

Except:

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C SIM: An incorrect volume of surrogate spiking solution was inadvertently added the following samples: (LCS 250-6049/2-A), (LCSD 250-6049/3-A), (MB 250-6049/1-A), Outfall A (250-3451-1), Outfall B (250-3451-2). Percent recoveries are based on the amount spiked. Dilution of batch QC and samples was necessary in order to report surrogates within calibration range. Target analytes are reported from the undiluted analysis.

No other analytical or quality issues were noted.

GC Semi VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall A
Date Collected: 06/04/12 11:05
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25		ug/L			06/07/12 15:45	1
Benzene	ND		1.0		ug/L			06/07/12 15:45	1
Bromobenzene	ND		1.0		ug/L			06/07/12 15:45	1
Bromochloromethane	ND		5.0		ug/L			06/07/12 15:45	1
Bromodichloromethane	ND		1.0		ug/L			06/07/12 15:45	1
Bromoform	ND		5.0		ug/L			06/07/12 15:45	1
Bromomethane	ND		5.0		ug/L			06/07/12 15:45	1
2-Butanone (MEK)	ND		10		ug/L			06/07/12 15:45	1
n-Butylbenzene	ND		5.0		ug/L			06/07/12 15:45	1
sec-Butylbenzene	ND		1.0		ug/L			06/07/12 15:45	1
tert-Butylbenzene	ND		1.0		ug/L			06/07/12 15:45	1
Carbon disulfide	ND		10		ug/L			06/07/12 15:45	1
Carbon tetrachloride	ND		1.0		ug/L			06/07/12 15:45	1
Chlorobenzene	ND		1.0		ug/L			06/07/12 15:45	1
Chloroethane	ND		1.0		ug/L			06/07/12 15:45	1
Chloroform	ND		1.0		ug/L			06/07/12 15:45	1
Chloromethane	ND		5.0		ug/L			06/07/12 15:45	1
2-Chlorotoluene	ND		1.0		ug/L			06/07/12 15:45	1
4-Chlorotoluene	ND		1.0		ug/L			06/07/12 15:45	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			06/07/12 15:45	1
Dibromochloromethane	ND		1.0		ug/L			06/07/12 15:45	1
1,2-Dibromoethane	ND		1.0		ug/L			06/07/12 15:45	1
Dibromomethane	ND		5.0		ug/L			06/07/12 15:45	1
1,2-Dichloroethane	ND		1.0		ug/L			06/07/12 15:45	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/07/12 15:45	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/07/12 15:45	1
Dichlorodifluoromethane	ND		5.0		ug/L			06/07/12 15:45	1
1,1-Dichloroethane	ND		1.0		ug/L			06/07/12 15:45	1
1,1-Dichloroethene	ND		1.0		ug/L			06/07/12 15:45	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/07/12 15:45	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/07/12 15:45	1
1,2-Dichloropropane	ND		1.0		ug/L			06/07/12 15:45	1
1,3-Dichloropropane	ND		1.0		ug/L			06/07/12 15:45	1
2,2-Dichloropropane	ND		1.0		ug/L			06/07/12 15:45	1
1,1-Dichloropropene	ND		1.0		ug/L			06/07/12 15:45	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/07/12 15:45	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/07/12 15:45	1
Ethylbenzene	ND		1.0		ug/L			06/07/12 15:45	1
Hexachlorobutadiene	ND		4.0		ug/L			06/07/12 15:45	1
2-Hexanone	ND		15		ug/L			06/07/12 15:45	1
Isopropylbenzene	ND		2.0		ug/L			06/07/12 15:45	1
p-Isopropyltoluene	ND		2.0		ug/L			06/07/12 15:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			06/07/12 15:45	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/07/12 15:45	1
Methylene Chloride	ND		5.0		ug/L			06/07/12 15:45	1
Naphthalene	ND		5.0		ug/L			06/07/12 15:45	1
N-Propylbenzene	ND		1.0		ug/L			06/07/12 15:45	1
Styrene	ND		1.0		ug/L			06/07/12 15:45	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/07/12 15:45	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/07/12 15:45	1
Tetrachloroethene	ND		1.0		ug/L			06/07/12 15:45	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: Outfall A — **Lab Sample ID: 250-3451-1**
Date Collected: 06/04/12 11:05 — **Matrix: Water**
Date Received: 06/04/12 14:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0		ug/L			06/07/12 15:45	1
1,2,3-Trichlorobenzene	ND		5.0		ug/L			06/07/12 15:45	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/07/12 15:45	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/07/12 15:45	1
1,1,2-Trichloroethane	ND		5.0		ug/L			06/07/12 15:45	1
Trichloroethene	ND		1.0		ug/L			06/07/12 15:45	1
Trichlorofluoromethane	ND		1.0		ug/L			06/07/12 15:45	1
1,2,3-Trichloropropane	ND		5.0		ug/L			06/07/12 15:45	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			06/07/12 15:45	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/07/12 15:45	1
Vinyl chloride	ND		1.0		ug/L			06/07/12 15:45	1
m,p-Xylene	ND		2.0		ug/L			06/07/12 15:45	1
o-Xylene	ND		1.0		ug/L			06/07/12 15:45	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/07/12 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*06/07/12 15:45*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*06/07/12 15:45*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*06/07/12 15:45*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/07/12 15:45*	*1*

Client Sample ID: Outfall B — **Lab Sample ID: 250-3451-2**
Date Collected: 06/04/12 10:26 — **Matrix: Water**
Date Received: 06/04/12 14:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25		ug/L			06/07/12 16:12	1
Benzene	ND		1.0		ug/L			06/07/12 16:12	1
Bromobenzene	ND		1.0		ug/L			06/07/12 16:12	1
Bromochloromethane	ND		5.0		ug/L			06/07/12 16:12	1
Bromodichloromethane	ND		1.0		ug/L			06/07/12 16:12	1
Bromoform	ND		5.0		ug/L			06/07/12 16:12	1
Bromomethane	ND		5.0		ug/L			06/07/12 16:12	1
2-Butanone (MEK)	ND		10		ug/L			06/07/12 16:12	1
n-Butylbenzene	ND		5.0		ug/L			06/07/12 16:12	1
sec-Butylbenzene	ND		1.0		ug/L			06/07/12 16:12	1
tert-Butylbenzene	ND		1.0		ug/L			06/07/12 16:12	1
Carbon disulfide	ND		10		ug/L			06/07/12 16:12	1
Carbon tetrachloride	ND		1.0		ug/L			06/07/12 16:12	1
Chlorobenzene	ND		1.0		ug/L			06/07/12 16:12	1
Chloroethane	ND		1.0		ug/L			06/07/12 16:12	1
Chloroform	ND		1.0		ug/L			06/07/12 16:12	1
Chloromethane	ND		5.0		ug/L			06/07/12 16:12	1
2-Chlorotoluene	ND		1.0		ug/L			06/07/12 16:12	1
4-Chlorotoluene	ND		1.0		ug/L			06/07/12 16:12	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			06/07/12 16:12	1
Dibromochloromethane	ND		1.0		ug/L			06/07/12 16:12	1
1,2-Dibromoethane	ND		1.0		ug/L			06/07/12 16:12	1
Dibromomethane	ND		5.0		ug/L			06/07/12 16:12	1
1,2-Dichloroethane	ND		1.0		ug/L			06/07/12 16:12	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/07/12 16:12	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/07/12 16:12	1

Client Sample Results

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: Outfall B
Date Collected: 06/04/12 10:26
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		5.0		ug/L			06/07/12 16:12	1
1,1-Dichloroethane	ND		1.0		ug/L			06/07/12 16:12	1
1,1-Dichloroethene	ND		1.0		ug/L			06/07/12 16:12	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/07/12 16:12	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/07/12 16:12	1
1,2-Dichloropropane	ND		1.0		ug/L			06/07/12 16:12	1
1,3-Dichloropropane	ND		1.0		ug/L			06/07/12 16:12	1
2,2-Dichloropropane	ND		1.0		ug/L			06/07/12 16:12	1
1,1-Dichloropropene	ND		1.0		ug/L			06/07/12 16:12	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/07/12 16:12	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/07/12 16:12	1
Ethylbenzene	ND		1.0		ug/L			06/07/12 16:12	1
Hexachlorobutadiene	ND		4.0		ug/L			06/07/12 16:12	1
2-Hexanone	ND		15		ug/L			06/07/12 16:12	1
Isopropylbenzene	ND		2.0		ug/L			06/07/12 16:12	1
p-Isopropyltoluene	ND		2.0		ug/L			06/07/12 16:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			06/07/12 16:12	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/07/12 16:12	1
Methylene Chloride	ND		5.0		ug/L			06/07/12 16:12	1
Naphthalene	ND		5.0		ug/L			06/07/12 16:12	1
N-Propylbenzene	ND		1.0		ug/L			06/07/12 16:12	1
Styrene	ND		1.0		ug/L			06/07/12 16:12	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/07/12 16:12	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/07/12 16:12	1
Tetrachloroethene	ND		1.0		ug/L			06/07/12 16:12	1
Toluene	ND		1.0		ug/L			06/07/12 16:12	1
1,2,3-Trichlorobenzene	ND		5.0		ug/L			06/07/12 16:12	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/07/12 16:12	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/07/12 16:12	1
1,1,2-Trichloroethane	ND		5.0		ug/L			06/07/12 16:12	1
Trichloroethene	ND		1.0		ug/L			06/07/12 16:12	1
Trichlorofluoromethane	ND		1.0		ug/L			06/07/12 16:12	1
1,2,3-Trichloropropane	ND		5.0		ug/L			06/07/12 16:12	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			06/07/12 16:12	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/07/12 16:12	1
Vinyl chloride	ND		1.0		ug/L			06/07/12 16:12	1
m,p-Xylene	ND		2.0		ug/L			06/07/12 16:12	1
o-Xylene	ND		1.0		ug/L			06/07/12 16:12	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/07/12 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*80 - 120*		*06/07/12 16:12*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*06/07/12 16:12*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*06/07/12 16:12*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/07/12 16:12*	*1*

Client Sample Results

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Client Sample ID: Outfall A
Date Collected: 06/04/12 11:05
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:35	1
Butyl benzyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:35	1
Diethyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:35	1
Dimethyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:35	1
Di-n-butyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:35	1
Di-n-octyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl-d14 (Surr)	*84*		*10 - 150*	*06/07/12 15:56*	*06/12/12 19:30*	*20*
2-Fluorobiphenyl (Surr)	*72*		*10 - 150*	*06/07/12 15:56*	*06/12/12 19:30*	*20*

Client Sample ID: Outfall B
Date Collected: 06/04/12 10:26
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:59	1
Butyl benzyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:59	1
Diethyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:59	1
Dimethyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:59	1
Di-n-butyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:59	1
Di-n-octyl phthalate	ND		0.95		ug/L		06/07/12 15:56	06/12/12 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl-d14 (Surr)	*94*		*10 - 150*	*06/07/12 15:56*	*06/12/12 19:54*	*20*
2-Fluorobiphenyl (Surr)	*78*		*10 - 150*	*06/07/12 15:56*	*06/12/12 19:54*	*20*

Client Sample Results

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: Outfall A
Date Collected: 06/04/12 11:05
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1221	ND		0.20		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1232	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1242	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1248	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1254	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1260	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1262	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1
PCB-1268	ND		0.10		ug/L		06/08/12 14:41	06/11/12 13:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*87*		*10 - 130*	*06/08/12 14:41*	*06/11/12 13:52*	*1*

Client Sample ID: Outfall B
Date Collected: 06/04/12 10:26
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1221	ND		0.20		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1232	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1242	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1248	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1254	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1260	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1262	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1
PCB-1268	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*80*		*10 - 130*	*06/08/12 14:41*	*06/11/12 14:14*	*1*

Client Sample Results

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Method: 6020 - Metals (ICP/MS)

Client Sample ID: Outfall A
Date Collected: 06/04/12 11:05
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.029		0.0020		mg/L		06/05/12 09:57	06/05/12 18:03	1
Lead	0.0053		0.0010		mg/L		06/05/12 09:57	06/05/12 18:03	1
Zinc	0.081		0.010		mg/L		06/05/12 09:57	06/05/12 18:03	1

Client Sample ID: Outfall B
Date Collected: 06/04/12 10:26
Date Received: 06/04/12 14:45

Lab Sample ID: 250-3451-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0064		0.0020		mg/L		06/05/12 09:57	06/05/12 18:09	1
Lead	ND		0.0010		mg/L		06/05/12 09:57	06/05/12 18:09	1
Zinc	0.085		0.010		mg/L		06/05/12 09:57	06/05/12 18:09	1

Client Sample Results

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

General Chemistry

Client Sample ID: Outfall A — **Lab Sample ID: 250-3451-1**
Date Collected: 06/04/12 11:05 — **Matrix: Water**
Date Received: 06/04/12 14:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**30**		10		mg/L			06/07/12 15:58	1

Client Sample ID: Outfall B — **Lab Sample ID: 250-3451-2**
Date Collected: 06/04/12 10:26 — **Matrix: Water**
Date Received: 06/04/12 14:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10		mg/L			06/07/12 15:58	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 250-6035/7
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25		ug/L			06/07/12 10:54	1
Benzene	ND		1.0		ug/L			06/07/12 10:54	1
Bromobenzene	ND		1.0		ug/L			06/07/12 10:54	1
Bromochloromethane	ND		5.0		ug/L			06/07/12 10:54	1
Bromodichloromethane	ND		1.0		ug/L			06/07/12 10:54	1
Bromoform	ND		5.0		ug/L			06/07/12 10:54	1
Bromomethane	ND		5.0		ug/L			06/07/12 10:54	1
2-Butanone (MEK)	ND		10		ug/L			06/07/12 10:54	1
n-Butylbenzene	ND		5.0		ug/L			06/07/12 10:54	1
sec-Butylbenzene	ND		1.0		ug/L			06/07/12 10:54	1
tert-Butylbenzene	ND		1.0		ug/L			06/07/12 10:54	1
Carbon disulfide	ND		10		ug/L			06/07/12 10:54	1
Carbon tetrachloride	ND		1.0		ug/L			06/07/12 10:54	1
Chlorobenzene	ND		1.0		ug/L			06/07/12 10:54	1
Chloroethane	ND		1.0		ug/L			06/07/12 10:54	1
Chloroform	ND		1.0		ug/L			06/07/12 10:54	1
Chloromethane	ND		5.0		ug/L			06/07/12 10:54	1
2-Chlorotoluene	ND		1.0		ug/L			06/07/12 10:54	1
4-Chlorotoluene	ND		1.0		ug/L			06/07/12 10:54	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			06/07/12 10:54	1
Dibromochloromethane	ND		1.0		ug/L			06/07/12 10:54	1
1,2-Dibromoethane	ND		1.0		ug/L			06/07/12 10:54	1
Dibromomethane	ND		5.0		ug/L			06/07/12 10:54	1
1,2-Dichloroethane	ND		1.0		ug/L			06/07/12 10:54	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/07/12 10:54	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/07/12 10:54	1
Dichlorodifluoromethane	ND		5.0		ug/L			06/07/12 10:54	1
1,1-Dichloroethane	ND		1.0		ug/L			06/07/12 10:54	1
1,1-Dichloroethene	ND		1.0		ug/L			06/07/12 10:54	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/07/12 10:54	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/07/12 10:54	1
1,2-Dichloropropane	ND		1.0		ug/L			06/07/12 10:54	1
1,3-Dichloropropane	ND		1.0		ug/L			06/07/12 10:54	1
2,2-Dichloropropane	ND		1.0		ug/L			06/07/12 10:54	1
1,1-Dichloropropene	ND		1.0		ug/L			06/07/12 10:54	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/07/12 10:54	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/07/12 10:54	1
Ethylbenzene	ND		1.0		ug/L			06/07/12 10:54	1
Hexachlorobutadiene	ND		4.0		ug/L			06/07/12 10:54	1
2-Hexanone	ND		15		ug/L			06/07/12 10:54	1
Isopropylbenzene	ND		2.0		ug/L			06/07/12 10:54	1
p-Isopropyltoluene	ND		2.0		ug/L			06/07/12 10:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			06/07/12 10:54	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/07/12 10:54	1
Methylene Chloride	ND		5.0		ug/L			06/07/12 10:54	1
Naphthalene	ND		5.0		ug/L			06/07/12 10:54	1
N-Propylbenzene	ND		1.0		ug/L			06/07/12 10:54	1
Styrene	ND		1.0		ug/L			06/07/12 10:54	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/07/12 10:54	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 250-6035/7
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/07/12 10:54	1
Tetrachloroethene	ND		1.0		ug/L			06/07/12 10:54	1
Toluene	ND		1.0		ug/L			06/07/12 10:54	1
1,2,3-Trichlorobenzene	ND		5.0		ug/L			06/07/12 10:54	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/07/12 10:54	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/07/12 10:54	1
1,1,2-Trichloroethane	ND		5.0		ug/L			06/07/12 10:54	1
Trichloroethene	ND		1.0		ug/L			06/07/12 10:54	1
Trichlorofluoromethane	ND		1.0		ug/L			06/07/12 10:54	1
1,2,3-Trichloropropane	ND		5.0		ug/L			06/07/12 10:54	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			06/07/12 10:54	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/07/12 10:54	1
Vinyl chloride	ND		1.0		ug/L			06/07/12 10:54	1
m,p-Xylene	ND		2.0		ug/L			06/07/12 10:54	1
o-Xylene	ND		1.0		ug/L			06/07/12 10:54	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/07/12 10:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*06/07/12 10:54*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/07/12 10:54*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*06/07/12 10:54*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*06/07/12 10:54*	*1*

Lab Sample ID: LCS 250-6035/4
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	100	113		ug/L		113	55 - 145
Benzene	20.0	18.2		ug/L		91	80 - 120
Bromobenzene	20.0	18.8		ug/L		94	75 - 120
Bromochloromethane	20.0	18.6		ug/L		93	75 - 125
Bromodichloromethane	20.0	18.8		ug/L		94	80 - 130
Bromoform	20.0	16.6		ug/L		83	55 - 135
Bromomethane	20.0	22.2		ug/L		111	35 - 150
2-Butanone (MEK)	100	106		ug/L		106	70 - 140
n-Butylbenzene	20.0	19.0		ug/L		95	75 - 130
sec-Butylbenzene	20.0	19.0		ug/L		95	60 - 130
tert-Butylbenzene	20.0	19.6		ug/L		98	70 - 130
Carbon disulfide	40.0	41.5		ug/L		104	60 - 120
Carbon tetrachloride	20.0	17.5		ug/L		88	70 - 135
Chlorobenzene	20.0	18.6		ug/L		93	80 - 125
Chloroethane	20.0	21.7		ug/L		109	75 - 125
Chloroform	20.0	19.4		ug/L		97	80 - 120
Chloromethane	20.0	22.2		ug/L		111	45 - 150
2-Chlorotoluene	20.0	19.3		ug/L		97	70 - 125
4-Chlorotoluene	20.0	19.3		ug/L		96	75 - 125
1,2-Dibromo-3-Chloropropane	20.0	18.8		ug/L		94	70 - 135
Dibromochloromethane	20.0	17.9		ug/L		90	65 - 140

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-6035/4
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	20.0	18.4		ug/L		92	80 - 125
Dibromomethane	20.0	18.5		ug/L		93	80 - 120
1,2-Dichloroethane	20.0	18.9		ug/L		95	75 - 125
1,3-Dichlorobenzene	20.0	18.5		ug/L		92	75 - 125
1,4-Dichlorobenzene	20.0	18.7		ug/L		94	70 - 120
Dichlorodifluoromethane	20.0	22.9		ug/L		114	45 - 140
1,1-Dichloroethane	20.0	18.5		ug/L		92	80 - 120
1,1-Dichloroethene	20.0	16.9		ug/L		84	75 - 120
cis-1,2-Dichloroethene	20.0	17.5		ug/L		88	80 - 120
trans-1,2-Dichloroethene	20.0	17.0		ug/L		85	80 - 120
1,2-Dichloropropane	20.0	19.4		ug/L		97	80 - 130
1,3-Dichloropropane	20.0	19.5		ug/L		98	80 - 120
2,2-Dichloropropane	20.0	18.9		ug/L		94	60 - 145
1,1-Dichloropropene	20.0	18.1		ug/L		91	80 - 120
cis-1,3-Dichloropropene	20.0	18.9		ug/L		94	80 - 125
trans-1,3-Dichloropropene	20.0	18.6		ug/L		93	80 - 130
Ethylbenzene	20.0	18.8		ug/L		94	80 - 120
Hexachlorobutadiene	20.0	19.5		ug/L		98	60 - 150
2-Hexanone	100	98.8		ug/L		99	70 - 140
Isopropylbenzene	20.0	19.2		ug/L		96	75 - 125
p-Isopropyltoluene	20.0	19.2		ug/L		96	65 - 130
4-Methyl-2-pentanone (MIBK)	100	102		ug/L		102	70 - 135
Methyl tert-butyl ether	20.0	21.2		ug/L		106	80 - 130
Methylene Chloride	20.0	18.2		ug/L		91	80 - 120
Naphthalene	20.0	16.8		ug/L		84	70 - 150
N-Propylbenzene	20.0	18.9		ug/L		95	75 - 130
Styrene	20.0	18.0		ug/L		90	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.0		ug/L		95	65 - 140
1,1,2,2-Tetrachloroethane	20.0	20.5		ug/L		102	75 - 130
Tetrachloroethene	20.0	17.9		ug/L		89	80 - 125
Toluene	20.0	18.2		ug/L		91	80 - 125
1,2,3-Trichlorobenzene	20.0	18.2		ug/L		91	65 - 140
1,2,4-Trichlorobenzene	20.0	17.4		ug/L		87	75 - 130
1,1,1-Trichloroethane	20.0	18.7		ug/L		94	75 - 135
1,1,2-Trichloroethane	20.0	19.1		ug/L		95	80 - 125
Trichloroethene	20.0	18.7		ug/L		94	80 - 135
Trichlorofluoromethane	20.0	22.2		ug/L		111	75 - 140
1,2,3-Trichloropropane	20.0	20.4		ug/L		102	75 - 125
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		97	70 - 130
1,3,5-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 135
Vinyl chloride	20.0	22.2		ug/L		111	75 - 135
m,p-Xylene	40.0	37.4		ug/L		93	70 - 130
o-Xylene	20.0	18.8		ug/L		94	75 - 125
1,2-Dichlorobenzene	20.0	19.8		ug/L		99	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-6035/4
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 250-6035/5
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	100	117		ug/L		117	55 - 145	4	25
Benzene	20.0	20.6		ug/L		103	80 - 120	13	25
Bromobenzene	20.0	19.9		ug/L		100	75 - 120	6	25
Bromochloromethane	20.0	20.6		ug/L		103	75 - 125	10	25
Bromodichloromethane	20.0	19.9		ug/L		100	80 - 130	6	25
Bromoform	20.0	17.7		ug/L		88	55 - 135	6	25
Bromomethane	20.0	21.8		ug/L		109	35 - 150	2	25
2-Butanone (MEK)	100	110		ug/L		110	70 - 140	3	25
n-Butylbenzene	20.0	20.0		ug/L		100	75 - 130	5	25
sec-Butylbenzene	20.0	20.0		ug/L		100	60 - 130	5	25
tert-Butylbenzene	20.0	20.5		ug/L		103	70 - 130	5	25
Carbon disulfide	40.0	39.2		ug/L		98	60 - 120	6	25
Carbon tetrachloride	20.0	20.3		ug/L		101	70 - 135	15	25
Chlorobenzene	20.0	20.2		ug/L		101	80 - 125	8	25
Chloroethane	20.0	21.2		ug/L		106	75 - 125	2	25
Chloroform	20.0	21.2		ug/L		106	80 - 120	9	25
Chloromethane	20.0	21.9		ug/L		109	45 - 150	1	25
2-Chlorotoluene	20.0	20.2		ug/L		101	70 - 125	4	25
4-Chlorotoluene	20.0	19.8		ug/L		99	75 - 125	3	25
1,2-Dibromo-3-Chloropropane	20.0	20.9		ug/L		105	70 - 135	10	25
Dibromochloromethane	20.0	19.0		ug/L		95	65 - 140	6	25
1,2-Dibromoethane	20.0	19.7		ug/L		99	80 - 125	7	
Dibromomethane	20.0	19.9		ug/L		100	80 - 120	7	25
1,2-Dichloroethane	20.0	20.5		ug/L		102	75 - 125	8	25
1,3-Dichlorobenzene	20.0	19.3		ug/L		96	75 - 125	4	25
1,4-Dichlorobenzene	20.0	19.6		ug/L		98	70 - 120	5	25
Dichlorodifluoromethane	20.0	22.3		ug/L		111	45 - 140	3	25
1,1-Dichloroethane	20.0	21.4		ug/L		107	80 - 120	15	25
1,1-Dichloroethene	20.0	20.9		ug/L		105	75 - 120	21	25
cis-1,2-Dichloroethene	20.0	19.7		ug/L		99	80 - 120	12	25
trans-1,2-Dichloroethene	20.0	19.8		ug/L		99	80 - 120	16	25
1,2-Dichloropropane	20.0	21.0		ug/L		105	80 - 130	8	25
1,3-Dichloropropane	20.0	20.8		ug/L		104	80 - 120	6	25
2,2-Dichloropropane	20.0	21.3		ug/L		106	60 - 145	12	25
1,1-Dichloropropene	20.0	20.7		ug/L		103	80 - 120	13	25
cis-1,3-Dichloropropene	20.0	20.2		ug/L		101	80 - 125	7	25
trans-1,3-Dichloropropene	20.0	19.7		ug/L		99	80 - 130	6	25
Ethylbenzene	20.0	20.2		ug/L		101	80 - 120	7	25
Hexachlorobutadiene	20.0	20.3		ug/L		102	60 - 150	4	25
2-Hexanone	100	103		ug/L		103	70 - 140	4	25
Isopropylbenzene	20.0	20.5		ug/L		103	75 - 125	7	25
p-Isopropyltoluene	20.0	19.8		ug/L		99	65 - 130	3	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 250-6035/5
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone (MIBK)	100	106		ug/L		106	70 - 135	4	25
Methyl tert-butyl ether	20.0	20.4		ug/L		102	80 - 130	4	25
Methylene Chloride	20.0	21.2		ug/L		106	80 - 120	15	25
Naphthalene	20.0	19.3		ug/L		97	70 - 150	14	25
N-Propylbenzene	20.0	20.2		ug/L		101	75 - 130	6	25
Styrene	20.0	19.3		ug/L		96	70 - 130	7	25
1,1,1,2-Tetrachloroethane	20.0	19.5		ug/L		97	65 - 140	3	25
1,1,2,2-Tetrachloroethane	20.0	21.4		ug/L		107	75 - 130	5	25
Tetrachloroethene	20.0	19.7		ug/L		98	80 - 125	10	25
Toluene	20.0	20.1		ug/L		101	80 - 125	10	25
1,2,3-Trichlorobenzene	20.0	20.0		ug/L		100	65 - 140	10	25
1,2,4-Trichlorobenzene	20.0	18.7		ug/L		93	75 - 130	7	25
1,1,1-Trichloroethane	20.0	21.4		ug/L		107	75 - 135	13	25
1,1,2-Trichloroethane	20.0	20.4		ug/L		102	80 - 125	7	25
Trichloroethene	20.0	20.4		ug/L		102	80 - 135	9	25
Trichlorofluoromethane	20.0	21.9		ug/L		110	75 - 140	1	25
1,2,3-Trichloropropane	20.0	21.1		ug/L		106	75 - 125	3	25
1,2,4-Trimethylbenzene	20.0	20.0		ug/L		100	70 - 130	4	25
1,3,5-Trimethylbenzene	20.0	20.2		ug/L		101	75 - 135	5	25
Vinyl chloride	20.0	21.4		ug/L		107	75 - 135	4	25
m,p-Xylene	40.0	40.1		ug/L		100	70 - 130	7	25
o-Xylene	20.0	20.2		ug/L		101	75 - 125	7	25
1,2-Dichlorobenzene	20.0	21.1		ug/L		106	80 - 120	7	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: 250-3451-2 MS
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Outfall B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		100	112		ug/L		112	55 - 125
Benzene	ND		20.0	21.3		ug/L		106	80 - 125
Bromobenzene	ND		20.0	22.3		ug/L		111	80 - 125
Bromochloromethane	ND		20.0	22.2		ug/L		111	80 - 130
Bromodichloromethane	ND		20.0	23.0		ug/L		115	80 - 135
Bromoform	ND		20.0	19.9		ug/L		99	65 - 150
Bromomethane	ND		20.0	22.5		ug/L		113	30 - 150
2-Butanone (MEK)	ND		100	105		ug/L		105	70 - 145
n-Butylbenzene	ND		20.0	20.4		ug/L		102	70 - 140
sec-Butylbenzene	ND		20.0	21.5		ug/L		108	70 - 135
tert-Butylbenzene	ND		20.0	22.2		ug/L		111	70 - 135
Carbon disulfide	ND		40.0	42.0		ug/L		105	40 - 150
Carbon tetrachloride	ND		20.0	21.0		ug/L		105	75 - 130
Chlorobenzene	ND		20.0	23.1		ug/L		115	70 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-3451-2 MS
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Outfall B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroethane	ND		20.0	21.6		ug/L		108	75 - 130
Chloroform	ND		20.0	24.1		ug/L		121	80 - 125
Chloromethane	ND		20.0	22.6		ug/L		113	40 - 150
2-Chlorotoluene	ND		20.0	22.2		ug/L		111	80 - 120
4-Chlorotoluene	ND		20.0	22.2		ug/L		111	80 - 125
1,2-Dibromo-3-Chloropropane	ND		20.0	22.3		ug/L		112	55 - 145
Dibromochloromethane	ND		20.0	22.1		ug/L		110	80 - 130
1,2-Dibromoethane	ND		20.0	22.9		ug/L		114	80 - 130
Dibromomethane	ND		20.0	23.1		ug/L		115	75 - 135
1,2-Dichloroethane	ND		20.0	23.2		ug/L		116	80 - 125
1,3-Dichlorobenzene	ND		20.0	21.6		ug/L		108	80 - 125
1,4-Dichlorobenzene	ND		20.0	21.6		ug/L		108	80 - 120
Dichlorodifluoromethane	ND		20.0	22.1		ug/L		110	60 - 135
1,1-Dichloroethane	ND		20.0	22.8		ug/L		114	80 - 125
1,1-Dichloroethene	ND		20.0	21.4		ug/L		107	75 - 130
cis-1,2-Dichloroethene	ND		20.0	21.8		ug/L		109	75 - 140
trans-1,2-Dichloroethene	ND		20.0	21.0		ug/L		105	80 - 120
1,2-Dichloropropane	ND		20.0	23.0		ug/L		115	80 - 120
1,3-Dichloropropane	ND		20.0	23.9		ug/L		120	80 - 135
2,2-Dichloropropane	ND		20.0	22.4		ug/L		112	70 - 145
1,1-Dichloropropene	ND		20.0	21.5		ug/L		108	80 - 125
cis-1,3-Dichloropropene	ND		20.0	22.7		ug/L		113	80 - 130
trans-1,3-Dichloropropene	ND		20.0	22.1		ug/L		111	80 - 135
Ethylbenzene	ND		20.0	21.8		ug/L		109	80 - 125
Hexachlorobutadiene	ND		20.0	20.2		ug/L		101	45 - 150
2-Hexanone	ND		100	98.0		ug/L		98	60 - 150
Isopropylbenzene	ND		20.0	22.1		ug/L		110	80 - 130
p-Isopropyltoluene	ND		20.0	21.6		ug/L		108	70 - 140
4-Methyl-2-pentanone (MIBK)	ND		100	100		ug/L		100	55 - 150
Methyl tert-butyl ether	ND		20.0	21.1		ug/L		106	80 - 130
Methylene Chloride	ND		20.0	22.6		ug/L		113	80 - 120
Naphthalene	ND		20.0	18.7		ug/L		94	65 - 150
N-Propylbenzene	ND		20.0	21.6		ug/L		108	70 - 135
Styrene	ND		20.0	21.5		ug/L		107	45 - 150
1,1,1,2-Tetrachloroethane	ND		20.0	22.7		ug/L		113	80 - 130
1,1,2,2-Tetrachloroethane	ND		20.0	25.1		ug/L		125	75 - 150
Tetrachloroethene	ND		20.0	21.2		ug/L		106	80 - 125
Toluene	ND		20.0	21.9		ug/L		109	75 - 135
1,2,3-Trichlorobenzene	ND		20.0	19.1		ug/L		95	70 - 150
1,2,4-Trichlorobenzene	ND		20.0	19.0		ug/L		95	70 - 150
1,1,1-Trichloroethane	ND		20.0	22.4		ug/L		112	80 - 130
1,1,2-Trichloroethane	ND		20.0	24.0		ug/L		120	80 - 130
Trichloroethene	ND		20.0	22.2		ug/L		111	65 - 130
Trichlorofluoromethane	ND		20.0	22.1		ug/L		111	75 - 130
1,2,3-Trichloropropane	ND		20.0	24.3		ug/L		122	80 - 135
1,2,4-Trimethylbenzene	ND		20.0	22.3		ug/L		112	80 - 140
1,3,5-Trimethylbenzene	ND		20.0	22.1		ug/L		111	70 - 145
Vinyl chloride	ND		20.0	22.0		ug/L		110	70 - 135
m,p-Xylene	ND		40.0	42.7		ug/L		107	75 - 135
o-Xylene	ND		20.0	22.0		ug/L		110	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-3451-2 MS
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Outfall B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	ND		20.0	22.3		ug/L		112	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 250-3451-2 MSD
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Outfall B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		100	103		ug/L		103	55 - 125	8	25
Benzene	ND		20.0	21.0		ug/L		105	80 - 125	1	25
Bromobenzene	ND		20.0	21.6		ug/L		108	80 - 125	3	25
Bromochloromethane	ND		20.0	22.4		ug/L		112	80 - 130	1	25
Bromodichloromethane	ND		20.0	21.7		ug/L		109	80 - 135	6	25
Bromoform	ND		20.0	19.3		ug/L		96	65 - 150	3	25
Bromomethane	ND		20.0	21.1		ug/L		106	30 - 150	6	25
2-Butanone (MEK)	ND		100	99.0		ug/L		99	70 - 145	6	25
n-Butylbenzene	ND		20.0	20.6		ug/L		103	70 - 140	1	25
sec-Butylbenzene	ND		20.0	20.3		ug/L		101	70 - 135	6	25
tert-Butylbenzene	ND		20.0	21.6		ug/L		108	70 - 135	3	25
Carbon disulfide	ND		40.0	39.6		ug/L		99	40 - 150	6	25
Carbon tetrachloride	ND		20.0	20.3		ug/L		101	75 - 130	3	25
Chlorobenzene	ND		20.0	21.9		ug/L		109	70 - 135	5	25
Chloroethane	ND		20.0	20.2		ug/L		101	75 - 130	6	25
Chloroform	ND		20.0	22.9		ug/L		115	80 - 125	5	25
Chloromethane	ND		20.0	21.6		ug/L		108	40 - 150	4	25
2-Chlorotoluene	ND		20.0	21.3		ug/L		107	80 - 120	4	25
4-Chlorotoluene	ND		20.0	20.9		ug/L		105	80 - 125	6	25
1,2-Dibromo-3-Chloropropane	ND		20.0	21.6		ug/L		108	55 - 145	3	25
Dibromochloromethane	ND		20.0	20.9		ug/L		104	80 - 130	6	25
1,2-Dibromoethane	ND		20.0	22.2		ug/L		111	80 - 130	3	
Dibromomethane	ND		20.0	22.0		ug/L		110	75 - 135	5	25
1,2-Dichloroethane	ND		20.0	21.6		ug/L		108	80 - 125	7	25
1,3-Dichlorobenzene	ND		20.0	20.3		ug/L		102	80 - 125	6	25
1,4-Dichlorobenzene	ND		20.0	20.9		ug/L		104	80 - 120	3	25
Dichlorodifluoromethane	ND		20.0	21.4		ug/L		107	60 - 135	3	25
1,1-Dichloroethane	ND		20.0	21.8		ug/L		109	80 - 125	4	25
1,1-Dichloroethene	ND		20.0	20.5		ug/L		102	75 - 130	4	25
cis-1,2-Dichloroethene	ND		20.0	20.5		ug/L		103	75 - 140	6	25
trans-1,2-Dichloroethene	ND		20.0	19.7		ug/L		99	80 - 120	6	25
1,2-Dichloropropane	ND		20.0	22.3		ug/L		111	80 - 120	3	25
1,3-Dichloropropane	ND		20.0	22.6		ug/L		113	80 - 135	6	25
2,2-Dichloropropane	ND		20.0	21.1		ug/L		105	70 - 145	6	25
1,1-Dichloropropene	ND		20.0	20.6		ug/L		103	80 - 125	4	25
cis-1,3-Dichloropropene	ND		20.0	21.6		ug/L		108	80 - 130	5	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-3451-2 MSD
Matrix: Water
Analysis Batch: 6035

Client Sample ID: Outfall B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
trans-1,3-Dichloropropene	ND		20.0	21.6		ug/L		108	80 - 135	2	25
Ethylbenzene	ND		20.0	21.0		ug/L		105	80 - 125	4	25
Hexachlorobutadiene	ND		20.0	20.5		ug/L		102	45 - 150	1	25
2-Hexanone	ND		100	94.9		ug/L		95	60 - 150	3	25
Isopropylbenzene	ND		20.0	21.2		ug/L		106	80 - 130	4	25
p-Isopropyltoluene	ND		20.0	20.4		ug/L		102	70 - 140	6	25
4-Methyl-2-pentanone (MIBK)	ND		100	98.2		ug/L		98	55 - 150	2	25
Methyl tert-butyl ether	ND		20.0	20.0		ug/L		100	80 - 130	5	25
Methylene Chloride	ND		20.0	21.4		ug/L		107	80 - 120	5	25
Naphthalene	ND		20.0	19.7		ug/L		99	65 - 150	5	25
N-Propylbenzene	ND		20.0	20.8		ug/L		104	70 - 135	4	25
Styrene	ND		20.0	20.6		ug/L		103	45 - 150	4	25
1,1,1,2-Tetrachloroethane	ND		20.0	21.6		ug/L		108	80 - 130	5	25
1,1,2,2-Tetrachloroethane	ND		20.0	23.6		ug/L		118	75 - 150	6	25
Tetrachloroethene	ND		20.0	20.4		ug/L		102	80 - 125	4	25
Toluene	ND		20.0	21.4		ug/L		107	75 - 135	2	25
1,2,3-Trichlorobenzene	ND		20.0	20.2		ug/L		101	70 - 150	6	25
1,2,4-Trichlorobenzene	ND		20.0	19.2		ug/L		96	70 - 150	1	25
1,1,1-Trichloroethane	ND		20.0	21.5		ug/L		108	80 - 130	4	25
1,1,2-Trichloroethane	ND		20.0	22.9		ug/L		114	80 - 130	5	25
Trichloroethene	ND		20.0	21.3		ug/L		107	65 - 130	4	25
Trichlorofluoromethane	ND		20.0	21.3		ug/L		107	75 - 130	4	25
1,2,3-Trichloropropane	ND		20.0	23.8		ug/L		119	80 - 135	2	25
1,2,4-Trimethylbenzene	ND		20.0	21.2		ug/L		106	80 - 140	5	25
1,3,5-Trimethylbenzene	ND		20.0	21.1		ug/L		105	70 - 145	5	25
Vinyl chloride	ND		20.0	20.6		ug/L		103	70 - 135	6	25
m,p-Xylene	ND		40.0	42.4		ug/L		106	75 - 135	1	25
o-Xylene	ND		20.0	21.5		ug/L		108	80 - 125	2	25
1,2-Dichlorobenzene	ND		20.0	22.6		ug/L		113	80 - 120	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 250-6049/1-A
Matrix: Water
Analysis Batch: 6325

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		1.0		ug/L		06/07/12 15:56	06/12/12 14:00	1
Butyl benzyl phthalate	ND		1.0		ug/L		06/07/12 15:56	06/12/12 14:00	1
Diethyl phthalate	ND		1.0		ug/L		06/07/12 15:56	06/12/12 14:00	1
Dimethyl phthalate	ND		1.0		ug/L		06/07/12 15:56	06/12/12 14:00	1
Di-n-butyl phthalate	ND		1.0		ug/L		06/07/12 15:56	06/12/12 14:00	1
Di-n-octyl phthalate	ND		1.0		ug/L		06/07/12 15:56	06/12/12 14:00	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 250-6049/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6325 — **Prep Batch: 6049**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl-d14 (Surr)	90		10 - 150	06/07/12 15:56	06/12/12 17:56	20
2-Fluorobiphenyl (Surr)	73		10 - 150	06/07/12 15:56	06/12/12 17:56	20

Lab Sample ID: LCS 250-6049/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6325 — **Prep Batch: 6049**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	4.00	2.93		ug/L		73	20 - 150
Butyl benzyl phthalate	4.00	3.06		ug/L		76	20 - 150
Diethyl phthalate	4.00	3.18		ug/L		80	20 - 150
Dimethyl phthalate	4.00	3.13		ug/L		78	20 - 150
Di-n-butyl phthalate	4.00	3.22		ug/L		80	20 - 150
Di-n-octyl phthalate	4.00	2.80		ug/L		70	20 - 150

Lab Sample ID: LCS 250-6049/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6325 — **Prep Batch: 6049**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
p-Terphenyl-d14 (Surr)	93		10 - 150
2-Fluorobiphenyl (Surr)	72		10 - 150

Lab Sample ID: LCSD 250-6049/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6325 — **Prep Batch: 6049**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	4.00	2.98		ug/L		75	20 - 150	2	35
Butyl benzyl phthalate	4.00	3.14		ug/L		78	20 - 150	3	35
Diethyl phthalate	4.00	3.19		ug/L		80	20 - 150	0	35
Dimethyl phthalate	4.00	3.19		ug/L		80	20 - 150	2	35
Di-n-butyl phthalate	4.00	3.21		ug/L		80	20 - 150	0	35
Di-n-octyl phthalate	4.00	2.79		ug/L		70	20 - 150	0	35

Lab Sample ID: LCSD 250-6049/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6325 — **Prep Batch: 6049**

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
p-Terphenyl-d14 (Surr)	87		10 - 150
2-Fluorobiphenyl (Surr)	73		10 - 150

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 250-6108/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6173 — **Prep Batch: 6108**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1221	ND		0.20		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1232	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1242	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1248	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1254	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1260	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1262	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1
PCB-1268	ND		0.10		ug/L		06/08/12 14:41	06/11/12 14:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*92*		*10 - 130*	*06/08/12 14:41*	*06/11/12 14:35*	*1*

Lab Sample ID: LCS 250-6108/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6173 — **Prep Batch: 6108**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	0.500	0.316		ug/L		63	50 - 150
PCB-1260	0.500	0.434		ug/L		87	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*92*		*10 - 130*

Lab Sample ID: LCSD 250-6108/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6173 — **Prep Batch: 6108**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	0.500	0.349		ug/L		70	50 - 150	10	20
PCB-1260	0.500	0.458		ug/L		92	50 - 150	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*96*		*10 - 130*

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 250-5880/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 5938 — **Prep Batch: 5880**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		0.0020		mg/L		06/05/12 09:57	06/05/12 17:46	1
Lead	ND		0.0010		mg/L		06/05/12 09:57	06/05/12 17:46	1
Zinc	ND		0.010		mg/L		06/05/12 09:57	06/05/12 17:46	1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 250-5880/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 5938 — **Prep Batch: 5880**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	0.100	0.0918		mg/L		92	80 - 120
Lead	0.100	0.0913		mg/L		91	80 - 120
Zinc	0.100	0.0979		mg/L		98	80 - 120

Lab Sample ID: 250-3411-B-4-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 5938 — **Prep Batch: 5880**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	ND		0.100	0.0961		mg/L		95	75 - 125
Lead	ND		0.100	0.0900		mg/L		90	75 - 125
Zinc	ND		0.100	0.103		mg/L		103	75 - 125

Lab Sample ID: 250-3451-1 MS — **Client Sample ID: Outfall A**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 5938 — **Prep Batch: 5880**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	0.029		0.100	0.122		mg/L		93	75 - 125
Lead	0.0053		0.100	0.103		mg/L		98	75 - 125
Zinc	0.081		0.100	0.183		mg/L		101	75 - 125

Lab Sample ID: 250-3398-G-1-B DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 5938 — **Prep Batch: 5880**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Copper	0.025		0.0222		mg/L		12	20
Lead	0.023		0.0216		mg/L		5	20
Zinc	0.34		0.306		mg/L		12	20

Method: 160.2 - Solids, Total Suspended (TSS)

Lab Sample ID: MB 250-6043/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6043

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10		mg/L			06/07/12 15:58	1

Lab Sample ID: LCS 250-6043/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 6043

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	60.3	66.0		mg/L		109	80 - 120

Method: 160.2 - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 250-3451-2 DU
Matrix: Water
Analysis Batch: 6043

Client Sample ID: Outfall B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	ND			ND		mg/L				NC	20

QC Association Summary

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

GC/MS VOA

Analysis Batch: 6035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3451-1	Outfall A	Total/NA	Water	8260B	
250-3451-2	Outfall B	Total/NA	Water	8260B	
250-3451-2 MS	Outfall B	Total/NA	Water	8260B	
250-3451-2 MSD	Outfall B	Total/NA	Water	8260B	
LCS 250-6035/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 250-6035/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 250-6035/7	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 6049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3451-1	Outfall A	Total/NA	Water	3520C	
250-3451-2	Outfall B	Total/NA	Water	3520C	
LCS 250-6049/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 250-6049/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 250-6049/1-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 6325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3451-1	Outfall A	Total/NA	Water	8270C SIM	6049
250-3451-1	Outfall A	Total/NA	Water	8270C SIM	6049
250-3451-2	Outfall B	Total/NA	Water	8270C SIM	6049
250-3451-2	Outfall B	Total/NA	Water	8270C SIM	6049
LCS 250-6049/2-A	Lab Control Sample	Total/NA	Water	8270C SIM	6049
LCS 250-6049/2-A	Lab Control Sample	Total/NA	Water	8270C SIM	6049
LCSD 250-6049/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	6049
LCSD 250-6049/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	6049
MB 250-6049/1-A	Method Blank	Total/NA	Water	8270C SIM	6049
MB 250-6049/1-A	Method Blank	Total/NA	Water	8270C SIM	6049

GC Semi VOA

Prep Batch: 6108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3451-1	Outfall A	Total/NA	Water	3510C	
250-3451-2	Outfall B	Total/NA	Water	3510C	
LCS 250-6108/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 250-6108/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 250-6108/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 6173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3451-1	Outfall A	Total/NA	Water	8082	6108
250-3451-2	Outfall B	Total/NA	Water	8082	6108
LCS 250-6108/2-A	Lab Control Sample	Total/NA	Water	8082	6108
LCSD 250-6108/3-A	Lab Control Sample Dup	Total/NA	Water	8082	6108
MB 250-6108/1-A	Method Blank	Total/NA	Water	8082	6108

QC Association Summary

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Metals

Prep Batch: 5880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3398-G-1-B DU	Duplicate	Total/NA	Water	3005A	
250-3411-B-4-C MS	Matrix Spike	Total/NA	Water	3005A	
250-3451-1	Outfall A	Total/NA	Water	3005A	
250-3451-1 MS	Outfall A	Total/NA	Water	3005A	
250-3451-2	Outfall B	Total/NA	Water	3005A	
LCS 250-5880/2-A	Lab Control Sample	Total/NA	Water	3005A	
MB 250-5880/1-A	Method Blank	Total/NA	Water	3005A	

Analysis Batch: 5938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3398-G-1-B DU	Duplicate	Total/NA	Water	6020	5880
250-3411-B-4-C MS	Matrix Spike	Total/NA	Water	6020	5880
250-3451-1	Outfall A	Total/NA	Water	6020	5880
250-3451-1 MS	Outfall A	Total/NA	Water	6020	5880
250-3451-2	Outfall B	Total/NA	Water	6020	5880
LCS 250-5880/2-A	Lab Control Sample	Total/NA	Water	6020	5880
MB 250-5880/1-A	Method Blank	Total/NA	Water	6020	5880

General Chemistry

Analysis Batch: 6043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-3451-1	Outfall A	Total/NA	Water	160.2	
250-3451-2	Outfall B	Total/NA	Water	160.2	
250-3451-2 DU	Outfall B	Total/NA	Water	160.2	
LCS 250-6043/2	Lab Control Sample	Total/NA	Water	160.2	
MB 250-6043/1	Method Blank	Total/NA	Water	160.2	

Certification Summary

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Portland	Alaska	State Program	10	OR00040
TestAmerica Portland	Alaska (UST)	State Program	10	UST-012
TestAmerica Portland	California	State Program	9	2597
TestAmerica Portland	Oregon	NELAC	10	OR100021
TestAmerica Portland	USDA	Federal		P330-11-00092
TestAmerica Portland	Washington	State Program	10	C586

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: Hart Crowser, Inc.
Project/Site: Brix Maritime

TestAmerica Job ID: 250-3451-1
SDG: 15634.00

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
8270C SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL PRT
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL PRT
6020	Metals (ICP/MS)	SW846	TAL PRT
160.2	Solids, Total Suspended (TSS)	MCAWW	TAL PRT

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-42
5755 8Th Street East, Tacoma, Wa 98424 253-92
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-90
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-56

Loc: 250
3451

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: Hart Crowser

REPORT TO: Leon Lahiere
ADDRESS: 8910 SW Gemini Dr.
Beaverton, OR 97008

PHONE: FAX:

INVOICE TO: Leon Lahiere
Hart Crowser

P.O. NUMBER: 15634-00

PROJECT NAME: Brix Maritime
PROJECT NUMBER: 15634-00
SAMPLED BY: Chris Martin

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 STD, 7, 5, 4, 3, 2, 1, <1

Petroleum Hydrocarbon Analyses: 5 STD, 4, 3, 2, 1, <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	VOCs 8260B	PCBs Low Level 8082A	Phthalates Low Level 8270	TSS 160.2	Total Copper, Lead, & Zinc 6000	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	Outfall A	6/4/12 / 1105	X	X	X	X	X	W			
2	Outfall B	6/4/12 / 1026	X	X	X	X	X	W			
3											
4											
5											
6											
7											
8											
9											
10											

RELEASED BY: John	DATE: 6/4/12	RECEIVED BY: Brian Moran	DATE: 6-4-12
PRINT NAME: Chris Martin	FIRM: HC	TIME:	PRINT NAME: Brian Moran	FIRM: T.A.	TIME: 1442
RELEASED BY: Brian Moran	DATE: 6-4-12	RECEIVED BY:	DATE: 06/04/12
PRINT NAME: Brian Moran	FIRM: TA	TIME: 1445	PRINT NAME: Tom Krause	FIRM: TAP	TIME: 1445

ADDITIONAL REMARKS:
EPA 6000 Total Copper, Lead, & Zinc

TEMP: 5.1

PAGE 1 OF 1

TAL-1000 (0212)

1R/P-L

6/13/2012

Login Sample Receipt Checklist

Client: Hart Crowser, Inc.

Job Number: 250-3451-1
SDG Number: 15634.00

Login Number: 3451
List Number: 1
Creator: Svabik-Seror, Philip

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	Trip Blank received, not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

Report Summary

Wednesday June 13, 2012

Report Number: L578549
Samples Received: 06/05/12
Client Project: 15534-00

Description: Brix Maritime

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.
Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

June 13, 2012

ESC Sample # : L578549-01

Date Received : June 05, 2012
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL A

Project # : 15534-00

Collected By : Chris Martin
Collection Date : 06/04/12 11:05

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	33.	100	ug/l		NWTPHGX	06/06/12	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	97.6			% Rec.		NWTPHGX	06/06/12	1
Diesel Range Organics (DRO)	90.	33.	100	ug/l	J	NWTPHDX	06/13/12	1
Residual Range Organics (RRO)	U	82.	250	ug/l		NWTPHDX	06/13/12	1
Surrogate Recovery								
o-Terphenyl	84.7			% Rec.		NWTPHDX	06/13/12	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.026	0.0076	0.050	ug/l	J	8270C-S	06/12/12	1
Acenaphthene	0.0095	0.0082	0.050	ug/l	J	8270C-S	06/12/12	1
Acenaphthylene	U	0.0068	0.050	ug/l		8270C-S	06/12/12	1
Benzo(a)anthracene	0.15	0.012	0.050	ug/l		8270C-S	06/12/12	1
Benzo(a)pyrene	0.12	0.012	0.050	ug/l		8270C-S	06/12/12	1
Benzo(b)fluoranthene	0.19	0.014	0.050	ug/l		8270C-S	06/12/12	1
Benzo(g,h,i)perylene	0.087	0.011	0.050	ug/l		8270C-S	06/12/12	1
Benzo(k)fluoranthene	0.079	0.014	0.050	ug/l		8270C-S	06/12/12	1
Chrysene	0.18	0.011	0.050	ug/l		8270C-S	06/12/12	1
Dibenz(a,h)anthracene	0.018	0.0040	0.050	ug/l	J	8270C-S	06/12/12	1
Fluoranthene	0.24	0.016	0.050	ug/l		8270C-S	06/12/12	1
Fluorene	U	0.0085	0.050	ug/l		8270C-S	06/12/12	1
Indeno(1,2,3-cd)pyrene	0.070	0.015	0.050	ug/l		8270C-S	06/12/12	1
Naphthalene	0.071	0.020	0.25	ug/l	J	8270C-S	06/12/12	1
Phenanthrene	0.089	0.0082	0.050	ug/l		8270C-S	06/12/12	1
Pyrene	0.25	0.012	0.050	ug/l		8270C-S	06/12/12	1
1-Methylnaphthalene	0.014	0.0082	0.25	ug/l	J	8270C-S	06/12/12	1
2-Methylnaphthalene	0.018	0.0090	0.25	ug/l	J	8270C-S	06/12/12	1
2-Chloronaphthalene	U	0.0065	0.25	ug/l		8270C-S	06/12/12	1
Surrogate Recovery								
Nitrobenzene-d5	107.			% Rec.		8270C-S	06/12/12	1
2-Fluorobiphenyl	93.1			% Rec.		8270C-S	06/12/12	1
p-Terphenyl-d14	95.3			% Rec.		8270C-S	06/12/12	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/13/12 14:33 Printed: 06/13/12 14:34

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

June 13, 2012

ESC Sample # : L578549-02

Date Received : June 05, 2012
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL B

Project # : 15534-00

Collected By : Chris Martin
Collection Date : 06/04/12 10:26

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	33.	100	ug/l		NWTPHGX	06/06/12	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	98.1			% Rec.		NWTPHGX	06/06/12	1
Diesel Range Organics (DRO)	U	33.	100	ug/l		NWTPHDX	06/13/12	1
Residual Range Organics (RRO)	U	82.	250	ug/l		NWTPHDX	06/13/12	1
Surrogate Recovery								
o-Terphenyl	73.9			% Rec.		NWTPHDX	06/13/12	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0076	0.050	ug/l		8270C-S	06/12/12	1
Acenaphthene	U	0.0082	0.050	ug/l		8270C-S	06/12/12	1
Acenaphthylene	U	0.0068	0.050	ug/l		8270C-S	06/12/12	1
Benzo(a)anthracene	U	0.012	0.050	ug/l		8270C-S	06/12/12	1
Benzo(a)pyrene	U	0.012	0.050	ug/l		8270C-S	06/12/12	1
Benzo(b)fluoranthene	U	0.014	0.050	ug/l		8270C-S	06/12/12	1
Benzo(g,h,i)perylene	U	0.011	0.050	ug/l		8270C-S	06/12/12	1
Benzo(k)fluoranthene	U	0.014	0.050	ug/l		8270C-S	06/12/12	1
Chrysene	U	0.011	0.050	ug/l		8270C-S	06/12/12	1
Dibenz(a,h)anthracene	U	0.0040	0.050	ug/l		8270C-S	06/12/12	1
Fluoranthene	U	0.016	0.050	ug/l		8270C-S	06/12/12	1
Fluorene	U	0.0085	0.050	ug/l		8270C-S	06/12/12	1
Indeno(1,2,3-cd)pyrene	U	0.015	0.050	ug/l		8270C-S	06/12/12	1
Naphthalene	0.057	0.020	0.25	ug/l	J	8270C-S	06/12/12	1
Phenanthrene	0.010	0.0082	0.050	ug/l	J	8270C-S	06/12/12	1
Pyrene	U	0.012	0.050	ug/l		8270C-S	06/12/12	1
1-Methylnaphthalene	0.012	0.0082	0.25	ug/l	J	8270C-S	06/12/12	1
2-Methylnaphthalene	0.018	0.0090	0.25	ug/l	J	8270C-S	06/12/12	1
2-Chloronaphthalene	U	0.0065	0.25	ug/l		8270C-S	06/12/12	1
Surrogate Recovery								
Nitrobenzene-d5	110.			% Rec.		8270C-S	06/12/12	1
2-Fluorobiphenyl	89.9			% Rec.		8270C-S	06/12/12	1
p-Terphenyl-d14	91.5			% Rec.		8270C-S	06/12/12	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/13/12 14:33 Printed: 06/13/12 14:34

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L578549-01	WG596822	SAMP	Diesel Range Organics (DRO)	R2208473	J
	WG596526	SAMP	Anthracene	R2205873	J
	WG596526	SAMP	Acenaphthene	R2205873	J
	WG596526	SAMP	Dibenz(a,h)anthracene	R2205873	J
	WG596526	SAMP	Naphthalene	R2205873	J
	WG596526	SAMP	1-Methylnaphthalene	R2205873	J
	WG596526	SAMP	2-Methylnaphthalene	R2205873	J
L578549-02	WG596526	SAMP	Naphthalene	R2205873	J
	WG596526	SAMP	Phenanthrene	R2205873	J
	WG596526	SAMP	1-Methylnaphthalene	R2205873	J
	WG596526	SAMP	2-Methylnaphthalene	R2205873	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
06/13/12 at 14:34:05

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L578549-01 Account: HARCROPOR Received: 06/05/12 09:00 Due Date: 06/12/12 00:00 RPT Date: 06/13/12 14:33

Sample: L578549-02 Account: HARCROPOR Received: 06/05/12 09:00 Due Date: 06/12/12 00:00 RPT Date: 06/13/12 14:33

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L578549

June 13, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Gasoline Range Organics-NWTPH	< .1	mg/l			WG596424	06/06/12 16:43
a,a,a-Trifluorotoluene(FID)		% Rec.	98.70	62-128	WG596424	06/06/12 16:43
1-Methylnaphthalene	< .00025	mg/l			WG596526	06/11/12 12:36
2-Chloronaphthalene	< .00025	mg/l			WG596526	06/11/12 12:36
2-Methylnaphthalene	< .00025	mg/l			WG596526	06/11/12 12:36
Acenaphthene	< .00005	mg/l			WG596526	06/11/12 12:36
Acenaphthylene	< .00005	mg/l			WG596526	06/11/12 12:36
Anthracene	< .00005	mg/l			WG596526	06/11/12 12:36
Benzo(a)anthracene	< .00005	mg/l			WG596526	06/11/12 12:36
Benzo(a)pyrene	< .00005	mg/l			WG596526	06/11/12 12:36
Benzo(b)fluoranthene	< .00005	mg/l			WG596526	06/11/12 12:36
Benzo(g,h,i)perylene	< .00005	mg/l			WG596526	06/11/12 12:36
Benzo(k)fluoranthene	< .00005	mg/l			WG596526	06/11/12 12:36
Chrysene	< .00005	mg/l			WG596526	06/11/12 12:36
Dibenz(a,h)anthracene	< .00005	mg/l			WG596526	06/11/12 12:36
Fluoranthene	< .00005	mg/l			WG596526	06/11/12 12:36
Fluorene	< .00005	mg/l			WG596526	06/11/12 12:36
Indeno(1,2,3-cd)pyrene	< .00005	mg/l			WG596526	06/11/12 12:36
Naphthalene	< .00025	mg/l			WG596526	06/11/12 12:36
Phenanthrene	< .00005	mg/l			WG596526	06/11/12 12:36
Pyrene	< .00005	mg/l			WG596526	06/11/12 12:36
2-Fluorobiphenyl		% Rec.	123.2	70-130	WG596526	06/11/12 12:36
Nitrobenzene-d5		% Rec.	116.8	70-130	WG596526	06/11/12 12:36
p-Terphenyl-d14		% Rec.	129.6	70-130	WG596526	06/11/12 12:36
Diesel Range Organics (DRO)	< .1	ppm			WG596822	06/13/12 09:33
Residual Range Organics (RRO)	< .25	ppm			WG596822	06/13/12 09:33
o-Terphenyl		% Rec.	77.72	50-150	WG596822	06/13/12 09:33

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Gasoline Range Organics-NWTPH	mg/l	5.5	5.41	98.4	70-124	WG596424
a,a,a-Trifluorotoluene(FID)				105.2	62-128	WG596424
1-Methylnaphthalene	mg/l	.002	0.00161	80.6	70-130	WG596526
2-Chloronaphthalene	mg/l	.002	0.00185	92.5	70-130	WG596526
2-Methylnaphthalene	mg/l	.002	0.00156	78.2	70-130	WG596526
Acenaphthene	mg/l	.002	0.00190	95.0	70-130	WG596526
Acenaphthylene	mg/l	.002	0.00182	91.2	70-130	WG596526
Anthracene	mg/l	.002	0.00187	93.3	70-130	WG596526
Benzo(a)anthracene	mg/l	.002	0.00194	96.9	70-130	WG596526
Benzo(a)pyrene	mg/l	.002	0.00199	99.3	70-130	WG596526
Benzo(b)fluoranthene	mg/l	.002	0.00196	97.8	70-130	WG596526
Benzo(g,h,i)perylene	mg/l	.002	0.00157	78.7	70-130	WG596526
Benzo(k)fluoranthene	mg/l	.002	0.00196	98.1	70-130	WG596526
Chrysene	mg/l	.002	0.00190	95.0	70-130	WG596526
Dibenz(a,h)anthracene	mg/l	.002	0.00164	82.0	70-130	WG596526
Fluoranthene	mg/l	.002	0.00180	90.2	70-130	WG596526
Fluorene	mg/l	.002	0.00184	91.8	70-130	WG596526
Indeno(1,2,3-cd)pyrene	mg/l	.002	0.00168	83.9	70-130	WG596526
Naphthalene	mg/l	.002	0.00184	91.9	70-130	WG596526
Phenanthrene	mg/l	.002	0.00183	91.5	70-130	WG596526
Pyrene	mg/l	.002	0.00198	99.1	70-130	WG596526
2-Fluorobiphenyl				90.90	70-130	WG596526

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L578549

June 13, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Nitrobenzene-d5				86.27	70-130	
p-Terphenyl-d14				90.37	70-130	
Diesel Range Organics (DRO)	mg/l	.75	0.638	85.1	50-150	WG596822
Residual Range Organics (RRO)	mg/l	.75	0.611	81.4	50-150	WG596822
o-Terphenyl				94.01	50-150	WG596822

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Gasoline Range Organics-NWTPH	mg/l	5.58	5.41	101.	70-124	2.98	20	WG596424
a,a,a-Trifluorotoluene(FID)				105.9	62-128			WG596424
1-Methylnaphthalene	mg/l	0.00187	0.00161	93.0	70-130	14.8	25	WG596526
2-Chloronaphthalene	mg/l	0.00210	0.00185	105.	70-130	12.4	25	WG596526
2-Methylnaphthalene	mg/l	0.00181	0.00156	90.0	70-130	14.4	25	WG596526
Acenaphthene	mg/l	0.00214	0.00190	107.	70-130	12.1	25	WG596526
Acenaphthylene	mg/l	0.00209	0.00182	104.	70-130	13.6	25	WG596526
Anthracene	mg/l	0.00217	0.00187	108.	70-130	14.9	25	WG596526
Benzo(a)anthracene	mg/l	0.00219	0.00194	109.	70-130	12.0	25	WG596526
Benzo(a)pyrene	mg/l	0.00224	0.00199	112.	70-130	12.1	25	WG596526
Benzo(b)fluoranthene	mg/l	0.00206	0.00196	103.	70-130	5.05	25	WG596526
Benzo(g,h,i)perylene	mg/l	0.00184	0.00157	92.0	70-130	15.5	25	WG596526
Benzo(k)fluoranthene	mg/l	0.00241	0.00196	121.	70-130	20.7	25	WG596526
Chrysene	mg/l	0.00214	0.00190	107.	70-130	11.9	25	WG596526
Dibenz(a,h)anthracene	mg/l	0.00191	0.00164	95.0	70-130	15.1	25	WG596526
Fluoranthene	mg/l	0.00210	0.00180	105.	70-130	15.2	25	WG596526
Fluorene	mg/l	0.00209	0.00184	104.	70-130	12.9	25	WG596526
Indeno(1,2,3-cd)pyrene	mg/l	0.00191	0.00168	96.0	70-130	13.1	25	WG596526
Naphthalene	mg/l	0.00209	0.00184	104.	70-130	12.8	25	WG596526
Phenanthrene	mg/l	0.00209	0.00183	104.	70-130	13.4	25	WG596526
Pyrene	mg/l	0.00226	0.00198	113.	70-130	13.0	25	WG596526
2-Fluorobiphenyl				101.6	70-130			WG596526
Nitrobenzene-d5				98.32	70-130			WG596526
p-Terphenyl-d14				105.6	70-130			WG596526
Diesel Range Organics (DRO)	mg/l	0.640	0.638	85.0	50-150	0.376	20	WG596822
Residual Range Organics (RRO)	mg/l	0.607	0.611	81.0	50-150	0.562	20	WG596822
o-Terphenyl				92.82	50-150			WG596822

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/l	5.47	0.0257	5.5	98.9	58-122	L578541-04	WG596424
a,a,a-Trifluorotoluene(FID)					105.1	62-128		WG596424

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/l	5.62	5.47	102.	58-122	2.74	20	L578541-04	WG596424
a,a,a-Trifluorotoluene(FID)				105.2	62-128				WG596424

Batch number /Run number / Sample number cross reference

WG596424: R2199813: L578549-01 02
WG596526: R2205873: L578549-01 02
WG596822: R2208473: L578549-01 02
* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L578549

June 13, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Hart Crowser - Portland, OR

8910 SW Gemini Drive
Beaverton,OR 97008

Billing information:

Accounts Payable
8910 SW Gemini Drive

Beaverton,OR 97008

H036

ESC LAB SCIENCES
12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Report to: Leon Lahiere

Email: leon.lahiere@hartcrowser.co

Project Description: Brix Maritime

City/State Collected: Portland, OR

Phone: (503) 620-7284
FAX:

Client Project #: 15534-00

Lab Project #: HARCROPOR-1563400

Collected by (print): Chris Martin

Site/Facility ID#:

P.O.#:

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: Standard

Email? ___No X Yes
FAX? ___No ___Yes

Acctnum: HARCROPOR (lab use only)
Template/Prelogin: T79193/ P393566
Cooler #: 5-22 mm
Shipped Via: FedEX Saver

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	NWTPHDX 100ml Amb-HCl	NWTPHGX 40mlAmb HCl	SVPAHSIMLVID 40mlAmb-NoPres						Remarks/Contaminant	Sample # (lab only)
Outfall A	Grab	GW	NA	6/4/12	1105	7	X	X	X							L578549-01
Outfall B	Grab	GW	NA	6/4/12	1026	7	X	X	X							02

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

S2748789 7030

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (1)	(lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.7 Bottles Received: 14+TB	COC Seal Intact: ___Y ___N ✓NA	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6/5/12 Time: 0900	pH Checked: L2	NCF:

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

Report Summary

Tuesday March 05, 2013

Report Number: L621775
Samples Received: 02/23/13
Client Project: 15634-00

Description: Brix Maritime

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.
Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-01

Date Received : February 23, 2013
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL A

Project # : 15634-00

Collected By : Jason R. Miles
Collection Date : 02/22/13 11:04

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Suspended Solids	14000	350	1000	ug/l		2540 D-	03/01/13	1
Copper	3.3	0.52	2.0	ug/l		6020	02/27/13	1
Lead	1.9	0.24	1.0	ug/l		6020	02/27/13	1
Zinc	15.	2.6	10.	ug/l		6020	02/27/13	1
Gasoline Range Organics-NWTPH	U	32.	100	ug/l		NWTPHGX	02/26/13	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	97.4			% Rec.		NWTPHGX	02/26/13	1
Volatile Organics								
Acetone	U	4.6	50.	ug/l	J3	8260B	02/24/13	1
Acrolein	U	8.9	50.	ug/l		8260B	02/24/13	1
Acrylonitrile	U	1.9	10.	ug/l		8260B	02/24/13	1
Benzene	U	0.33	1.0	ug/l		8260B	02/24/13	1
Bromobenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
Bromodichloromethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
Bromoform	U	0.47	1.0	ug/l		8260B	02/24/13	1
Bromomethane	U	0.87	5.0	ug/l		8260B	02/24/13	1
n-Butylbenzene	U	0.36	1.0	ug/l		8260B	02/24/13	1
sec-Butylbenzene	U	0.36	1.0	ug/l		8260B	02/24/13	1
tert-Butylbenzene	U	0.40	1.0	ug/l		8260B	02/24/13	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	02/24/13	1
Chlorobenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
Chlorodibromomethane	U	0.33	1.0	ug/l		8260B	02/24/13	1
Chloroethane	U	0.45	5.0	ug/l		8260B	02/24/13	1
2-Chloroethyl vinyl ether	U	3.0	50.	ug/l		8260B	02/24/13	1
Chloroform	U	0.32	5.0	ug/l		8260B	02/24/13	1
Chloromethane	U	0.28	2.5	ug/l		8260B	02/24/13	1
2-Chlorotoluene	U	0.38	1.0	ug/l		8260B	02/24/13	1
4-Chlorotoluene	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,2-Dibromo-3-Chloropropane	U	1.3	5.0	ug/l		8260B	02/24/13	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
Dibromomethane	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,2-Dichlorobenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,3-Dichlorobenzene	U	0.22	1.0	ug/l		8260B	02/24/13	1
1,4-Dichlorobenzene	U	0.27	1.0	ug/l		8260B	02/24/13	1
Dichlorodifluoromethane	U	0.55	5.0	ug/l		8260B	02/24/13	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	02/24/13	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	02/24/13	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	02/24/13	1
cis-1,2-Dichloroethene	U	0.26	1.0	ug/l		8260B	02/24/13	1
trans-1,2-Dichloroethene	U	0.40	1.0	ug/l		8260B	02/24/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-01

Date Received : February 23, 2013
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL A

Project # : 15634-00

Collected By : Jason R. Miles
Collection Date : 02/22/13 11:04

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
1,2-Dichloropropane	U	0.31	1.0	ug/l		8260B	02/24/13	1
1,1-Dichloropropene	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,3-Dichloropropane	U	0.37	1.0	ug/l		8260B	02/24/13	1
cis-1,3-Dichloropropene	U	0.42	1.0	ug/l		8260B	02/24/13	1
trans-1,3-Dichloropropene	U	0.42	1.0	ug/l		8260B	02/24/13	1
2,2-Dichloropropane	U	0.32	1.0	ug/l		8260B	02/24/13	1
Di-isopropyl ether	U	0.32	1.0	ug/l		8260B	02/24/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	02/24/13	1
Hexachloro-1,3-butadiene	U	0.26	1.0	ug/l		8260B	02/24/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	02/24/13	1
p-Isopropyltoluene	U	0.35	1.0	ug/l		8260B	02/24/13	1
2-Butanone (MEK)	U	3.9	10.	ug/l		8260B	02/24/13	1
Methylene Chloride	U	0.84	5.0	ug/l		8260B	02/24/13	1
4-Methyl-2-pentanone (MIBK)	U	2.1	10.	ug/l		8260B	02/24/13	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	02/24/13	1
Naphthalene	U	0.59	5.0	ug/l		8260B	02/24/13	1
n-Propylbenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
Styrene	U	0.31	1.0	ug/l		8260B	02/24/13	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
1,1,2,2-Tetrachloroethane	U	0.58	1.0	ug/l		8260B	02/24/13	1
1,1,2-Trichlorotrifluoroethane	U	0.30	1.0	ug/l		8260B	02/24/13	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	02/24/13	1
Toluene	U	0.78	5.0	ug/l		8260B	02/24/13	1
1,2,3-Trichlorobenzene	U	0.23	1.0	ug/l		8260B	02/24/13	1
1,2,4-Trichlorobenzene	U	0.21	1.0	ug/l		8260B	02/24/13	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	02/24/13	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
Trichloroethene	U	0.40	1.0	ug/l		8260B	02/24/13	1
Trichlorofluoromethane	U	1.2	5.0	ug/l		8260B	02/24/13	1
1,2,3-Trichloropropane	U	0.81	2.5	ug/l		8260B	02/24/13	1
1,2,4-Trimethylbenzene	U	0.37	1.0	ug/l		8260B	02/24/13	1
1,2,3-Trimethylbenzene	U	0.32	1.0	ug/l		8260B	02/24/13	1
1,3,5-Trimethylbenzene	U	0.39	1.0	ug/l		8260B	02/24/13	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	02/24/13	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	02/24/13	1
Surrogate Recovery								
Toluene-d8	96.4			% Rec.		8260B	02/24/13	1
Dibromofluoromethane	101.			% Rec.		8260B	02/24/13	1
4-Bromofluorobenzene	95.7			% Rec.		8260B	02/24/13	1
Diesel Range Organics (DRO)	97.	33.	100	ug/l	J	NWTPHDX	02/26/13	1
Residual Range Organics (RRO)	180	82.	250	ug/l	J	NWTPHDX	02/26/13	1
Surrogate Recovery								

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-01

Date Received : February 23, 2013
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL A

Project # : 15634-00

Collected By : Jason R. Miles
Collection Date : 02/22/13 11:04

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	90.7			% Rec.		NWTPHDX	02/26/13	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0076	0.050	ug/l		8270C-S	02/27/13	1
Acenaphthene	U	0.0082	0.050	ug/l		8270C-S	02/27/13	1
Acenaphthylene	U	0.0068	0.050	ug/l		8270C-S	02/27/13	1
Benzo(a)anthracene	U	0.012	0.050	ug/l		8270C-S	02/27/13	1
Benzo(a)pyrene	U	0.012	0.050	ug/l		8270C-S	02/27/13	1
Benzo(b)fluoranthene	U	0.014	0.050	ug/l		8270C-S	02/27/13	1
Benzo(g,h,i)perylene	0.012	0.011	0.050	ug/l	J	8270C-S	02/27/13	1
Benzo(k)fluoranthene	U	0.014	0.050	ug/l		8270C-S	02/27/13	1
Chrysene	U	0.011	0.050	ug/l		8270C-S	02/27/13	1
Dibenz(a,h)anthracene	U	0.0040	0.050	ug/l		8270C-S	02/27/13	1
Fluoranthene	U	0.016	0.050	ug/l		8270C-S	02/27/13	1
Fluorene	U	0.0085	0.050	ug/l		8270C-S	02/27/13	1
Indeno(1,2,3-cd)pyrene	U	0.015	0.050	ug/l		8270C-S	02/27/13	1
Naphthalene	0.046	0.020	0.25	ug/l	J	8270C-S	02/27/13	1
Phenanthrene	0.023	0.0082	0.050	ug/l	J	8270C-S	02/27/13	1
Pyrene	0.019	0.012	0.050	ug/l	J	8270C-S	02/27/13	1
1-Methylnaphthalene	0.0094	0.0082	0.25	ug/l	J	8270C-S	02/27/13	1
2-Methylnaphthalene	0.012	0.0090	0.25	ug/l	J	8270C-S	02/27/13	1
2-Chloronaphthalene	U	0.0065	0.25	ug/l		8270C-S	02/27/13	1
Surrogate Recovery								
Nitrobenzene-d5	103.			% Rec.		8270C-S	02/27/13	1
2-Fluorobiphenyl	93.4			% Rec.		8270C-S	02/27/13	1
p-Terphenyl-d14	90.1			% Rec.		8270C-S	02/27/13	1
Polychlorinated Biphenyls								
PCB 1016	U	0.10	0.50	ug/l		8082 A	02/26/13	1
PCB 1221	U	0.073	0.50	ug/l		8082 A	02/26/13	1
PCB 1232	U	0.042	0.50	ug/l		8082 A	02/26/13	1
PCB 1242	U	0.047	0.50	ug/l		8082 A	02/26/13	1
PCB 1248	U	0.086	0.50	ug/l		8082 A	02/26/13	1
PCB 1254	U	0.047	0.50	ug/l		8082 A	02/26/13	1
PCB 1260	U	0.12	0.50	ug/l		8082 A	02/26/13	1
PCBs Surrogates								
Decachlorobiphenyl	73.1			% Rec.		8082 A	02/26/13	1
Tetrachloro-m-xylene	77.3			% Rec.		8082 A	02/26/13	1
Total Phthalates	1.6		6.0	ug/l	J	8270 C	02/25/13	1
Bis(2-ethylhexyl)phthalate	1.3	0.71	3.0	ug/l	J	8270 C	02/25/13	1
Benzylbutyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1
Diethyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-01

Site ID :

Project # : 15634-00

Date Received : February 23, 2013
Description : Brix Maritime

Sample ID : OUTFALL A

Collected By : Jason R. Miles
Collection Date : 02/22/13 11:04

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Dimethyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1
Di-n-butyl phthalate	0.32	0.27	3.0	ug/l	J	8270 C	02/25/13	1
Di-n-octyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1
Surrogate Recovery								
Nitrobenzene-d5	54.1			% Rec.		8270 C	02/25/13	1
2-Fluorobiphenyl	63.0			% Rec.		8270 C	02/25/13	1
p-Terphenyl-d14	78.2			% Rec.		8270 C	02/25/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-02

Date Received : February 23, 2013
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL B

Project # : 15634-00

Collected By : Jason R. Miles
Collection Date : 02/22/13 10:14

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Suspended Solids	9000	350	1000	ug/l		2540 D-	03/01/13	1
Copper	6.4	0.52	2.0	ug/l		6020	02/27/13	1
Lead	1.8	0.24	1.0	ug/l		6020	02/27/13	1
Zinc	97.	2.6	10.	ug/l		6020	02/27/13	1
Gasoline Range Organics-NWTPH	U	32.	100	ug/l		NWTPHGX	02/26/13	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	97.2			% Rec.		NWTPHGX	02/26/13	1
Volatile Organics								
Acetone	5.4	4.6	50.	ug/l	JJ3	8260B	02/24/13	1
Acrolein	U	8.9	50.	ug/l		8260B	02/24/13	1
Acrylonitrile	U	1.9	10.	ug/l		8260B	02/24/13	1
Benzene	U	0.33	1.0	ug/l		8260B	02/24/13	1
Bromobenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
Bromodichloromethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
Bromoform	U	0.47	1.0	ug/l		8260B	02/24/13	1
Bromomethane	U	0.87	5.0	ug/l		8260B	02/24/13	1
n-Butylbenzene	U	0.36	1.0	ug/l		8260B	02/24/13	1
sec-Butylbenzene	U	0.36	1.0	ug/l		8260B	02/24/13	1
tert-Butylbenzene	U	0.40	1.0	ug/l		8260B	02/24/13	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	02/24/13	1
Chlorobenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
Chlorodibromomethane	U	0.33	1.0	ug/l		8260B	02/24/13	1
Chloroethane	U	0.45	5.0	ug/l		8260B	02/24/13	1
2-Chloroethyl vinyl ether	U	3.0	50.	ug/l		8260B	02/24/13	1
Chloroform	U	0.32	5.0	ug/l		8260B	02/24/13	1
Chloromethane	U	0.28	2.5	ug/l		8260B	02/24/13	1
2-Chlorotoluene	U	0.38	1.0	ug/l		8260B	02/24/13	1
4-Chlorotoluene	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,2-Dibromo-3-Chloropropane	U	1.3	5.0	ug/l		8260B	02/24/13	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
Dibromomethane	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,2-Dichlorobenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,3-Dichlorobenzene	U	0.22	1.0	ug/l		8260B	02/24/13	1
1,4-Dichlorobenzene	U	0.27	1.0	ug/l		8260B	02/24/13	1
Dichlorodifluoromethane	U	0.55	5.0	ug/l		8260B	02/24/13	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	02/24/13	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	02/24/13	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	02/24/13	1
cis-1,2-Dichloroethene	U	0.26	1.0	ug/l		8260B	02/24/13	1
trans-1,2-Dichloroethene	U	0.40	1.0	ug/l		8260B	02/24/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-02

Date Received : February 23, 2013
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL B

Project # : 15634-00

Collected By : Jason R. Miles
Collection Date : 02/22/13 10:14

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
1,2-Dichloropropane	U	0.31	1.0	ug/l		8260B	02/24/13	1
1,1-Dichloropropene	U	0.35	1.0	ug/l		8260B	02/24/13	1
1,3-Dichloropropane	U	0.37	1.0	ug/l		8260B	02/24/13	1
cis-1,3-Dichloropropene	U	0.42	1.0	ug/l		8260B	02/24/13	1
trans-1,3-Dichloropropene	U	0.42	1.0	ug/l		8260B	02/24/13	1
2,2-Dichloropropane	U	0.32	1.0	ug/l		8260B	02/24/13	1
Di-isopropyl ether	U	0.32	1.0	ug/l		8260B	02/24/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	02/24/13	1
Hexachloro-1,3-butadiene	U	0.26	1.0	ug/l		8260B	02/24/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	02/24/13	1
p-Isopropyltoluene	U	0.35	1.0	ug/l		8260B	02/24/13	1
2-Butanone (MEK)	U	3.9	10.	ug/l		8260B	02/24/13	1
Methylene Chloride	U	0.84	5.0	ug/l		8260B	02/24/13	1
4-Methyl-2-pentanone (MIBK)	U	2.1	10.	ug/l		8260B	02/24/13	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	02/24/13	1
Naphthalene	U	0.59	5.0	ug/l		8260B	02/24/13	1
n-Propylbenzene	U	0.35	1.0	ug/l		8260B	02/24/13	1
Styrene	U	0.31	1.0	ug/l		8260B	02/24/13	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
1,1,2,2-Tetrachloroethane	U	0.58	1.0	ug/l		8260B	02/24/13	1
1,1,2-Trichlorotrifluoroethane	U	0.30	1.0	ug/l		8260B	02/24/13	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	02/24/13	1
Toluene	U	0.78	5.0	ug/l		8260B	02/24/13	1
1,2,3-Trichlorobenzene	U	0.23	1.0	ug/l		8260B	02/24/13	1
1,2,4-Trichlorobenzene	U	0.21	1.0	ug/l		8260B	02/24/13	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	02/24/13	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	02/24/13	1
Trichloroethene	U	0.40	1.0	ug/l		8260B	02/24/13	1
Trichlorofluoromethane	U	1.2	5.0	ug/l		8260B	02/24/13	1
1,2,3-Trichloropropane	U	0.81	2.5	ug/l		8260B	02/24/13	1
1,2,4-Trimethylbenzene	U	0.37	1.0	ug/l		8260B	02/24/13	1
1,2,3-Trimethylbenzene	U	0.32	1.0	ug/l		8260B	02/24/13	1
1,3,5-Trimethylbenzene	U	0.39	1.0	ug/l		8260B	02/24/13	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	02/24/13	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	02/24/13	1
Surrogate Recovery								
Toluene-d8	99.2			% Rec.		8260B	02/24/13	1
Dibromofluoromethane	124.			% Rec.		8260B	02/24/13	1
4-Bromofluorobenzene	108.			% Rec.		8260B	02/24/13	1
Diesel Range Organics (DRO)	120	33.	100	ug/l		NWTPHDX	02/26/13	1
Residual Range Organics (RRO)	340	82.	250	ug/l		NWTPHDX	02/26/13	1
Surrogate Recovery								

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-02

Date Received : February 23, 2013
Description : Brix Maritime

Site ID :

Sample ID : OUTFALL B

Project # : 15634-00

Collected By : Jason R. Miles
Collection Date : 02/22/13 10:14

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	92.2			% Rec.		NWTPHDX	02/26/13	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0092	0.0076	0.050	ug/l	J	8270C-S	02/27/13	1
Acenaphthene	U	0.0082	0.050	ug/l		8270C-S	02/27/13	1
Acenaphthylene	U	0.0068	0.050	ug/l		8270C-S	02/27/13	1
Benzo(a)anthracene	0.031	0.012	0.050	ug/l	J	8270C-S	02/27/13	1
Benzo(a)pyrene	0.025	0.012	0.050	ug/l	J	8270C-S	02/27/13	1
Benzo(b)fluoranthene	0.039	0.014	0.050	ug/l	J	8270C-S	02/27/13	1
Benzo(g,h,i)perylene	0.030	0.011	0.050	ug/l	J	8270C-S	02/27/13	1
Benzo(k)fluoranthene	U	0.014	0.050	ug/l		8270C-S	02/27/13	1
Chrysene	0.030	0.011	0.050	ug/l	J	8270C-S	02/27/13	1
Dibenz(a,h)anthracene	U	0.0040	0.050	ug/l		8270C-S	02/27/13	1
Fluoranthene	0.071	0.016	0.050	ug/l		8270C-S	02/27/13	1
Fluorene	U	0.0085	0.050	ug/l		8270C-S	02/27/13	1
Indeno(1,2,3-cd)pyrene	0.016	0.015	0.050	ug/l	J	8270C-S	02/27/13	1
Naphthalene	0.030	0.020	0.25	ug/l	J	8270C-S	02/27/13	1
Phenanthrene	0.044	0.0082	0.050	ug/l	J	8270C-S	02/27/13	1
Pyrene	0.075	0.012	0.050	ug/l		8270C-S	02/27/13	1
1-Methylnaphthalene	U	0.0082	0.25	ug/l		8270C-S	02/27/13	1
2-Methylnaphthalene	U	0.0090	0.25	ug/l		8270C-S	02/27/13	1
2-Chloronaphthalene	U	0.0065	0.25	ug/l		8270C-S	02/27/13	1
Surrogate Recovery								
Nitrobenzene-d5	108.			% Rec.		8270C-S	02/27/13	1
2-Fluorobiphenyl	93.4			% Rec.		8270C-S	02/27/13	1
p-Terphenyl-d14	88.5			% Rec.		8270C-S	02/27/13	1
Polychlorinated Biphenyls								
PCB 1016	U	0.10	0.50	ug/l		8082 A	02/26/13	1
PCB 1221	U	0.073	0.50	ug/l		8082 A	02/26/13	1
PCB 1232	U	0.042	0.50	ug/l		8082 A	02/26/13	1
PCB 1242	U	0.047	0.50	ug/l		8082 A	02/26/13	1
PCB 1248	U	0.086	0.50	ug/l		8082 A	02/26/13	1
PCB 1254	U	0.047	0.50	ug/l		8082 A	02/26/13	1
PCB 1260	U	0.12	0.50	ug/l		8082 A	02/26/13	1
PCBs Surrogates								
Decachlorobiphenyl	51.7			% Rec.		8082 A	02/26/13	1
Tetrachloro-m-xylene	61.7			% Rec.		8082 A	02/26/13	1
Total Phthalates	1.3		6.0	ug/l	J	8270 C	02/25/13	1
Bis(2-ethylhexyl)phthalate	1.3	0.71	3.0	ug/l	J	8270 C	02/25/13	1
Benzylbutyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1
Diethyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
8910 SW Gemini Drive
Beaverton, OR 97008

March 05, 2013

ESC Sample # : L621775-02

Site ID :

Project # : 15634-00

Date Received : February 23, 2013
Description : Brix Maritime

Sample ID : OUTFALL B

Collected By : Jason R. Miles
Collection Date : 02/22/13 10:14

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Dimethyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1
Di-n-butyl phthalate	U	0.27	3.0	ug/l		8270 C	02/25/13	1
Di-n-octyl phthalate	U	0.28	3.0	ug/l		8270 C	02/25/13	1
Surrogate Recovery								
Nitrobenzene-d5	50.2			% Rec.		8270 C	02/25/13	1
2-Fluorobiphenyl	63.1			% Rec.		8270 C	02/25/13	1
p-Terphenyl-d14	62.2			% Rec.		8270 C	02/25/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 03/05/13 11:49 Printed: 03/05/13 12:02

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L621775-01	WG638288	SAMP	Diesel Range Organics (DRO)	R2559818	J
	WG638288	SAMP	Residual Range Organics (RRO)	R2559818	J
	WG638235	SAMP	Acetone	R2555179	J3
	WG638291	SAMP	Total Phthalates	R2557197	J
	WG638291	SAMP	Bis(2-ethylhexyl)phthalate	R2557197	J
	WG638291	SAMP	Di-n-butyl phthalate	R2557197	J
	WG638285	SAMP	Benzo(g,h,i)perylene	R2561598	J
	WG638285	SAMP	Naphthalene	R2561598	J
	WG638285	SAMP	Phenanthrene	R2561598	J
	WG638285	SAMP	Pyrene	R2561598	J
	WG638285	SAMP	1-Methylnaphthalene	R2561598	J
	WG638285	SAMP	2-Methylnaphthalene	R2561598	J
L621775-02	WG638235	SAMP	Acetone	R2555179	JJ3
	WG638291	SAMP	Total Phthalates	R2557197	J
	WG638291	SAMP	Bis(2-ethylhexyl)phthalate	R2557197	J
	WG638285	SAMP	Anthracene	R2561598	J
	WG638285	SAMP	Benzo(a)anthracene	R2561598	J
	WG638285	SAMP	Benzo(a)pyrene	R2561598	J
	WG638285	SAMP	Benzo(b)fluoranthene	R2561598	J
	WG638285	SAMP	Benzo(g,h,i)perylene	R2561598	J
	WG638285	SAMP	Chrysene	R2561598	J
	WG638285	SAMP	Indeno(1,2,3-cd)pyrene	R2561598	J
	WG638285	SAMP	Naphthalene	R2561598	J
	WG638285	SAMP	Phenanthrene	R2561598	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG638235	02/24/13 00:43
1,1,1-Trichloroethane	< .001	mg/l			WG638235	02/24/13 00:43
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG638235	02/24/13 00:43
1,1,2-Trichloroethane	< .001	mg/l			WG638235	02/24/13 00:43
1,1,2-Trichlorotrifluoroethane	< .001	mg/l			WG638235	02/24/13 00:43
1,1-Dichloroethane	< .001	mg/l			WG638235	02/24/13 00:43
1,1-Dichloroethene	< .001	mg/l			WG638235	02/24/13 00:43
1,1-Dichloropropene	< .001	mg/l			WG638235	02/24/13 00:43
1,2,3-Trichlorobenzene	< .001	mg/l			WG638235	02/24/13 00:43
1,2,3-Trichloropropane	< .001	mg/l			WG638235	02/24/13 00:43
1,2,3-Trimethylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
1,2,4-Trichlorobenzene	< .001	mg/l			WG638235	02/24/13 00:43
1,2,4-Trimethylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG638235	02/24/13 00:43
1,2-Dibromoethane	< .001	mg/l			WG638235	02/24/13 00:43
1,2-Dichlorobenzene	< .001	mg/l			WG638235	02/24/13 00:43
1,2-Dichloroethane	< .001	mg/l			WG638235	02/24/13 00:43
1,2-Dichloropropane	< .001	mg/l			WG638235	02/24/13 00:43
1,3,5-Trimethylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
1,3-Dichlorobenzene	< .001	mg/l			WG638235	02/24/13 00:43
1,3-Dichloropropane	< .001	mg/l			WG638235	02/24/13 00:43
1,4-Dichlorobenzene	< .001	mg/l			WG638235	02/24/13 00:43
2,2-Dichloropropane	< .001	mg/l			WG638235	02/24/13 00:43
2-Butanone (MEK)	< .01	mg/l			WG638235	02/24/13 00:43
2-Chloroethyl vinyl ether	< .05	mg/l			WG638235	02/24/13 00:43
2-Chlorotoluene	< .001	mg/l			WG638235	02/24/13 00:43
4-Chlorotoluene	< .001	mg/l			WG638235	02/24/13 00:43
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG638235	02/24/13 00:43
Acetone	< .05	mg/l			WG638235	02/24/13 00:43
Acrolein	< .025	mg/l			WG638235	02/24/13 00:43
Acrylonitrile	< .01	mg/l			WG638235	02/24/13 00:43
Benzene	< .001	mg/l			WG638235	02/24/13 00:43
Bromobenzene	< .001	mg/l			WG638235	02/24/13 00:43
Bromodichloromethane	< .001	mg/l			WG638235	02/24/13 00:43
Bromoform	< .001	mg/l			WG638235	02/24/13 00:43
Bromomethane	< .005	mg/l			WG638235	02/24/13 00:43
Carbon tetrachloride	< .001	mg/l			WG638235	02/24/13 00:43
Chlorobenzene	< .001	mg/l			WG638235	02/24/13 00:43
Chlorodibromomethane	< .001	mg/l			WG638235	02/24/13 00:43
Chloroethane	< .005	mg/l			WG638235	02/24/13 00:43
Chloroform	< .005	mg/l			WG638235	02/24/13 00:43
Chloromethane	< .0025	mg/l			WG638235	02/24/13 00:43
cis-1,2-Dichloroethene	< .001	mg/l			WG638235	02/24/13 00:43
cis-1,3-Dichloropropene	< .001	mg/l			WG638235	02/24/13 00:43
Di-isopropyl ether	< .001	mg/l			WG638235	02/24/13 00:43
Dibromomethane	< .001	mg/l			WG638235	02/24/13 00:43
Dichlorodifluoromethane	< .005	mg/l			WG638235	02/24/13 00:43
Ethylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
Hexachloro-1,3-butadiene	< .001	mg/l			WG638235	02/24/13 00:43
Isopropylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
Methyl tert-butyl ether	< .001	mg/l			WG638235	02/24/13 00:43
Methylene Chloride	< .005	mg/l			WG638235	02/24/13 00:43
n-Butylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
n-Propylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
Naphthalene	< .005	mg/l			WG638235	02/24/13 00:43
p-Isopropyltoluene	< .001	mg/l			WG638235	02/24/13 00:43
sec-Butylbenzene	< .001	mg/l			WG638235	02/24/13 00:43
Styrene	< .001	mg/l			WG638235	02/24/13 00:43
tert-Butylbenzene	< .001	mg/l			WG638235	02/24/13 00:43

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Tetrachloroethene	< .001	mg/l			WG638235	02/24/13 00:43
Toluene	< .005	mg/l			WG638235	02/24/13 00:43
trans-1,2-Dichloroethene	< .001	mg/l			WG638235	02/24/13 00:43
trans-1,3-Dichloropropene	< .001	mg/l			WG638235	02/24/13 00:43
Trichloroethene	< .001	mg/l			WG638235	02/24/13 00:43
Trichlorofluoromethane	< .005	mg/l			WG638235	02/24/13 00:43
Vinyl chloride	< .001	mg/l			WG638235	02/24/13 00:43
Xylenes, Total	< .003	mg/l			WG638235	02/24/13 00:43
4-Bromofluorobenzene		% Rec.	100.9	82-120	WG638235	02/24/13 00:43
Dibromofluoromethane		% Rec.	105.0	82-126	WG638235	02/24/13 00:43
Toluene-d8		% Rec.	98.21	92-112	WG638235	02/24/13 00:43
Benzylbutyl phthalate	< .003	mg/l			WG638291	02/25/13 11:17
Bis(2-ethylhexyl)phthalate	< .003	mg/l			WG638291	02/25/13 11:17
Di-n-butyl phthalate	< .003	mg/l			WG638291	02/25/13 11:17
Di-n-octyl phthalate	< .003	mg/l			WG638291	02/25/13 11:17
Diethyl phthalate	< .003	mg/l			WG638291	02/25/13 11:17
Dimethyl phthalate	< .003	mg/l			WG638291	02/25/13 11:17
2,4,6-Tribromophenol		% Rec.	46.80	16-147	WG638291	02/25/13 11:17
2-Fluorobiphenyl		% Rec.	72.00	29-127	WG638291	02/25/13 11:17
2-Fluorophenol		% Rec.	35.20	10-75	WG638291	02/25/13 11:17
Nitrobenzene-d5		% Rec.	58.60	17-119	WG638291	02/25/13 11:17
Phenol-d5		% Rec.	24.90	10-63	WG638291	02/25/13 11:17
p-Terphenyl-d14		% Rec.	80.00	40-174	WG638291	02/25/13 11:17
Gasoline Range Organics-NWTPH	< .1	mg/l			WG638489	02/26/13 12:41
a,a,a-Trifluorotoluene(FID)		% Rec.	97.91	62-128	WG638489	02/26/13 12:41
Diesel Range Organics (DRO)	< .1	mg/l			WG638288	02/26/13 15:06
Residual Range Organics (RRO)	< .25	mg/l			WG638288	02/26/13 15:06
o-Terphenyl		% Rec.	91.60	50-150	WG638288	02/26/13 15:06
Copper	< .002	mg/l			WG638476	02/26/13 22:07
Lead	< .001	mg/l			WG638476	02/26/13 22:07
Zinc	< .01	mg/l			WG638476	02/26/13 22:07
1-Methylnaphthalene	< .00025	mg/l			WG638285	02/27/13 10:10
2-Chloronaphthalene	< .00005	mg/l			WG638285	02/27/13 10:10
2-Methylnaphthalene	< .00025	mg/l			WG638285	02/27/13 10:10
Acenaphthene	< .00005	mg/l			WG638285	02/27/13 10:10
Acenaphthylene	< .00005	mg/l			WG638285	02/27/13 10:10
Anthracene	< .00005	mg/l			WG638285	02/27/13 10:10
Benzo(a)anthracene	< .00005	mg/l			WG638285	02/27/13 10:10
Benzo(a)pyrene	< .00005	mg/l			WG638285	02/27/13 10:10
Benzo(b)fluoranthene	< .00005	mg/l			WG638285	02/27/13 10:10
Benzo(g,h,i)perylene	< .00005	mg/l			WG638285	02/27/13 10:10
Benzo(k)fluoranthene	< .00005	mg/l			WG638285	02/27/13 10:10
Chrysene	< .00005	mg/l			WG638285	02/27/13 10:10
Dibenz(a,h)anthracene	< .00005	mg/l			WG638285	02/27/13 10:10
Fluoranthene	< .00005	mg/l			WG638285	02/27/13 10:10
Fluorene	< .00005	mg/l			WG638285	02/27/13 10:10
Indeno(1,2,3-cd)pyrene	< .00005	mg/l			WG638285	02/27/13 10:10
Naphthalene	< .00025	mg/l			WG638285	02/27/13 10:10
Phenanthrene	< .00005	mg/l			WG638285	02/27/13 10:10

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Pyrene	< .00005	mg/l			WG638285	02/27/13 10:10
2-Fluorobiphenyl		% Rec.	87.80	64.4-143	WG638285	02/27/13 10:10
Nitrobenzene-d5		% Rec.	88.20	61.3-162	WG638285	02/27/13 10:10
p-Terphenyl-d14		% Rec.	97.30	55.3-145	WG638285	02/27/13 10:10
Suspended Solids	< 1	mg/l			WG638407	03/01/13 09:24
PCB 1016	< .0005	mg/l			WG638039	02/26/13 10:41
PCB 1221	< .0005	mg/l			WG638039	02/26/13 10:41
PCB 1232	< .0005	mg/l			WG638039	02/26/13 10:41
PCB 1242	< .0005	mg/l			WG638039	02/26/13 10:41
PCB 1248	< .0005	mg/l			WG638039	02/26/13 10:41
PCB 1254	< .0005	mg/l			WG638039	02/26/13 10:41
PCB 1260	< .0005	mg/l			WG638039	02/26/13 10:41
Decachlorobiphenyl		% Rec.	98.90	10-141	WG638039	02/26/13 10:41
Tetrachloro-m-xylene		% Rec.	78.70	10-125	WG638039	02/26/13 10:41

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Copper	mg/l	0.00350	0.00340	2.90	20	L621709-02	WG638476
Lead	mg/l	0	0.000130	NA	20	L621709-02	WG638476
Zinc	mg/l	0.260	0.260	0	20	L621709-02	WG638476
Suspended Solids	mg/l	8000	7740	3.30	5	L621762-01	WG638407
Suspended Solids	mg/l	60.0	60.8	1.38	5	L621827-01	WG638407

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0224	89.6	77-128	WG638235
1,1,1-Trichloroethane	mg/l	.025	0.0230	92.0	71-126	WG638235
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0228	91.1	78-130	WG638235
1,1,2-Trichloroethane	mg/l	.025	0.0236	94.3	81-121	WG638235
1,1,2-Trichlorotrifluoroethane	mg/l	.025	0.0188	75.4	53-143	WG638235
1,1-Dichloroethane	mg/l	.025	0.0247	98.8	73-123	WG638235
1,1-Dichloroethene	mg/l	.025	0.0233	93.1	54-134	WG638235
1,1-Dichloropropene	mg/l	.025	0.0243	97.3	67-127	WG638235
1,2,3-Trichlorobenzene	mg/l	.025	0.0221	88.4	77-130	WG638235
1,2,3-Trichloropropane	mg/l	.025	0.0229	91.7	68-130	WG638235
1,2,3-Trimethylbenzene	mg/l	.025	0.0228	91.3	77-126	WG638235
1,2,4-Trichlorobenzene	mg/l	.025	0.0243	97.4	76-127	WG638235
1,2,4-Trimethylbenzene	mg/l	.025	0.0229	91.6	77-129	WG638235
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0223	89.3	55-142	WG638235
1,2-Dibromoethane	mg/l	.025	0.0244	97.6	78-124	WG638235
1,2-Dichlorobenzene	mg/l	.025	0.0239	95.8	82-121	WG638235
1,2-Dichloroethane	mg/l	.025	0.0257	103.	69-128	WG638235
1,2-Dichloropropane	mg/l	.025	0.0218	87.3	77-121	WG638235
1,3,5-Trimethylbenzene	mg/l	.025	0.0227	90.7	78-127	WG638235
1,3-Dichlorobenzene	mg/l	.025	0.0240	96.0	77-127	WG638235
1,3-Dichloropropane	mg/l	.025	0.0253	101.	78-117	WG638235
1,4-Dichlorobenzene	mg/l	.025	0.0234	93.4	79-117	WG638235
2,2-Dichloropropane	mg/l	.025	0.0232	92.7	63-130	WG638235
2-Butanone (MEK)	mg/l	.125	0.131	105.	58-144	WG638235
2-Chloroethyl vinyl ether	mg/l	.125	0.115	91.9	26-172	WG638235
2-Chlorotoluene	mg/l	.025	0.0244	97.6	78-123	WG638235

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
4-Chlorotoluene	mg/l	.025	0.0233	93.1	78-122	WG638235
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.117	93.7	58-147	WG638235
Acetone	mg/l	.125	0.139	111.	49-153	WG638235
Acrolein	mg/l	.125	0.108	86.5	10-181	WG638235
Acrylonitrile	mg/l	.125	0.112	89.2	53-153	WG638235
Benzene	mg/l	.025	0.0245	98.1	72-119	WG638235
Bromobenzene	mg/l	.025	0.0228	91.0	76-121	WG638235
Bromodichloromethane	mg/l	.025	0.0231	92.4	75-127	WG638235
Bromoform	mg/l	.025	0.0211	84.4	61-136	WG638235
Bromomethane	mg/l	.025	0.0264	106.	42-172	WG638235
Carbon tetrachloride	mg/l	.025	0.0221	88.3	63-129	WG638235
Chlorobenzene	mg/l	.025	0.0246	98.3	78-123	WG638235
Chlorodibromomethane	mg/l	.025	0.0221	88.4	73-128	WG638235
Chloroethane	mg/l	.025	0.0216	86.2	52-164	WG638235
Chloroform	mg/l	.025	0.0240	95.9	76-122	WG638235
Chloromethane	mg/l	.025	0.0212	84.8	50-141	WG638235
cis-1,2-Dichloroethene	mg/l	.025	0.0224	89.7	75-121	WG638235
cis-1,3-Dichloropropene	mg/l	.025	0.0238	95.3	74-124	WG638235
Di-isopropyl ether	mg/l	.025	0.0245	97.8	66-129	WG638235
Dibromomethane	mg/l	.025	0.0226	90.3	77-124	WG638235
Dichlorodifluoromethane	mg/l	.025	0.0231	92.2	33-173	WG638235
Ethylbenzene	mg/l	.025	0.0235	93.8	77-124	WG638235
Hexachloro-1,3-butadiene	mg/l	.025	0.0208	83.1	71-134	WG638235
Isopropylbenzene	mg/l	.025	0.0234	93.8	74-126	WG638235
Methyl tert-butyl ether	mg/l	.025	0.0244	97.8	67-127	WG638235
Methylene Chloride	mg/l	.025	0.0251	101.	67-122	WG638235
n-Butylbenzene	mg/l	.025	0.0240	95.9	74-130	WG638235
n-Propylbenzene	mg/l	.025	0.0238	95.2	77-125	WG638235
Naphthalene	mg/l	.025	0.0219	87.5	70-134	WG638235
p-Isopropyltoluene	mg/l	.025	0.0230	92.2	77-132	WG638235
sec-Butylbenzene	mg/l	.025	0.0232	92.6	77-130	WG638235
Styrene	mg/l	.025	0.0237	94.7	69-145	WG638235
tert-Butylbenzene	mg/l	.025	0.0229	91.5	76-131	WG638235
Tetrachloroethene	mg/l	.025	0.0237	94.8	69-131	WG638235
Toluene	mg/l	.025	0.0236	94.6	75-114	WG638235
trans-1,2-Dichloroethene	mg/l	.025	0.0230	91.8	63-127	WG638235
trans-1,3-Dichloropropene	mg/l	.025	0.0254	102.	69-124	WG638235
Trichloroethene	mg/l	.025	0.0245	98.0	69-131	WG638235
Trichlorofluoromethane	mg/l	.025	0.0250	100.	53-161	WG638235
Vinyl chloride	mg/l	.025	0.0230	92.2	55-142	WG638235
Xylenes, Total	mg/l	.075	0.0707	94.2	77-123	WG638235
4-Bromofluorobenzene				97.69	82-120	WG638235
Dibromofluoromethane				104.0	82-126	WG638235
Toluene-d8				97.78	92-112	WG638235
Benzylbutyl phthalate	mg/l	.01	0.00587	58.7	10-178	WG638291
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00721	72.1	42-191	WG638291
Di-n-butyl phthalate	mg/l	.01	0.00682	68.2	33-175	WG638291
Di-n-octyl phthalate	mg/l	.01	0.00611	61.1	40-170	WG638291
Diethyl phthalate	mg/l	.01	0.00734	73.4	10-182	WG638291
Dimethyl phthalate	mg/l	.01	0.00728	72.8	10-165	WG638291
2,4,6-Tribromophenol				59.40	16-147	WG638291
2-Fluorobiphenyl				69.70	29-127	WG638291
2-Fluorophenol				37.00	10-75	WG638291
Nitrobenzene-d5				63.60	17-119	WG638291
Phenol-d5				25.80	10-63	WG638291
p-Terphenyl-d14				72.60	40-174	WG638291

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Gasoline Range Organics-NWTPH	mg/l	5.5	6.10	111.	70-124	WG638489
a,a,a-Trifluorotoluene(FID)				105.6	62-128	WG638489
Diesel Range Organics (DRO)	mg/l	.75	0.655	87.3	50-150	WG638288
Residual Range Organics (RRO)	mg/l	.75	0.650	86.6	50-150	WG638288
o-Terphenyl				90.10	50-150	WG638288
Copper	mg/l	.0556	0.0566	102.	85-115	WG638476
Lead	mg/l	.0556	0.0520	93.5	85-115	WG638476
Zinc	mg/l	.0556	0.0583	105.	85-115	WG638476
1-Methylnaphthalene	mg/l	.002	0.00168	83.9	71.2-137	WG638285
2-Chloronaphthalene	mg/l	.002	0.00175	87.7	81.1-129	WG638285
2-Methylnaphthalene	mg/l	.002	0.00163	81.7	69.8-134	WG638285
Acenaphthene	mg/l	.002	0.00187	93.3	80.8-128	WG638285
Acenaphthylene	mg/l	.002	0.00182	90.8	77.2-132	WG638285
Anthracene	mg/l	.002	0.00197	98.6	78.4-136	WG638285
Benzo(a)anthracene	mg/l	.002	0.00199	99.3	69.2-141	WG638285
Benzo(a)pyrene	mg/l	.002	0.00201	100.	71.1-135	WG638285
Benzo(b)fluoranthene	mg/l	.002	0.00207	103.	69.5-140	WG638285
Benzo(g,h,i)perylene	mg/l	.002	0.00208	104.	64.6-138	WG638285
Benzo(k)fluoranthene	mg/l	.002	0.00203	102.	69.3-144	WG638285
Chrysene	mg/l	.002	0.00204	102.	75.6-138	WG638285
Dibenz(a,h)anthracene	mg/l	.002	0.00211	105.	64.1-139	WG638285
Fluoranthene	mg/l	.002	0.00200	100.	78.6-135	WG638285
Fluorene	mg/l	.002	0.00195	97.4	78.3-131	WG638285
Indeno(1,2,3-cd)pyrene	mg/l	.002	0.00212	106.	64.8-140	WG638285
Naphthalene	mg/l	.002	0.00174	86.9	80.2-126	WG638285
Phenanthrene	mg/l	.002	0.00198	98.9	79.6-130	WG638285
Pyrene	mg/l	.002	0.00203	101.	76.6-134	WG638285
2-Fluorobiphenyl				86.80	64.4-143	WG638285
Nitrobenzene-d5				89.20	61.3-162	WG638285
p-Terphenyl-d14				98.90	55.3-145	WG638285
Suspended Solids	mg/l	773	844.	109.	85-115	WG638407
PCB 1016	mg/l	.0005	0.000473	94.5	32-126	WG638039
PCB 1260	mg/l	.0005	0.000506	101.	58-128	WG638039
Decachlorobiphenyl				106.0	10-141	WG638039
Tetrachloro-m-xylene				74.00	10-125	WG638039

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0228	0.0224	91.0	77-128	1.72	20	WG638235
1,1,1-Trichloroethane	mg/l	0.0226	0.0230	90.0	71-126	1.99	20	WG638235
1,1,2,2-Tetrachloroethane	mg/l	0.0230	0.0228	92.0	78-130	0.850	20	WG638235
1,1,2-Trichloroethane	mg/l	0.0238	0.0236	95.0	81-121	0.780	20	WG638235
1,1,2-Trichlorotrifluoroethane	mg/l	0.0191	0.0188	76.0	53-143	1.25	20	WG638235
1,1-Dichloroethane	mg/l	0.0252	0.0247	101.	73-123	2.18	20	WG638235
1,1-Dichloroethene	mg/l	0.0220	0.0233	88.0	54-134	5.55	20	WG638235
1,1-Dichloropropene	mg/l	0.0247	0.0243	99.0	67-127	1.62	20	WG638235
1,2,3-Trichlorobenzene	mg/l	0.0229	0.0221	92.0	77-130	3.58	20	WG638235

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,2,3-Trichloropropane	mg/l	0.0252	0.0229	101.	68-130	9.53	20	WG638235
1,2,3-Trimethylbenzene	mg/l	0.0232	0.0228	93.0	77-126	1.53	20	WG638235
1,2,4-Trichlorobenzene	mg/l	0.0252	0.0243	101.	76-127	3.64	20	WG638235
1,2,4-Trimethylbenzene	mg/l	0.0227	0.0229	91.0	77-129	0.970	20	WG638235
1,2-Dibromo-3-Chloropropane	mg/l	0.0243	0.0223	97.0	55-142	8.59	20	WG638235
1,2-Dibromoethane	mg/l	0.0259	0.0244	103.	78-124	5.80	20	WG638235
1,2-Dichlorobenzene	mg/l	0.0244	0.0239	98.0	82-121	2.02	20	WG638235
1,2-Dichloroethane	mg/l	0.0263	0.0257	105.	69-128	2.26	20	WG638235
1,2-Dichloropropane	mg/l	0.0221	0.0218	88.0	77-121	1.19	20	WG638235
1,3,5-Trimethylbenzene	mg/l	0.0227	0.0227	91.0	78-127	0.250	20	WG638235
1,3-Dichlorobenzene	mg/l	0.0237	0.0240	95.0	77-127	1.40	20	WG638235
1,3-Dichloropropane	mg/l	0.0251	0.0253	100.	78-117	0.710	20	WG638235
1,4-Dichlorobenzene	mg/l	0.0241	0.0234	96.0	79-117	3.32	20	WG638235
2,2-Dichloropropane	mg/l	0.0233	0.0232	93.0	63-130	0.370	20	WG638235
2-Butanone (MEK)	mg/l	0.149	0.131	119.	58-144	12.8	20	WG638235
2-Chloroethyl vinyl ether	mg/l	0.127	0.115	101.	26-172	9.90	22	WG638235
2-Chlorotoluene	mg/l	0.0240	0.0244	96.0	78-123	1.75	20	WG638235
4-Chlorotoluene	mg/l	0.0233	0.0233	93.0	78-122	0.160	20	WG638235
4-Methyl-2-pentanone (MIBK)	mg/l	0.131	0.117	104.	58-147	10.9	20	WG638235
Acetone	mg/l	0.174	0.139	139.	49-153	22.0*	21	WG638235
Acrolein	mg/l	0.125	0.108	100.	10-181	14.7	30	WG638235
Acrylonitrile	mg/l	0.123	0.112	98.0	53-153	9.41	20	WG638235
Benzene	mg/l	0.0242	0.0245	97.0	72-119	1.15	20	WG638235
Bromobenzene	mg/l	0.0223	0.0228	89.0	76-121	1.81	20	WG638235
Bromodichloromethane	mg/l	0.0237	0.0231	95.0	75-127	2.50	20	WG638235
Bromoform	mg/l	0.0224	0.0211	90.0	61-136	6.19	20	WG638235
Bromomethane	mg/l	0.0259	0.0264	104.	42-172	1.71	20	WG638235
Carbon tetrachloride	mg/l	0.0226	0.0221	90.0	63-129	2.35	20	WG638235
Chlorobenzene	mg/l	0.0242	0.0246	97.0	78-123	1.36	20	WG638235
Chlorodibromomethane	mg/l	0.0225	0.0221	90.0	73-128	1.96	20	WG638235
Chloroethane	mg/l	0.0215	0.0216	86.0	52-164	0.0600	20	WG638235
Chloroform	mg/l	0.0243	0.0240	97.0	76-122	1.60	20	WG638235
Chloromethane	mg/l	0.0213	0.0212	85.0	50-141	0.270	20	WG638235
cis-1,2-Dichloroethene	mg/l	0.0233	0.0224	93.0	75-121	3.65	20	WG638235
cis-1,3-Dichloropropene	mg/l	0.0249	0.0238	100.	74-124	4.41	20	WG638235
Di-isopropyl ether	mg/l	0.0249	0.0245	99.0	66-129	1.63	20	WG638235
Dibromomethane	mg/l	0.0229	0.0226	92.0	77-124	1.36	20	WG638235
Dichlorodifluoromethane	mg/l	0.0234	0.0231	94.0	33-173	1.44	20	WG638235
Ethylbenzene	mg/l	0.0227	0.0235	91.0	77-124	3.21	20	WG638235
Hexachloro-1,3-butadiene	mg/l	0.0217	0.0208	87.0	71-134	4.23	20	WG638235
Isopropylbenzene	mg/l	0.0235	0.0234	94.0	74-126	0.440	20	WG638235
Methyl tert-butyl ether	mg/l	0.0253	0.0244	101.	67-127	3.61	20	WG638235
Methylene Chloride	mg/l	0.0262	0.0251	105.	67-122	4.26	20	WG638235
n-Butylbenzene	mg/l	0.0241	0.0240	96.0	74-130	0.670	20	WG638235
n-Propylbenzene	mg/l	0.0232	0.0238	93.0	77-125	2.44	20	WG638235
Naphthalene	mg/l	0.0230	0.0219	92.0	70-134	5.06	20	WG638235
p-Isopropyltoluene	mg/l	0.0229	0.0230	92.0	77-132	0.700	20	WG638235
sec-Butylbenzene	mg/l	0.0229	0.0232	92.0	77-130	1.12	20	WG638235
Styrene	mg/l	0.0237	0.0237	95.0	69-145	0.0500	20	WG638235
tert-Butylbenzene	mg/l	0.0225	0.0229	90.0	76-131	1.81	20	WG638235
Tetrachloroethene	mg/l	0.0229	0.0237	92.0	69-131	3.38	20	WG638235
Toluene	mg/l	0.0241	0.0236	96.0	75-114	2.08	20	WG638235
trans-1,2-Dichloroethene	mg/l	0.0235	0.0230	94.0	63-127	2.16	20	WG638235
trans-1,3-Dichloropropene	mg/l	0.0255	0.0254	102.	69-124	0.360	20	WG638235
Trichloroethene	mg/l	0.0240	0.0245	96.0	69-131	2.20	20	WG638235
Trichlorofluoromethane	mg/l	0.0247	0.0250	99.0	53-161	1.32	20	WG638235
Vinyl chloride	mg/l	0.0226	0.0230	90.0	55-142	1.77	20	WG638235
Xylenes, Total	mg/l	0.0701	0.0707	93.0	77-123	0.830	20	WG638235
4-Bromofluorobenzene				97.51	82-120			WG638235

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Dibromofluoromethane				103.1	82-126			
Toluene-d8				99.18	92-112			
Benzylbutyl phthalate	mg/l	0.00609	0.00587	61.0	10-178	3.75	40	WG638291
Bis(2-ethylhexyl)phthalate	mg/l	0.00743	0.00721	74.0	42-191	2.95	33	WG638291
Di-n-butyl phthalate	mg/l	0.00669	0.00682	67.0	33-175	1.93	39	WG638291
Di-n-octyl phthalate	mg/l	0.00614	0.00611	61.0	40-170	0.500	28	WG638291
Diethyl phthalate	mg/l	0.00699	0.00734	70.0	10-182	4.88	35	WG638291
Dimethyl phthalate	mg/l	0.00658	0.00728	66.0	10-165	10.1	37	WG638291
2,4,6-Tribromophenol				56.90	16-147			WG638291
2-Fluorobiphenyl				65.90	29-127			WG638291
2-Fluorophenol				32.10	10-75			WG638291
Nitrobenzene-d5				55.90	17-119			WG638291
Phenol-d5				23.20	10-63			WG638291
p-Terphenyl-d14				69.00	40-174			WG638291
Gasoline Range Organics-NWTPH	mg/l	5.98	6.10	109.	70-124	2.09	20	WG638489
a,a,a-Trifluorotoluene(FID)				105.3	62-128			WG638489
Diesel Range Organics (DRO)	mg/l	0.625	0.655	83.0	50-150	4.63	20	WG638288
Residual Range Organics (RRO)	mg/l	0.601	0.650	80.0	50-150	7.79	20	WG638288
o-Terphenyl				86.00	50-150			WG638288
1-Methylnaphthalene	mg/l	0.00178	0.00168	89.0	71.2-137	6.13	20	WG638285
2-Chloronaphthalene	mg/l	0.00190	0.00175	95.0	81.1-129	8.01	20	WG638285
2-Methylnaphthalene	mg/l	0.00176	0.00163	88.0	69.8-134	7.20	20	WG638285
Acenaphthene	mg/l	0.00190	0.00187	95.0	80.8-128	1.95	20	WG638285
Acenaphthylene	mg/l	0.00182	0.00182	91.0	77.2-132	0.0400	20	WG638285
Anthracene	mg/l	0.00194	0.00197	97.0	78.4-136	1.56	20	WG638285
Benzo(a)anthracene	mg/l	0.00191	0.00199	96.0	69.2-141	3.90	20	WG638285
Benzo(a)pyrene	mg/l	0.00198	0.00201	99.0	71.1-135	1.42	20	WG638285
Benzo(b)fluoranthene	mg/l	0.00199	0.00207	100.	69.5-140	3.86	20	WG638285
Benzo(g,h,i)perylene	mg/l	0.00197	0.00208	98.0	64.6-138	5.53	20	WG638285
Benzo(k)fluoranthene	mg/l	0.00200	0.00203	100.	69.3-144	1.69	20	WG638285
Chrysene	mg/l	0.00197	0.00204	99.0	75.6-138	3.36	20	WG638285
Dibenz(a,h)anthracene	mg/l	0.00196	0.00211	98.0	64.1-139	7.17	20	WG638285
Fluoranthene	mg/l	0.00194	0.00200	97.0	78.6-135	3.12	20	WG638285
Fluorene	mg/l	0.00191	0.00195	96.0	78.3-131	1.91	20	WG638285
Indeno(1,2,3-cd)pyrene	mg/l	0.00200	0.00212	100.	64.8-140	5.87	20	WG638285
Naphthalene	mg/l	0.00191	0.00174	95.0	80.2-126	9.24	20	WG638285
Phenanthrene	mg/l	0.00195	0.00198	97.0	79.6-130	1.54	20	WG638285
Pyrene	mg/l	0.00198	0.00203	99.0	76.6-134	2.52	20	WG638285
2-Fluorobiphenyl				80.70	64.4-143			WG638285
Nitrobenzene-d5				93.50	61.3-162			WG638285
p-Terphenyl-d14				91.40	55.3-145			WG638285
Suspended Solids	mg/l	856.	844.	111.	85-115	1.41	5	WG638407
PCB 1016	mg/l	0.000406	0.000473	81.0	32-126	15.1	22	WG638039
PCB 1260	mg/l	0.000502	0.000506	100.	58-128	0.640	20	WG638039
Decachlorobiphenyl				89.00	10-141			WG638039
Tetrachloro-m-xylene				74.40	10-125			WG638039

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0218	0	.025	87.2	71-130	L621766-18	WG638235
1,1,1-Trichloroethane	mg/l	0.0227	0	.025	91.0	58-137	L621766-18	WG638235
1,1,2,2-Tetrachloroethane	mg/l	0.0233	0	.025	93.0	64-149	L621766-18	WG638235
1,1,2-Trichloroethane	mg/l	0.0235	0	.025	94.0	73-128	L621766-18	WG638235
1,1,2-Trichlorotrifluoroethane	mg/l	0.0216	0	.025	86.6	36-159	L621766-18	WG638235
1,1-Dichloroethane	mg/l	0.0235	0	.025	94.2	58-133	L621766-18	WG638235
1,1-Dichloroethene	mg/l	0.0212	0	.025	84.8	32-152	L621766-18	WG638235
1,1-Dichloropropene	mg/l	0.0235	0	.025	94.0	50-140	L621766-18	WG638235
1,2,3-Trichlorobenzene	mg/l	0.0212	0	.025	84.6	68-135	L621766-18	WG638235
1,2,3-Trichloropropane	mg/l	0.0233	0	.025	93.2	74-137	L621766-18	WG638235
1,2,3-Trimethylbenzene	mg/l	0.0218	0	.025	87.3	67-133	L621766-18	WG638235
1,2,4-Trichlorobenzene	mg/l	0.0236	0	.025	94.2	67-133	L621766-18	WG638235
1,2,4-Trimethylbenzene	mg/l	0.0222	0	.025	88.8	62-141	L621766-18	WG638235
1,2-Dibromo-3-Chloropropane	mg/l	0.0243	0	.025	97.2	55-148	L621766-18	WG638235
1,2-Dibromoethane	mg/l	0.0247	0	.025	98.9	71-129	L621766-18	WG638235
1,2-Dichlorobenzene	mg/l	0.0227	0	.025	90.8	75-125	L621766-18	WG638235
1,2-Dichloroethane	mg/l	0.0250	0	.025	100.	59-135	L621766-18	WG638235
1,2-Dichloropropane	mg/l	0.0208	0	.025	83.2	68-126	L621766-18	WG638235
1,3,5-Trimethylbenzene	mg/l	0.0219	0	.025	87.8	67-136	L621766-18	WG638235
1,3-Dichlorobenzene	mg/l	0.0230	0	.025	91.9	69-131	L621766-18	WG638235
1,3-Dichloropropane	mg/l	0.0248	0	.025	99.4	70-122	L621766-18	WG638235
1,4-Dichlorobenzene	mg/l	0.0223	0	.025	89.3	70-123	L621766-18	WG638235
2,2-Dichloropropane	mg/l	0.0224	0	.025	89.7	51-141	L621766-18	WG638235
2-Butanone (MEK)	mg/l	0.101	0	.125	80.8	51-149	L621766-18	WG638235
2-Chloroethyl vinyl ether	mg/l	0.00179	0	.125	1.43*	10-161	L621766-18	WG638235
2-Chlorotoluene	mg/l	0.0229	0	.025	91.6	65-133	L621766-18	WG638235
4-Chlorotoluene	mg/l	0.0225	0	.025	90.0	67-129	L621766-18	WG638235
4-Methyl-2-pentanone (MIBK)	mg/l	0.118	0	.125	94.7	53-154	L621766-18	WG638235
Acetone	mg/l	0.0652	0.00650	.125	46.9	34-146	L621766-18	WG638235
Acrolein	mg/l	0.119	0	.125	95.1	10-189	L621766-18	WG638235
Acrylonitrile	mg/l	0.119	0	.125	95.1	49-162	L621766-18	WG638235
Benzene	mg/l	0.0235	0	.025	94.1	51-134	L621766-18	WG638235
Bromobenzene	mg/l	0.0218	0	.025	87.2	64-130	L621766-18	WG638235
Bromodichloromethane	mg/l	0.0218	0	.025	87.1	67-132	L621766-18	WG638235
Bromoform	mg/l	0.0220	0	.025	88.1	59-137	L621766-18	WG638235
Bromomethane	mg/l	0.0270	0	.025	108.	23-177	L621766-18	WG638235
Carbon tetrachloride	mg/l	0.0218	0	.025	87.2	49-140	L621766-18	WG638235
Chlorobenzene	mg/l	0.0232	0	.025	92.9	69-126	L621766-18	WG638235
Chlorodibromomethane	mg/l	0.0221	0	.025	88.6	68-130	L621766-18	WG638235
Chloroethane	mg/l	0.0219	0	.025	87.4	32-177	L621766-18	WG638235
Chloroform	mg/l	0.0231	0	.025	92.3	64-130	L621766-18	WG638235
Chloromethane	mg/l	0.0210	0	.025	84.0	27-155	L621766-18	WG638235
cis-1,2-Dichloroethene	mg/l	0.0217	0	.025	86.8	54-137	L621766-18	WG638235
cis-1,3-Dichloropropene	mg/l	0.0227	0	.025	90.6	63-127	L621766-18	WG638235
Di-isopropyl ether	mg/l	0.0234	0	.025	93.7	58-133	L621766-18	WG638235
Dibromomethane	mg/l	0.0218	0	.025	87.4	68-131	L621766-18	WG638235
Dichlorodifluoromethane	mg/l	0.0271	0	.025	108.	16-188	L621766-18	WG638235
Ethylbenzene	mg/l	0.0227	0	.025	90.9	64-135	L621766-18	WG638235
Hexachloro-1,3-butadiene	mg/l	0.0207	0	.025	83.0	64-140	L621766-18	WG638235
Isopropylbenzene	mg/l	0.0230	0	.025	92.2	62-134	L621766-18	WG638235
Methyl tert-butyl ether	mg/l	0.0237	0	.025	94.7	55-136	L621766-18	WG638235
Methylene Chloride	mg/l	0.0237	0.000718	.025	91.8	52-130	L621766-18	WG638235
n-Butylbenzene	mg/l	0.0235	0	.025	93.9	62-142	L621766-18	WG638235
n-Propylbenzene	mg/l	0.0231	0	.025	92.4	62-137	L621766-18	WG638235
Naphthalene	mg/l	0.0219	0	.025	87.7	65-140	L621766-18	WG638235
p-Isopropyltoluene	mg/l	0.0223	0	.025	89.3	64-142	L621766-18	WG638235
sec-Butylbenzene	mg/l	0.0229	0	.025	91.8	67-139	L621766-18	WG638235
Styrene	mg/l	0.0226	0	.025	90.5	58-152	L621766-18	WG638235
tert-Butylbenzene	mg/l	0.0225	0	.025	90.0	66-139	L621766-18	WG638235
Tetrachloroethene	mg/l	0.0228	0	.025	91.2	56-139	L621766-18	WG638235

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
		Matrix Spike						
Toluene	mg/l	0.0227	0	.025	90.6	61-126	L621766-18	WG638235
trans-1,2-Dichloroethene	mg/l	0.0221	0	.025	88.4	45-137	L621766-18	WG638235
trans-1,3-Dichloropropene	mg/l	0.0240	0	.025	95.9	59-130	L621766-18	WG638235
Trichloroethene	mg/l	0.0226	0	.025	90.3	40-155	L621766-18	WG638235
Trichlorofluoromethane	mg/l	0.0261	0	.025	104.	35-177	L621766-18	WG638235
Vinyl chloride	mg/l	0.0244	0	.025	97.6	32-159	L621766-18	WG638235
Xylenes, Total	mg/l	0.0680	0	.075	90.7	64-133	L621766-18	WG638235
4-Bromofluorobenzene					96.83	82-120		WG638235
Dibromofluoromethane					103.4	82-126		WG638235
Toluene-d8					97.97	92-112		WG638235
Gasoline Range Organics-NWTPH	mg/l	6.64	1.22	5.5	98.4	58-122	L621315-14	WG638489
a,a,a-Trifluorotoluene(FID)					107.2	62-128		WG638489
Copper	mg/l	0.0564	0.00340	.0556	95.3	75-125	L621709-02	WG638476
Lead	mg/l	0.0530	0.000130	.0556	95.1	75-125	L621709-02	WG638476
Zinc	mg/l	0.315	0.260	.0556	98.9	75-125	L621709-02	WG638476

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
		Matrix Spike Duplicate							
1,1,1,2-Tetrachloroethane	mg/l	0.0225	0.0218	89.9	71-130	2.99	20	L621766-18	WG638235
1,1,1-Trichloroethane	mg/l	0.0262	0.0227	105.	58-137	14.1	20	L621766-18	WG638235
1,1,2,2-Tetrachloroethane	mg/l	0.0238	0.0233	95.2	64-149	2.35	20	L621766-18	WG638235
1,1,2-Trichloroethane	mg/l	0.0230	0.0235	92.1	73-128	2.00	20	L621766-18	WG638235
1,1,2-Trichlorotrifluoroethane	mg/l	0.0225	0.0216	90.2	36-159	4.13	21	L621766-18	WG638235
1,1-Dichloroethane	mg/l	0.0262	0.0235	105.	58-133	10.7	20	L621766-18	WG638235
1,1-Dichloroethene	mg/l	0.0224	0.0212	89.6	32-152	5.51	20	L621766-18	WG638235
1,1-Dichloropropene	mg/l	0.0279	0.0235	112.	50-140	17.2	20	L621766-18	WG638235
1,2,3-Trichlorobenzene	mg/l	0.0237	0.0212	94.8	68-135	11.4	20	L621766-18	WG638235
1,2,3-Trichloropropane	mg/l	0.0253	0.0233	101.	74-137	8.42	20	L621766-18	WG638235
1,2,3-Trimethylbenzene	mg/l	0.0239	0.0218	95.6	67-133	9.07	20	L621766-18	WG638235
1,2,4-Trichlorobenzene	mg/l	0.0256	0.0236	102.	67-133	8.18	20	L621766-18	WG638235
1,2,4-Trimethylbenzene	mg/l	0.0228	0.0222	91.0	62-141	2.50	20	L621766-18	WG638235
1,2-Dibromo-3-Chloropropane	mg/l	0.0263	0.0243	105.	55-148	7.94	22	L621766-18	WG638235
1,2-Dibromoethane	mg/l	0.0254	0.0247	102.	71-129	2.58	20	L621766-18	WG638235
1,2-Dichlorobenzene	mg/l	0.0253	0.0227	101.	75-125	11.0	20	L621766-18	WG638235
1,2-Dichloroethane	mg/l	0.0282	0.0250	113.	59-135	11.7	20	L621766-18	WG638235
1,2-Dichloropropane	mg/l	0.0228	0.0208	91.1	68-126	9.10	20	L621766-18	WG638235
1,3,5-Trimethylbenzene	mg/l	0.0229	0.0219	91.6	67-136	4.27	20	L621766-18	WG638235
1,3-Dichlorobenzene	mg/l	0.0236	0.0230	94.6	69-131	2.92	20	L621766-18	WG638235
1,3-Dichloropropane	mg/l	0.0242	0.0248	96.9	70-122	2.49	20	L621766-18	WG638235
1,4-Dichlorobenzene	mg/l	0.0251	0.0223	100.	70-123	11.7	20	L621766-18	WG638235
2,2-Dichloropropane	mg/l	0.0262	0.0224	105.	51-141	15.6	20	L621766-18	WG638235
2-Butanone (MEK)	mg/l	0.119	0.101	95.6	51-149	16.7	22	L621766-18	WG638235
2-Chloroethyl vinyl ether	mg/l	0.000760	0.00179	0.608*	10-161	81.0*	40	L621766-18	WG638235
2-Chlorotoluene	mg/l	0.0239	0.0229	95.4	65-133	4.01	20	L621766-18	WG638235
4-Chlorotoluene	mg/l	0.0231	0.0225	92.4	67-129	2.72	20	L621766-18	WG638235
4-Methyl-2-pentanone (MIBK)	mg/l	0.135	0.118	108.	53-154	12.8	21	L621766-18	WG638235
Acetone	mg/l	0.0825	0.0652	60.8	34-146	23.5*	22	L621766-18	WG638235
Acrolein	mg/l	0.123	0.119	98.6	10-189	3.57	30	L621766-18	WG638235
Acrylonitrile	mg/l	0.138	0.119	111.	49-162	15.2	20	L621766-18	WG638235
Benzene	mg/l	0.0259	0.0235	104.	51-134	9.69	20	L621766-18	WG638235
Bromobenzene	mg/l	0.0224	0.0218	89.5	64-130	2.64	20	L621766-18	WG638235
Bromodichloromethane	mg/l	0.0240	0.0218	95.9	67-132	9.61	20	L621766-18	WG638235
Bromoform	mg/l	0.0226	0.0220	90.3	59-137	2.49	20	L621766-18	WG638235
Bromomethane	mg/l	0.0309	0.0270	124.	23-177	13.6	21	L621766-18	WG638235

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Carbon tetrachloride	mg/l	0.0248	0.0218	99.3	49-140	13.0	20	L621766-18	WG638235
Chlorobenzene	mg/l	0.0236	0.0232	94.5	69-126	1.74	20	L621766-18	WG638235
Chlorodibromomethane	mg/l	0.0218	0.0221	87.2	68-130	1.55	20	L621766-18	WG638235
Chloroethane	mg/l	0.0243	0.0219	97.2	32-177	10.6	21	L621766-18	WG638235
Chloroform	mg/l	0.0259	0.0231	103.	64-130	11.4	20	L621766-18	WG638235
Chloromethane	mg/l	0.0232	0.0210	92.6	27-155	9.82	20	L621766-18	WG638235
cis-1,2-Dichloroethene	mg/l	0.0241	0.0217	96.5	54-137	10.6	20	L621766-18	WG638235
cis-1,3-Dichloropropene	mg/l	0.0247	0.0227	98.9	63-127	8.75	20	L621766-18	WG638235
Di-isopropyl ether	mg/l	0.0271	0.0234	108.	58-133	14.4	20	L621766-18	WG638235
Dibromomethane	mg/l	0.0245	0.0218	98.0	68-131	11.5	20	L621766-18	WG638235
Dichlorodifluoromethane	mg/l	0.0305	0.0271	122.	16-188	11.9	22	L621766-18	WG638235
Ethylbenzene	mg/l	0.0231	0.0227	92.5	64-135	1.70	20	L621766-18	WG638235
Hexachloro-1,3-butadiene	mg/l	0.0230	0.0207	92.2	64-140	10.5	20	L621766-18	WG638235
Isopropylbenzene	mg/l	0.0235	0.0230	93.8	62-134	1.74	20	L621766-18	WG638235
Methyl tert-butyl ether	mg/l	0.0264	0.0237	105.	55-136	10.8	20	L621766-18	WG638235
Methylene Chloride	mg/l	0.0254	0.0237	98.8	52-130	7.20	20	L621766-18	WG638235
n-Butylbenzene	mg/l	0.0260	0.0235	104.	62-142	10.1	20	L621766-18	WG638235
n-Propylbenzene	mg/l	0.0234	0.0231	93.8	62-137	1.45	20	L621766-18	WG638235
Naphthalene	mg/l	0.0249	0.0219	99.7	65-140	12.8	20	L621766-18	WG638235
p-Isopropyltoluene	mg/l	0.0232	0.0223	92.6	64-142	3.62	20	L621766-18	WG638235
sec-Butylbenzene	mg/l	0.0234	0.0229	93.8	67-139	2.15	20	L621766-18	WG638235
Styrene	mg/l	0.0230	0.0226	92.2	58-152	1.83	20	L621766-18	WG638235
tert-Butylbenzene	mg/l	0.0227	0.0225	91.0	66-139	1.12	20	L621766-18	WG638235
Tetrachloroethene	mg/l	0.0231	0.0228	92.2	56-139	1.19	20	L621766-18	WG638235
Toluene	mg/l	0.0247	0.0227	98.9	61-126	8.73	20	L621766-18	WG638235
trans-1,2-Dichloroethene	mg/l	0.0234	0.0221	93.6	45-137	5.61	20	L621766-18	WG638235
trans-1,3-Dichloropropene	mg/l	0.0262	0.0240	105.	59-130	8.88	20	L621766-18	WG638235
Trichloroethene	mg/l	0.0260	0.0226	104.	40-155	14.0	20	L621766-18	WG638235
Trichlorofluoromethane	mg/l	0.0261	0.0261	104.	35-177	0.0400	23	L621766-18	WG638235
Vinyl chloride	mg/l	0.0270	0.0244	108.	32-159	10.1	21	L621766-18	WG638235
Xylenes, Total	mg/l	0.0688	0.0680	91.7	64-133	1.11	20	L621766-18	WG638235
4-Bromofluorobenzene				93.38	82-120				WG638235
Dibromofluoromethane				107.3	82-126				WG638235
Toluene-d8				100.0	92-112				WG638235
Gasoline Range Organics-NWTPH	mg/l	6.95	6.64	104.	58-122	4.62	20	L621315-14	WG638489
a,a,a-Trifluorotoluene(FID)				107.9	62-128				WG638489
Copper	mg/l	0.0566	0.0564	95.7	75-125	0.354	20	L621709-02	WG638476
Lead	mg/l	0.0527	0.0530	94.6	75-125	0.568	20	L621709-02	WG638476
Zinc	mg/l	0.320	0.315	108.	75-125	1.57	20	L621709-02	WG638476

Batch number /Run number / Sample number cross reference

WG638235: R2555179: L621775-01 02
WG638291: R2557197: L621775-01 02
WG638489: R2558897: L621775-01 02
WG638288: R2559818: L621775-01 02
WG638476: R2560717: L621775-01 02
WG638285: R2561598: L621775-01 02
WG638407: R2563757: L621775-01 02
WG638039: R2568939: L621775-01 02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
8910 SW Gemini Drive

Beaverton, OR 97008

Quality Assurance Report
Level II

L621775

March 05, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Hart Crowser - Portland, OR

8910 SW Gemini Drive
Beaverton,OR 97008

Billing information.

Accounts Payable
8910 SW Gemini Drive

Beaverton,OR 97008

C207

Chain of Custody
Page 1 of 1

ESC LAB SCIENCES
12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Report to: Leon Lahiere

Email: leon.lahiere@hartcrowser.co

Project Description: Brix Maritime

City/State Collected: Portland/OR

Phone: (503) 620-7284
FAX:

Client Project #: ~~15534-00~~ 15634-00

Lab Project #: HARCROPOR-BRIX

Collected by (print): Jason R. Miles

Site/Facility ID#:

P.O.#: 15634-00/Task 11

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X Yes
FAX? ___No ___Yes

Acctnum: HARCROPOR (lab use only)
Template/Prelogin: T81457/ P403568
Cooler #: 8/29 MO
Shipped Via: FedEX Saver

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	8082 100ml Amb-NoPres Low Level PCBs	8270PHTH 100ml Amb NoPres Low Level	Metals- Cu, Pb, Zn 500mlHDPE-HNO3 C2	NWTPHDX 100ml Amb-HCl C2	NWTPHGX 40mlAmb HCl	SVPAHSIMLVID 40mlAmb-NoPres Low Level	TSS 1L-HDPE NoPres	V8260 40mlAmb-HCl	Remarks/Contaminant	Sample # (lab only)
Outfall A	Grab	GW	N/A	02/22/13	1104	16	X	X	X	X	X	X	X	X	L621775	-01
Outfall B	Grab	GW	N/A	02/22/13	1014	~~15~~ 16 JM	X	X	X	X	X	X	X	X	2 PAH VOAs rather than 3	-02

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

5413472 19471

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ ____	Condition: JF OK (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.8 Bottles Received: 31	COC Seal Intact: ✓ Y ___ N ___ NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2-23-13 Time: 0920	pH Checked: C2 NCF:
02/22/13	1415				

APPENDIX D
Stormwater Pathway Support Documentation

APPENDIX D

Stormwater Pathway Support Documentation

This appendix includes additional documentation referenced in the text regarding the stormwater pathway. Documentation includes representative photographs of the stormwater system and sampling activities, concentration plots, rainfall hydrographs, and City of Portland stormwater data for outfall AAE427. Specifically, this appendix includes the following (in order).

- Photographs of the catch basins, the outfalls and their location on the riverbank, the stormwater conveyance system cleanout activities, and stormwater discharges from the outfalls.
- Brix's catch basin sediment data plotted on DEQ's catch basin sediment screening charts (from Appendix E of DEQ 2010). Plots are included for PCBs, BEHP, and total PAHs. These plots show Brix's data for composite sediment samples obtained from Catchment Areas A and B (i.e., CB-A and CB-B, respectively) from catch basin filter inserts (Upper) and sumps (Lower).
- Hydrographs for each of the six stormwater sampling events. Each hydrograph lists the rainfall measurements (in inches/hour) and a graph of the rainfall, the estimated onset of discharge, and the beginning of stormwater sampling.
- Brix's stormwater discharge data plotted on DEQ's stormwater screening charts (from Appendix E of DEQ 2010). Plots are included for copper, lead, zinc, BEHP, total PAHs, and TSS. For plotting Brix's data, the geometric mean was calculated for each outfall using stormwater data collected before and after implementation of the 2012 SCMs (specifically the conveyance system cleanout). Calculated geometric means are listed in Table D-1.
- Stormwater data for four sampling events conducted by the City from the on-site manhole associated with outfall AAE427 (City of Portland 2010, 2014). Table D-2 lists these data.

The CD included in this appendix includes electronic copies of the catch basin sediment data and stormwater sampling data in DEQ's Data Reporting and Screening Tables format (DEQ 2010).

Photograph 1 – Catch basin CB-A1. Photograph taken looking east.

Photograph 2 – Catch basin CB-A2. Note nearby spill kit (between parking bumpers). Photograph taken looking south.

Photograph 3 – Catch basin CB-A3. Photograph taken looking northwest.

Photograph 4 – Catch basin CB-B1. Note nearby spill kit (attached to fence).
Photograph taken looking northwest.

Photograph 5 – Catch basin CB-A3. Photograph taken looking northeast.

Photograph 6 – Catch basin CB-A1 construction. Photograph taken after cleaning out of sediment in February 2008.

Photograph 7 – Outfall A (red arrow) and City of Portland Outfall AAE427. Photograph taken looking southeast.

Photograph 8 – Outfall A (red arrow) at elevation of 33 feet NAVD88 relative to river level and top of City outfall (yellow arrow) on January 15, 2013 (river about 10.5 feet NAVD88). Photograph taken looking southeast.

Photograph 9 – Outfall B by lifejacket (red arrow).

Photograph 10 – Outfall B, approximate elevation of 35 feet NAVD88 relative to river level on January 15, 2013 (about 10.5 feet NAVD88). Photograph taken looking northwest.

Photograph 11 – Stormwater system conveyance cleanout of catch basin CB-B2 in May 2012. Photograph taken looking northwest.

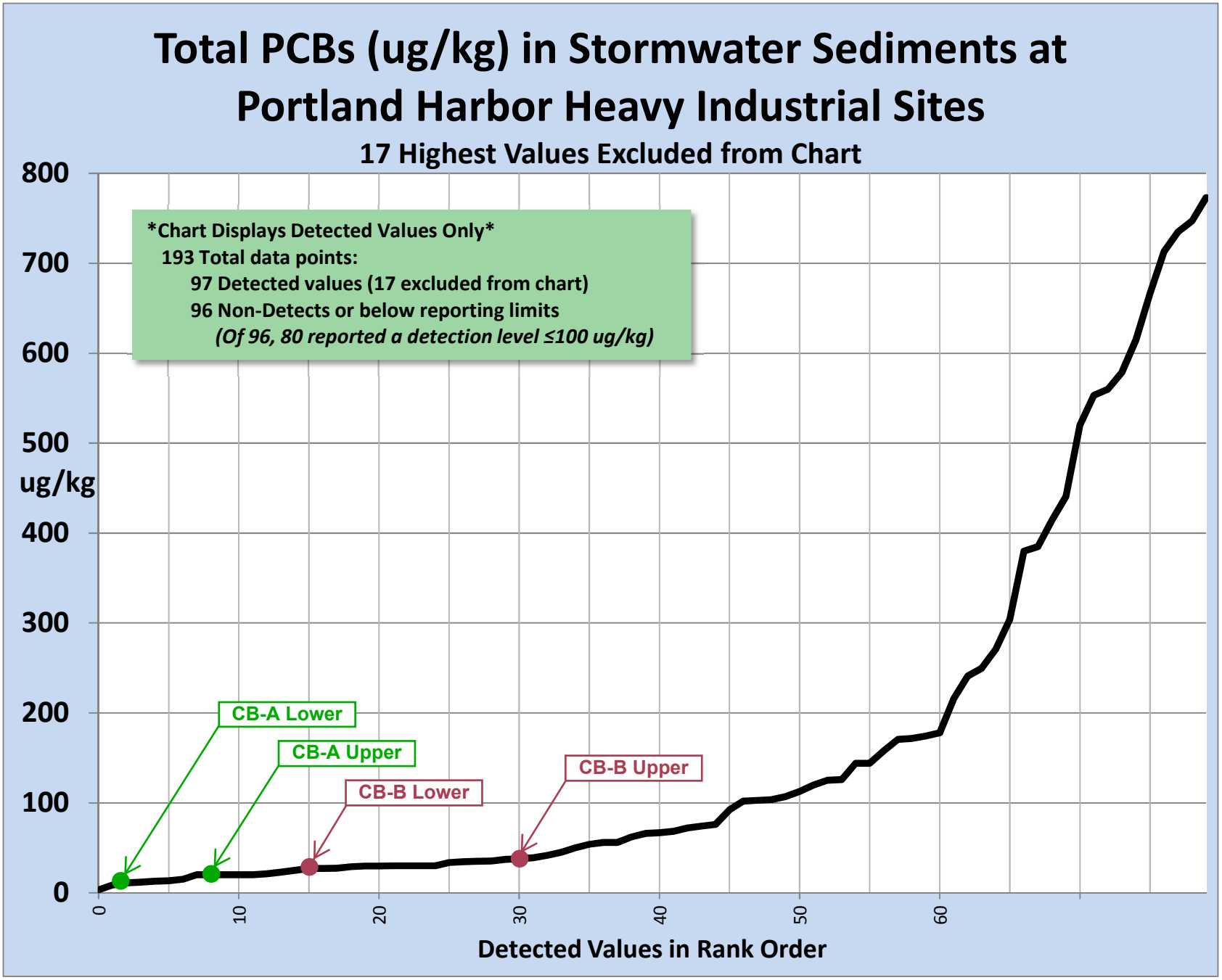
Photograph 12 – Cleanout of discharge piping to Outfall B in May 2012. Rinse water is being captured for proper disposal.

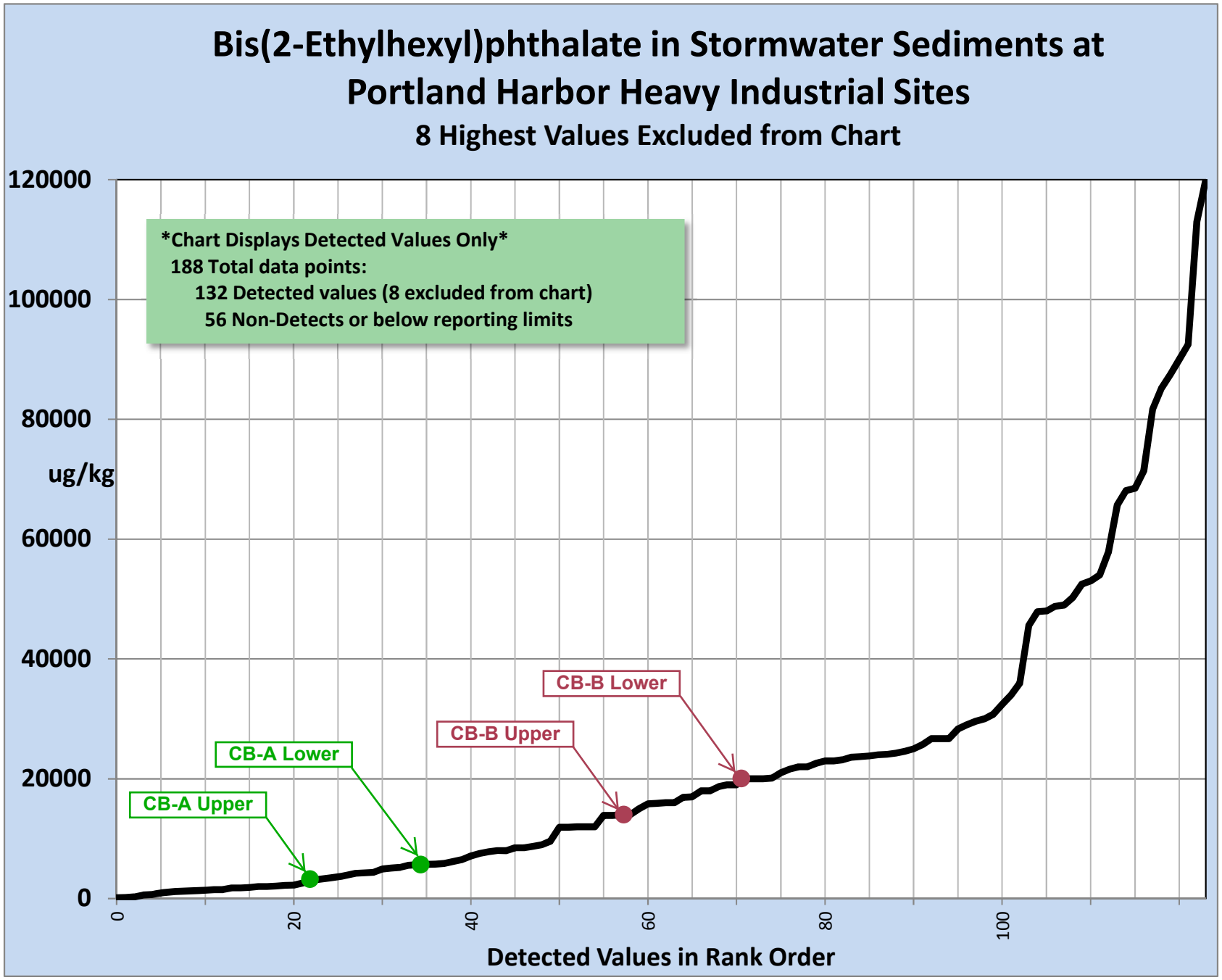
Photograph 13 – Stormwater discharge from Outfall A during October 21, 2009, sampling event.

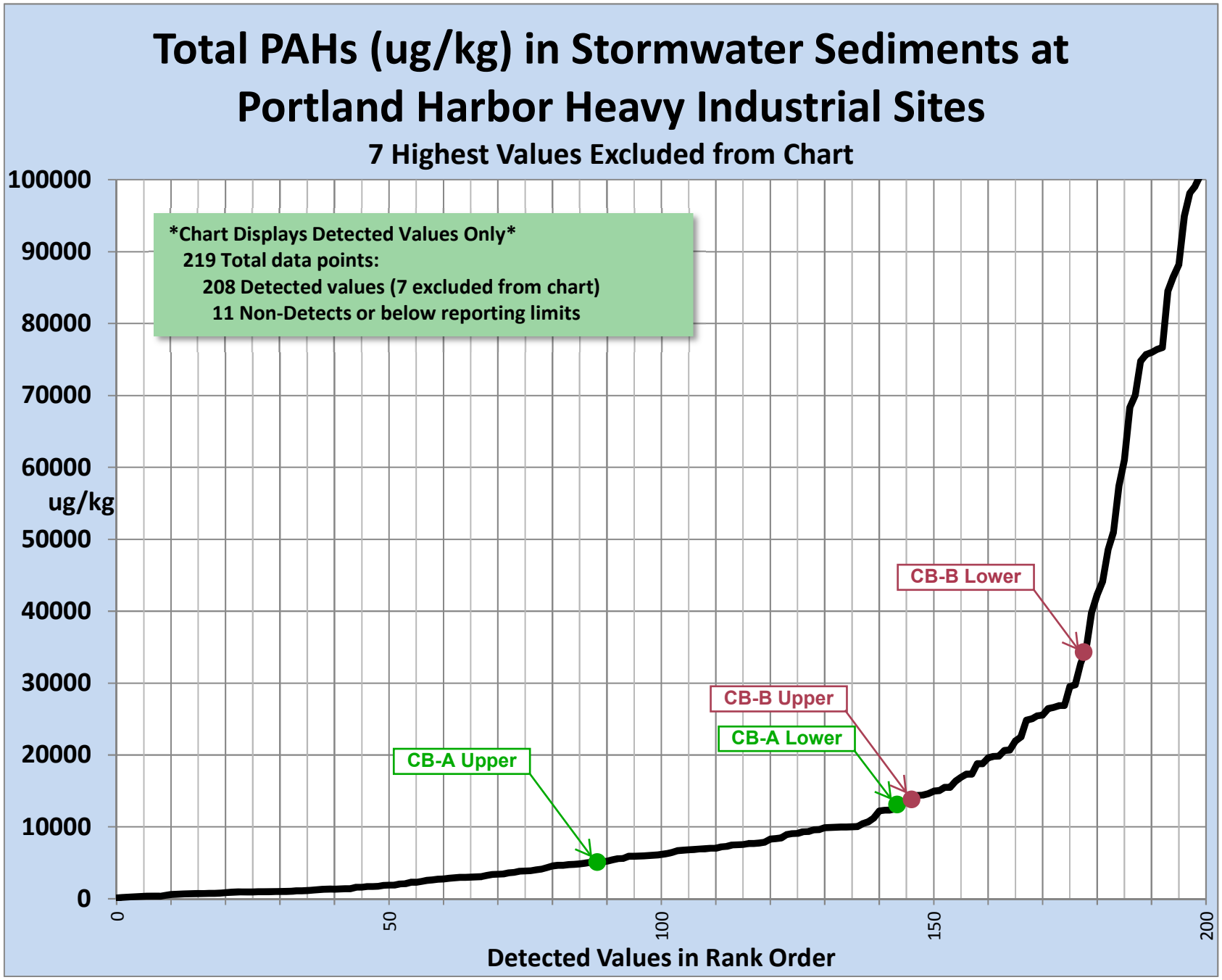
Photograph 14 – Stormwater discharge from Outfall A during October 21, 2009, sampling event.

Photograph 15 – Stormwater discharge from Outfall A during February 22, 2013, sampling event.

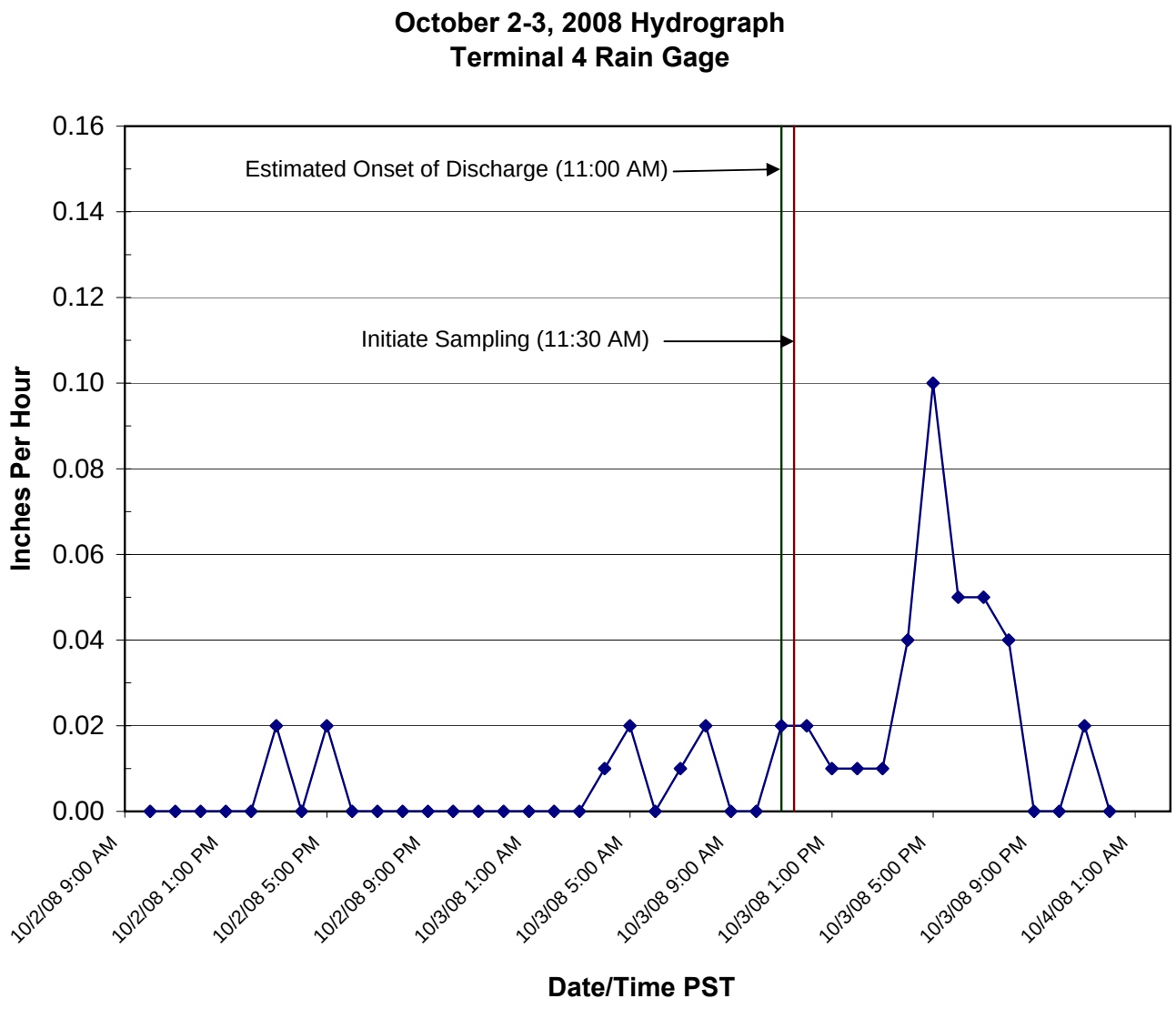
Photograph 16 – Stormwater discharge from Outfall A during February 22, 2013, sampling event.


Total PCBs (ug/kg) in Stormwater Sediments at Portland Harbor Heavy Industrial Sites
17 Highest Values Excluded from Chart
Chart Displays Detected Values Only
193 Total data points:
97 Detected values (17 excluded from chart)
96 Non-Detects or below reporting limits
(Of 96, 80 reported a detection level ≤100 ug/kg)
800
700
600
500
ug/kg
400
300
200
100
0
CB-A Lower
CB-A Upper
CB-B Lower
CB-B Upper
0
10
20
30
40
50
60
Detected Values in Rank Order

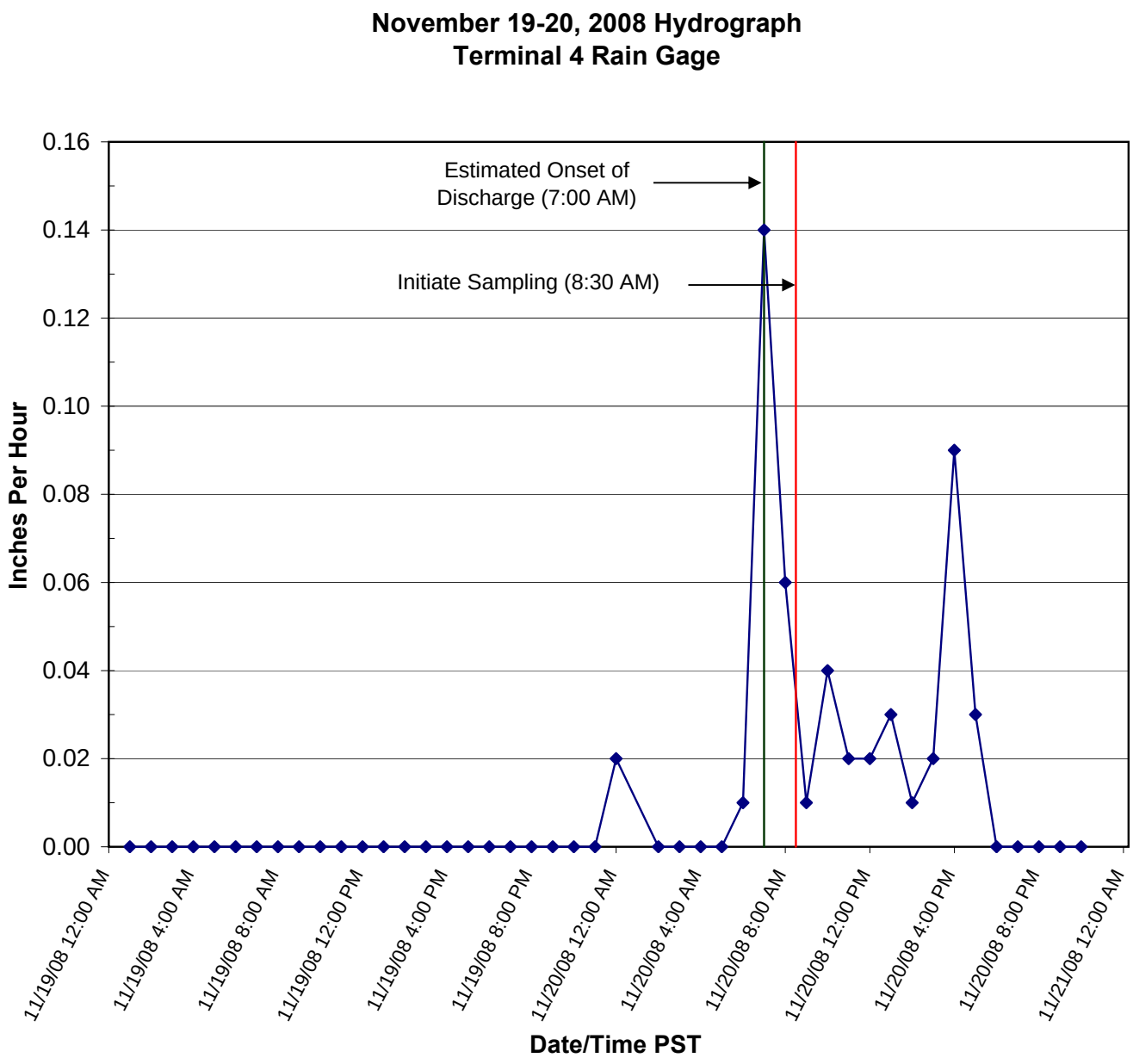

Bis(2-Ethylhexyl)phthalate in Stormwater Sediments at Portland Harbor Heavy Industrial Sites
8 Highest Values Excluded from Chart
Chart Displays Detected Values Only
188 Total data points:
132 Detected values (8 excluded from chart)
56 Non-Detects or below reporting limits
120000
100000
80000
ug/kg
60000
40000
20000
0
CB-A Upper
CB-A Lower
CB-B Upper
CB-B Lower
0
20
40
60
80
100
Detected Values in Rank Order


Total PAHs (ug/kg) in Stormwater Sediments at Portland Harbor Heavy Industrial Sites
7 Highest Values Excluded from Chart
Chart Displays Detected Values Only
219 Total data points:
208 Detected values (7 excluded from chart)
11 Non-Detects or below reporting limits
100000
90000
80000
70000
60000
ug/kg
50000
40000
30000
20000
10000
0
0
50
100
150
200
Detected Values in Rank Order
CB-B Lower
CB-B Upper
CB-A Lower
CB-A Upper

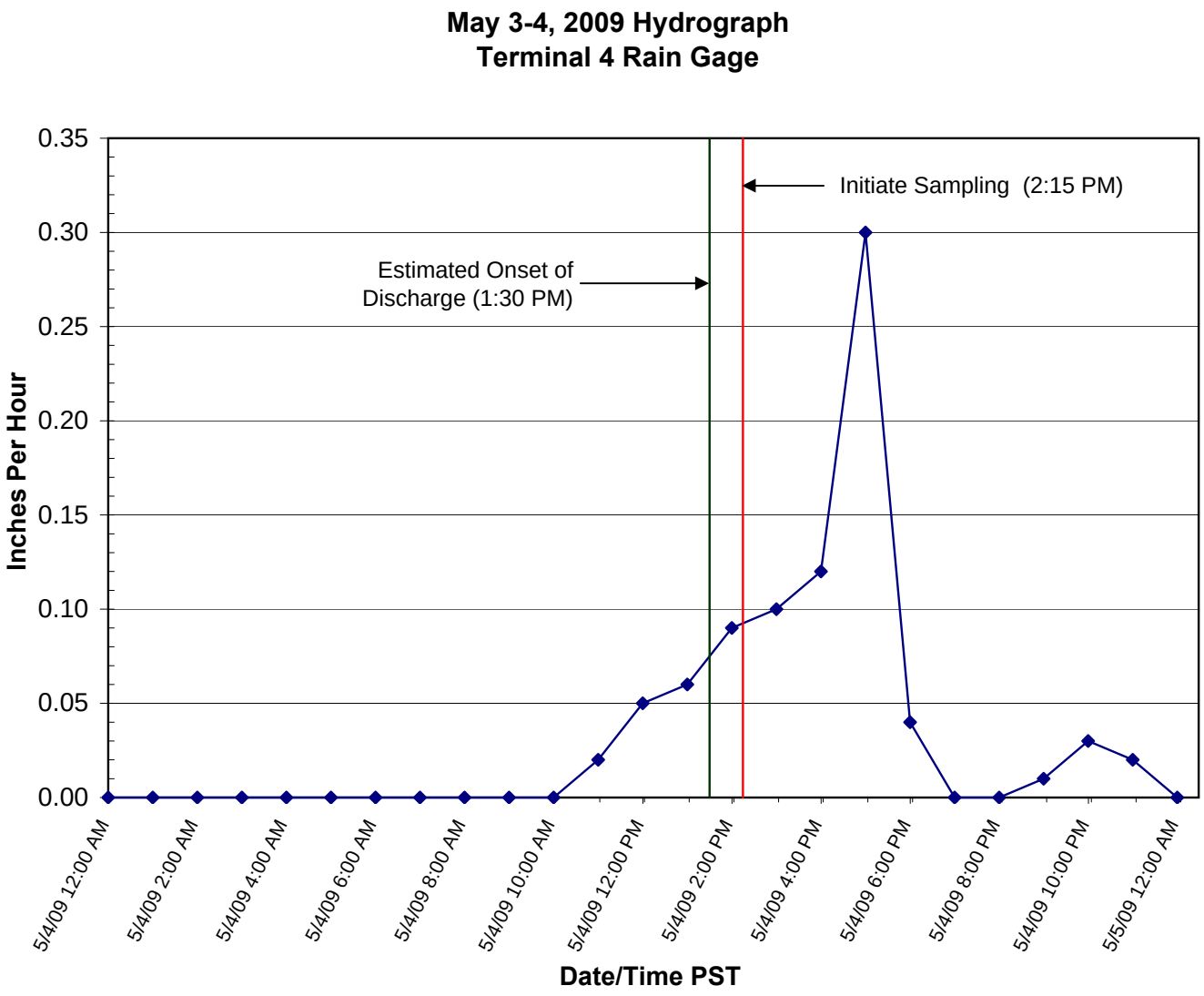
Date and Time (PST)	Number of Tips	Inches
10/2/08 9:00 AM	0	0.00
10/2/08 10:00 AM	0	0.00
10/2/08 11:00 AM	0	0.00
10/2/08 12:00 PM	0	0.00
10/2/08 1:00 PM	0	0.00
10/2/08 2:00 PM	0	0.00
10/2/08 3:00 PM	2	0.02
10/2/08 4:00 PM	0	0.00
10/2/08 5:00 PM	2	0.02
10/2/08 6:00 PM	0	0.00
10/2/08 7:00 PM	0	0.00
10/2/08 8:00 PM	0	0.00
10/2/08 9:00 PM	0	0.00
10/2/08 10:00 PM	0	0.00
10/2/08 11:00 PM	0	0.00
10/3/08 12:00 AM	0	0.00
10/3/08 1:00 AM	0	0.00
10/3/08 2:00 AM	0	0.00
10/3/08 3:00 AM	0	0.00
10/3/08 4:00 AM	1	0.01
10/3/08 5:00 AM	2	0.02
10/3/08 6:00 AM	0	0.00
10/3/08 7:00 AM	1	0.01
10/3/08 8:00 AM	2	0.02
10/3/08 9:00 AM	0	0.00
10/3/08 10:00 AM	0	0.00
10/3/08 11:00 AM	2	0.02
10/3/08 12:00 PM	2	0.02
10/3/08 1:00 PM	1	0.01
10/3/08 2:00 PM	1	0.01
10/3/08 3:00 PM	1	0.01
10/3/08 4:00 PM	4	0.04
10/3/08 5:00 PM	10	0.10
10/3/08 6:00 PM	5	0.05
10/3/08 7:00 PM	5	0.05
10/3/08 8:00 PM	4	0.04
10/3/08 9:00 PM	0	0.00
10/3/08 10:00 PM	0	0.00
10/3/08 11:00 PM	2	0.02
10/4/08 12:00 AM	0	0.00



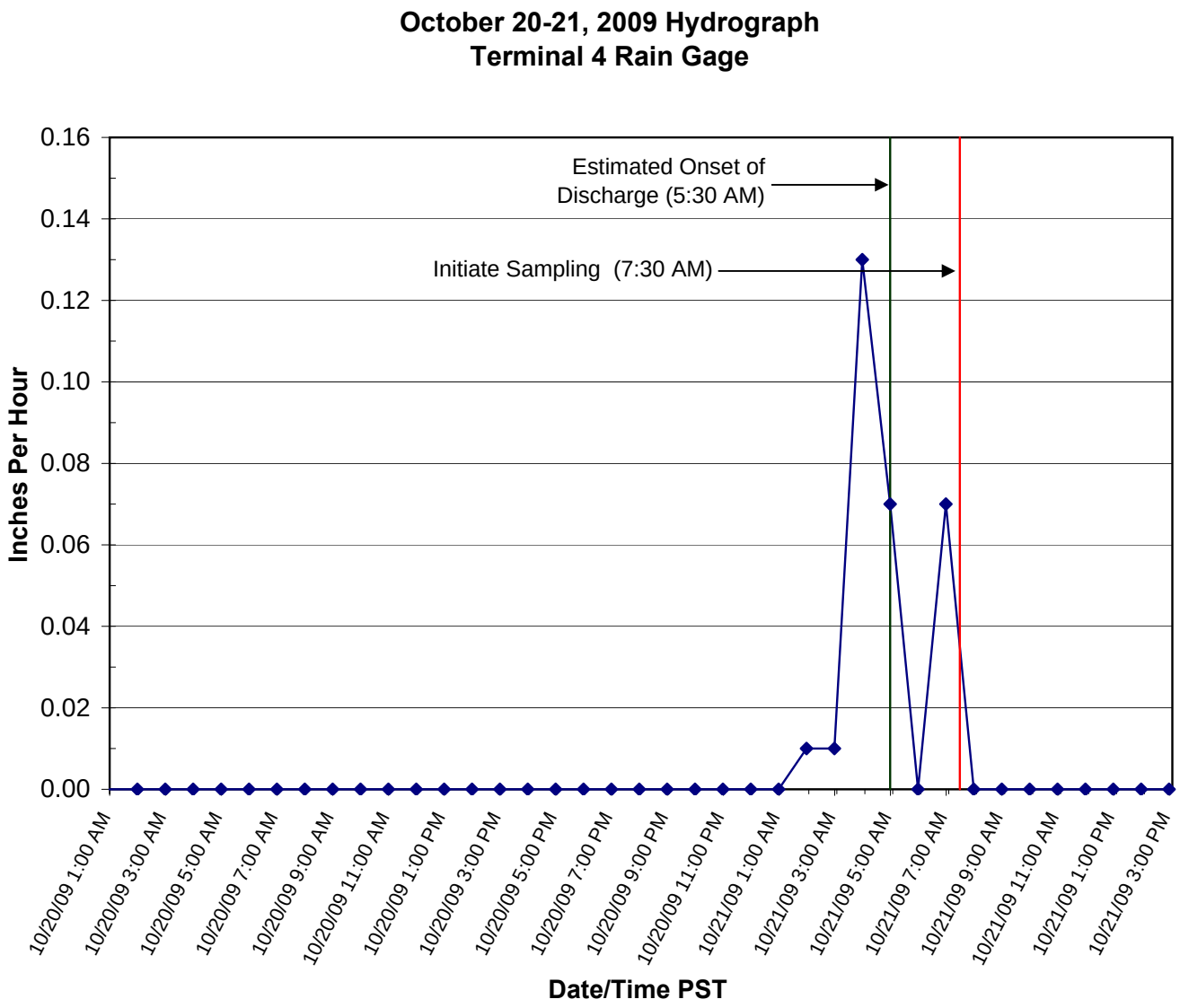
Date and Time	Number of Tips	Inches
11/19/08 1:00 AM	0	0.00
11/19/08 2:00 AM	0	0.00
11/19/08 3:00 AM	0	0.00
11/19/08 4:00 AM	0	0.00
11/19/08 5:00 AM	0	0.00
11/19/08 6:00 AM	0	0.00
11/19/08 7:00 AM	0	0.00
11/19/08 8:00 AM	0	0.00
11/19/08 9:00 AM	0	0.00
11/19/08 10:00 AM	0	0.00
11/19/08 11:00 AM	0	0.00
11/19/08 12:00 PM	0	0.00
11/19/08 1:00 PM	0	0.00
11/19/08 2:00 PM	0	0.00
11/19/08 3:00 PM	0	0.00
11/19/08 4:00 PM	0	0.00
11/19/08 5:00 PM	0	0.00
11/19/08 6:00 PM	0	0.00
11/19/08 7:00 PM	0	0.00
11/19/08 8:00 PM	0	0.00
11/19/08 9:00 PM	0	0.00
11/19/08 10:00 PM	0	0.00
11/19/08 11:00 PM	0	0.00
11/20/08 12:00 AM	2	0.02
11/20/08 2:00 AM	0	0.00
11/20/08 3:00 AM	0	0.00
11/20/08 4:00 AM	0	0.00
11/20/08 5:00 AM	0	0.00
11/20/08 6:00 AM	1	0.01
11/20/08 7:00 AM	14	0.14
11/20/08 8:00 AM	6	0.06
11/20/08 9:00 AM	1	0.01
11/20/08 10:00 AM	4	0.04
11/20/08 11:00 AM	2	0.02
11/20/08 12:00 PM	2	0.02
11/20/08 1:00 PM	3	0.03
11/20/08 2:00 PM	1	0.01
11/20/08 3:00 PM	2	0.02
11/20/08 4:00 PM	9	0.09
11/20/08 5:00 PM	3	0.03
11/20/08 6:00 PM	0	0.00
11/20/08 7:00 PM	0	0.00
11/20/08 8:00 PM	0	0.00



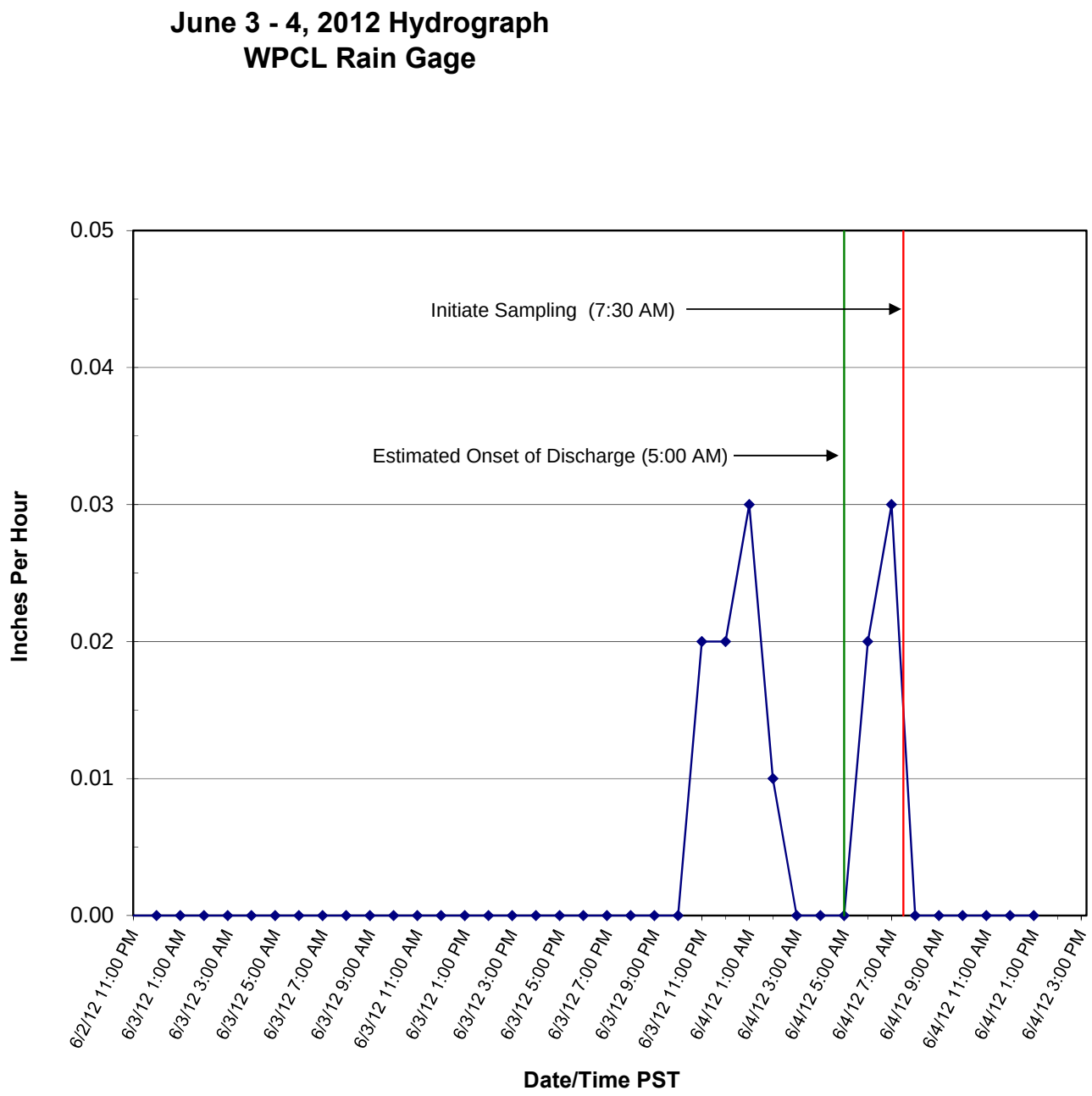
Date and Time (PST)	Number of Tips	Inches
5/3/09 11:00 AM	0	0.00
5/3/09 12:00 PM	0	0.00
5/3/09 1:00 PM	0	0.00
5/3/09 2:00 PM	0	0.00
5/3/09 3:00 PM	0	0.00
5/3/09 4:00 PM	0	0.00
5/3/09 5:00 PM	0	0.00
5/3/09 6:00 PM	0	0.00
5/3/09 7:00 PM	0	0.00
5/3/09 8:00 PM	0	0.00
5/3/09 9:00 PM	0	0.00
5/3/09 10:00 PM	0	0.00
5/3/09 11:00 PM	0	0.00
5/4/09 12:00 AM	0	0.00
5/4/09 1:00 AM	0	0.00
5/4/09 2:00 AM	0	0.00
5/4/09 3:00 AM	0	0.00
5/4/09 4:00 AM	0	0.00
5/4/09 5:00 AM	0	0.00
5/4/09 6:00 AM	0	0.00
5/4/09 7:00 AM	0	0.00
5/4/09 8:00 AM	0	0.00
5/4/09 9:00 AM	0	0.00
5/4/09 10:00 AM	0	0.00
5/4/09 11:00 AM	2	0.02
5/4/09 12:00 PM	5	0.05
5/4/09 1:00 PM	6	0.06
5/4/09 2:00 PM	9	0.09
5/4/09 3:00 PM	10	0.10
5/4/09 4:00 PM	12	0.12
5/4/09 5:00 PM	30	0.30
5/4/09 6:00 PM	4	0.04
5/4/09 7:00 PM	0	0.00
5/4/09 8:00 PM	0	0.00
5/4/09 9:00 PM	1	0.01
5/4/09 10:00 PM	3	0.03
5/4/09 11:00 PM	2	0.02
5/5/09 12:00 AM	0	0.00



Date and Time (PST)	Number of Tips	Inches
10/20/09 1:00 AM	0	0.00
10/20/09 2:00 AM	0	0.00
10/20/09 3:00 AM	0	0.00
10/20/09 4:00 AM	0	0.00
10/20/09 5:00 AM	0	0.00
10/20/09 6:00 AM	0	0.00
10/20/09 7:00 AM	0	0.00
10/20/09 8:00 AM	0	0.00
10/20/09 9:00 AM	0	0.00
10/20/09 10:00 AM	0	0.00
10/20/09 11:00 AM	0	0.00
10/20/09 12:00 PM	0	0.00
10/20/09 1:00 PM	0	0.00
10/20/09 2:00 PM	0	0.00
10/20/09 3:00 PM	0	0.00
10/20/09 4:00 PM	0	0.00
10/20/09 5:00 PM	0	0.00
10/20/09 6:00 PM	0	0.00
10/20/09 7:00 PM	0	0.00
10/20/09 8:00 PM	0	0.00
10/20/09 9:00 PM	0	0.00
10/20/09 10:00 PM	0	0.00
10/20/09 11:00 PM	0	0.00
10/21/09 12:00 AM	0	0.00
10/21/09 1:00 AM	0	0.00
10/21/09 2:00 AM	1	0.01
10/21/09 3:00 AM	1	0.01
10/21/09 4:00 AM	13	0.13
10/21/09 5:00 AM	7	0.07
10/21/09 6:00 AM	0	0.00
10/21/09 7:00 AM	7	0.07
10/21/09 8:00 AM	0	0.00
10/21/09 9:00 AM	0	0.00
10/21/09 10:00 AM	1	0.00
10/21/09 11:00 AM	3	0.00
10/21/09 12:00 PM	2	0.00
10/21/09 1:00 PM	0	0.00
10/21/09 2:00 PM	0	0.00
10/21/09 3:00 PM	0	0.00

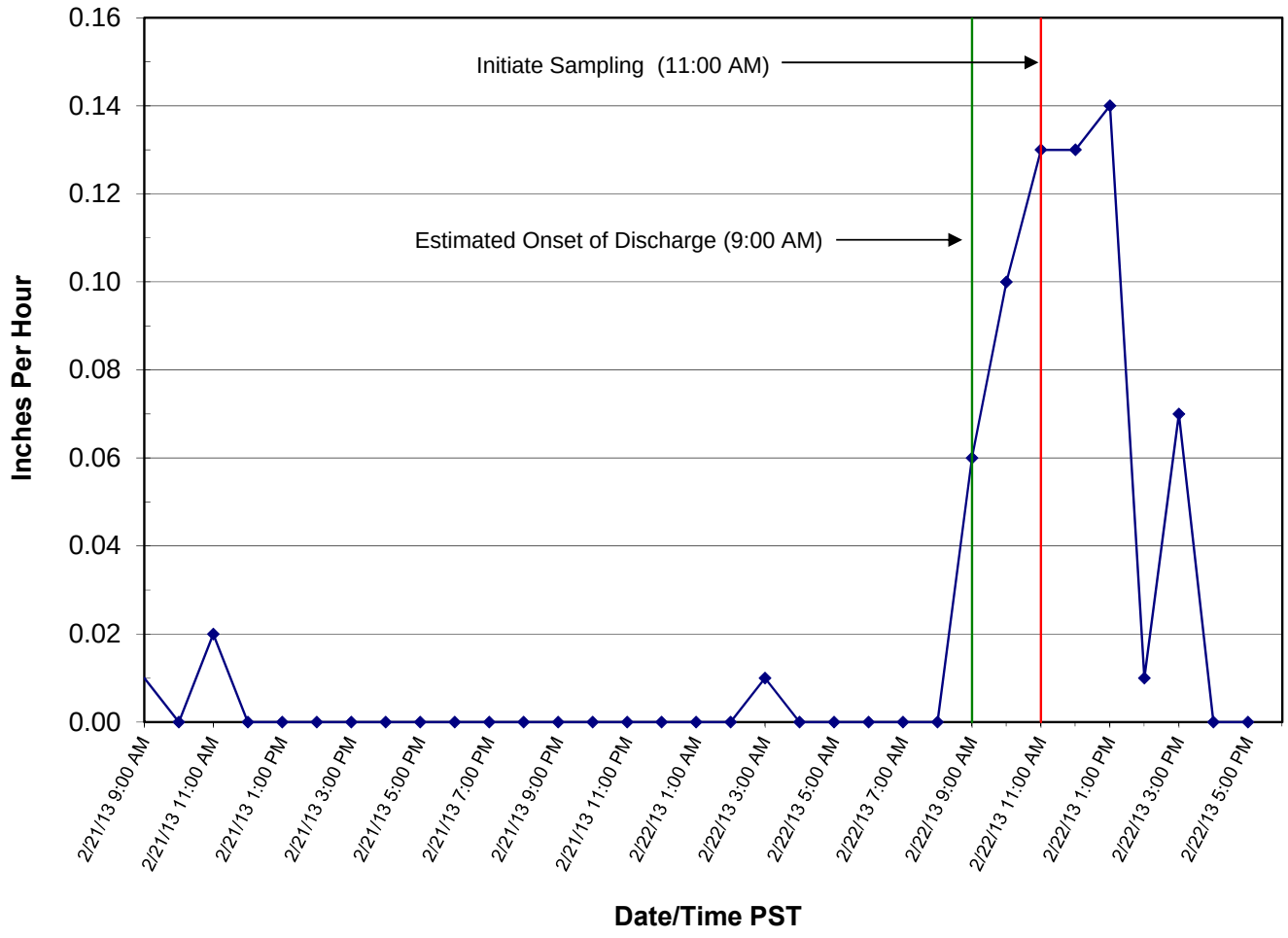


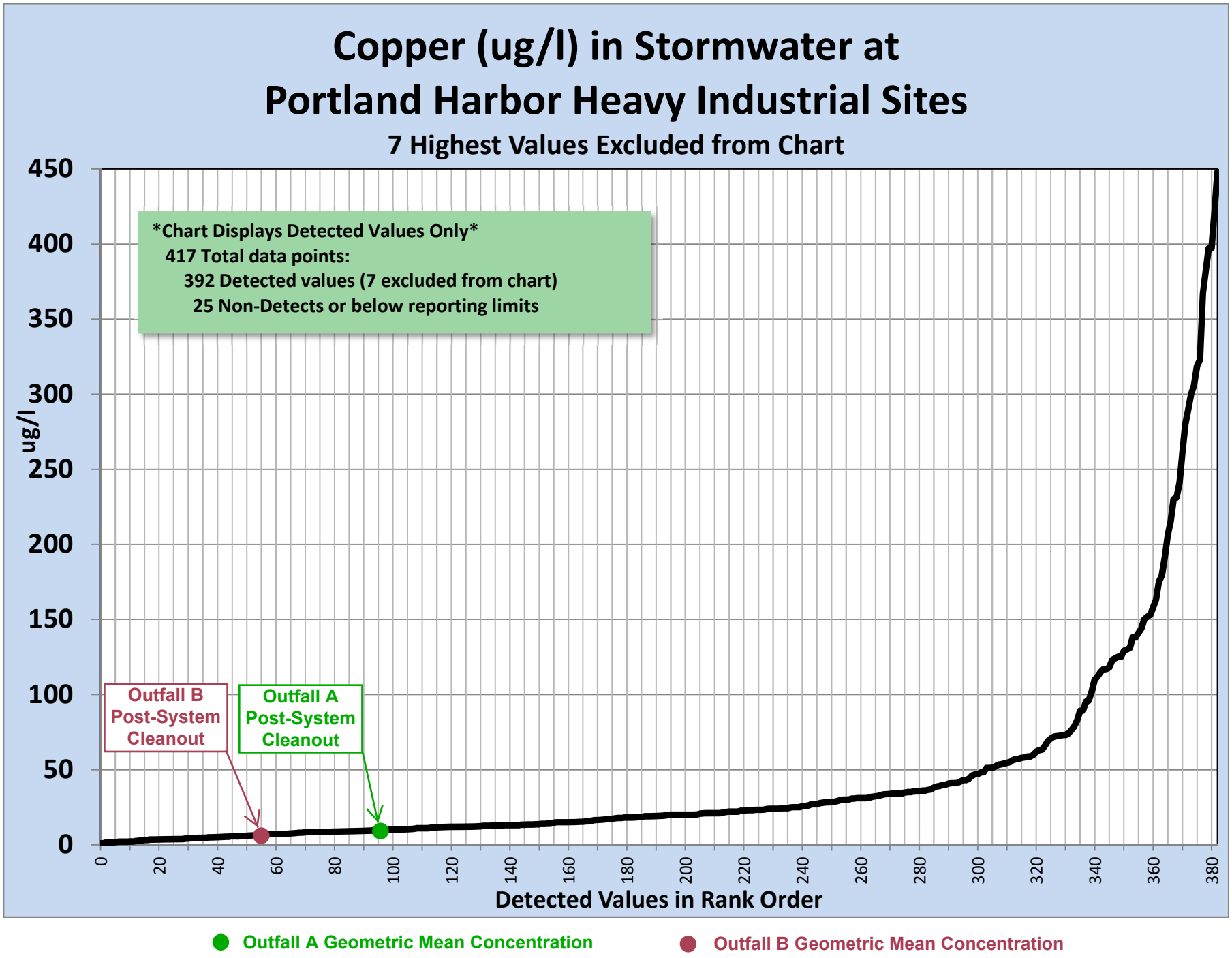
Date and Time (PST)	Number of Tips	Inches
6/2/12 11:00 PM	0	0.00
6/3/12 12:00 AM	0	0.00
6/3/12 1:00 AM	0	0.00
6/3/12 2:00 AM	0	0.00
6/3/12 3:00 AM	0	0.00
6/3/12 4:00 AM	0	0.00
6/3/12 5:00 AM	0	0.00
6/3/12 6:00 AM	0	0.00
6/3/12 7:00 AM	0	0.00
6/3/12 8:00 AM	0	0.00
6/3/12 9:00 AM	0	0.00
6/3/12 10:00 AM	0	0.00
6/3/12 11:00 AM	0	0.00
6/3/12 12:00 PM	0	0.00
6/3/12 1:00 PM	0	0.00
6/3/12 2:00 PM	0	0.00
6/3/12 3:00 PM	0	0.00
6/3/12 4:00 PM	0	0.00
6/3/12 5:00 PM	0	0.00
6/3/12 6:00 PM	0	0.00
6/3/12 7:00 PM	0	0.00
6/3/12 8:00 PM	0	0.00
6/3/12 9:00 PM	0	0.00
6/3/12 10:00 PM	0	0.00
6/3/12 11:00 PM	2	0.02
6/4/12 12:00 AM	2	0.02
6/4/12 1:00 AM	3	0.03
6/4/12 2:00 AM	1	0.01
6/4/12 3:00 AM	0	0.00
6/4/12 4:00 AM	0	0.00
6/4/12 5:00 AM	0	0.00
6/4/12 6:00 AM	2	0.02
6/4/12 7:00 AM	3	0.03
6/4/12 8:00 AM	0	0.00
6/4/12 9:00 AM	0	0.00
6/4/12 10:00 AM	0	0.00
6/4/12 11:00 AM	0	0.00
6/4/12 12:00 PM	0	0.00
6/4/12 1:00 PM	0	0.00

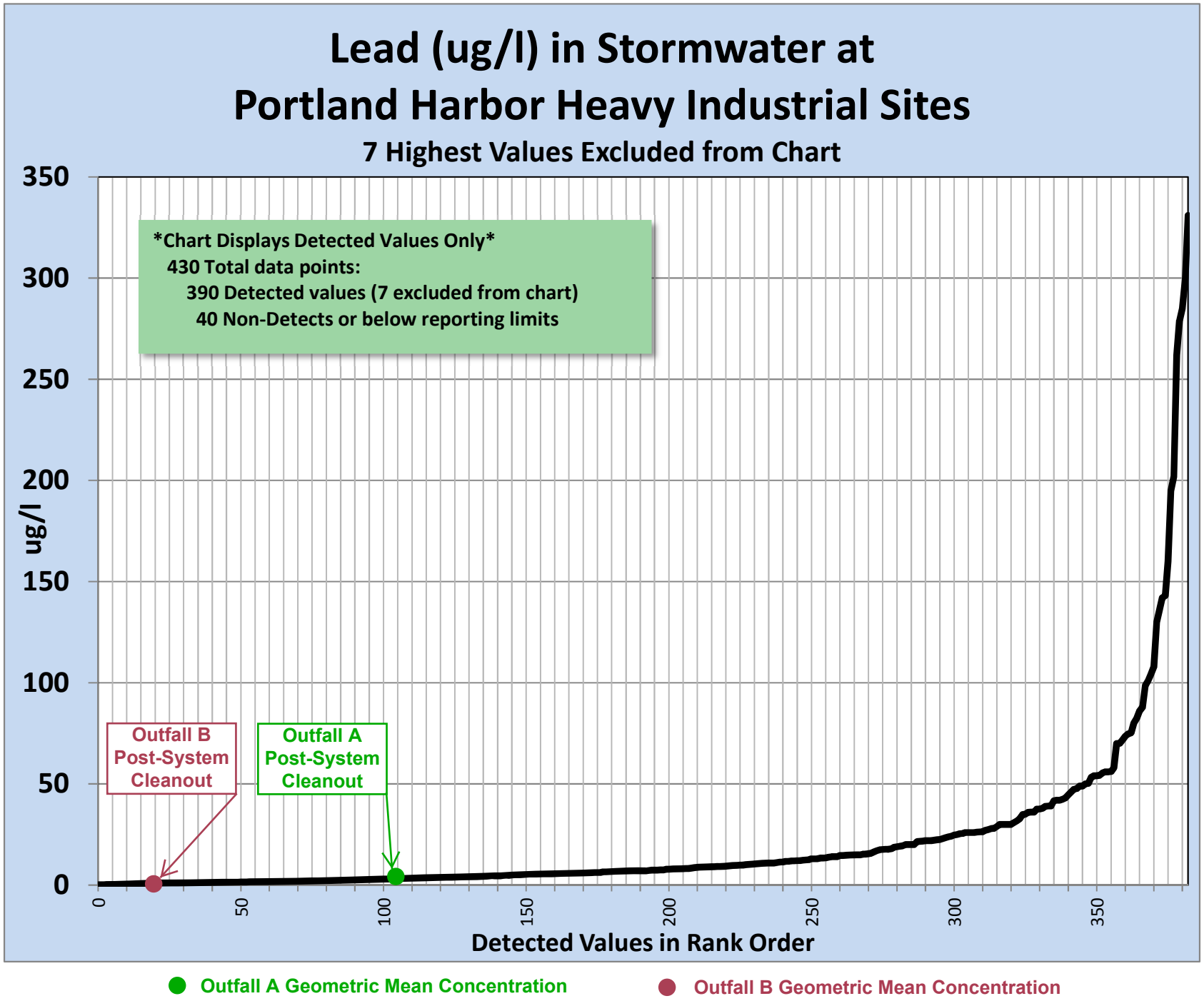


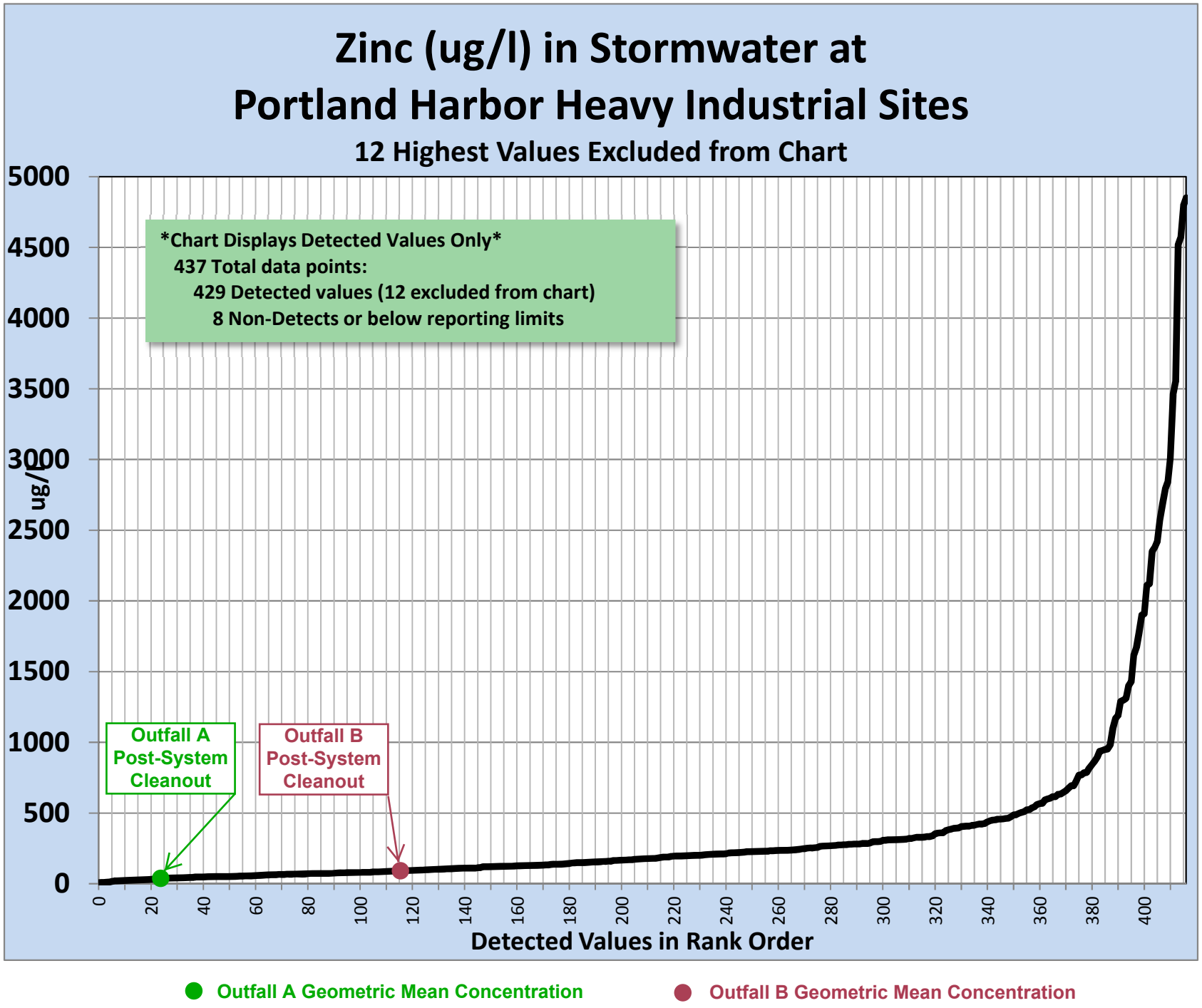
February 21-22, 2013 Hydrograph
WPCL Rain Gage

Date and Time (PST)	Number of Tips	Inches
2/21/13 8:00 AM	0	0.00
2/21/13 9:00 AM	1	0.01
2/21/13 10:00 AM	0	0.00
2/21/13 11:00 AM	2	0.02
2/21/13 12:00 PM	0	0.00
2/21/13 1:00 PM	0	0.00
2/21/13 2:00 PM	0	0.00
2/21/13 3:00 PM	0	0.00
2/21/13 4:00 PM	0	0.00
2/21/13 5:00 PM	0	0.00
2/21/13 6:00 PM	0	0.00
2/21/13 7:00 PM	0	0.00
2/21/13 8:00 PM	0	0.00
2/21/13 9:00 PM	0	0.00
2/21/13 10:00 PM	0	0.00
2/21/13 11:00 PM	0	0.00
2/22/13 12:00 AM	0	0.00
2/22/13 1:00 AM	0	0.00
2/22/13 2:00 AM	0	0.00
2/22/13 3:00 AM	1	0.01
2/22/13 4:00 AM	0	0.00
2/22/13 5:00 AM	0	0.00
2/22/13 6:00 AM	0	0.00
2/22/13 7:00 AM	0	0.00
2/22/13 8:00 AM	0	0.00
2/22/13 9:00 AM	6	0.06
2/22/13 10:00 AM	10	0.10
2/22/13 11:00 AM	13	0.13
2/22/13 12:00 PM	13	0.13
2/22/13 1:00 PM	14	0.14
2/22/13 2:00 PM	1	0.01
2/22/13 3:00 PM	7	0.07
2/22/13 4:00 PM	0	0.00
2/22/13 5:00 PM	0	0.00



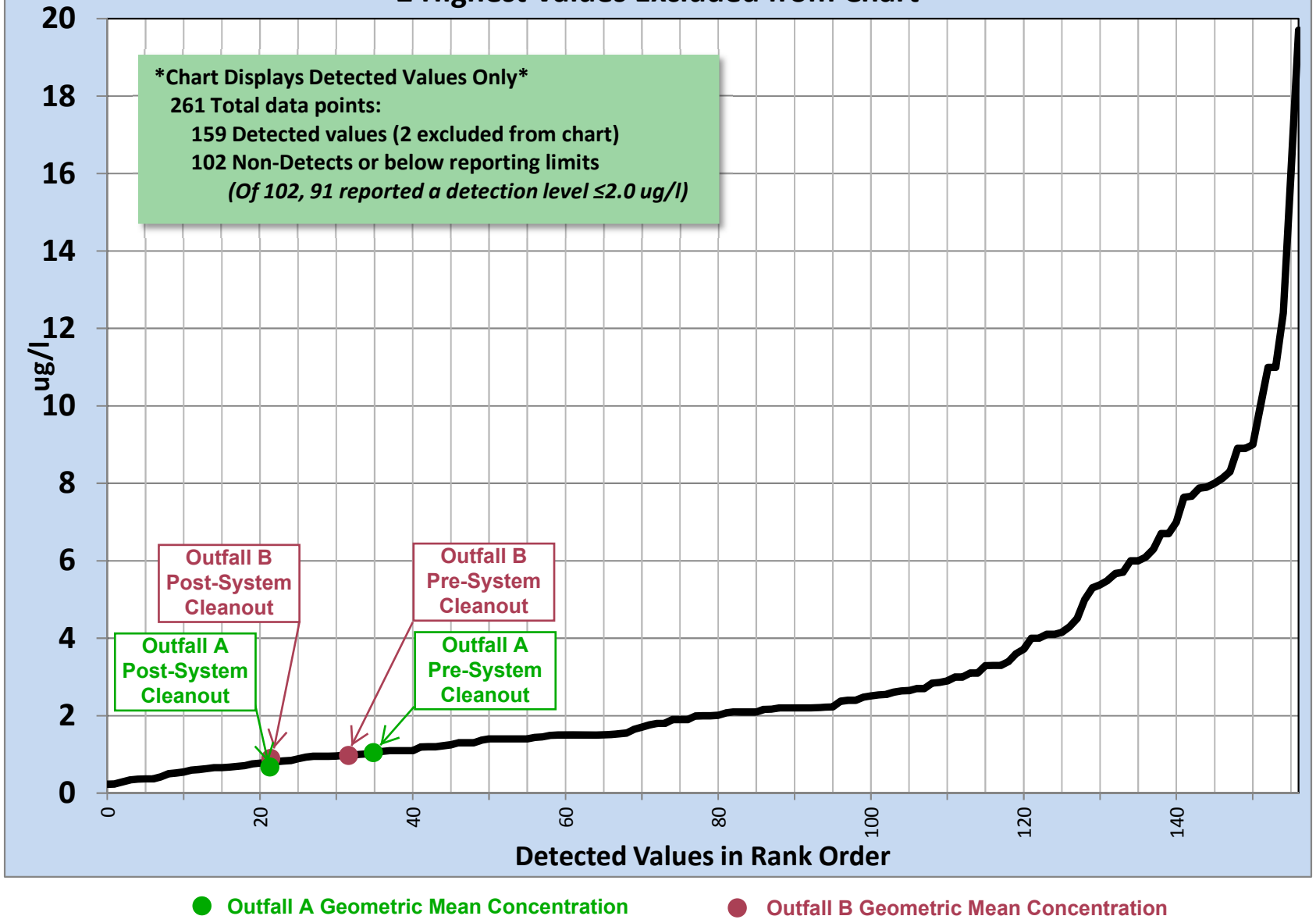

Copper (ug/l) in Stormwater at
Portland Harbor Heavy Industrial Sites
7 Highest Values Excluded from Chart
Chart Displays Detected Values Only
417 Total data points:
392 Detected values (7 excluded from chart)
25 Non-Detects or below reporting limits
Outfall B Post-System Cleanout
Outfall A Post-System Cleanout
ug/l
450
400
350
300
250
200
150
100
50
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
Detected Values in Rank Order
Outfall A Geometric Mean Concentration
Outfall B Geometric Mean Concentration


Lead (ug/l) in Stormwater at
Portland Harbor Heavy Industrial Sites
7 Highest Values Excluded from Chart
Chart Displays Detected Values Only
430 Total data points:
390 Detected values (7 excluded from chart)
40 Non-Detects or below reporting limits
Outfall B Post-System Cleanout
Outfall A Post-System Cleanout
ug/l
350
300
250
200
150
100
50
0
0
50
100
150
200
250
300
350
Detected Values in Rank Order
Outfall A Geometric Mean Concentration
Outfall B Geometric Mean Concentration


Zinc (ug/l) in Stormwater at
Portland Harbor Heavy Industrial Sites
12 Highest Values Excluded from Chart
Chart Displays Detected Values Only
437 Total data points:
429 Detected values (12 excluded from chart)
8 Non-Detects or below reporting limits
Outfall A Post-System Cleanout
Outfall B Post-System Cleanout
ug/l
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
Detected Values in Rank Order
Outfall A Geometric Mean Concentration
Outfall B Geometric Mean Concentration

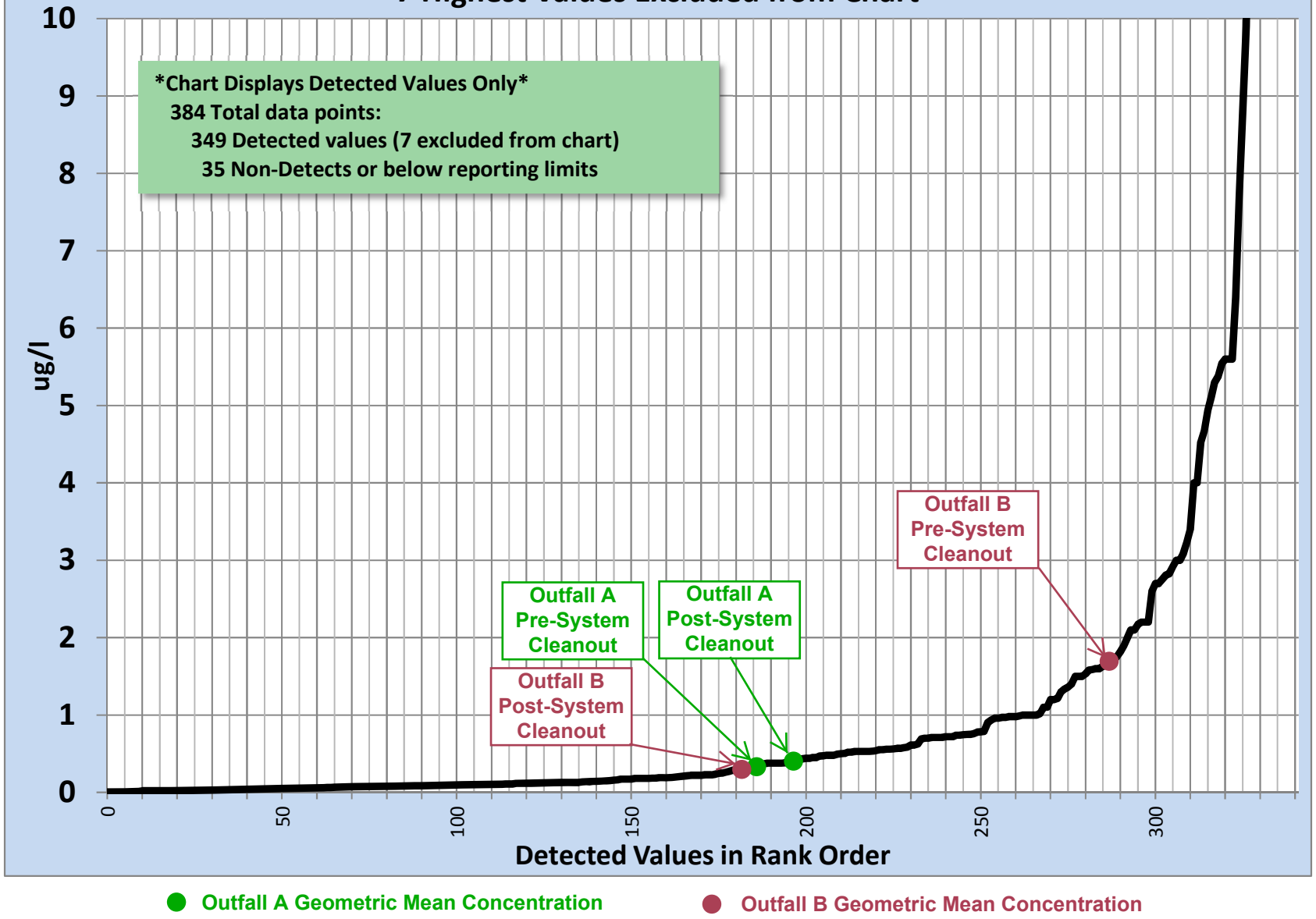
Bis(2-Ethylhexyl)phthalate in Stormwater at Portland Harbor Heavy Industrial Sites

2 Highest Values Excluded from Chart



Total PAHs (ug/l) in Stormwater at Portland Harbor Heavy Industrial Sites

7 Highest Values Excluded from Chart



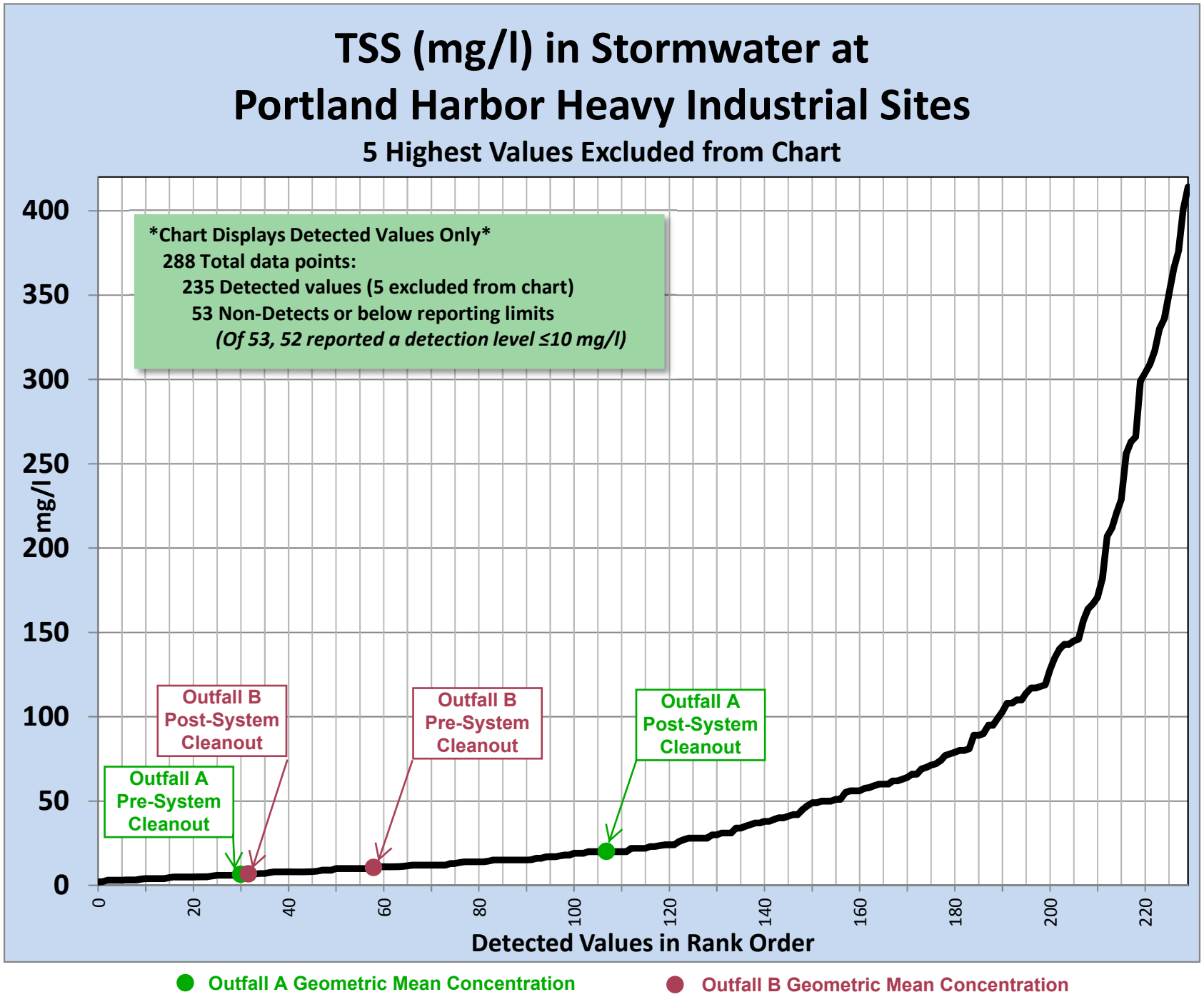

TSS (mg/l) in Stormwater at
Portland Harbor Heavy Industrial Sites
5 Highest Values Excluded from Chart
Chart Displays Detected Values Only
288 Total data points:
235 Detected values (5 excluded from chart)
53 Non-Detects or below reporting limits
(Of 53, 52 reported a detection level ≤10 mg/l)
mg/l
400
350
300
250
200
150
100
50
0
Outfall B Post-System Cleanout
Outfall B Pre-System Cleanout
Outfall A Post-System Cleanout
Outfall A Pre-System Cleanout
0
20
40
60
80
100
120
140
160
180
200
220
Detected Values in Rank Order
Outfall A Geometric Mean Concentration
Outfall B Geometric Mean Concentration

Table D-1 - Geometric Mean Concentrations of Stormwater Data
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Location:	Outfall A		Outfall B	
	Timing:	Before System Cleanout	After System Cleanout	Before System Cleanout	After System Cleanout
	Date:	2008-2009	2012-2013	2008-2009	2012-2013
Total Metals		Concentration in microgram per kilogram (µg/kg)			
Copper		-	**9.8**	-	**6.4**
Lead		-	**3.2**	-	**0.95**
Zinc		-	**35**	-	**91**
Phthalates					
bis(2-Ethylhexyl)phthalate		**1.0**	**0.79**	**0.98**	**0.79**
PAHs					
Total PAHs		**0.349**	**0.423**	**1.68**	**0.303**
Other Analytes					
Total Suspended Solids		**6,055**	**20,494**	**10,670**	**6,708**

Notes:
1. Stormwater data from Tables 5 and 6.
2. For non-detect values, half the laboratory method detection limit or method reporting limit was used in calculating the geometric mean.
3. - = Not analyzed.
4. PAHs = Polycyclic aromatic hydrocarbons.

Table D-2 - Stormwater Chemical Analysis Results: City of Portland Outfall AAE427
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Event 1 FO080318 29-Feb-08	Event 1 DUP FO080319 29-Feb-08	Event 2 FO080436 20-Mar-08	Event 3 FO080510 4-Apr-08	Event 4 FO080653 13-May-08	JSCS SLVs
Total Metals	Concentration in micrograms per liter (µg/L) parts per billion (ppb)					
Arsenic	**0.23**	**0.22**	**1.21**	**0.60**	**0.20**	0.045
Cadmium	0.10 U	0.10 U	**0.38**	**0.11**	0.10 U	0.094
Chromium	**1.34**	**1.54**	**14.9**	**1.89**	**1.09**	100
Copper	**2.79**	**2.71**	**28.3**	**5.64**	**1.86**	2.7
Lead	**1.35**	**1.42**	**32.6**	**2.3**	**0.83**	0.54
Mercury	**0.0045**	**0.0036**	**0.039**	**0.0055**	**0.0034**	0.77
Nickel	**0.79**	**0.76**	**6.76**	**1.47**	**0.6**	16
Silver	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12
Zinc	**18.6**	**18.4**	**216**	**42.6**	**9.2**	36
PCBs as Congeners						
Total PCBs	0.00250 U	0.00245 U	**0.0505**	**0.000591**	0.00256 U	0.000064
Phthalates						
Dimethylphthalate	0.971 U	0.971 U	0.971 U	0.98 U	0.971 U	3
Diethylphthalate	0.971 U	0.971 U	0.971 U	0.98 U	0.971 U	3
Di-n-butylphthalate	0.971 U	0.971 U	0.971 U	0.98 U	0.971 U	3
Butylbenzylphthalate	0.971 U	0.971 U	0.971 U	0.98 U	0.971 U	3
Di-n-octylphthalate	0.971 U	0.971 U	1.94 U	0.98 U	0.971 U	3
bis (2-Ethylhexyl)phthalate	0.971 U	**0.605 B**	**4.32**	**0.7 J**	0.971 U	2.2
PAHs						
Naphthalene	0.0194 U	0.0194 U	0.0971 U	**0.0634**	**0.0653**	0.2
Acenaphthene	0.0194 U	0.0194 U	0.0971 U	0.0196 U	0.0194 U	0.2
Acenaphthylene	0.0194 U	0.0194 U	0.0971 U	0.0196 U	0.0194 U	0.2
Fluorene	0.0194 U	0.0194 U	0.0971 U	0.0196 U	0.0194 U	0.2
Phenanthrene	**0.0204**	**0.0214**	**0.139**	**0.0558**	0.0194 U	0.2
Anthracene	0.0194 U	0.0194 U	0.0971 U	0.0196 U	0.0194 U	0.2
Fluoranthene	**0.0242**	**0.0306**	**0.378**	**0.0864**	0.0194 U	0.2
Pyrene	**0.0316**	**0.0362**	**0.281**	**0.0505**	0.0194 U	0.2
Benz(a)anthracene	0.00971 U	**0.0193**	**0.125**	**0.0176**	0.00971 U	0.018
Chrysene	**0.0128**	**0.0286**	**0.234**	**0.0331**	0.00971 U	0.018
Benzo(b)fluoranthene	0.00971 U	**0.0187**	**0.132**	**0.0262**	0.00971 U	0.018
Benzo(k)fluoranthene	0.00971 U	**0.0189**	**0.0958**	**0.0149**	0.00971 U	0.018
Benzo(a)pyrene	0.00971 U	**0.0152**	**0.113**	**0.0186**	0.00971 U	0.018
Indeno(1,2,3-cd)pyrene	0.00971 U	**0.0169**	**0.1**	**0.014**	0.00971 U	0.018
Dibenz(a,h)anthracene	0.00971 U	**0.015**	0.0485 U	0.0098 U	0.00971 U	0.018
Benzo(g,h,i)perylene	0.0194 U	**0.0236**	**0.189**	**0.0289**	0.0194 U	0.2
Total PAHs	**0.0890**	**0.2444**	**1.79**	**0.409**	**0.0653**	-
Other Analytes						
Total Suspended Solids	**6,000**	**6,000**	**275,000**	**21,000**	**6,000**	-

Notes:
1. Data from City of Portland Stormwater Evaluation Report, dated February 2010.
2. Metals by EPA Method 200.8, except for mercury by WPCL SOP M-10.01.
3. Polychlorinated biphenyls (PCBs) by EPA Method 1668A.
4. Phthalates and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM.
5. Total suspended solids (TSS) by SM 2540D.
6. Bolding denotes a detected concentration.
7. Shading denotes a detected concentration exceeding a Joint Source Control Strategy (JSCS) screening level value (SLV) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision).
8. - = Not available.
9. U = Not detected above the indicated laboratory method reporting limit.
10. B = Compound also detected in an associated field decontamination blank suggesting field decontamination.
11. J = Estimated concentration.

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
Metals/Inorganics															
Aluminum (pH 6.5 - 9.0)	--														
Antimony	64,000														
Arsenic	7,000														
Arsenic III	--														
Cadmium	1,000														
Chromium, total	111,000														
Chromium, hexavalent	--														
Copper	149,000														
Lead	17,000														
Manganese	1,100,000														
Mercury	70														
Methyl Mercury	--														
Nickel	48,600														
Selenium	2,000														
Silver	5,000														
Zinc	459,000														
Perchlorate	--														
Cyanide	--														
Butyltins															
Monobutyltin	--														
Dibutyltin	--														
Tributyltin	2.3														
Tetrabutyltin	--														
PCBs Aroclors															
Aroclor 1016	530	<8.8	<8.9	<8.9	<8.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	--	<8.8	<8.9	<8.9	<8.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	--	<8.8	<8.9	<8.9	<8.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	--	<8.8	<8.9	<8.9	<8.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
Aroclor 1248	1,500	<15 Y	<8.9	<18 Y	<30 Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	300	<24 Y	<8.9	<30 Y	<88 Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	200	**20**	**11**	**27**	**38**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.39	**20**	**11**	**27**	**38**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Congeners															
All 209 PCB congener target analytes															
3,3',4,4'-TCB	0.052														
3,4,4',5-TCB	0.017														
2,3,3',4,4'-PeCB	0.017														
2,3,4,4',5-PeCB	0.017														
2,3',4,4',5-PeCB	0.12														
2',3,4,4',5-PeCB	0.21														
3,3',4,4',5-PeCB	0.00005														
2,3,3',4,4',5'-HxCB	0.21														
2,3,3',4,4',5-HxCB	0.21														
2,3',4,4',5,5'-HxCB	0.21														
3,3',4,4',5,5'-HxCB	0.00021														
2,3,3',4,4',5,5'-HpCB	1.2														
Chlorinated Herbicides															
Dalapon	--														
Dicamba	--														
MCPA	--														
Dichlorprop	--														
2,4-D	--														
2,4,5-TP (Silvex)	--														
2,4,5-T	--														
2,4-DB	--														
Dinoseb	--														
MCPP	--														

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Organochlorine Pesticides															
α - BHC	--														
β - BHC	--														
γ - BHC (Lindane)	4.99														
δ - BHC	--														
Heptachlor	10														
Heptachlor epoxide	16														
Aldrin	40														
Chlordane	0.37														
Endosulfan alpha-	--														
Endosulfan beta-	--														
Endosulfan sulfate	--														
DDE	0.33														
DDD	0.33														
DDT	0.33														
DDT - total (DDE+DDD+DDT)	0.33														
Dieldrin	0.0081														
Endrin	207														
Endrin aldehyde	--														
Endrin ketone	--														
Methoxychlor	--														
Toxaphene	--														
oxy chlordane	--														
cis - nonachlor	--														
trans - nonachlor	--														
Volatile Organic Compounds															
1,1,1,2- Tetrachloroethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,1,1- Trichloroethane (TCA)	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,1,2,2- Tetrachloroethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,1,2- Trichloroethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
1,1- Dichloroethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,2,3- Trichloropropane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,2- Dichloroethane (EDC)	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
cis-1,2-Dichloroethlyene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,2- Dichloropropane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,2- Dibromoethane (EDB)	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
2- Butanone (MEK)	--	NA	NA	NA	NA	<10	<10	<10	**24**	<1,200	<10	**210**	**12**	**99**	<12
2- Chloroethyl Vinyl Ether	--	NA	NA	NA	NA	<50	<50	<50	<50	<6,000	<50	<50	<50	<51	<58
2- Hexanone	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4- Methyl-2-Pentanone (MIBK)	--	NA	NA	NA	NA	<10	<10	<10	**24**	<1,200	<10	**12**	<10	**11**	<12
Acetone	--	NA	NA	NA	NA	<50	<50	<50	**87**	<6,000	<50	**500**	**240**	**420**	**120**
Acrolein	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	--	NA	NA	NA	NA	<10	<10	<10	<10	<1,200	<10	<10	<10	<10	<10
Bromochloromethane	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Bromoform	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Bromomethane	--	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8
Carbon Disulfide	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Chlorobenzene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Chlorodibromomethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Chloroethane	--	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8
Chloroform	--	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8
Chloromethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
cis-1,2-dichloroethylene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
cis-1,3-Dichloropropene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Dibromomethane	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Dichlorodifluoromethane	--	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8
Iodomethane (Methyl Iodide)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Methylene chloride	--	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8
Styrene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
trans-1,4-Dichloro-2-butene	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	--	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<600	<5.0	<5.0	<5.0	<5.1	<5.8
Vinyl Acetate	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
EthylBenzene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	**1.4**	<1.0	<1.2
m,p-Xylene	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	--	NA	NA	NA	NA	<3.0	<3.0	<3.0	<3.0	<360	<3.0	<3.0	**4.3**	**8.5**	**3.5**
Methyltert-butyl ether	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Tetrachloroethene (PCE)	500	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Toluene	--	NA	NA	NA	NA	<5.0	<5.0	<5.0	**1,400**	**5,500**	**6.0**	**1,300**	<5.0	<5.1	**3,000**
trans-1,2-Dichloroethene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
trans-1,3-Dichloropropene	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Trichloroethene (TCE)	2,100	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Vinyl Chloride	--	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Semivolatile Organic Compounds															
Halogenated Compounds															
1,2-Dichlorobenzene	1,700	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,3-Dichlorobenzene	300	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,4-Dichlorobenzene	300	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
1,2,4-Trichlorobenzene	9,200	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Hexachlorobenzene	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	600	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<120	<1.0	<1.0	<1.0	<1.0	<1.2
Hexachlorocyclopentadiene	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-oxybis(1-chloropropane)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis-(2-chloroethoxy) methane	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis-(2-chloroethyl) ether	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenyl ether	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
4-bromophenyl-phenyl ether	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organonitrogen Compounds															
Nitrobenzene	--														
Aniline	--														
2-Nitroaniline	--														
3-Nitroaniline	--														
4-Nitroaniline	--														
N-Nitrosodimethylamine	--														
N-Nitroso-di-n-propylamine	--														
N-Nitrosodiphenylamine	--														
2,4-Dinitrotoluene	--														
2,6-Dinitrotoluene	--														
Carbazole	1,600														
Oxygen-Containing Compounds															
Benzoic Acid	50														
Benzyl Alcohol	--														
Dibenzofuran	--														
Isophorone	--														
Phenols and Substituted Phenols															
Phenol	50														
2-Methylphenol (o-Cresol)	--														
4-Methylphenol (p-Cresol)	--														
2,4-Dimethylphenol	--														
2-Chlorophenol	--														
2,4-Dichlorophenol	--														
2,4,5-Trichlorophenol	--														
2,4,6-trichlorophenol	--														

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
2,3,4,6-Tetrachlorophenol	--														
Pentachlorophenol	250														
4-Chloro-3-methylphenol	--														
2-Nitrophenol	--														
4-Nitrophenol	--														
2,4-Dinitrophenol	--														
Methyl-4,6-Dinitrophenol 2-	--														
Phthalate Esters															
Dimethylphthalate	--	<66	<330	**250 J**	<420	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	600	<66	<330	<330	<420	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	60	<66	<330	**190 J**	**260 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	--	<66	<330	**1,000**	**330 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	--	**320**	**380**	**1,200**	**3,500**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	330	**3,000**	**5,700**	**14,000**	**20,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons															
Naphthalene	561	<66	<330	<330	<420	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	200	<66	<330	<330	<420	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	200	<66	<330	<330	<420	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	**39 J**	<330	**400**	**410 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	536	**54 J**	<330	**170 J**	**580**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1,170	**550**	**1,200**	**1,600**	**4,100**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	845	**100**	**220 J**	**240 J**	**650**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,230	**1,100**	**2,400**	**3,300**	**7,500**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,520	**710**	**1,600**	**1,800**	**4,500**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1,050	**240**	**920**	**830**	**1,800**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1,290	**480**	**1,300**	**1,300**	**3,100**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	--	**550**	**1,200**	**1,200**	**3,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	13,000	**500**	**1,800**	**1,400**	**3,200**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1,450	**420**	**1,400**	**940**	**2,500**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	100	**170**	**450**	**260 J**	**700**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	1,300	<66	<330	<330	<420	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
Benzo(g,h,i)perylene	300	**210**	**420**	**260 J**	**710**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorinated Dioxins and Furans															
2,3,7,8,-TCDD (Toxicity Equivalence Quotient)	--														
2,3,7,8,-TCDD	0.0000091														
2,3,7,8,-TCDF	0.00077														
1,2,3,7,8,-PeCDD	0.0026														
1,2,3,7,8,-PeCDF	0.0026														
2,3,4,7,8,-PeCDF	0.00003														
2,3,4,7,8,-PeCDF	--														
1,2,3,6,7,8,-HxCDD	--														
1,2,3,7,8,9,-HxCDD	--														
1,2,3,4,7,8,-HxCDF	0.0027														
1,2,3,6,7,8,-HxCDF	0.0027														
1,2,3,7,8,9,-HxCDF	0.0027														
2,3,4,6,7,8,-HxCDF	0.0027														
1,2,3,4,6,7,8,-HpCDD	0.69														
1,2,3,4,6,7,8,-HpCDF	0.69														
1,2,3,4,7,8,9,-HpCDF	0.69														
OCDD	23														
OCDF	23														
Total tetrachlorinated dioxins	--														
Total pentachlorinated dioxins	--														
Total hexachlorinated dioxins	--														
Total heptachlorinated dioxins	--														
Total tetrachlorinated furans	--														
Total pentachlorinated furans	--														
Total hexachlorinated furans	--														
Total heptachlorinated furans	--														

Catch Basin Sediment Data Reporting and Screening
Brix Maritime Co., 9030 NW St. Helens Road, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

	Screening Value[1]	CB-A Upper Composite 2-19-08	CB-A Lower Composite 2-19-08	CB-B Upper Composite 2-19-08	CB-B Lower Composite 2-19-08	CB-A1 Upper 2-19-08	CB-A1 Lower 2-19-08	CB-A2 Upper 2-19-08	CB-A2 Lower 2-19-08	CB-A3 Upper 2-19-08	CB-A3 Lower 2-19-08	CB-B1 Upper 2-19-08	CB-B1 Lower 2-19-08	CB-B2 Upper 2-19-08	CB-B2 Lower 2-19-08
Units	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
Not on Table 3-1															
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**										
TPH Diesel	--	**120**	**110**	**190**	**220**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH Heavy Oil	--	**440**	**1,200**	**850**	**2,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Gx	--	**3.9**	<7	**3.5**	**27**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Units		**%**	**%**	**%**	**%**										
Total Organic Carbon	--	**10.9**	**5.35**	**13.3**	**7.43**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Solids	--	**51.1**	**67.2**	**56.9**	**46.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. Polychlorinated biphenyls (PCBs) by EPA Method 8082A.
2. Volatile organic compounds (VOCs) by EPA Method 5035/8260B.
3. Phthalates and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM.
4. Total petroleum hydrocarbons (TPH) by Northwest Methods NWTPH-Gx and Dx. A silica gel cleanup was performed on the Dx samples.
5. Total solids by EPA Method 160.3.
6. Total organic carbon by Plumb (1981).
6. Bolding denotes a detected concentration.
7. Shading denotes concentrations exceeding the Joint Source Control Strategy (JSCS) Screening Level Values (SLVs) in Table 3.1 of the JSCS (DEQ/EPA 2005, 7/16/2007 revision). The exceeded SLV is also shaded.
8. < = Analyte is not detected at or above the indicated concentration. All results reported on a dry weight basis.
9. J = Associated value is below the lowest calibration point and is estimated.
10. Y = Reporting limit raised due to chromatographic interference. Analyte is not present at or above the indicated concentration.
11. NA or blank = Not analyzed.

Stormwater Data Reporting and Screening Results
Brix Maritime Co., 9030 NW St. Helens RD, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text

	SLV for Portland Harbor	Outfall A 10-03-08	Outfall A 11-20-08	Outfall A 5-04-09	Outfall A 10-20-09	Outfall A 6-4-12	Outfall A 2-22-13	Outfall B 10-03-08	Outfall B 11-20-08	Outfall B 5-04-09	Outfall B 10-20-09	Outfall B 6-4-12	Outfall B 2-22-13
Units	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Metals/Inorganics													
Aluminum (pH 6.5 - 9.0)	50												
Antimony	6												
Arsenic	0.045												
Arsenic III	190												
Cadmium	0.094												
Chromium, total	100												
Chromium, hexavalent	11												
Copper	2.7	NA	NA	NA	NA	**29**	**3.3**	NA	NA	NA	NA	**6.4**	**6.4**
Lead	0.54	NA	NA	NA	NA	**5.3**	**1.9**	NA	NA	NA	NA	<1.0	**1.8**
Manganese	50												
Mercury	0.77												
Methyl Mercury	0.0028												
Nickel	16												
Selenium	5												
Silver	0.12												
Zinc	36	NA	NA	NA	NA	**81**	**15**	NA	NA	NA	NA	**85**	**97**
Perchlorate	<24.5												
Cyanide	5.2												
Butyltins													
Monobutyltin	--												
Dibutyltin	--												
Tributyltin	0.072												
Tetrabutyltin	--												
PCBs Aroclors													
Aroclor 1016	0.96	<0.048	<0.048	<0.0031	<0.048	<0.10	<0.10	<0.048	<0.048	<0.0031	<0.047	<0.10	<0.10
Aroclor 1221	0.034	<0.048	<0.048	<0.049	<0.048	<0.20	<0.073	<0.048	<0.048	<0.048	<0.047	<0.20	<0.073
Aroclor 1232	0.034	<0.048	<0.048	<0.049	<0.048	<0.10	<0.042	<0.048	<0.048	<0.048	<0.047	<0.10	<0.042
Aroclor 1242	0.034	<0.048	<0.048	<0.049	<0.048	<0.10	<0.047	<0.048	<0.048	<0.048	<0.047	<0.10	<0.047
Aroclor 1248	0.034	<0.048	<0.048	<0.049	<0.048	<0.10	<0.086	<0.048	<0.048	<0.048	<0.047	<0.10	<0.086
Aroclor 1254	0.033	<0.048	<0.048	<0.049	<0.048	<0.10	<0.047	<0.048	<0.048	<0.048	<0.047	<0.10	<0.047
Aroclor 1260	0.034	<0.048	<0.048	<0.0034	<0.048	<0.10	<0.12	<0.048	<0.048	<0.0034	<0.047	<0.10	<0.12
Aroclor 1262	--	<0.048	<0.048	<0.049	<0.048	<0.10	NA	<0.048	<0.048	<0.048	<0.047	<0.10	NA
Aroclor 1268	--	<0.048	<0.048	<0.049	<0.048	<0.20	NA	<0.048	<0.048	<0.048	<0.047	<0.20	NA
Total PCBs	0.000064												
PCB Congeners	--												
All 209 PCB congener target analytes	--												
3,3',4,4'-TCB	--												

Stormwater Data Reporting and Screening Results
Brix Maritime Co., 9030 NW St. Helens RD, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text

	SLV for Portland Harbor	Outfall A 10-03-08	Outfall A 11-20-08	Outfall A 5-04-09	Outfall A 10-20-09	Outfall A 6-4-12	Outfall A 2-22-13	Outfall B 10-03-08	Outfall B 11-20-08	Outfall B 5-04-09	Outfall B 10-20-09	Outfall B 6-4-12	Outfall B 2-22-13
Units	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
3,4,4',5-TCB	--												
2,3,3',4,4'-PeCB	--												
2,3,4,4',5-PeCB	--												
2,3',4,4',5-PeCB	--												
2',3,4,4',5-PeCB	--												
3,3',4,4',5-PeCB	--												
2,3,3',4,4',5'-HxCB	--												
2,3,3',4,4',5-HxCB	--												
2,3',4,4',5,5'-HxCB	--												
3,3',4,4',5,5'-HxCB	--												
2,3,3',4,4',5,5'-HpCB	--												
Chlorinated Herbicides													
Dalapon	200												
Dicamba	1,100												
MCPA	18												
Dichlorprop	370												
2,4-D	70												
2,4,5-TP (Silvex)	50												
2,4,5-T	370												
2,4-DB	290												
Dinoseb	7												
MCPP	37												
Organochlorine Pesticides													
α - BHC	0.0049												
β - BHC	0.017												
γ - BHC (Lindane)	0.052												
δ - BHC	0.037												
Heptachlor	0.000079												
Heptachlor epoxide	0.000039												
Aldrin	0.00005												
Chlordane	0.00081												
Endosulfan alpha-	0.056												
Endosulfan beta-	0.056												
Endosulfan sulfate	89												
DDE	0.00022												
DDD	0.00031												
DDT	0.00022												
DDT - total (sum DDE+DDE+DDT)	0.2												
Dieldrin	0.000054												
Endrin	0.036												
Endrin aldehyde	0.3												

Stormwater Data Reporting and Screening Results
Brix Maritime Co., 9030 NW St. Helens RD, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text

	SLV for Portland Harbor	Outfall A 10-03-08	Outfall A 11-20-08	Outfall A 5-04-09	Outfall A 10-20-09	Outfall A 6-4-12	Outfall A 2-22-13	Outfall B 10-03-08	Outfall B 11-20-08	Outfall B 5-04-09	Outfall B 10-20-09	Outfall B 6-4-12	Outfall B 2-22-13
Units	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Endrin ketone	--												
Methoxychlor	0.03												
Toxaphene	0.0002												
oxy chlordane	0.19												
cis - nonachlor	0.19												
trans - nonachlor	0.19												
Volatile Organic Compounds													
1,1,1,2- Tetrachloroethane	2.5	<1.0	<1.0	<0.15	<1.0	<1.0	<0.38	<1.0	<1.0	<0.15	<1.0	<1.0	<0.38
1,1,1- Trichloroethane (TCA)	11	<1.0	<1.0	<0.20	<1.0	<1.0	<0.32	<1.0	<1.0	<0.20	<1.0	<1.0	<0.32
1,1,2,2- Tetrachloroethane	0.33	<1.0	<1.0	<0.22	<1.0	<1.0	<0.58	<1.0	<1.0	<0.22	<1.0	<1.0	<0.58
1,1,2- Trichloroethane	1.2	<1.0	<1.0	<0.19	<1.0	<5.0	<0.38	<1.0	<1.0	<0.19	<1.0	<5.0	<0.38
1,1- Dichloroethane	47	<1.0	<1.0	<0.23	<1.0	<1.0	<0.26	<1.0	<1.0	<0.23	<1.0	<1.0	<0.26
1,2,3- Trichloropropane	0.0095	<1.0	<1.0	<0.37	<1.0	<5.0	<0.81	<1.0	<1.0	<0.37	<1.0	<5.0	<0.81
1,2- Dichloroethane (EDC)	0.73	<1.0	<1.0	<0.074	<1.0	<1.0	<0.36	<1.0	<1.0	<0.074	<1.0	<1.0	<0.36
cis-1,2-Dichloroethlyene	61	<1.0	<1.0	<0.32	<1.0	<1.0	<0.26	<1.0	<1.0	<0.32	<1.0	<1.0	<0.26
1,2- Dichloropropane	0.97	<1.0	<1.0	<0.16	<1.0	<1.0	<0.31	<1.0	<1.0	<0.16	<1.0	<1.0	<0.31
1,2- Dibromoethane (EDB)	0.033	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38
2- Butanone (MEK)	7,100	<10	<10	<0.52	<5.0	<10	<3.9	<10	<10	<0.52	<5.0	<10	<3.9
2- Chloroethyl Vinyl Ether	--	NA	NA	NA	NA	NA	<3.0	NA	NA	NA	NA	NA	<3.0
2- Hexanone	99	<10	<10	<0.57	<5.0	<15	NA	<10	<10	<0.57	<5.0	<15	NA
4- Methyl-2-Pentanone (MIBK)	170	<10	<10	<0.32	<5.0	<5.0	<2.1	<10	<10	<0.32	<5.0	<5.0	<2.1
Acetone	1500	<20	<20	**9.4**	**9.5 T**	<25	<4.6	<20	<20	**9.7**	**10.2 T**	<25	**5.4 J**
Acrolein	0.042	NA	NA	NA	NA	NA	<8.9	NA	NA	NA	NA	NA	<8.9
Acrylonitrile	0.12	NA	NA	NA	NA	NA	<1.9	NA	NA	NA	NA	NA	<1.9
Bromochloromethane	--	<1.0	<1.0	<0.34	<1.0	<5.0	NA	<1.0	<1.0	<0.34	<1.0	<5.0	NA
Bromodichloromethane	1.1	<1.0	<1.0	<0.11	<1.0	<1.0	<0.38	<1.0	<1.0	<0.11	<1.0	<1.0	<0.38
Bromoform	8.5	<1.0	<1.0	<0.23	<1.0	<5.0	<0.47	<1.0	<1.0	<0.23	<1.0	<5.0	<0.47
Bromomethane	8.7	<1.0	<1.0	<0.072	<1.0	<5.0	<0.87	<1.0	<1.0	<0.072	<1.0	<5.0	<0.87
Carbon Disulfide	0.92	<1.0	<1.0	<0.16	<1.0	<10	NA	<1.0	<1.0	<0.16	<1.0	<10	NA
Carbon Tetrachloride	0.51	<1.0	<1.0	<0.25	<1.0	<1.0	<0.38	<1.0	<1.0	<0.25	<1.0	<1.0	<0.38
Chlorobenzene	50	<1.0	<1.0	<0.12	<1.0	<1.0	<0.35	<1.0	<1.0	<0.12	<1.0	<1.0	<0.35
Chlorodibromomethane	0.79	<1.0	<1.0	<0.20	<1.0	<1.0	<0.33	<1.0	<1.0	<0.20	<1.0	<1.0	<0.33
Chloroethane	23	<1.0	<1.0	<0.27	<1.0	<1.0	<0.45	<1.0	<1.0	<0.27	<1.0	<1.0	<0.45
Chloroform	0.17	<1.0	<1.0	<0.15	<1.0	<1.0	<0.32	<1.0	<1.0	<0.15	<1.0	<1.0	<0.32
Chloromethane	2.1	<5.0	<5.0	<0.20	<1.0	<5.0	<0.28	<5.0	<5.0	<0.20	<1.0	<5.0	<0.28
cis-1,2-dichloroethylene	590	<1.0	<1.0	<0.32	<1.0	<1.0	<0.26	<1.0	<1.0	<0.32	<1.0	<1.0	<0.26
cis-1,3-Dichloropropene	0.055	<1.0	<1.0	<0.086	<1.0	<1.0	<0.42	<1.0	<1.0	<0.086	<1.0	<1.0	<0.42

Stormwater Data Reporting and Screening Results
Brix Maritime Co., 9030 NW St. Helens RD, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text

	SLV for Portland Harbor	Outfall A 10-03-08	Outfall A 11-20-08	Outfall A 5-04-09	Outfall A 10-20-09	Outfall A 6-4-12	Outfall A 2-22-13	Outfall B 10-03-08	Outfall B 11-20-08	Outfall B 5-04-09	Outfall B 10-20-09	Outfall B 6-4-12	Outfall B 2-22-13
Units	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Volatile Organic Compounds													
Dibromomethane	61	<1.0	<1.0	<0.18	<1.0	<5.0	<0.35	<1.0	<1.0	<0.18	<1.0	<5.0	<0.35
Dichlorodifluoromethane	390	<1.0	<1.0	<0.19	<1.0	<5.0	<0.55	<1.0	<1.0	<0.19	<1.0	<5.0	<0.55
Iodomethane (Methyl Iodide)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	660	<1.0	<1.0	<0.11	<1.0	<2.0	<0.33	<1.0	<1.0	<0.11	<1.0	<2.0	<0.33
Methylene chloride	8.9	<5.0	<5.0	<1.0	<4.0	<5.0	<0.84	<5.0	<5.0	<1.0	<4.0	<5.0	<0.84
Styrene	100	<1.0	<1.0	<0.074	<1.0	<1.0	<0.31	<1.0	<1.0	<0.074	<1.0	<1.0	<0.31
trans-1,4-Dichloro-2-butene	7100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	1,300	<1.0	<1.0	<0.24	<1.0	<1.0	<1.2	<1.0	<1.0	<0.24	<1.0	<1.0	<1.2
Vinyl Acetate	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.2	<1.0	<1.0	<0.12	<1.0	<1.0	<0.33	<1.0	<1.0	<0.12	<1.0	<1.0	<0.33
EthylBenzene	7.3	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38	<1.0	<1.0	<0.20	<1.0	<1.0	<0.38
m,p-Xylene	1.8	<2.0	<2.0	<0.27	<2.0	<2.0	NA	<2.0	<2.0	<0.27	<2.0	<2.0	NA
o-Xylene	13	<1.0	<1.0	<0.15	<1.0	<1.0	NA	<1.0	<1.0	<0.15	<1.0	<1.0	NA
Xylenes (total)	200	NA	NA	<0.15	<3.0	<3.0	<1.10	NA	NA	<0.15	<3.0	<3.0	<1.10
Methyltert-butyl ether	37	<1.0	<1.0	<0.16	<1.0	<1.0	<0.37	<1.0	<1.0	<0.16	<1.0	<1.0	<0.37
Tetrachloroethene (PCE)	0.12	<1.0	<1.0	<0.10	<1.0	<1.0	<0.37	<1.0	<1.0	<0.10	<1.0	<1.0	<0.37
Toluene	9.8	<1.0	<1.0	**1.1**	<1.0	<1.0	<0.78	<1.0	<1.0	<0.21	<1.0	<1.0	<0.78
trans-1,2-Dichloroethene	100	<1.0	<1.0	<0.22	<1.0	<1.0	<0.40	<1.0	<1.0	<0.22	<1.0	<1.0	<0.40
trans-1,3-Dichloropropene	0.055	<1.0	<1.0	<0.22	<1.0	<1.0	<0.42	<1.0	<1.0	<0.22	<1.0	<1.0	<0.42
Trichloroethene (TCE)	0.17	<1.0	<1.0	<0.22	<1.0	<1.0	<0.40	<1.0	<1.0	<0.22	<1.0	<1.0	<0.40
Vinyl Chloride	0.015	<0.20	<0.20	<0.27	<1.0	<1.0	<0.26	<0.20	<0.20	<0.27	<1.0	<1.0	<0.26
Semivolatile Organic Compounds													
Halogenated Compounds													
1,2-Dichlorobenzene	49	<1.0	<1.0	<0.25	<1.0	<1.0	<0.35	<1.0	<1.0	<0.25	<1.0	<1.0	<0.35
1,3-Dichlorobenzene	14	<1.0	<1.0	<0.16	<1.0	<1.0	<0.22	<1.0	<1.0	<0.16	<1.0	<1.0	<0.22
1,4-Dichlorobenzene	2.8	<1.0	<1.0	<0.20	<1.0	<1.0	<0.27	<1.0	<1.0	<0.20	<1.0	<1.0	<0.27
1,2,4-Trichlorobenzene	8.2	<1.0	<1.0	<0.15	<1.0	<1.0	<0.21	<1.0	<1.0	<0.15	<1.0	<1.0	<0.21
Hexachlorobenzene	0.00029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	490	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	3.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	0.86	<1.0	<1.0	<0.27	<1.0	<4.0	<0.26	<1.0	<1.0	<0.27	<1.0	<4.0	<0.26
Hexachlorocyclopentadiene	5.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-oxybis(1-chloropropane)	0.95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis-(2-chloroethoxy) methane	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis-(2-chloroethyl) ether	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenyl ether	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-bromophenyl-phenyl ether	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	0.028	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organonitrogen Compounds													
Nitrobenzene	3.4												

Stormwater Data Reporting and Screening Results
Brix Maritime Co., 9030 NW St. Helens RD, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text

	SLV for Portland Harbor	Outfall A 10-03-08	Outfall A 11-20-08	Outfall A 5-04-09	Outfall A 10-20-09	Outfall A 6-4-12	Outfall A 2-22-13	Outfall B 10-03-08	Outfall B 11-20-08	Outfall B 5-04-09	Outfall B 10-20-09	Outfall B 6-4-12	Outfall B 2-22-13
Units	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Aniline	12												
2-Nitroaniline	110.0												
3-Nitroaniline	3.2												
4-Nitroaniline	3.2												
N-Nitrosodimethylamine	0.00042												
N-Nitroso-di-n-propylamine	0.0096												
N-Nitrosodiphenylamine	6												
2,4-Dinitrotoluene	3.4												
2,6-Dinitrotoluene	37												
Carbazole	3.4												
Oxygen-Containing Compounds													
Benzoic Acid	42												
Benzyl Alcohol	8.6												
Dibenzofuran	3.7												
Isophorone	71												
Phenols and Substituted Phenols													
Phenol	2560												
2-Methylphenol (o-Cresol)	13												
4-Methylphenol (p-Cresol)	180												
2,4-Dimethylphenol	730												
2-Chlorophenol	30												
2,4-Dichlorophenol	110												
2,4,5-Trichlorophenol	3600												
2,4,6-trichlorophenol	2.4												
2,3,4,6-Tetrachlorophenol	1,100												
Pentachlorophenol	0.56												
4-Chloro-3-methylphenol													
2-Nitrophenol	150												
4-Nitrophenol	150												
2,4-Dinitrophenol	73												
Methyl-4,6-Dinitrophenol 2-	150												
Phthalate Esters													
Dimethylphthalate	3	<0.075	<0.077	<0.36	<1.9	<0.95	<0.28	<0.075	<0.076	<0.36	<1.9	<0.95	<0.28
Diethylphthalate	3	<0.075	<0.077	<0.43	<1.9	<0.95	<0.28	<0.075	<0.076	<0.42	<1.9	<0.95	<0.28
Di-n-butylphthalate	3	<0.075	**1.4**	<0.30	<1.9	<0.95	**0.32 J**	<0.075	<0.076	<0.29	<1.9	<0.95	<0.27
Butylbenzylphthalate	3	<0.075	<0.077	<0.34	<1.9	<0.95	<0.28	<0.075	<0.076	<0.34	<1.9	<0.95	<0.28
Di-n-octylphthalate	3	<0.075	<0.077	<0.56	<1.9	<0.95	<0.28	<0.075	<0.076	<0.56	<1.9	<0.95	<0.28
bis(2-Ethylhexyl)phthalate	2.2	**1.3**	**4.1**	<0.42	<1.9	<0.95	**1.3 J**	**1.3**	**3.6**	<0.42	<1.9	<0.95	**1.3 J**

Stormwater Data Reporting and Screening Results
Brix Maritime Co., 9030 NW St. Helens RD, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text

	SLV for Portland Harbor	Outfall A 10-03-08	Outfall A 11-20-08	Outfall A 5-04-09	Outfall A 10-20-09	Outfall A 6-4-12	Outfall A 2-22-13	Outfall B 10-03-08	Outfall B 11-20-08	Outfall B 5-04-09	Outfall B 10-20-09	Outfall B 6-4-12	Outfall B 2-22-13
Units	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Polycyclic Aromatic Hydrocarbons													
Naphthalene	0.2	**0.053 J**	**0.071 J**	<0.0047	**0.13**	**0.071 J**	**0.046 J**	**0.053 J**	**0.095**	<0.0047	**0.051**	**0.057 J**	**0.030 J**
2-Methylnaphthalene	0.2	<0.0087	<0.0086	**0.013 B**	**0.045**	**0.018 J**	**0.012 J**	<0.0087	**0.048 J**	**0.023 B**	**0.026**	**0.018 J**	<0.0090
Acenaphthylene	0.2	<0.0087	<0.0086	<0.00082	<0.0095	<0.0068	<0.0068	<0.0087	<0.0086	<0.00081	<0.0095	<0.0068	<0.0068
Acenaphthene	0.2	<0.0087	**0.076 J**	<0.00091	<0.0095	**0.0095 J**	<0.0082	<0.0087	**0.14**	**0.024**	<0.0095	<0.0082	<0.0082
Fluorene	0.2	<0.0087	<0.0086	**0.13**	**0.037**	<0.0085	<0.0085	<0.0087	**0.10**	**0.15**	**0.020**	<0.0085	<0.0085
Phenanthrene	0.2	**0.067 J**	**0.11**	**0.053**	**0.094**	**0.089**	**0.023 J**	**0.091 J**	**0.49**	**0.22**	**0.10**	**0.010 J**	**0.044 J**
Anthracene	0.2	<0.0087	<0.0086	<0.00091	**0.014**	**0.026 J**	<0.0076	<0.0087	**0.067 J**	**0.012**	**0.010**	<0.0076	**0.0092 J**
Fluoranthene	0.2	<0.0087	**0.067 J**	**0.096 B**	**0.046**	**0.24**	<0.016	**0.16**	**0.79**	**0.50 B**	**0.091**	<0.016	**0.071**
Pyrene	0.2	<0.0087	**0.057 J**	**0.039**	**0.031**	**0.25**	**0.019 J**	**0.12**	**0.65**	**0.33**	**0.069**	<0.012	**0.075**
Benzo(a)anthracene	0.018	<0.0087	<0.0086	**0.027**	<0.0095	**0.15**	<0.012	**0.063 J**	**0.25**	**0.16**	**0.014**	<0.012	**0.031 J**
Chrysene	0.018	<0.0087	<0.0086	**0.038**	**0.0095**	**0.18**	<0.011	**0.087 J**	**0.43**	**0.24**	**0.028**	<0.011	**0.030 J**
Benzo(b)fluoranthene	0.018	<0.0087	<0.0086	**0.047**	**0.0099**	**0.19**	<0.014	**0.11**	**0.50**	**0.34**	**0.026**	<0.014	**0.039 J**
Benzo(k)fluoranthene	0.018	<0.0087	<0.0086	<0.0031	<0.0095	**0.079**	<0.014	**0.077 J**	**0.32**	**0.18**	**0.015**	<0.014	<0.014
Benzo(a)pyrene	0.018	<0.0087	<0.0086	<0.0024	<0.0095	**0.12**	<0.012	**0.077 J**	**0.36**	**0.27**	**0.013**	<0.012	**0.025 J**
Indeno(1,2,3-cd)pyrene	0.018	<0.0087	<0.0086	**0.099**	<0.0095	**0.070**	<0.015	**0.11**	**0.39**	**0.30**	**0.014**	<0.015	**0.016 J**
Dibenz(a,h)anthracene	0.018	<0.0087	<0.0086	**0.14**	<0.0095	**0.018 J**	<0.0040	<0.0087	<0.0086	**0.19**	<0.0095	<0.0040	<0.0040
Benzo(g,h,i)perylene	0.2	<0.0087	<0.0086	**0.10**	<0.0095	**0.087**	**0.012 J**	**0.072 J**	**0.31**	**0.29**	**0.018**	<0.011	**0.030 J**
Chlorinated Dioxins and Furans													
2,3,7,8,-TCDD (Toxicity Equivalence Quotient)	5.1E-09												
2,3,7,8,-TCDD	5.1E-09												
2,3,7,8,-TCDF	--												
1,2,3,7,8,-PeCDD	--												
1,2,3,7,8,-PeCDF	--												
2,3,4,7,8,-PeCDF	--												
2,3,4,7,8,-PeCDF	--												
1,2,3,6,7,8,-HxCDD	--												
1,2,3,7,8,9,-HxCDD	--												
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	--												
1,2,3,4,6,7,8,-HpCDF	--												
1,2,3,4,7,8,9,-HpCDF	--												
OCDD	--												
OCDF	--												
Total tetrachlorinated dioxins	--												
Total pentachlorinated dioxins	--												
Total hexachlorinated dioxins	--												

Stormwater Data Reporting and Screening Results
Brix Maritime Co., 9030 NW St. Helens RD, Portland, Oregon

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text

	SLV for Portland Harbor	Outfall A 10-03-08	Outfall A 11-20-08	Outfall A 5-04-09	Outfall A 10-20-09	Outfall A 6-4-12	Outfall A 2-22-13	Outfall B 10-03-08	Outfall B 11-20-08	Outfall B 5-04-09	Outfall B 10-20-09	Outfall B 6-4-12	Outfall B 2-22-13
Units	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Total heptachlorinated dioxins	--												
Total tetrachlorinated furans	--												
Total pentachlorinated furans	--												
Total hexachlorinated furans	--												
Total heptachlorinated furans	--												
Other Analytes													
TPH Diesel	--	**270**	**110**	<39	**210**	**90 J**	**97 J**	**390**	**350**	**150**	<76	<33	**120**
TPH Heavy Oil	--	**320**	<210	<64	<380	<82	**180 J**	**490**	**530**	<61	<380	<82	**340**
TPH-Gx	--	<25.0	<25.0	<13.4	<50.0	<33	<100	<25.0	<25.0	<13.4	<50.0	<33	<32
Total Organic Carbon	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids	--	**8,000**	**7,000**	**12,000**	**2,000**	**30,000**	**14,000**	**8,000**	**27,000**	**15,000**	**4,000**	<10,000	**9,000**

Notes:

1. Total metals (copper, lead, and zinc) by EPA Method 6020.
2. Polychlorinated biphenyls (PCBs) by EPA Method 8082A.
3. Volatile organic compounds (VOCs) by EPA Method 5035/8260B.
4. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 SPE-SIM.
5. Phthalates by EPA Method 8270 (low level).
6. Total petroleum hydrocarbons (TPH) by Northwest Methods NWTPH-Gx and Dx.
7. Total suspended solids by EPA Method 160.2.
8. Bolding denotes a detected concentration.
9. Shading denotes concentrations exceeding the Joint Source Control Strategy (JSCS) Screening Level Values (SLVs) in Table 3.1 of the JSCS (DEQ/EPA, 2005, 7/16/2007 revision). The exceeded SLV is also shaded.
10. < = Analyte is not detected at or above the indicated concentration.
11. J = Associated value is below the reporting limit and is estimated.
12. B = Analyte is also present in the laboratory method blank.
13. T = Analyte is also present in the trip blank.
14. NA = Not Analyzed.

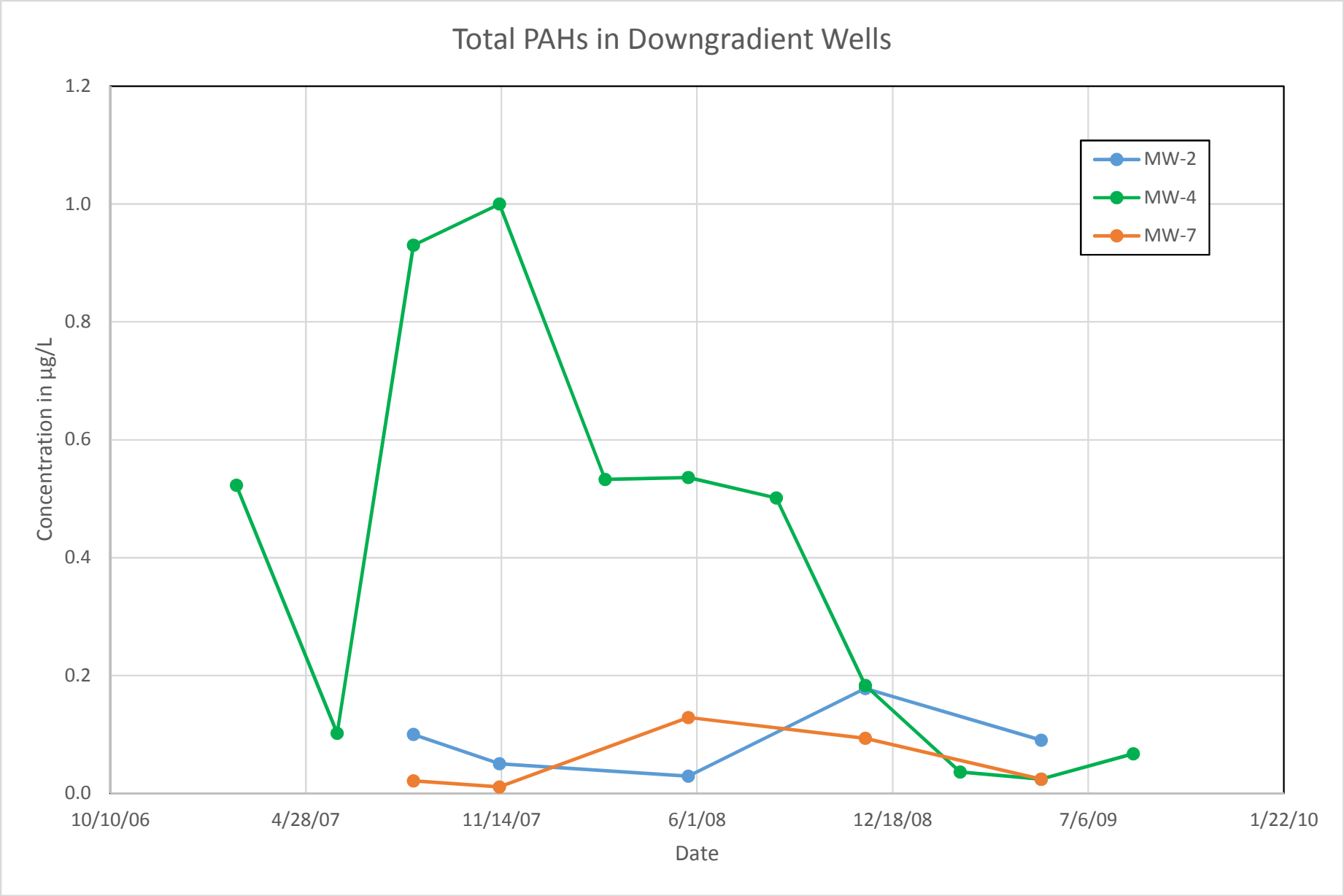
APPENDIX E
Groundwater Pathway Support Documentation

APPENDIX E

Groundwater Pathway Support Documentation

The groundwater pathway was evaluated in Section 5 of the SCE Report. This evaluation included assessing data listed in Tables 7 through 9 from the last three years of monitoring downgradient wells MW-2, MW-4, and MW-7 (2007 through 2009). Appendix B includes groundwater data summary tables from explorations and monitoring wells on the Brix Property. This appendix includes additional documentation referenced in the text regarding the groundwater pathway. Specifically, this appendix includes the following (in order).

- A plot of total PAH concentrations for the last three years of monitoring of the downgradient wells that shows stable or decreasing concentrations.
- Photographs taken prior to and during groundwater seep sampling event (Anchor 2005c).
- A summary table of surface water data for September 29, 2005 (Table E-1). On this day, Anchor collected a surface water sample at the River Stage Gauge along the Brix Property as part of the groundwater seep assessment. However, NW Natural was undertaking Early Action activities upstream at that time to remove a nearshore tar body. Surface water data from downstream of their activities is included in Table E-1.
- A soil data table (Table E-2) comparing the PAH concentrations on soil samples obtained from the native soil horizon at the groundwater seep sample location and at two monitoring well locations (MW-6 and MW-7) outside the estimated extent of petroleum contamination (Figure 7).


Total PAHs in Downgradient Wells
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Concentration in µg/L
10/10/06
4/28/07
11/14/07
6/1/08
12/18/08
7/6/09
1/22/10
Date
MW-2
MW-4
MW-7

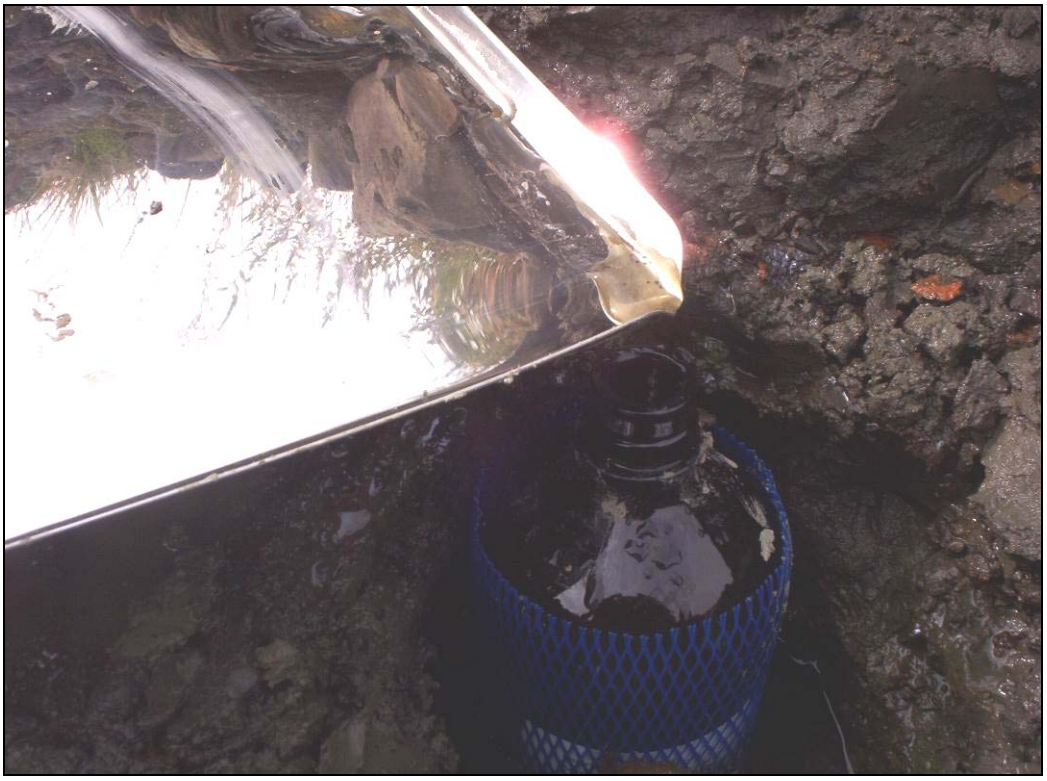
Photograph 1 – Seep location identified during a September 6, 2005, meeting with the DEQ at the Property.

Photograph 2 – Seep sample location on September 29, 2005.

Photograph 3 – Close-up of seep sample location.

Photograph 4 – Excavation into riverbank in order to set up sample collection tray and container.

Photograph 5 – Setup with tray to collect groundwater seepage in sample container.



Photograph 6 – Seep water directed into sample container.

Table E-1 - Seep Assessment – Surface Water Chemical Analysis Results
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Chemical Compound	Location:	Brix Property	Gasco - WCD4 (Approx. 400 Feet Downstream from Early Action Removal Area)							JSCS SLVs
	Sample ID:	River	A-050929-1	A-050929-2	B-050929-1	B-050929-2	B-050929-2 Dup	C-050929-1	C-050929-2	
	Depth:	Surface	Surface	Surface	Mid	Mid	Mid	Bottom	Bottom	
	Date:	29-Sep-05	29-Sep-05	29-Sep-05	29-Sep-05	29-Sep-05	29-Sep-05	29-Sep-05	29-Sep-05	
PAHs		Concentration in micrograms per liter (µg/L) parts per billion (ppb)								
LPAHs										
Acenaphthylene		0.020 U	-	-	-	-	-	-	-	0.2
Acenaphthene		0.020 U	-	-	-	-	-	-	-	0.2
Anthracene		0.020 U	**0.85 J**	**0.3**	0.2 U	**0.46**	**0.49**	0.19 UJ	**0.62**	0.2
Dibenzofuran		0.020 U	2.1 UJ	2 UJ	2 UJ	2.2 UJ	1.9 UJ	1.9 UJ	2 UJ	3.7
2-Methylnaphthalene		0.020 U	-	-	-	-	-	-	-	0.2
Fluorene		0.020 U	**1.7 J**	**0.24**	0.2 U	**0.22**	**0.29**	0.19 UJ	**0.34**	0.2
Naphthalene		0.020 U	**110 J**	0.5 U	0.49 U	0.54 U	0.49 U	0.48 UJ	0.5 U	0.2
Phenanthrene		**0.029**	**6 J**	**0.84 J**	0.2 UJ	**0.96 J**	**1 J**	0.19 UJ	1.1 UJ	0.2
HPAHs										
Benz(a)anthracene		**0.022**	**0.62 J**	**0.22 J**	0.2 U	**0.31 J**	**0.38 J**	0.19 UJ	**0.44 J**	0.018
Benzo(a)pyrene		**0.023**	**0.84 J**	**0.46**	**0.24**	**0.61**	**0.69**	0.19 UJ	**0.72**	0.018
Benzo(b)fluoranthene		0.020 U	-	-	-	-	-	-	-	0.018
Benzo(k)fluoranthene		0.020 U	-	-	-	-	-	-	-	0.018
Benzo(g,h,i)perylene		0.020 U	-	-	-	-	-	-	-	0.2
Chrysene		**0.037**	-	-	-	-	-	-	-	0.018
Dibenz(a,h)anthracene		0.020 U	-	-	-	-	-	-	-	0.018
Fluoranthene		**0.081**	**2.5 J**	**0.99 J**	**0.25 J**	**1.9 J**	**1.8 J**	0.19 UJ	**1.9 J**	0.2
Indeno(1,2,3-cd)pyrene		0.020 U	-	-	-	-	-	-	-	0.018
Pyrene		**0.095**	-	-	-	-	-	-	-	0.2

Notes:
1. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM.
2. Bolding denotes a detected concentration.
3. - = Not reported.
4. U = Not detected above the indicated laboratory method reporting limit.
5. Shaded concentrations exceed JSCS SLVs; the associated SLV is also shaded.
6. Gasco site data from Table 17 of Anchor (2006b).

Table E-2 - Seep Assessment – Seep Soil Sample Evaluation of PAHs
Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

		Monitoring Well Installations		Shoreline Seep		
	Location:	MW-6	MW-7	Surface	0.5 Deep	
	Date:	19-Jun-03	19-Jun-03	29-Sep-05	29-Sep-05	**JSCS**
PAHs	**Depth (ft.):**	24.5-26	25-26.5	0.0	0.5	**SLVs**
LPAHs		Concentration in milligrams per kilogram (mg/kg) parts per million (ppm)				
Acenaphthene		**0.05**	0.005 U	**0.020**	0.0051 U	0.300
Acenaphthylene		**0.039**	0.005 U	**0.017**	0.0051 U	0.200
Anthracene		**0.088**	**0.0068**	**0.056**	**0.011**	0.845
Dibenzofuran		**0.01**	0.005 U	**0.0095**	0.0051 U	-
Fluorene		**0.04**	0.005 U	**0.026**	0.0051 U	0.536
2-Methylnaphthalene		**0.029**	0.005 U	**0.016**	0.005 U	0.200
Naphthalene		**0.083**	0.005 U	**0.072**	**0.0081**	0.561
Phenanthrene		**0.34**	**0.013**	**0.21**	**0.046**	1.17
Total LPAHs		**0.7**	**0.0198**	**0.43**	**0.065**	-
HPAHs						
Benz(a)anthracene		**0.29**	**0.063**	**0.097**	**0.031**	1.05
Benzo(a)pyrene		**0.44**	**0.066**	**0.15**	**0.039**	1.45
Benzo(b)fluoranthene		**0.19**	**0.037**	**0.097**	**0.024**	-
Benzo(k)fluoranthene		**0.28**	**0.054**	**0.079**	**0.022**	13
Benzo(g,h,i)perylene		**0.36**	**0.034**	**0.18**	**0.031**	0.300
Chrysene		**0.36**	**0.061**	**0.12**	**0.037**	1.29
Dibenzo(a,h)anthracene		**0.056**	**0.0091**	**0.016**	0.0051 U	1.30
Fluoranthene		**0.50**	**0.086**	**0.22**	**0.047**	2.23
Indeno(1,2,3-cd)pyrene		**0.33**	**0.040**	**0.15**	**0.031**	0.100
Pyrene		**0.55**	**0.076**	**0.45**	**0.081**	1.52
Total HPAHs		**3.36**	**0.526**	**1.56**	**0.343**	-
Total PAHs		**4.035**	**0.546**	**1.99**	**0.408**	-

Notes:
1. Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM.
2. All results reported on a dry weight basis.
3. Bolding denotes a detected concentration.
4. - = Not available.
5. U = Not detected above the indicated laboratory method reporting limit.
6. HPAH = High molecular weight PAH.
7. LPAH = Low molecular weight PAH.
8. Screening levels are Joint Source Control Strategy (JSCS) screening level value (SLVs) from Table 3.1 (DEQ/EPA 2005, 7/16/2007 revision).
9. Shaded concentrations exceed JSCS SLVs; the associated SLV is also shaded.

APPENDIX F
Erosion Pathway Support Documentation

Photograph 1 – Access road down to work barge. Note riprap on both sides armoring slopes. Large silos in background are located on Shore Terminal's property north of the Brix Property. Photograph taken facing northwest.

Photograph 2 – Riprap-armored riverbank between upland Property (left) and work barge (right). Photograph taken facing northwest.

Photograph 3 – Riprap armor on riverbank north of work barge. Small area of riprap on lower slope has settled downward and created scarp. Photograph taken facing northwest.

Photograph 4 – Riprap eroded on lower bank below northern portion of office building. Riprap on upper slope. Photograph taken facing west-northwest.

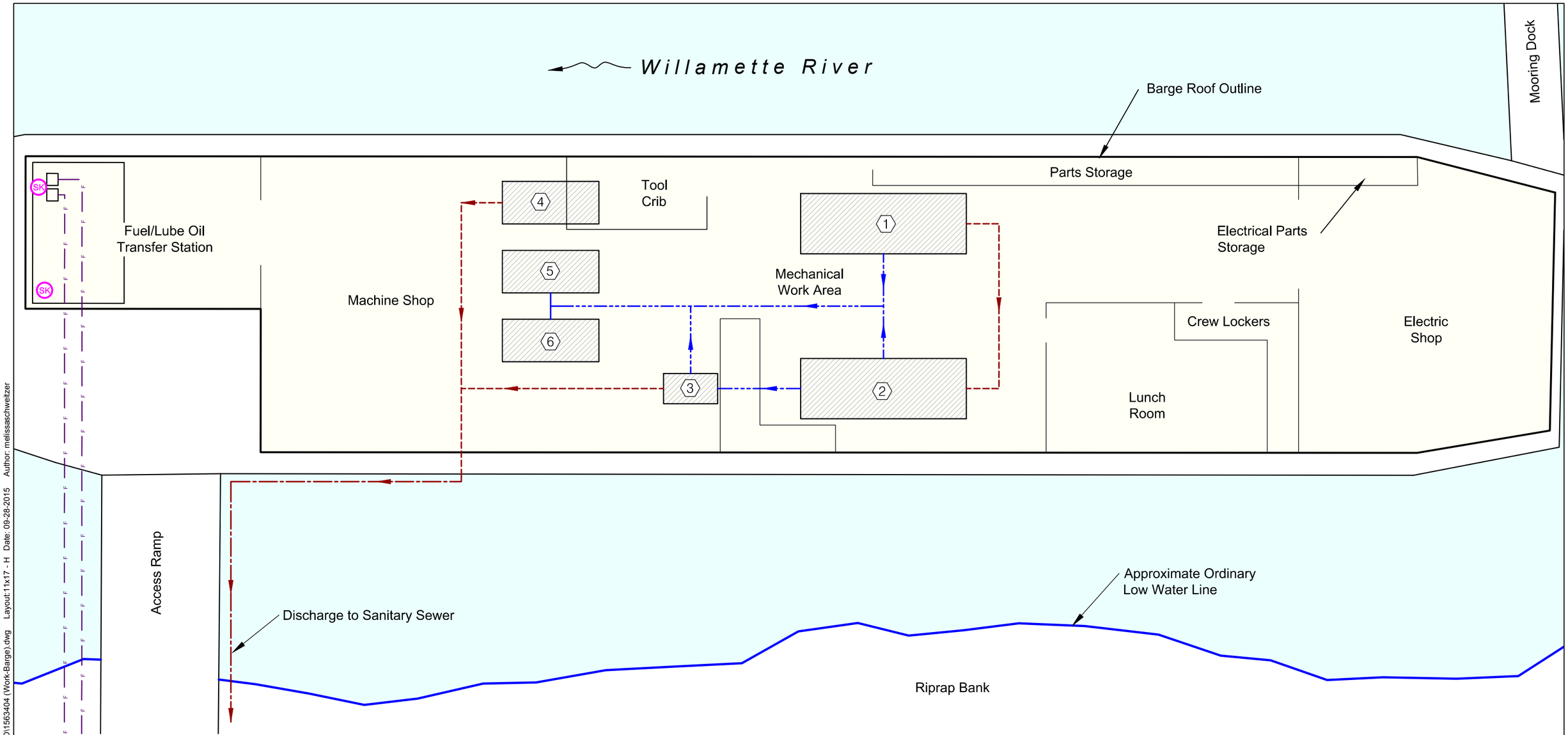
APPENDIX G
Overwater Activities Pathway Support Documentation

APPENDIX G

Overwater Activities Pathway Support Documentation

This appendix includes additional documentation referenced in the text regarding overwater activities. Specifically, this appendix includes the following (in order).

- Photographs of the mooring docks and work barge, including its features and operational areas.
- Figure G-1 showing the configuration of the work barge.



Below Deck Features:

- (1) 3,000-gallon Bilge Water Tank "A"
- (2) 3,000-gallon Bilge Water Tank "B"
- (3) Oil/Water Separator
- (4) 1,000-gallon Sanitary Wastewater Tank
- (5) 1,000-gallon Used Oil Tank
- (6) 1,000-gallon Used Oil Tank
- Used Oil/Oily Water Line
- Wastewater Line

Above Deck Features:

- Aboveground Wastewater Line
- Aboveground Product Transfer Line
- (SK) Spill Kit

Note: All work barge activity areas are above deck.

N

0 10 20

Scale in Feet

Source: Brix Maritime Co. files and observations by Hart Crowser personnel.

Brix Maritime Co.
9030 NW St. Helens Road, Portland, Oregon

Work Barge Configuration

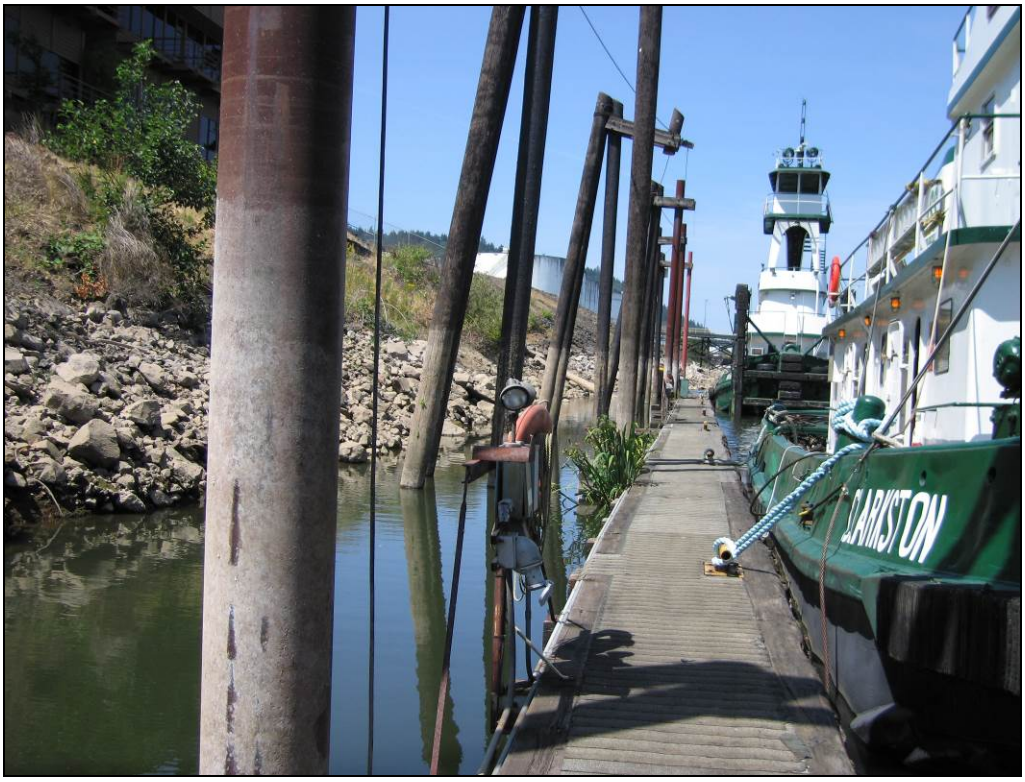
15634-04 9/15

HARTCROWSER

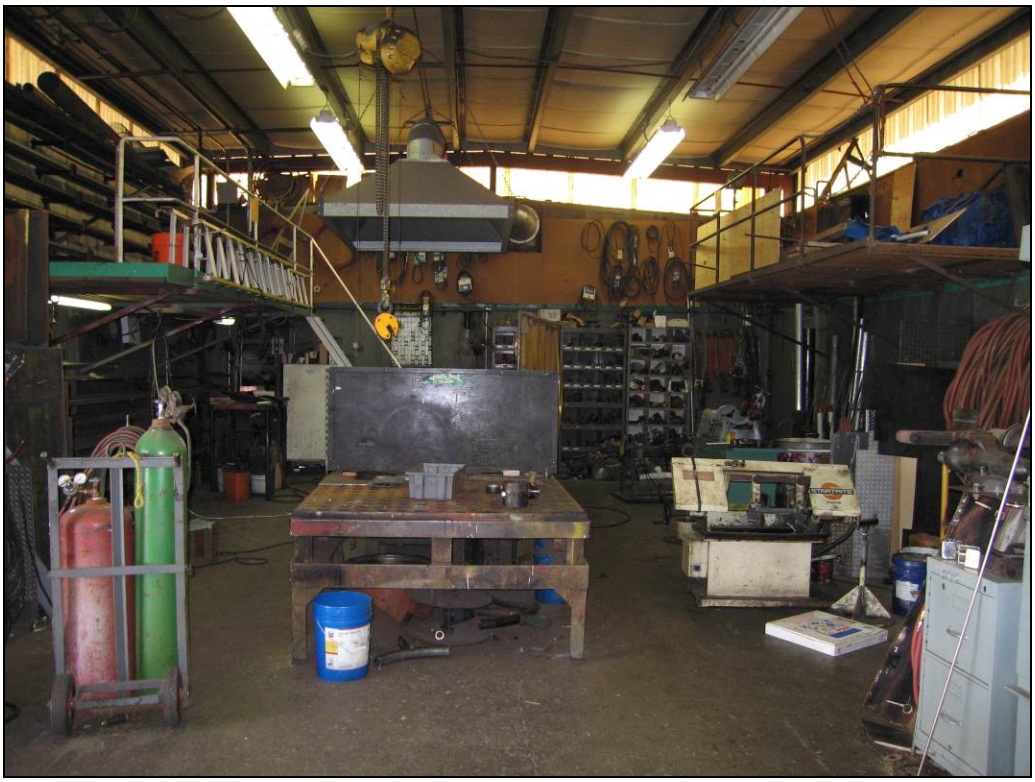
Figure **G-1**

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (Work-Barge).dwg Layout:11x17 - H Date: 09-28-2015 Author: melissaschweitzer

Photograph 1 – Stationary covered work barge moored in the river adjacent to the embankment between the mooring docks and shoreline. Photograph taken looking north.



Photograph 2 – Mooring dock along Brix Property riverbank. Note armored riprap on riverbank. Photograph taken looking northwest.

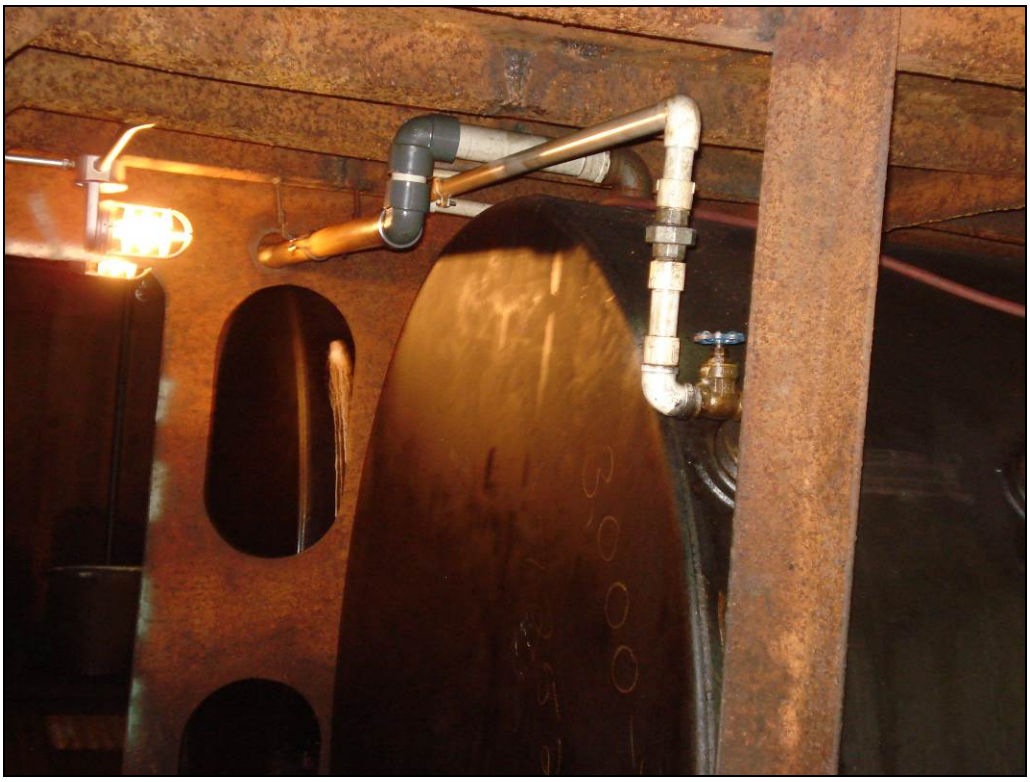


Photograph 3 – Work area within covered work barge.

Photograph 4 – Work area within covered work barge.

Photograph 5 – Fuel/lubricating oil transfer station at northwest end of work barge (under cover). Hosing within secondary container and absorbent pads/ booms readily available. Secured drum for used oil filters.

Photograph 6 – Emergency phone and fire extinguisher within fuel/lubricating oil transfer station at northwest end of work barge (under cover).



Photograph 7 – Bilge water tank in hull of work barge.

Photograph 8 – Sarex® oily water separator and filtration system within hull of work barge.