REMEDIAL INVESTIGATION AND FEASIBILITY STUDY - WORK PLAN

CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

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1.0 INTRODUCTION

This Draft Remedial Investigation and Feasibility Study Work Plan (Draft RI/FS) references the Renton Terminal located at 2423 Lind Avenue Southwest in Renton, Washington (ConocoPhillips AOC No. 3485, Washington Department of Ecology [WDOE] Facility No. 2070).

1.1 REGULATORY CONTEXT

This Draft RI/FS fulfils the requirements of Deliverable 1 of Exhibit B contained in Agreed Order No DE 722; Issued by the Washington State Department of Ecology (Ecology) on August 5, 2010. The mutual objective of Ecology, ExxonMobil Oil Corporation (ExxonMobil), and ConocoPhillips Company (ConocoPhillips) under the Agreed Order is to provide for remedial action at a facility where there has been a release of hazardous substances. The Agreed Order was issued pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.050(1). The Agreed Order requires ExxonMobil, ConocoPhillips and the Potentially Liable Persons (PLPs) to complete an RI/FS and, if necessary, supplement existing data and reports in accordance with Washington Administrative Code (WAC) 173-340 to determine the nature and extent of contamination associated with the Site (as defined below).

1.2 OBJECTIVES AND SCOPE

Exhibit B of the Agreed Order provides an outline of the objective and scope of the RI/FS. A copy of Exhibit B is provided in Appendix A of this work plan, the following is an excerpt from Exhibit B describing the objectives and scope of the RI/FS work plan:

'An RI/FS Work Plan will be prepared to consolidate, compile, and analyze past investigation results, monitoring reports, and remedial actions undertaken at the ConocoPhillips Renton Terminal Site. The RI/FS Work Plan will also identify data gaps and specify a scope of work necessary to complete the RI/FS. The purpose of the RI/FS is to collect, develop, and evaluate sufficient information regarding the ConocoPhillips Renton Terminal Site to select a cleanup action under Chapters 173-340-350 through 173-340-390 of the Washington Administrative Code. The RI/FS Work Plan will include a Sampling and Analysis Plan, Quality Assurance Plan, and Health and Safety Plan.'

Exhibit B continues with details of what needs to be included in the RI/FS.

The following briefly summarizes the scope specified in Exhibit B:

- Define the nature and extent of subsurface contamination at the Site. Include results of previous subsurface work employed to define the extent of subsurface impacts. Indicate requirements for further delineation if necessary to further define the extent of subsurface impacts.
- Design and implement a Site-wide groundwater monitoring network.
- Periodically assess the effectiveness of the interim remedial action.
- Identify risk pathways and receptors for contaminants of potential concern.
- Ensure the existing remedial systems are sufficiently preventing off-Property migration of the hydrocarbon plume.
- Assess soil, surface water and sediment in the adjacent wetland to the west and northwest of the Property,.
- Assess potential impacts to the adjacent wetland and stormwater retention pond.
- Complete an engineering and stability assessment of the containment dike surrounding the main tank farm area and the surface water containment dike in the southwest corner of the storm water retention pond.
- Complete a Site conceptual model based on historical data.
- Indicate any evidence of contamination coming from off-Property.
- Computer modeling may be used to predict groundwater migration of contaminants. Results of modeling could be used to predict the effectiveness of the remediation system.
- Pilot and/or bench scale tests may be implemented to evaluate the effectiveness of potential remedial alternatives.
- Preparation of a feasibility study to evaluate cleanup action alternatives per MTCA WAC 173-340-360.

A substantial portion of the information required to complete the RI/FS has been gathered during historical assessments. However, additional assessment/research will be required to address existing data gaps.

1.3 WORK PLAN ORGANIZATION

The work plan is organized as follows:

- Sections 2 through 7 address Remedial Investigation (RI) requirements of the RI/FS.

- Section 8 addresses Data Gaps and Additional Work Required.
- Section 9 provides the Feasibility Study Work Plan.

2.0 SITE AND VICINITY DESCRIPTIONS

2.1 GENERAL

The Property is an active bulk petroleum distribution terminal located at 2423 Lind Avenue Southwest in Renton, Washington (Figures 1 and 2 shows the Property location and layout, respectively). The Property occupies approximately 7 acres and is situated at the northwest corner of the intersection of Lind Avenue Southwest and Southwest 27th Street.

The Property is located in King County in the northwest quarter of section 30; township 23 North; range 5 East. The eastern portion of the parcel is occupied by the terminal facility and the western portion of the parcel is a wetland (King County Tax Parcel Number 3023059086).

Mobil (the predecessor to ExxonMobil) began terminal operations in 1968 and operated the facility until 1988 when the Property was sold to British Petroleum Exploration & Oil (BP). Tosco Corporation (ConocoPhillips) purchased the Property from BP in 1993 and is the current owner.

2.2 LAND USE

2.2.1 PROPERTY FACILITIES

The following description is based on observations and details provided in the Property's Stormwater Pollution Prevention Plan (SWPP) dated November 22, 2004.

The facility receives, stores, loads and dispatches bulk petroleum products including gasoline, diesel fuel, kerosene, ethanol, and additives.

The facility is constructed on fill material surrounded by undeveloped land. The Property contains an earthen tank farm, that stores refined petroleum products, one truck rack for loading/unloading products with a spill collection system, an office building and an associated fuel dispensing facility for vehicles.

The tank farm consists of seven primary refined product above ground storage tanks (ASTs) with a combined nominal capacity of 248,805 bbls, and four ASTs storing additives. Figure 2 shows the Property layout.

Each AST is surrounded by concrete block walls approximately three feet in height. The entire AST tank farm area is surrounded by an earthen containment berm which provides secondary containment.

2.2.2 SURFACE COVER AND DRAINAGE

Surface cover at the facility consists of a combination of earthen cover and asphalt. Earthen cover is present in the tank farm area. The distribution, parking and truck routing areas are covered with asphalt.

Drainage from each secondary containment area is designed to be manually controlled through a gate valve. The gate valves are normally closed at all times and only manually opened to drain to a concrete in-ground holding tank, if necessary.

Storm runoff from the tank farm and vapor recovery containment area are collected by a large in-ground holding tank which provides settling before the runoff is discharged on a batch basis to the adjacent undeveloped land area under provisions of a NPDES permit. If an oil sheen is visually observed, this wastewater is instead pumped to the underground spill containment tanks and associated air stripper treatment system and discharged to the sewer system. Stormwater discharged from the facility is from one outfall which is located along the southwest side of the office.

2.2.3 REGULATORY DESIGNATIONS

The Washington State Department of Ecology (Ecology) indicates that the Property is registered in several of the following Ecology programs: TOXICS; HAZWASTE; SPILLS; and, WATQUAL (See Appendix B for a copy of Ecology's Facility Site Report).

2.3 SURROUNDING LAND USE

The area consists of a mix of commercial businesses and vacant undeveloped land. Figure 2 shows the surrounding land use;

- North: Olympic Pipeline Renton Terminal (2319 Lind Avenue Southwest).
- South: Southwest 27th Street, beyond Southwest 27th Street is undeveloped land (2705 Lind Avenue Southwest) owned by The City of Renton.

- East: Lind Avenue Southwest, beyond Lind Avenue Southwest is an undeveloped wetland (2600 Lind Avenue Southwest) owned by BIT Holdings Twenty Two, Inc.
- West: AllPak Container Corporation (800 SW 27th Street) occupies the property to the west of the on-Property wetland.

Areas of particular interest include:

- The wetlands in the vicinity of the Property
- The Olympic Pipeline Renton Terminal located immediately north of the Property

2.4 GEOLOGIC / HYDROGEOLOGIC SETTING

The Site lies within the central Puget Lowland. The lowland is part of a regional north-south trending trough that extends from southwestern British Columbia to near Eugene, Oregon. North of Olympia, Washington, this lowland is glacially carved, with a depositional and erosional history including at least four separate glacial advances/retreats. The Puget Lowland is bounded to the west by the Olympic Mountains and to the east by the Cascade Range. The lowland is filled with glacial and non-glacial sediments consisting of interbedded gravel, sand, silt, till, and peat lenses.

The Geologic Map of the Renton Quadrangle (1965) and Geologic Map of King County (2007) indicate that the Site is near the contact of Wetland Deposits and Alluvium. Wetland Deposits typically consist of silt, sand, peat, and muck deposited in wetland areas. These materials are typically very soft and are mapped based on the presence of surface water and through wetland vegetation identification. Alluvium generally consists of sand, gravel, cobbles, and silt in varying proportions deposited by post-glacial streams. These deposits commonly include poorly sorted debris-flow materials. Alluvium in the area of the site is generally loose to medium dense and extends to depths exceeding 70 feet in places. These materials can have a low to very high liquefaction potential depending on the density, composition, groundwater level, and other site- specific factors.

A review of the water well database on the Department of Ecology website indicates that there are 18 registered wells within a 0.5 mile radius of the Site. Wells of interest in the vicinity of the Site include:

- A well located at the intersection of I-405 and SR 167 (3500 feet northeast of the Site) was advanced to a depth of 51.5 feet. Groundwater was apparently not present in this well
- A well situated approximately 750 feet southeast of the Site advanced to a depth of

- 50 feet. Groundwater was apparently not present in this well
- A well situated approximately 2500 feet southeast of the Site advanced to a depth of 47 feet. Groundwater was apparently encountered at a depth of 12 feet in this well
- According to the City of Renton, Renton's drinking water comes from the following sources:
    - Five municipal wells located north of the Site at a distance of approximately two miles
    - Springbrook Springs located approximately one mile south of the Site
    - A well field located east at a distance of approximately two miles

Water well logs were reviewed on the Department of Ecology's website in an effort to identify the depth at which the City's drinking water is collected. The City's drinking water wells were not identified. However, the following wells were advanced in the vicinity of the City of Renton's drinking water wells.

- Wells located near the five municipal wells, up-gradient from the Site, were advanced to a maximum depth of 105 feet and document groundwater between 20 and 27 feet. Well screens were installed from approximately 60 to 90 feet.
- Wells located near Springbrook Springs, down-gradient from the Site, were advanced to a maximum depth of 72.5 feet and document groundwater at 62 feet. The well screen was installed from 62.5 to 72.5 feet.
- Wells located near the well field, cross-gradient from the Site, were advanced to a maximum depth of 346 feet and document groundwater between 10-12 feet. Well screens were installed from 285 to 342 feet.

2.4.1 SITE SPECIFIC GEOLOGY

The Site-specific geology is derived from a review of historical subsurface investigations completed between 1986 and 2009.

The Site is underlain by structural fill from ground surface to a depth of between approximately seven and 12 feet. The structural fill is medium-dense sand with silt and gravel apparently derived from glacial till. The structural fill is underlain by native silt/clay with trace organics. The silt/clay layer has been confirmed on Site to a depth of 22 feet. Groundwater is encountered throughout the Site at between approximately seven and 11 feet and is situated in the interface between the structural fill and the underlying silt/clay layer. The groundwater appears to be in a perched condition and is at least partially recharged

through infiltration of rainwater. Groundwater was not encountered in the boring advanced to 22 feet. Depth of groundwater below the apparent perched zone is not known.

Observations during groundwater monitoring indicate the groundwater remediation system has varying effects on nearby wells (i.e. drawdown is not consistent in wells at equal distance from the pumping point). These results indicate the groundwater table may not be in full hydraulic communication.

Groundwater flow direction on Site is inconsistent but generally trends from the center of the site towards the northwest and south at gradients of between approximately 0.005 and 0.01 foot/foot.

3.0 ENVIRONMENTAL ACTIVITIES

The nature and extent of subsurface contamination associated with the Site has been investigated and is well documented. The Site-specific documents reviewed were sourced from ConocoPhillips' Livelink Database. Documents referencing off-Property activities of interest were sourced from the Department of Ecology's Northwest Regional Office.

The following provides a summary of the relevant documents reviewed and a synopsis of their content. Information from these reports forms the basis of the Conceptual Site Model presented in Section 6.0.

3.1 SITE-SPECIFIC RELEVANT REPORTS AND DOCUMENTATION

Hart Crowser's *Subsurface Petroleum Product Assessment*, July 31, 1986 indicates that the presumed Property operator, Mobil Oil Corporation (Mobil), identified petroleum-impacted soils in July 1986 while removing an underground storage tank (UST) in the vicinity of the loading rack. Six monitoring wells (B-1 through B-6, see Figure 4) were installed at locations chosen by Mobil Oil and Hart Crowser, to complete a preliminary assessment of the extent of free-phase petroleum product beneath the facility. The distribution of product thickness and the estimated groundwater flow direction indicate that the source of the product was within the bulk fuel storage area and was migrating to the northeast. The results of the subsequent investigation and testing suggested the source of contamination was spilled petroleum products entering the subsurface soils through cracks in the loading rack containment system. The petroleum product was identified primarily as leaded gasoline. Hart Crowser (Mobile's consultant) recommended the monitoring and installation of additional wells down-gradient and within the suspected source location. Soil and/or groundwater samples were not analyzed during this investigation.

Hart Crowser's *Subsurface Petroleum Recovery System* reports, November 1987 to September 1992 indicate that a product recovery system was installed at the bulk handling facility. Several monitoring wells (D1 through D-8; W-1 through W-4; R-1, R-2; and, HA12 through HA-14) were installed in 1987. Well locations are included on Figure 4. Progress reports document fairly stable trends in product thickness documented near the truck loading rack and recovery trench (north of the Site). However, in April 1991, 7.30 feet of product was documented in well B-3; an increase of 6.95 feet in four months.

Mobil Oil Corporation's September 21, 1990 letter to British Petroleum Oil Company indicated that a release of BP regular leaded gasoline is suspected to have occurred between March 15, and March 21, 1990. Mobil suspected that product spilled during tanker truck

refueling and leaked from the loading rack drain tank. The best estimate of the volume of product released was 1,800 gallons. BP responded to the letter on December 11, 1990 and indicated that in BP's opinion there was no evidence to support the suspicion of a release and that no spill had occurred. Details of this letter are further explained in Section 4.3 of this report.

Mobil Oil Corporation's May 14, 1991 letter to British Petroleum Oil Company indicated that an on-going leak was suspected. Neither Mobil nor BP had identified the leak location. All of the wells containing free product, except for HA-6, showed a rise in product thicknesses following system shut-down in December, 1990. Free product thicknesses in most of the wells were greater than those seen prior to the start of recovery operations in November, 1987. It was understood that BP had gauged the ASTs and results showed no indication of leaking. The underground overfill tank for the loading rack had not shown any anomalous increases. Mobil indicated that the most likely sources for the leak were the Olympic Pipeline or the BP underground lines.

British Petroleum Oil Company's July 1, 1991 letter to Mobil Oil Corporation indicates that BP was committed to identifying all potential leaks or spills associated with the Site. The letter suggests that the information reviewed to date did not indicate that a spill had occurred at the Site.

In 1991, Hart Crowser installed a Groundwater Treatment System on the Site A detailed description of the treatment system is provided in Hart Crowser's *Work Plan for Connecting the Groundwater Treatment System*, January 29, 1991. A report detailing the installation of the proposed groundwater treatment system was not available for review.

Monitoring of the system was conducted periodically from September 1991 to December 1992, when the system was shut down due to a leak in the piping. The system was repaired in January 1993 but system operation was on hold due to frozen pipes (Hart Crowser, 1993). No reports were available indicating that the system was operated or monitored subsequent to the freezing event.

E-mail from Jim O'Hara (BP) to David Shuttleworth (affiliation unknown) dated November 23, 1992. This e-mail documents BP's response to Mobil's claim that a release occurred. Mr. O'Hara indicated that BP tested the underground lines on the Site (including the Olympic Pipeline lines) for tightness. Test results indicate the lines 'passed'. Mobile requested documentation of the pressure tests as well as other maintenance documents and inventory records. Mr. O'Hara speculates that the residual contamination may be from the release Mobile documented in the May 14, 1991 letter to BP (cited previously). Mr. O'Hara

stated that he "seems to remember a newspaper article that quoted the amount thought lost as 600,000 gallons".

ConocoPhillips' ***Release Notification Report,*** **February 11, 2003** documents the discovery of a 14,800-gallon gasoline release (November 13, 2002) from an above-ground storage tank as well as initial response efforts and subsequent remedial actions conducted to address the release.

Landau & Associates' ***Submission of Notice of Construction Application,*** **January 30, 2003** describes the proposed installation of a remedial action system to reduce subsurface contamination caused by the release of petroleum products to the subsurface (November, 2002). The remediation system (installed in February 2003) included a "dual-phase vacuum extraction (DPVE) element that collects free phase gasoline, vapors, and groundwater impacted by gasoline from the subsurface. Vapors collected by the DPVE system were treated with a thermal oxidizer unit prior to discharge". It includes a permit application to the Puget Sound Clean Air Agency, worst case scenario emissions calculations, drawings and specifications, and State Environmental Policy Act (SEPA) checklist.

Landau & Associates' letter to the Department of Ecology, entitled ***Investigation of Stormwater Detention Pond,*** **July 15, 2004** documents the sampling of sediment and water from the stormwater detention pond. The Department of Ecology (Ecology) had expressed concern that free phase gasoline product was observed floating on the surface water in the pond. Ecology reported further that petroleum products were visually apparent in the adjacent soil. Landau collected a water sample from the pond and soil samples from hand augured borings from the location Ecology noted as containing free product. Some samples contained concentrations of benzene and TPH-G above MTCA Method A cleanup levels. Landau concluded that the concentrations reported for TPH-G and benzene are not indicative of free phase gasoline product being present in the soil. Boring locations were not illustrated on a figure in the *Investigation of Stormwater Detention Pond* report; thus an *approximate* location is illustrated on Figure 4. Analytical data for the soil samples collected is included on Figure 5 and Table 9 of this report.

Landau Associates' ***Semiannual Status Report*****, October 25, 2004** describes recovery of LPH and dissolved petroleum concentrations in groundwater through operation of the remediation system. The report describes the initial operation and activation date for the remediation system, the results of groundwater and LPH measurements and sampling, and system vapor sampling. The report summarizes a system evaluation completed to evaluate the effectiveness of remedial efforts performed to-date.

Based on the data evaluation results, Landau concluded that the remediation system appeared to be effective in controlling and reducing LPH, controlling the extent of the dissolved-phase

gasoline and benzene, and operated in general accordance with the air and water discharge permits. Total estimated volume of gasoline recovered was reported to be 11,013 gallons.

SECOR International Inc. (SECOR) ***Work Plan for System Modifications and Improvements*****, August 19, 2005** describes planned activities designed to increase recovery rates for LPH and/or dissolved-phase petroleum constituents by increasing groundwater recovery and system operating time. Proposed activities included deepening recovery wells, and upgrading and/or modifying the system, including replacing the compressor, installing a new flow meter, performing maintenance on the down-hole pumps, installing a wireless auto-dialer, and rerouting a liquid natural gas line.

Action Mickelson Environmental, Inc.'s ***Trench 2 Investigation Report*****, November 5, 2007** documents efforts to better understand the hydrogeology surrounding the Site. AME, together with Ecology, ExxonMobil, ConocoPhillips, and SECOR, decided that a field assessment of Trench 2 would be beneficial. AME advanced eight direct push borings (SB-TR2A through SB-TR2H, Figure 4) with objectives to:

- Evaluate the composition and current condition of the backfill in Trench 2, in particular whether excessive root growth or bacterial fouling are present
- Evaluate the depth of the contact between the trench backfill and the underlying native silt/clay

Soil samples were not analyzed for constituents of concern; however, hydrology data was obtained in the area surrounding Trench 2.

As found within two of the advanced borings, the base of the trench backfill material consisted mostly of sand with little gravel. The structural fill beneath the Site was mostly unsaturated. However, one foot of the underlying native silt/clay was wet. The saturation zone limited the effective drawdown of Trench 2 thus constraining the hydraulic capture zone. A groundwater flow model was developed to evaluate potential modifications to the remediation system. Two additional extraction wells near the ends of Trench 2 were suggested to improve performance and extend the capture zone to the west and east.

Stantec's ***Soil Investigation Report*****, October 7, 2009** documents efforts to further define subsurface soil impacts and to supplement historical assessment data. At the request of ConocoPhillips, 17 soil borings (G-1 through G-17, Figure 4) were advanced in the loading rack and tank farm areas. Soil borings were advanced to a maximum depth of 10 feet.

Select soil samples were submitted to the laboratory for analysis. Soil samples containing contaminant concentrations exceeding MTCA Method A clean-up levels were observed at depths from one to nine feet. TPH-G and BTEX constituents were present in soil analyzed from G-2 through G-9. The highest concentrations were documented between the depths of 4.5 and 6.0 feet (Figure 5 and Table 9).

Stantec's *Operations and Maintenance Report*, August 27, 2010 describes operations and maintenance (O&M) activities associated with the remediation system that were performed in the second quarter of 2010. The report includes a section describing effectiveness of the system in its current configuration, and reports that the total estimated mass of hydrocarbons recovered is 50,088.10 pounds since the initial release on November 13, 2002 (expanded upon in Section 5.0 of this report). The report also contains concentration versus time graphs for remediation system influent water and vapor. The report concludes that the system remains effective at recovering petroleum concentrations from the subsurface and containing the impacted groundwater on-Property.

3.2 RELEVANT REPORTS AND DOCUMENTATION – OFF-PROPERTY

The Olympic Pipeline Renton Terminal represents the primary off-Property concern. The following summarizes the relevant documents reviewed:

GeoEngineer's *Remedial Action Report*, May 1, 2000 documents remedial activities to mitigate soil contamination from a transformer oil spill at Puget Sound Energy's (PSE) Olympic-Renton Substation. Approximately 80 gallons of transformer oil (mineral oil) was released at the Property from several leaks in the transformer. The leak occurred in the central portion of the Property. Remediation consisted of removing approximately 19 tons of rock and soils from an excavation extending to a depth of 8 feet. The excavation depth extended approximately one foot into the water table. Following the remedial excavation, soil samples were collected from the limits of the excavation. The soil samples were submitted for analysis. Results indicated petroleum hydrocarbons either were not detected or were detected at concentrations less than the MTCA A clean-up levels in 4 of the 5 soil samples collected from the final limits of the remedial excavation. The one soil sample containing concentrations above MTCA A clean-up levels contained TPH and benzene. These impacts were not considered related to the transformer leak.

Delta's *December 2005 Semi-Annual Monitoring Report, May 6, 2006* documents Site assessment, groundwater monitoring and remedial actions performed at the Site during third and fourth quarters of 2005. The background section of the report indicates the Site has experienced the following releases:

- An August 1999 release of approximately 3,300 gallons of 'trans-mix' (a mixture of gasoline and diesel) in the northwest corner of the Property. The majority of the light non-aqueous phase liquid (LNAPL) was recovered and excavation of impacted soil was completed. A remedial system consisting of air sparge/soil vapor extraction (AS/SVE) was installed and began operating in 2000. Groundwater recovery was also performed using one recovery well.
- A May 2004 release of approximately 44 barrels of gasoline occured in the northeast portion of the Property. The majority of the gasoline was volatilized or burned in a fire that coincided with the release.
- A July 2005 release of approximately 40 gallons of jet fuel when a product sump located in the northeast portion of the Property overflowed. The 40 gallons were recovered using a vacuum truck.

The report documents the occurrence of dissolved-phase petroleum hydrocarbons and free-phase product in wells situated in the north and northeast portions of the Property. The hydraulic gradient is reported as variable with flow directions either to the north, east or west.

The report details the results of a November 2005 geoprobe investigation in the southern portion of the Property. Nineteen geoprobe borings were advanced in a grid pattern near the south property line. Groundwater samples were collected from each boring. Analytical results indicated the presence of gasoline contamination in the samples collected.

Delta's ***Semi-Annual Status Report*** **February, 2010** documents system operation and maintenance events and quarterly groundwater monitoring events conducted between July and November 2009. Groundwater analytical results indicated residual petroleum hydrocarbon concentrations exceeded the MTCA A levels in approximately 50% of the monitoring wells situated in the northeast corner of the Property. Constituents detected included gasoline and diesel – range total petroleum hydrocarbons.

4.0 RELEASE HISTORY

This section provides further details of the documented historical releases to better define the nature and extent of environmental impacts. Refer to Figure 3 for illustrations showing the general locations of the releases.

There are four documented releases summarized in the table below. The release associated with the loading rack was discovered in 1986 (1986 Loading Rack Release). Releases associated with the tank farm are reported to have occurred between 1990 and 2002 (Tank Farm Releases, 1990-2002).

Discovery Date	Release Location	Volume of Release	Volume and or Mass Retrieved
1986	Loading Rack Containment System	Unconfirmed	57,000 gallons removed from December 1987 to November 1993
1990	Suspected Near Loading Rack	Unconfirmed Estimated 1,800 gallons	Unknown
1991	Suspected Near Loading Rack	Unconfirmed	Unknown
2002	Tank Farm at AST #2	14,800 gallons	12,813 gallons from 2002 to 2009 and approximately 46,500 lbs of TPH

The following provides details descriptions of the four documented releases.

4.1 LOADING RACK RELEASE – 1986 OR PRIOR

Documentation detailing the loading rack release is incomplete. For this reason, the following summary should be considered a general overview of the current understanding the release and remedial response.

In 1986, an underground product spill was discovered by Mobil during the installation of a loading rack in the truck loading area. Following the release discovery, liquid phase hydrocarbons (LPH), up to 5.5 feet thick, was found floating on the groundwater table in the vicinity of the truck loading area. It was later determined that cracks in the concrete catch basin from the loading rack spill collection system were the source of the spill (Woodward-Clyde Consultants, March 21, 1989). The reports available for review do not

document whether the release was gasoline or diesel, however, groundwater samples collected from monitoring wells in the vicinity of the loading rack indicate gasoline as the primary contaminant and diesel in lesser concentrations.

A product recovery system was constructed and began operation in November 1987. Reports available for review do not document the volume of the release. However, approximately 57,000 gallons of product were removed by the product recovery system between December 1987 and November 1993 (Landau, February 11, 2003).

4.2 OLYMPIC PIPELINE AND/OR BP UNDERGROUND LINES WITHIN THE TANK FARM – 1990

In September 1990, Mobil documented in a letter to BP that high free product recovery and product thickness was documented in select wells for a period of eight days in March 1990. Samples were collected of the free product. Analysis indicated that the GC fingerprints of the gasoline fraction of the free product in well B-2 and the product recovery tank were very similar to that of the BP regular leaded gasoline. It was determined that a suspected release of BP regular leaded gasoline had occurred between March 15, and March 21, 1990 (Mobil Oil, September 21, 1990).

4.3 TANK FARM RELEASE – SUSPECTED RELEASE

In May 1991, Mobil documented in a letter to BP that they had suspected for over a year that there was an on-going leak at the Site. Mobil's consultant, Hart Crowser, had operated a product recovery system since 1987 and despite recovering 34,000 gallons of free product "gasoline"; the plume had grown in size. Free product thickness had not exhibited a decreasing trend from November 1987 to December 1990. In fact, free product thickness in most of the wells had increased. A comparative product analysis of free product collected from well B-2 (Figure 4) resembled BP regular gasoline. Neither BP nor Mobil had identified the source of the potential leak (Mobil Oil Corporation, May 14, 1991).

BP pressure tested all underground lines leading from the tanks to the rack. The results of these tests did not indicate a leak. In July 1991, BP responded to Mobil's letter and indicated that, in BP's opinion, the information reviewed did not indicate that a spill or leak was present. BP interpreted the data and concluded the following (BP, July 1, 1991):

- Regarding the allegation that the sudden increases in product thickness accompanied by abnormally high recovery rates over an eight day period were a result of a new surface

spill: the product recovery pump was not operating during the period of elevated product thickness, however, the water table depression pump was in operation. The depression in the water table caused product to accumulate, showing an increase in product thickness.

- Regarding the allegation that the product sample analyzed from B-2 resembled BP's regular gasoline: the lead content of free product sampled in well B-2 is apparently two to four times higher than the content found in regular gasoline.
- Regarding the allegation that the plume of product had increased in thickness and area during the time period between July 1986 and April 1991: large fluctuations in the groundwater table (as much as seven feet as documented in well B-3, Figure 4), can cause the size of the free product plume to vary significantly.

There is no indication that an agreement was ever reached regarding whether or not a release had occurred.

4.4 TANK FARM RELEASE – NOVEMBER 2002

In November 2002, a petroleum release consisting of 14,800 gallons of super-unleaded gasoline occurred from the AST designated as AST #2. Following discovery of the release, ConocoPhillips retained Landau to assess the extent of impact of the release and to conduct interim action LPH recovery efforts.

Between November 2002 and December 2003 the following initial efforts were conducted by Landau to recover LPH and define the extent of the release:

- Monitoring groundwater and LPH thickness from existing monitoring wells
- Monitoring groundwater and LPH thickness from 24 advanced hand augured borings surrounding AST #2
- Installation of 28 recovery wells and six additional monitoring wells
- In January 2003, LPH was discovered floating on the surface of a stormwater retention pond located to the southeast of AST #2. A diaphragm pump was installed west of the pond to limit the flow of water and LPH to the retention pond. In addition, a network of Venturi-style blowers was temporarily installed near the southern bank of the retention pond to abate vapor concentrations.
- In November 2003, a surface water containment emergency dike was installed near the southwest corner of the stormwater retention pond (Figure 3 shows the location of the dike with respect to the pond). The dike was installed as a containment measure to limit the potential for LPH to impact the pond.

- In December 2003, a horizontal interceptor trench (HW-1, Figure 4) was installed near the southern property boundary south of AST #2. The purpose of this trench was to prevent further off-Property migration of impacts to the south. Groundwater and soil vapor recovery points HWx-1W and HWx-1E are situated at the west and east end points of the trench, respectively.

The following section describes the remedial actions implemented thus far to address the releases.

5.0 REMEDIAL ACTION

5.1 HISTORIC INTERIM REMEDIAL ACTION

Two significant remedial actions were initiated to respond to the following two confirmed releases:

- The 1986 loading rack release of an undetermined volume
- The 2002 release from AST #2 of 14,800 gallons

5.2 LOADING RACK RELEASE REMEDIAL ACTIONS

Documentation detailing the loading rack release and remedial response is incomplete. For this reason, the following summary should be considered a general overview of the current understanding of the release and remedial response.

The release resulted in the presence of liquid phase hydrocarbons (LPH) in groundwater west and northwest of loading rack. Remedial actions appeared to be primarily focused on recovering LPH and preventing off-Property migration of contaminants to the north and northwest. Ecology issued Enforcement Order DE 87-N301 on October 14, 1987, and two amendments on November 3 and December 16, 1987. The order required the installation of the product recovery system and groundwater extraction and treatment system (GWET), which was implemented as an initial remediation measure.

5.2.1 SYSTEM OVERVIEW

The system was constructed in 1987 and was operated from its inception to the end of 2009 by subcontractors working for ExxonMobil and BP. Stantec assumed responsibility for the system's operation in December 2009. The information summarizing the system's construction and operation throughout the years has been sourced from the documents generated by the subcontractor historically involved in the operation of the system, Acton Mickelson Environmental, Inc (AME).

The remediation system consisted of two gravel-filled recovery trenches with a recovery well in each trench. The system location, including trench locations, is shown on Figure 10. Each recovery well was initially equipped with a product recovery pump and a groundwater extraction pump. Product was pumped to an on-Property storage tank, and groundwater was pumped to an oil / water separator for removal of product in the extracted groundwater.

Water from the separator was treated by an air stripper. In 2002, the product recovery portion of the system was discontinued and the remediation system converted to operate as a groundwater extraction system only. In the converted system, groundwater was pumped through the oil / water separator and through the air stripper prior to discharge. Recovered LPH (if present) was separated in the oil / water separator and directed to the product recovery tank.

The system is currently operating.

5.2.2 SYSTEM EFFECTIVENESS

The purpose of the system is to recover product from the subsurface and to prevent off-Property migration of impacted groundwater. The system's effectiveness is measured against these objectives:

Product Recovery

Approximately 57,000 gallons of product have been reported recovered since the system began operation in 1987. The degree of the system's effectiveness cannot be definitely determined because the volume initially released is not defined. Based on the volume of product recovered it appears that the system has been somewhat successful at recovering product.

According to well monitoring completed in 1987, LPH was observed in monitoring wells B-1 through B-4, B-6, HA-2, HA-6, HA-9, HA-11, W-2 and W-4, at a thickness ranging from less than 1 inch in monitoring wells B-1 and HA-6 to 1.29 feet in monitoring well B-6. Groundwater monitoring results from the most recent event completed in August 2010 show a reduction from the 1987 readings in all wells situated west and northwest of the loading rack. LPH during this monitoring event was measured in R-1, B-3A, B-4 and B-5 at a thickness ranging from less than one inch in R-1 to 0.46 feet in B-4.

Prevention of Off-Property Migration of Impacted Groundwater

As indicated on Figure 9, the highest contaminant concentrations in groundwater are localized immediately west of the loading rack. Samples collected in the mid-1990s from this area contained dissolved TPH-G concentrations ranging from 38,900 µg/L to >1,000,000 µg/L. Results of groundwater monitoring during the most recent event in September 2010 indicate dissolved TPH-G concentrations in this area have diminished to between 12,300 µg/L to

56,200 µg/L. These results indicate the system has effectively reduced dissolved contaminant concentrations in the area of highest historical impact.

Results of groundwater monitoring in wells in the north and northwest corner of the Property indicate a trend similar to what has been observed west of the loading rack. Wells in this area sampled in the mid-1990's indicated dissolved TPH-G concentrations ranging from 29,000 to 77,000 µg/L. Results of groundwater monitoring during the most recent event in September 2010 indicate dissolved TPH-G concentrations in this area have diminished to between 858 and 44,100 µg/L. These results indicate the system has reduced contaminant concentrations near the property line, however, the extent of contamination above screening levels to the north and northwest has not been defined. .

5.2.3 EVALUATION OF TRENCH 2 – 2008

Trench 2 is situated in the northwest corner of Property (Figure 10). One groundwater pump extracts intercepted groundwater from the trench and directs the water through a subsurface line to the treatment system. The trench was presumably constructed to prevent migration of impacted groundwater off-Property to the north and northwest.

AME completed an evaluation of the trench in 2008. The purpose of the evaluation was to determine if the trench could be made more effective at intercepting groundwater and preventing off-Property migration of impacted groundwater. In addition, a groundwater flow model was developed to evaluate the effectiveness of the existing recovery trenches and assess the performance of potential modifications to the system.

The evaluation concluded that the gravel backfill in the trench appeared generally free of organic debris and had not deteriorated significantly from its original condition. Results of the groundwater flow model suggested that the addition of two extraction wells near the ends of Trench 2 may improve its performance sufficiently to extend its capture zone to the west and east.

5.3 RESPONSE TO AST #2 RELEASE

The initial response to the release from AST #2 was described in Section 4.4. A dual phase extraction system was installed in 2003 as a longer term remedial measure. The purpose of the system was presumably to recover LPH, prevent off-Property migration of impacted groundwater and remediate impacted soils.

The system is currently operational and consists of a soil vapor extraction (SVE) component and a groundwater pumping component. The SVE component was installed in February 2003 followed by the groundwater pumping component in March 2003. The components are currently combined and the system is operated as a single unit. The location of the system and current pumping wells is shown on Figure 10.

5.3.1 SYSTEM OVERVIEW - SOIL VAPOR EXTRACTION COMPONENT

Hydrocarbon vapors are extracted by soil vapor extraction from well points LAIx-4 through LAIx-5, LAIx-7 through LAIx-9, and from RWx-2 (these wells also extract groundwater using down-hole pumps – to be described in a subsequent section). Extracted vapors are treated via activated carbon and discharged to the atmosphere. Results of SVE monitoring indicate the system has successfully removed approximately 47,681 pounds (7,450 gallons) of TPH since February 2003.

5.3.2 SYSTEM OVERVIEW – GROUNDWATER EXTRACTION COMPONENT

The groundwater extraction treatment (GWET) component consists of a network of down-well pneumatic extraction pumps located in LAIx-4 through LAIx-9, HWx-1E, HWx-1W, and RWx-2. Extracted groundwater and any accumulated free product are directed to an oil/water separator situated in the treatment system compound. Extracted free product is directed to a holding tank. Extracted groundwater is remediated in two phases. The first phase of groundwater treatment consists of a shallow tray air stripper which volatilizes the majority of dissolved hydrocarbons. The resulting vapors are then treated with vapor phase carbon. The second phase of groundwater treatment involves liquid phase carbon polishing of the air stripper effluent. Following carbon polishing, the treated groundwater is discharged to the sewer system. Since its installation in 2003, the GWET is reported to have removed approximately 2,470 pounds (345 gallons) of TPH from the subsurface.

5.3.3 SYSTEM EFFECTIVENESS

The purpose of the system is to recover LPH, prevent off-Property migration of impacted groundwater and remediate impacted soils. The system's effectiveness is measured against these objectives.

SVE Component

Results of SVE monitoring throughout its operation indicate approximately 44,000 lbs of TPH have been removed from the unsaturated zone. Results of soil sampling during a 2009 drilling investigation in the vicinity of AST #2 indicate contaminant concentrations were below screening levels with the exception of TPH-G with concentrations of 120 mg/kg in one soil sample. The initial extent and degree of impact to the soils affected by the release is not known because soil samples were not collected during drilling in 2002 and 2003 to install recovery wells. It therefore is not possible to compare current soil quality with past soil quality to evaluate the effectiveness of the SVE.

Groundwater Extraction Component – LPH Recovery

It was reported that approximately 11,000 gallons of gasoline were recovered from the vicinity of AST #2 prior to January 1, 2004 during the initial recovery efforts following the release. Subsequent to the initial recovery efforts TPH removal has been tracked by mass. Results of monitoring the groundwater extraction component of the system since 2004 indicate approximately 2,470 pounds of TPH have been removed from the subsurface.

Well monitoring completed in 2003 indicated the presence of LPH in the majority of wells surrounding AST #2 and in the near vicinity. The maximum recorded thickness was 6.5 feet in HA-20. LPH thicknesses in the rest of the wells ranged from approximately 1 to 3 feet. Monitoring of the wells surrounding AST #2 completed during the most recent event in September 2010 indicated no LPH was present in any of the wells. Based on these results, the system has effectively reduced the presence of LPH associated with the release from AST #2.

Groundwater Extraction Component – Dissolved Petroleum Hydrocarbons

Historical groundwater sampling results indicate a general reduction in TPH-G concentrations in the wells surrounding AST # 2 over the years. Dissolved TPH-G concentrations measured in wells in the vicinity of AST # 2 between 2003 and 2005 typically ranged between approximately 100,000 and 150,000 ug/L. During the most recent monitoring event in September 2010, TPH-G concentrations in the same area have diminished to a range of between approximately 10,000 ug/L to 70,000 ug/L.

The TPH-G concentration distribution appears to be aligned north to south with concentrations diminishing to the east and west of AST #2 (Figure 9 provides TPH-G isoconcentration contours). TPH-G concentrations diminish significantly moving towards the south property line although it appears that off-property migration beneath SW 27th Avenue has occurred. Based on the TPH-G concentrations as depicted in Figures 7 and 8, it appears

that dissolved petroleum hydrocarbons in groundwater resulting from the loading rack release and AST #2 release are co-mingled. The extent of contamination above screening levels off-Property to the south of AST #2 has not been adequately defined.

6.0 CONCEPTUAL SITE MODEL

This Conceptual Site Model (CSM) was developed for the Site to provide a summary of Site conditions and exposure pathways. The CSM identifies how the contaminants were released into the environment, how they migrate through the various media and what receptor populations (human and ecological) are at risk. The CSM is based on existing data and is incomplete. Further Site investigation, as outlined in this work plan is required to address data gaps. The CSM will be updated upon completion of the additional investigations. The updated CSM will be provided in the RI/FS report.

The CSM identifies:

- Area of concern
- Contaminants of concern
- Potential sources of contamination
- Affected Media
- Environmental receptors
- Potential Exposure Pathways

This CSM was prepared in general accordance with the American Society for Testing and Materials (ASTM) Standard Guide E1689-95 (2003) *Developing Conceptual Site Models for Contaminated Sites*. The model is based on the data obtained in the historical investigations previously described.

6.1 POTENTIAL SOURCES OF CONTAMINATION

The documented confirmed historical releases at the Site are detailed in Section 4.0 .
The potential sources of contaminants at the Site are LNAPL, petroleum contaminated soils (PCS) and Smear zone PCS in the subsurface immediately west of the truck loading racks and in the vicinity of AST #2. The complete extent of the source area has not been defined.

6.2 AFFECTED MEDIA

This section details the extent of impacts to the environment based on a review of historical investigations. The extent of impacts is segregated based on affected media including surface cover, subsurface soil, sediment, groundwater and surface water. As indicated in Section 6.4,

soil analytical results were compared to the MTCA Method A cleanup levels for screening purposes.

6.2.1 SURFACE COVER

Surface cover throughout the Site consists of the following:

- Four to six inches of asphalt in the loading rack area;
- Two inches of beauty bark in the landscaped areas; and,
- Gravel / sand cover in the tank farm area.

Based on observations during Site visits conducted through third quarter 2010, there is little visual evidence of impact to surface cover (i.e. lack of staining or discoloration).

6.2.2 SUBSURFACE SOIL

Historically, subsurface soil quality has been investigated throughout the Site. The following provides a summary based on a review of subsurface investigations (Figure 6 shows the distribution of historic soil impacts).

Hart Crowser, Inc., Subsurface Petroleum Product Assessment, July 31, 1986

Six monitoring wells (B-1 through B-6, Figure 4) were installed throughout the Site to complete a preliminary assessment of the extent of free product related to the release associated with the loading rack. Borings were advanced north of the tank farm in the general location of the loading rack. The subsurface soils encountered consisted of 8 to 12 feet of gravelly / sandy fill followed by native soils consisting of organic rich clayey-silt to silty-clay.

During the well installation, evidence of product was noted in all borings. In particular, the following was observed:

- A petroleum-like odor was noticed from immediately below the asphalt to a depth of approximately 4 feet.
- A sheen of product was observed on several soil samples collected between 2 and 4 feet.
- Soil saturated with free product in soil samples collected from 7.5 to 10 feet below ground.

No evidence of contamination was observed in soils below the level of the fill (i.e. > 12 feet). Boring logs for the installation of B-1 through B-6 are included in Appendix D of this report.

Hart Crowser, Inc., *Addendum to Subsurface Petroleum Product Assessment Renton Bulk Storage Facility*, September 11, 1986

Four monitoring wells (HA-1 through HA-4, Figure 4) were installed in the landscaping on the north side of the Property to assess migration of free product identified during previous investigations. The subsurface soils encountered consisted of gravelly / sandy fill overlying silty-clay to a maximum explored depth of 7 feet.

Soil samples were not analyzed during this investigation and boring logs (included in Appendix D) do not indicate whether petroleum hydrocarbons were encountered.

Landau & Associates, Inc., *Investigation of Stormwater Detention Pond*, July 15, 2004

Four soil samples were collected from the stormwater detention pond. Samples were collected using a hand auger at various shallow depths. Samples with contaminant concentrations exceeding MTCA Method A cleanup levels consisted of:

- One sample collected from a depth of 0.5 to 1.0 feet contained TPH-G.
- All four samples collected from a depth of 0.5 to 2.5 feet contained benzene.

Boring locations were not indicated in the report. As a result, approximate locations are illustrated on Figure 4. Analytical data for the soil samples collected is included on Figure 5 and Table 9 of this report.

SECOR International Inc., *Subsurface Assessment Report*, May 27, 2005

A total of seven soil borings were advanced (B-1 through B-7, Figure 4). Five of these borings were advanced off-Property, to the south of the tank farm, to assess soils in anticipation of off-Property road improvements planned by the City of Renton. These borings were advanced to a maximum depth of 13 feet. One boring (B-6) was advanced west of the ASTs to a depth of 22 feet in order to assess soil conditions below the fill. The subsurface soils encountered consisted of medium grained sands with some fine to course gravel to a depth of 9 feet, followed by silt/sandy silt to a maximum drilled depth of 22 feet.

Select soil samples were submitted to the laboratory for analysis. Laboratory data did not indicate detections above the laboratory reporting limits, however, the reporting limits for

benzene exceeded the MTCA Method A cleanup level of 0.03 mg/kg. Boring logs for the installation of B-1 through B-7 are included in Appendix D of this report. Analytical data for the soil samples is included on Figure 5 and Table 9 of this report.

Stantec Consulting, *Soil Investigation Report*, October 7, 2009

To further define subsurface soil impacts and to supplement historical assessment data, 17 soil borings (G-1 through G-17, Figure 4) were advanced in the loading rack and tank farm areas. Soil borings were advanced to a maximum depth of 10 feet. The subsurface soils encountered consisted of coarse sand with some gravel and little silt to the maximum explored depth of 10 feet.

Select soil samples were submitted for analysis. Soil samples containing contaminant concentrations exceeding MTCA Method A clean-up levels were observed at depths from one to nine feet. The following indicates the constituents exceeding clean-up levels and their locations (Figure 5 and Table 9):

- Benzene in soils from depths ranging from one to nine feet. The highest concentration was located at depths of 4.5 to 5.5 feet, just west of the center of the loading rack.
- Toluene in soils from depths ranging from 4.5 to 8.5 feet. The highest concentration was located at depths of 4.5 to 5.5 feet, just west of the center of the loading rack.
- Ethylbenzene in soils from depths ranging from four to nine feet. The highest concentration was located at depths of five to six feet west of the loading rack, just north of the process tank.
- Total xylenes in soils from depths ranging from four to nine feet. The highest concentration was located at depths of four to 5.5 feet, just west of the center of the loading rack.
- TPH-G in soils ranging from depths of four to nine feet. The highest concentration was located between depths of five to six feet, west of the loading rack, just north of the process tank.

In summary, analytical data collected throughout the historical investigations indicate that TPH-G and BTEX constituents exceeding MTCA Method A cleanup level were located in soil samples collected west and northwest of the loading rack as well as to the west of AST #2. TPH-G and BTEX concentrations are documented in soil samples as deep as nine feet to the northwest of the loading rack and as deep as 8.5 feet to the west of the loading rack. The highest concentrations of TPH-G and BTEX constituents were documented in boring G-3, at a depth of five to six feet, located west of the loading rack.

TPH-G and benzene concentrations exceeding MTCA Method A cleanup levels were located in shallow soil samples (0.0 to 2.5) collected within the stormwater detention pond.

Figures 4 and 5 and Table 9 provide boring / monitoring well locations and soil analytical data.

6.2.3 SEDIMENT

For the purposes of this report, sediment is defined as material which has separated and settled out from the medium – wind, water, or ice – which originally carried it. Based on the definition, no sediment has been sampled.

6.2.4 GROUNDWATER

Groundwater throughout the Site has historically been monitored with two separate well networks consisting of:

- A monitoring well network associated with the 1986 loading rack release
- A monitoring well network associated with the AST #2 release

The loading rack release well network was monitored from the early 1990s until 2008 by Hart Crowser, Kleinfelder and AME. The AST #2 release well network was regularly monitored by Landau and SECOR / Stantec from 2003 until the present. Both networks consist of monitoring wells screened in the perched groundwater zone at depths of between 5 and 10 feet.

The two networks were combined in 2009 and are currently monitored as one network.

Figures 4, 7, and 8, as well as Tables 6 and 8 provide monitoring well locations and current analytical data.

6.2.4.1 MONITORING WELL NETWORK ASSOCIATED WITH 1986 LOADING RACK RELEASE

The monitoring well network associated with the 1986 loading rack release was initially established in 1986 and 1987 for Mobil Oil. The network of wells consists of (Figure 4):

- B-1 through B-6
- HA-1 through 14

- D-1 through D-8
- W-1 through W-4
- R-1 through R-2

AME's *2008 Annual Groundwater Monitoring and Remediation Report, Former Mobil Renton Terminal #46-080*, June 10, 2009 documents the monitoring and sampling of this well network. This monitoring event represents the last time the well network was monitored independently of the well network associated with the tank farm release. Thirty-two of the 34 groundwater monitoring wells were sampled. The inferred groundwater flow direction was variable; towards the center of the Property near Trench 1 and B-5 and to the northwest towards Trench 2 and W-4.

Groundwater samples exceeded MTCA Method A cleanup levels for concentrations of TPH-G, TPH-D, TPH-O, methy-tert butyl ether (MTBE), and BTEX constituents. The highest concentrations (up to 47,500 µg/L for benzene) are documented in three general locations:

- Northwest of AST #2
- West of the loading rack and north of the AST containment area
- Northwest of the Property near Trench #2
- No liquid phase product was measured in any of the wells monitored

6.2.4.2 MONITORING WELL NETWORK ASSOCIATED WITH THE AST #2 RELEASE

This well network was established to recover released product and to monitor groundwater quality in the vicinity of AST #2 and AST # 3. The wells were installed in 2002 to 2005 and in 2009. The network of wells consists of (Figure 4):

- RW-1 through RW-7
- HA-15 through HA-20
- LAI-1 through LAI-16
- HWx-1E and HWx-1W

- RWx-2, RWx-5, and RWx-7
- B-1 through B-7
- G-1 through G-17

Stantec's *Quarterly Groundwater Monitoring Report – Third Quarter 2009, ConocoPhillips Facility No 3485 (RM&R #3485)*, January 11, 2010 documents the monitoring and sampling of the network of wells. This monitoring event represents the last time the well network was monitored independently of the well network associated with the loading rack release. Thirteen of the existing 31 wells were sampled. The remaining wells were only gauged to aid in determining an accurate groundwater gradient. The inferred groundwater flow direction was variable; towards the south-southeast and to the northwest. Groundwater samples exceeded MTCA Method A screening levels for concentrations of TPH-G, TPH-D, TPH-O, and BTEX constituents. The highest concentrations are documented in two general locations:

- The area between ASTs # 1, # 2, and # 3 (benzene 28,300 µg/L, TPH-G 191,000 µg/L)
- The off-Property area south of AST #2 (benzene 3,710 µg/L, TPH-G 9,530 µg/L)

No liquid phase product was measured in any of the wells monitored.

6.2.4.3 INTEGRATED MONITORING WELL NETWORK

The two monitoring well networks were integrated in 2010 and monitored as a single network. Two groundwater monitoring events were conducted in 2010, one in March and the other in September. Monitoring the two networks as one integrated network provides a more complete understanding of contaminant distribution, groundwater flow direction and groundwater gradient.

During the September 2010 groundwater monitoring event, thirty-three of the sixty-one monitoring wells were sampled. The remaining wells were gauged to aid in determining a groundwater flow direction. The inferred groundwater flow direction was inconsistent throughout the site (i.e. to the northwest at a gradient of 0.0075 feet per foot and to the south-southeast at a gradient of 0.0066 feet per foot). These results are consistent with previous monitoring events. The gradient divide is at the approximate center of the Property.

Groundwater samples exceeded MTCA Method A screening levels for concentrations of TPH-G, TPH-D, TPH-O, and BTEX constituents. Results are provided on Figure 9 and documented in Tables 6 and 8. Results were consistent with historical trends and indicated the highest contaminant concentrations were in the following areas:

- Southeast of AST # 2 (benzene 14,600 ug/L and TPH-G 69,700 ug/L)
- West of the loading rack and north of the AST containment area (benzene 12,500 ug/L and TPH-G 30,700 ug/L)
- Northwest of the Property near Trench 2 (benzene 8,190 ug/L and TPH-G 44,100)

LPH was present in the area west of the loading rack and north of the AST containment area. Four wells (R-1, B-4, B-5 and B-3A) contained LPH in thicknesses varying from 0.02 feet to 0.46 feet.

6.2.5 SURFACE WATER

The nearest surface water is a stormwater detention pond located southeast of the tank farm. A wetland is located to the west of the facility operations. Wetlands are also located south of the Property (across 23rd Avenue) and east of the Property (across Lind Avenue). No samples have been collected from the surface water in the wetlands. Surface water in the pond was sampled in 2004. Results of the sampling indicated concentrations of benzene and TPH-G above the MTCA Method A cleanup levels.

6.3 AREA OF CONCERN

The Area of Concern (AOC) comprises:

- The Site
- Surrounding areas potentially impacted by on-Property impacts
- Surrounding areas with activities that may result in impacts to the Site

Based on soil data and recent groundwater monitoring results, the primary area of impact on Site is approximately 400 feet wide, extending south to north for approximately 700 feet between monitoring wells LAI-10 and HA-10. Soil data indicates impacts in the same area at depths ranging between 4.5 and 9.5 feet. These results indicate soil impacts are a result of fluctuation of impacted groundwater resulting in a smear zone effect.

6.4 CONTAMINANTS OF CONCERN

Based on results of historical investigations, the contaminants of concern are TPH-G, TPH-D, and TPH-O, as well as benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl-tert

butyl ether (MTBE). Concentrations of these primary contaminants have been compared to the MTCA A cleanup levels for screening purposes and to define their distribution. The MTCA Method A cleanup level does not represent the target clean-up level for the Site as the cleanup levels have not yet been defined. Figures 5, 7, and 8 present soil and groundwater analytical results and the distribution of contaminants throughout the Site.

6.4.1 CONTAMINANT DISTRIBUTION

Generally, the highest contaminant concentrations in soil and groundwater are located in the following two areas:

- West of the loading rack
- Southwest of AST #2

Historic analytical data suggest that impacted groundwater and associated impacted soil is distributed roughly along a northwest-southeast axis with the greatest contaminant concentrations in the vicinity of the most significant release points (loading rack and AST # 2). At these two release sites, LNAPL is still present depending on seasonal fluctuation of groundwater. Seasonal fluctuation of groundwater has also created a petroleum containing soil (PCS) smear zone in which LNAPL has been spread vertically through the soil column. Based on available data, the LNAPL plume and extent of PCS appear to be limited to areas near each release site. The full extent of the PCS smear zone will be addressed as part of these RI/FS activities.

6.4.1.1 CONTAMINANT DISTRIBUTION IN SOILS

Soil has been analyzed from a depth of 1.5 to 9 feet in locations from the south Property boundary (B-4 and B-5) and north to the adjacent Olympic Pipeline Company (G-8). The highest concentrations, primarily TPH-G (5,000 mg/kg) and benzene (14.9 mg/kg), are documented at depths of between four and nine feet in the area west of the loading rack.

Fluctuations in the groundwater level accompanied with the northwest / southwest groundwater gradient (as described in Section 2.4) have been the primary contributors to distribution of contaminants in the Site's subsurface. Soil samples containing elevated TPH-G and benzene levels were collected from within the groundwater smear zone.

During the surface water sampling of 2004 in the stormwater detention pond, samples of the soil within the pond were collected. Samples were collected from the surface to a depth of 2.5 feet. All soil samples collected exceeded the MTCA Method A screening levels for benzene and only one sample collected from 0.5 to 1.0 feet exceeded the MTCA Method A screening levels for TPH-G.

Figure 6 illustrates the soil TPH-G contamination plume. Figure 5 and Table 9 provide the soil analytical results.

6.4.1.2 CONTAMINANT DISTRIBUTION IN GROUNDWATER

The integrated groundwater monitoring well network provides groundwater quality information throughout the Property and in off-Property areas to the north and south. The highest contaminant concentrations, primarily TPH-G and benzene, are documented in groundwater collected west of the loading rack and to the southeast of AST #2 (historic release locations). The most recent groundwater monitoring event in August 2010 indicated the presence of LPH (0.02 to 0.46 feet) in wells B-3A, B-4, B-5, and R-1 which are located to the west of the loading rack.

Groundwater containing concentrations of contaminants exceeding MTCA Method A screening levels appears to have migrated from the release points to the northwest and southeast. Contaminant concentrations diminish with increased distance from the release points. Full delineation of the groundwater plume has not been completed. Figure 9 illustrates the TPH-G and benzene concentration plumes. Figures 7 and 8 and Table 6 and 8 provide the groundwater analytical results.

6.4.1.3 CONTAMINANT DISTRIBUTION IN SURFACE WATER

In 2004, surface water was sampled from the stormwater detention pond located southeast and adjacent to the Property. The stormwater detention pond was fairly dry when sampled and contained puddles displaying a slight sheen. One sample was collected and analyzed for TPH-G and BTEX constituents. Results indicated concentrations exceeding MTCA Method A cleanup levels.

The stormwater detention pond is periodically inspected for indications of impact (sheen, odors, discoloration). No indications of impact have been observed since 2004.

Surface water in the wetlands surrounding the Property to the east, west and south has not been sampled.

6.4.1.4 CONTAMINANT DISTRIBUTION IN SEDIMENTS

Sediments have not been sampled.

6.5 EXPOSURE PATHWAYS AND RECEPTORS

Based on the current and future Property use, it is most appropriate to use an industrial exposure scenario for the Site.

6.5.1 HUMAN RECEPTORS

On-Site facility workers and construction workers are the only human receptors. The following exposure scenarios were considered:

- Direct contact with impacted groundwater
- Groundwater ingestion
- Direct contact with impacted surface water
- Inhalation of vapors in buildings
- Inhalation of vapors in outdoor air
- Direct ingestion of soil

6.5.1.1 GROUNDWATER – DIRECT EXPOSURE

Given the depth of groundwater (4.5 to 13.5 feet), direct contact (including ingestion) is unlikely. No groundwater supply wells exist on the Property. Future installation of water supply wells is highly unlikely since adequate potable water is provided to the Property by the City of Renton's municipal water supply system.

Based on review of well logs filed with the State, the nearest existing potable water supply well is located approximately 4,000 feet east-northeast of the Property. It is unlikely that contaminants from the Site extend east-northeast to the water supply well. In addition,

contaminants associated with the Site are documented in groundwater at depths of 4.5 to 13.5 feet; the water supply well pumps from a depth of 30 to 50 feet.

This pathway is considered incomplete.

6.5.1.2 INDOOR AIR – INHALATION OF VAPORS

There is a potential for vapors volatilized from petroleum hydrocarbons in the subsurface to accumulate beneath the concrete floor slabs of the Site buildings. Vapors could potentially migrate through the slab, into the buildings.

Further delineation of existing impacts is required to determine if the subsurface beneath the buildings is impacted. This exposure pathway is currently undetermined.

6.5.1.3 AMBIENT AIR – INHALATION OF VAPORS

With the exception of the AST tank farm, the Site is covered by buildings or paved surfaces. The risk of migration of contaminants in the vapor phase from the subsurface to ambient air is low in the paved areas or areas covered by buildings. The risk is increased in the tank farm area because bare soil comprises the surface cover.

This pathway is considered complete.

6.5.1.4 SOIL – DIRECT EXPOSURE AND INGESTION

In general, shallow soil samples have contained contaminant concentrations that were very low or below laboratory reporting limits (benzene <0.0411 mg/kg). Soil impacts at depth are present and could be encountered during excavation activities. Therefore this pathway is considered incomplete for facility workers and complete for excavation workers.

6.5.1.5 ECOLOGICAL RECEPTORS

There are no ecological receptors on the developed portion of the Property. The wetlands in the vicinity of the Site may contain ecological receptors.

The wetlands contain numerous organisms from insects to birds which represent potential ecological receptors. The wetlands are typically dry during the summer and fall and wet during the winter and spring. Therefore, aquatic organisms are not continually present in the wetlands, and potential ecological receptors are likely limited to birds, insects and small reptiles.

According to a 2009 report released by the Washington State Department of Transportation (WSDOT), native plants were re-introduced to the wetlands to attract new species of wildlife; blue herons are apparently taking advantage of their new habitat. Wetlands restoration efforts are underway in the area to remove wetland fills to improve water quality and enhance hydrologic function.

6.6 CLEANUP SCREENING LEVELS

Cleanup levels specified in MTCA are categorized as Methods A, B, or C (WAC 173-340-700). Method A cleanup levels apply to soil, groundwater, and surface water media and are intended for routine site cleanups. Cleanup levels under Method A are available for the more commonly found contaminants among the hundreds of potential hazardous substances. Tables of the MTCA Method A cleanup levels are available for potable groundwater, unrestricted land use (includes residential) soil, and Industrial land use. Method A cleanup levels for these media must be at least as stringent as concentrations established under applicable state and federal laws.

Unlike for groundwater and soil, the regulation does not provide a table of Method A cleanup levels for surface water. Method A groundwater concentrations must be protective of surface water beneficial uses (if the pathway for surface water-groundwater is complete). Surface water Method A cleanup levels must be at least as stringent as concentrations established under applicable state and federal laws and other requirements (WAC 173-340-730(2)).

Cleanup levels under Method B are established using applicable state and federal laws and the risk assessment equations and other requirements specified in the MTCA Rule for each medium. In addition to accounting for human health impacts, Method B cleanup levels must account for any potential terrestrial or aquatic ecological impacts (unless it can be demonstrated that such impacts are not a concern at the site). Ecology's Cleanup Levels and Risk Calculations (CLARC) database contains precalculated/established levels for hazardous substances in the various media. The CLARC database does not contain cleanup levels for all exposure pathways, such as soil concentrations protective of groundwater and/or surface water.

In contrast to Method B, Method C cleanup levels are intended for industrial sites where exposure to potential contaminants is limited and controllable. As under Method B, potential terrestrial and aquatic ecological impacts must be accounted for in addition to human health impacts when establishing Method C cleanup levels.

For the purposes of this work plan, the analytical results are compared to the Method A Cleanup levels because Ecology recommends this approach as part of the RI screening process. However, future use of the Site is intended to remain industrial and less stringent industrial cleanup levels may eventually apply to the Site. Final cleanup levels will be presented in the Draft Cleanup Action Plan (DCAP).

7.0 ASSESSMENT OF EXISTING SPILL PREVENTION STRUCTURES

7.1 TANK FARM CONTAINMENT DIKE

7.1.1 GENERAL INFORMATION

Secondary containment for the tank farm area is provided by an earthen dike that extends across the perimeter of the AST area. The dike is constructed primarily of impermeable soils (clays or silty clays) and overlain by a layer of crushed gravel. The dike is roughly trapezoidal in cross sectional shape and is approximately 5.5 feet in height, two feet in width at the top and 22 feet in width at the bottom. The dike slopes upwards from the ground surface at an angle of approximately 28.6 degrees along both the inside and outside walls.
Personnel access into the tank farm is provided by a series of metal staircases constructed over the containment dike.

7.1.2 CONTAINMENT DIKE CAPACITY ANALYSIS

As per Washington Administrative Code (WAC) 173-303-640(4)(e), secondary containment systems such as the earthen dyke at the Site, must be of sufficient capacity to contain the contents of the largest tank in the containment area plus the stormwater generated in 24 hours by a 25-year storm event.

Based on dimensions estimated from Site maps and available drawings, the approximate capacity of the containment dike is 612,710 cubic feet. The maximum overfill capacity of Tank No. 1, the largest AST in the tank farm, is 328,664 cubic feet. According to data obtained from the Western Regional Climate Center (WRCC), the 24-hour rainfall from a 25-year storm event in the Renton, WA area is 35 tenths of an inch (3.5 inches). Thus, the stormwater that would accumulate in the containment area in 24 hours from a 25-year storm event is approximately 32,492 cubic feet. Therefore, under WAC 173-303-640(4)(e), the minimum volume of required secondary containment for the ASTs at the Renton Terminal is approximately 361,137 cubic feet. The capacity provided by the earthen dike containment system is therefore 170% of the minimum required capacity indicating that the containment system is sufficient for the current AST schedule at the Site.

Exhibit B of the Agreed Order specifies an engineering analysis of the dike. An approach for this analysis is specified in Section 8.5.

7.2 STORM WATER RETENTION POND DIKE

A surface water containment dike was installed in the southwest corner of the stormwater retention pond on November 2003 by Landau. The stormwater retention pond stores drainage water from a ditch running off-Property in a north to south direction along Site's east property line. Figure 2 shows the dike location with respect to the stormwater retention pond. In March 2003, LPH was reportedly observed in the pond and it was assumed the source of the LPH was associated with the release from AST #2 and had entered the pond from near the pond's southwestern corner.

A dike was installed as a contingency measure to limit the potential for LPH to migrate from the Site and into the pond. The dike is essentially a three foot high concrete wall constructed of pre-cast concrete. It is situated at the west end of the pond and is designed to prevent potentially impacted water and LPH originating from the Site from entering the pond from west.

Based on a review of the dike design drawings and a visual inspection, it appears the dike is stable and is functioning as designed. LPH has not apparently been observed in the storm water retention pond since installation of the dike in 2003 therefore the dike appears to have performed as intended.

8.0 DATA GAPS AND ADDITIONAL WORK REQUIRED

Based on a review of the remedial investigation work completed to date, several data gaps have been identified. The following section outlines the data gaps and specifies a scope of work necessary to address the data gaps.

A Sampling and Analysis Plan (SAP) (Attachment E) provides the detailed approach for implementing the scope of work related to soil, sediment, groundwater and surface water sampling including the analytical program. A Quality Assurance Project Plan (QAPP) (Attachment F) establishes quality control and quality assurance procedures (QA/QC) for the SAP.

Supplemental information is required to address the data gaps associated with the following:

- Hydrogeologic Conditions
- Delineation of LNAPL and associated Smear Zones
- Delineation of dissolved contaminants in groundwater
- Delineation of Soil Impacts
- Adjacent Wetlands
- Stormwater Retention Pond
- Off-Property Conditions – Contaminant Migration and/or Potential Sources;
- Tank Farm Containment Dike
- Pilot and/or bench scale tests to evaluate potential remedial alternatives (presented in Section 9.0 – Feasibility Study)

8.1 GROUNDWATER FLOW AND CONTAMINANT TRANSPORT MODELING

Cleanup action at the Site requires a thorough understanding of the Site's hydrogeologic conditions. Data accumulated to date provides a partial understanding, however, to ensure effective Site remediation, groundwater modeling is recommended.

8.1.1 GROUNDWATER MODELING

To evaluate the long-term remediation goals and strategies for the Site, a numerical groundwater flow and contaminant fate and transport model of the Site is proposed. The calibrated model will then be utilized to predict effectiveness of remediation strategies for the

Site. It is expected that a majority of the on-Site hydrogeologic and chemical data that will be used in the evaluation will be: 1) data collected during Site investigation, groundwater monitoring, and remediation system performance monitoring, 2) data collected from pressure transducers installed in the groundwater monitoring network, and 3) data collected during aquifer testing activities.

The intent of the model is not to fully evaluate hydrogeologic conditions, but to provide a tool that allows for correlation between groundwater data (i.e., groundwater elevation, drawdown, chemical concentration and migration, etc.) observed at the Site and groundwater data predicted by the model. Target values and ranges and modeling scenarios will be developed based on this assumption. Once the model has been calibrated to target values and ranges, groundwater flow, remediation system effectiveness, and contaminant transport will be generally evaluated by modeling groundwater flow scenarios based on simplified assumptions related to groundwater elevation, on-Site pumping, and remediation alternatives.

Specific tasks to be completed during the groundwater modeling study are presented below.

Task 1a. Hydrogeologic Setting

An evaluation of the hydrogeologic setting will be completed by conducting a thorough review of pertinent documents regarding the hydrogeologic setting beneath the Site and vicinity. This will include, but not be limited to, USGS publications, State of Washington publications, documents related to groundwater and hydrogeologic work conducted at and near the Site, and previous site investigations.

Task 1b. Aquifer Testing

Aquifer tests will be completed to further evaluate the hydrogeologic conditions beneath the Site. The testing will include pumping tests during which selected monitoring wells will be monitored. Two separate areas will be tested; one within the footprint of the northern BP remediation system and a second location within the footprint of the COP remediation system. Should a deeper aquifer be identified at the site, monitoring wells selected for testing will be located near the proposed "deep" wells to determine if the aquifers are connected. Data collected during aquifer testing will be analyzed to determine aquifer characteristics (i.e.,hydraulic conductivity and storativity) and hydraulic connectiveness between aquifer zones.

Results of the pumping test and drawdown in adjacent wells will also be used to assist in the remedial design (described in Section 9.0 Feasibility Study).

Task 1c. Data Analysis/Model Target Setup

Data sets will be utilized to establish target values and trends for model calibration and validation. The data sets will be assembled from existing data collected during groundwater monitoring and sampling data, remediation system performance monitoring data, and aquifer testing data, a data set of groundwater elevation and chemical of concern (COC) concentration values.

The primary goal of developing the numerical flow and contaminant fate and transport model is to obtain a reasonable correlation between the simulated and observed hydraulic conditions (i.e., targets). Subsequent to reviewing data collected during the aquifer testing activities and results of previous Site activities, target sets for calibration of the groundwater flow and contaminant fate and transport model (both steady-state and transient) will be selected.

Task 1d. Conceptual Model

The conceptual model included in this RI/FS workplan will be updated with information collected during the evaluation of the hydrogeologic setting and data collected during aquifer data analysis activities. Updates to the conceptual model will include conclusions regarding hydrostratigraphy of the aquifer, hydraulic conductivity zones and ranges within the aquifer, responses to stress (i.e., pumping, recharge, etc), aquifer thickness, groundwater flow and gradient direction, and contaminant fate and transport. The updated conceptual model will be the basis for groundwater modeling efforts to be conducted at the Site.

Task 2. Groundwater Flow Model

The purpose of developing a groundwater flow and contaminant transport model is to further evaluate groundwater flow and contaminant transport beneath the Site and to evaluate the effectiveness of current remediation operations. The groundwater flow model will also be utilized during feasibility study activities to further evaluate contaminant flow and transport and evaluate remediation options.

Groundwater modeling efforts will be completed in stages. Subsequent to completing each stage, the need for further modeling efforts will be evaluated. It is initially anticipated Groundwater Vistas can be utilized to develop a three-dimensional groundwater flow model utilizing the USGS Modular Three Dimensional Finite-Difference Groundwater Flow Model (MODFLOW or MODFLOW-Surfact) program. It is assumed that the model domain will be limited to the Site and an area extending one mile in radius from the Site or locations of natural occurring hydrogeologic boundaries, whichever is closer.

Task 3. Contaminant Fate and Transport Model

To evaluate the potential of contaminated groundwater migrating to off-Property receptors, a contaminant transport model (either MT3DMS® with MODFLOW or MODFLOW-Surfact/MODHMS) will be developed. The discrete solute transport parameters of the aquifer including bulk density, distribution coefficient (Kd), dispersivity, and porosity will be used to simulate advection, dispersion, and chemical reactions of chemical of concern in groundwater.

Task 4. Remediation Option Evaluation/Effectiveness

Subsequent to calibration of the groundwater flow and contaminant fate and transport model, the model will be used to evaluate various remediation strategies for the Site. Remediation strategies to be considered for evaluation by modeling are detailed in Section 9.0 of this report.

Task 5. Sensitivity Analysis

The purpose of the sensitivity analysis will be to further evaluate the effect input parameter values have on results predicted by computer modeling and if the sensitivity of model predictions to groundwater parameters warranted further evaluation. The analysis will be conducted on input such as minimum hydraulic conductivity and storativity. Depending on the confidence level of other input values, sensitivity of contaminant fate and transport to changes in specific values, and/or availability of Site specific values, additional sensitivity analysis may be performed. Utilizing the model, the main groundwater input parameters will be varied (hydraulic conductivity, storativity, contaminant source concentration, contaminant source mass, etc) plus and minus 0.5 times the input value utilized for the calibrated models.

Task 6. Reporting

Results of the groundwater modeling study will be provided as a separate report submitted as an attachment to the RI/FS report. The report will provide a detailed description of the groundwater flow and contaminant fate and transport model. The report will also include pertinent figures and tables describing the results of the groundwater modeling study. The report will be a formal technical document and will present the values, methods, and results of the groundwater modeling study. The modeling report will also include all information collected during Tasks 1 through 5 and include recommendations for additional and/or alternative remediation actions, as appropriate.

8.2 DELINEATION OF DISSOLVED CONTAMINANTS IN GROUNDWATER – HORIZONTAL PLANE

Groundwater quality in the horizontal plane in the unconfined aquifer has not been fully delineated. Delineation is required to assess the potential for off-Property impacts and to design a remedial approach.

Further delineation of groundwater quality is required at the edges of the Site in all directions (north, east, west and south). Details of the gaps in groundwater delineation and recommended assessment to fill the gaps are provided as follows:

North

As indicated by impacts recorded in MWs HA-9, HA-10, and HA-11 (Figure 11) situated off-Site near the northwest limits of the Property, impacted groundwater has not been fully delineated to the north.

Delineation wells MW-11, MW-12, MW-13, and MW-14 are recommended in the locations indicated on Figure 11. Wells MW-11, MW-12, and MW-13 will be situated on property owned by the Olympic Pipeline Company (Olympic). It will therefore be necessary to secure access from Olympic. MW-14 will be situated in the Property's access road. Further delineation may be required if the newly installed wells do not fully delineate the impacts.

Should the groundwater in the off-Property wells be impacted, selected groundwater samples will be selected for fingerprinting analyses. These analyses may help discern the source of the impacts (i.e. releases from the Site or from the Olympic Pipeline).

West

Impacts recorded in previously installed MWs D-1, D-6, and D-7 indicate impacted groundwater has not been fully delineated to the west in the vicinity of the office and the tank farm vapor recovery system. Two additional monitoring wells (MW-9 and MW-10) are recommended in the locations shown on Figure 11.

MW-9 will serve to delineate impacts west of the office building and will provide an indication of groundwater quality beneath the office building in concert with MW-10. D-1R is recommended to replace D-1. Further delineation may be required if the newly installed wells do not fully delineate the impacts.

Results of delineation work in this area will provide the data needed to determine if the vapor migration to indoor air exposure pathway is complete.

South

Impacts in previously installed MWs LAI-1, LAIx-2, and LAIx-3 indicate impacted groundwater is not fully delineated off-Property and directly south of AST #2 (the source of the 2002 release). Delineation well MW-1 is recommended to further delineate the southern extent of the impacts. Should further delineation be required, it may be necessary to install MW-2 south of SW 27th Street.

East

Groundwater impacts are not sufficiently delineated immediately east and northeast of the loading rack. Groundwater quality information in this area is important to monitor current performance of the groundwater remediation systems and to assist in the design of the future remediation system. Installation of two additional wells (MW-7 and MW-8) in the locations shown is recommended.

Groundwater quality at the east limits of the Property is monitored by HA-4, D-5, D-4, HA-14, and HA-13. Monitoring wells D-4 and D-5 were completed to shallow depths of 6.0 feet (D-4) and 6.9 feet (D-5) and do not produced adequate groundwater to adequately characterize groundwater at the east limit of the Property. The wells should therefore be replaced with wells installed to a greater depth to ensure sufficient groundwater for sampling. Installation of two new wells (D-4R and D-5R) in the locations shown on Figure 11 is recommended. The wells will be installed to a depth of approximately 10 feet to allow sufficient groundwater for sampling.

Should impacted groundwater be detected in monitoring wells D-4R and D-5R, further delineation to the east may be necessary. Three off-Property monitoring wells (MW-4 through MW-6) may be required in the locations shown on Figure 11 to characterize groundwater quality off-Property and to the east. Off-Property monitoring well MW-3 is recommended to delineate impacts detected in HA-14.

The sampling and analysis plan provides details of the sampling method and choice of analytical constituents.

8.3 GROUNDWATER – VERTICAL PLANE

Historical assessments have mainly targeted the shallow aquifer situated in the contact zone between the structural fill and native material at a depth of between eight and 12 feet. However, one boring (B-6 located east of the tank farm near the west property line) was advanced to a depth of 22 feet to explore subsurface conditions beneath the structural fill. Soils encountered during drilling boring of B-6 consisted of structural fill to a depth of nine feet followed by a silt/clay layer with silty sand inclusions to the maximum drilled depth of 22 feet. Groundwater was not encountered during drilling of B-6.

Given the potential for the perched groundwater to be discontinuous across the Site, the contaminant source or impacted groundwater may have migrated to lower saturated zones. It is therefore recommended that subsurface conditions be explored to a deeper depth. To confirm the existence (or lack of) a deeper aquifer and to verify groundwater quality and hydraulic gradient should a deeper aquifer be identified, it is recommended that three borings (DW-1,DW-2, and DW-3) be advanced in the locations shown on Figure 11. One boring will be advanced near the southeast corner of AST #2 (DW-1), one boring will be advanced west of the loading racks (DW-2), and one boring will be advanced near LAI-14. The borings will be advanced to a depth of approximately 60 feet. The final depth will be chosen based on the stratigraphy encountered during drilling and field screening using a PID. Drilling will be completed using dual-tube sonic drilling equipment or with a hollow stem auger rig and conductor casing to prevent cross-contamination of a potential deeper aquifer and the upper perched aquifer.

Should an impacted deeper aquifer be identified, further delineation will likely be required.

8.4 LNAPL, SMEAR ZONE, AND PETROLEUM CONTAMINATED SOIL

Further delineation of LNAPL, PCS, and smear zone PCS is required for the following purposes:

- Fully evaluate the risk to human health and the environment from the various soil to receptor pathways
- Fully characterize the distribution and extent of the contamination
- Assist in the design of a conceptual site model
- Evaluate the effectiveness of historical operation of the SVE system in the vicinity of AST #2
- Assist in the design of the final remedial prescription

Historical assessments have provided some delineation of PCS but very little delineation of LNAPL or smear zone PCS.. Soil sampling will be conducted during drilling to install monitoring wells to further delineate PCS along the perimeters of the plume(s). Additionally, soil borings G-18 through GP-39 will be advanced in and around the contaminant plume(s) to further delineate LNAPL, PCS, and smear zone PCS. The borings will be advanced using a direct push probe. Laser Induced Fluorescence or a PID will be used to measure the thickness of the LNAPL and smear zone.

8.5 ASSESSING ADJACENT WETLANDS

Assessment of the soil, surface water and sediments in the adjacent wetlands is specified in Exhibit B of the Agreed Order.

The potential for impacts to the adjacent wetlands is greatest in the area northwest of the facility. It is therefore recommended that soil, surface water and sediment samples be collected in the wetlands in this area to confirm they have not been impacted and to fulfill Ecology's request. Figure 11 shows the proposed sample locations.

The potential for impacts to the wetlands situated west, south and east of the facility is low given that there is no evidence that on-Property impacts have migrated a significant distance in those directions. The delineation investigation suggested in this work plan will confirm the extent of impacts to the west, south and east. Should delineation results indicate the potential for impact, the wetlands in those areas will be assessed.

The wetlands are typically flooded during the wet season (November through April). For this reason the surface water and sediment samples should be collected during the wet season. The soil samples should be collected at the end of the dry season during the months of either July or August. The Sampling and Analysis Plan provides details of the sampling method and choice of analytical constituents.

8.6 SURFACE WATER AND SEDIMENT QUALITY – STORMWATER DETENTION POND

Assessment of the stormwater detention pond located off-Property and adjacent to the southeast corner of the Property is specified in Exhibit B of the Agreed Order.

A surface water sample and soil samples from hand augured borings adjacent to the pond were collected in 2004. The precise location of the soil and water samples is undetermined. Analytical results indicated the water and soil samples contained petroleum hydrocarbon concentrations above the MTCA Method A cleanup levels.

Surface water and sediment samples will be collected to update the results from the 2004 sampling event. Sediment samples will be collected from the west, north and south banks of the pond in the locations shown on Figure 11. A surface water sample will be collected from a location just east of the dike. Sampling will be conducted during the rainy season (November to April). The Sampling and Analysis Plan provides details of the sampling method and choice of analytical constituents.

8.7 ENGINEERING AND STABILITY ANALYSIS OF TANK FARM CONTAINMENT DIKE

The secondary containment for the tank farm was reviewed for capacity and inspected for general condition. An engineering assessment and stability analysis is prescribed as part of the Agreed Order.

The geotechnical stability of the existing dike will be evaluated using the limit equilibrium analysis method. Input soil parameters / properties will be assessed from existing boreholes located adjacent to or in the vicinity of the dike. Visual observations and simple measurements will be carried out to determine the geometry and configuration of the dike. Sensitivity analyses will be completed to incorporate the uncertainty and inherent heterogeneity associated with soil deposits. Ultimately, the Factor of Safety (FoS) against instability of the dike will be determined, both for static and seismic conditions with different earthquake return periods. For FoS determined below a prescribed threshold value, preliminary analyses/evaluations will be completed to determine the potential impact and possible remedial solutions (if required).

Results of the stability analysis will be summarized in a report provided as an attachment to the RI/FS report.

9.0 FEASIBILITY STUDY WORK PLAN

9.1 INTRODUCTION

The Agreed Order specifies the preparation of a Feasibility Study (FS). The following is an excerpt from the Agreed Order regarding the FS:

'Prepare a feasibility study to develop and evaluate cleanup action alternatives that will be used to support the selection of a cleanup action for the Site. As per MTCA WAC 173-340-360, this plan will collect data needed to evaluate alternatives that will meet the threshold requirements for cleanup actions, and will include using permanent solutions to the maximum extent practicable, and providing for a reasonable restoration time.'

MTCA WAC 173-340-360 references other regulations including MTCA WAC 173-340-350 which specifies Ecology's expectations of scope to be included in a FS. This FS work plan is designed to meet the requirements specified in the regulations.

9.2 OBJECTIVES AND SCOPE OF SERVICES

9.2.1 REGULATORY FRAMEWORK

MTCA 173 340 350(8) specifies the following purpose for conducting a FS:

'The purpose of the feasibility study is to develop and evaluate clean-up action alternatives to enable a clean-up action to be selected for the Site. If concentrations of hazardous substances do not exceed the cleanup level at a standard point of compliance, no further action is necessary'.

The regulation suggests an initial screening of alternatives to reduce the number of alternatives for the final detailed evaluation and provides the general requirements for the feasibility study.

9.2.2 SITE-SPECIFIC OBJECTIVES AND APPROACH

Interim remedial action has been ongoing at the Site since 2002. This interim action has been primarily focused on product recovery. The bulk of the released product has been recovered from the groundwater although LPH remains in a limited number of monitoring wells in the vicinity of the loading rack. Soil remediation has been implemented through the operation of

the SVE system in the vicinity of the AST #2 release. No soil remediation efforts have been implemented in the vicinity of the loading rack release.

Future remediation will progress in the following overlapping phases:

- Recover remaining free product and continue to prevent off-Property migration of contaminants
- Site-wide remediation of soil and groundwater to practically achievable clean-up levels
- Targeted remediation of residual impacts

A preliminary screening of remedial technologies to implement phased remediation is detailed in the following sections. A full screening and selection requires that the following data gaps be addressed:

- Presence/absence of a deeper aquifer is unknown
- Full delineation of soil and groundwater impacts has not been completed
- Incomplete hydrogeologic data
- Determination of clean-up levels and point of compliance

Implementation of this RI/FS work plan will address these data gaps and allow a full evaluation of remedial alternatives in the RI/FS report. Pilot or bench-scale studies of select remedial technologies will be completed as part of this feasibility study to evaluate the potential effectiveness, practicability and cost of potential remedial actions.

Further evaluation of remedial technologies beyond what is described in this work plan may be required and will be discussed in the RI/FS report.

9.3 SCREENING CRITERIA

Criteria for evaluation of cleanup action alternatives are listed in WAC 173-340-360. These criteria include four threshold criteria (WAC 173-340-360(2)(a):

- Protective of human health and the environment
- Complies with cleanup standards
- Complies with applicable state and federal laws
- Provides for compliance monitoring

Any clean-up action alternative that fails to meet one or more of these threshold criteria was excluded from further screening. Each of the alternatives that achieved these threshold requirements were then evaluated further on the following criteria (WAC 173-340-360(2)(b):

- Permanence
- Long-Term Effectiveness
- Management of Short-Term Risks
- Technical Implementability
- Administrative Implementability
- Cost
- Consideration of Public Concerns

Comparison of each of the alternatives to the threshold criteria is provided in tabular form in Section 9.6.

9.4 IDENTIFICATION OF ALTERNATIVES

The following six clean-up alternatives were chosen for initial screening:

- Groundwater Extraction and Treatment and Soil Vapor Extraction (GWET/SVE)
- Air Sparging and Soil Vapor Extraction (AS/SVE)
- In-Situ Chemical Oxidation
- Monitored Natural Attenuation
- Institutional Controls
- No Action

The remedial actions will be applied in phases with some overlap principally during the initial period.

A better understanding of the appropriate approach will be gained once the previously identified data gaps have been addressed. Pilot and bench scale testing of the alternatives is recommended once the data gaps have been addressed and the groundwater modeling is completed.

The following section provides a description of each proposed remedial action and its applicability to the Site.

9.4.1 COMBINED GROUNDWATER EXTRACTION AND TREATMENT AND SOIL VAPOR EXTRACTION (GWET/SVE)

Groundwater Extraction

In general, the groundwater extraction portion of a combined GWET system is designed to remove groundwater and liquid-phase product (if present) through a series of extraction wells. The system then separates the liquid phase product from the water and passes water through a treatment device (e.g., granulated activated carbon). From this point, the treated water is discharged to surface water, storm sewer or publicly owned treatment works (POTW). The liquid phase product is directed to a holding tank and typically removed in batches using a tanker truck. The groundwater extraction portion of the technology has three components: groundwater extraction, groundwater treatment, and treated groundwater discharge. These components are discussed individually as follows:

Groundwater Extraction - Most commonly, vertical wells screened in the contaminated zone are used for extraction and equipped with submersible pumps.

Groundwater Treatment - Removal of VOCs from groundwater is generally accomplished by partitioning them to air (air stripping), or solids (granular activated carbon), or by destruction (UV oxidation).

Groundwater Discharge - Treated water effluent may potentially be discharged through piping directly to surface water, indirectly to a storm water system, to a POTW or re-injected to the subsurface through up-gradient wells, galleries or basins.

Soil Vapor Extraction

Advantages

- Established technology
- Effective at removing free-phase contaminants
- Technology can be used for a variety of contaminants (VOCs, SVOCs and metals)
- May be used as a hydraulic barrier to prevent off-Property migration of contaminant plumes

Disadvantages

- Attainment of cleanup levels may take a very long time. Not generally cost effective as contaminant concentrations decrease.
- Pumping depresses the groundwater level leaving residuals absorbed to soil. When groundwater level returns to normal level, contaminants absorbed to soil may become dissolved (resulting in a rebound of contaminant concentrations in groundwater).
- GWET technology may not be feasible for sites with low-permeable zones (less than about 10^{-5} cm/sec) which restrict contaminant flow to extraction wells.
- Capital costs for installation and annual costs for O&M are generally greater than for other technologies.

9.4.2 SOURCE AREA AIR SPARGING AND SOIL VAPOR EXTRACTION (AS/SVE)

Air sparging (AS) is an in situ remedial technology that reduces concentrations of volatile organic carbons (VOCs) that are adsorbed to soils and/or dissolved in groundwater. AS involves the injection of air into the saturated zone enabling partitioning of contaminants from the dissolved phase to the vapor phase. Injected air moves vertically and horizontally through the saturated zone, creating an underground air stripping process. Injected air migrates to the unsaturated zone where a soil vapor extraction (SVE) system creates a negative pressure to capture stripped VOCs. AS is not effective at removing LPH and is therefore typically employed as a follow-up to GWET once LPH has been removed.

An AS system is composed of four basic elements: air sparging wells, an air compressor or blower; a soil vapor extraction system; and, a monitoring system. These components are further described as follows:

Air Sparging Wells - An air sparging well is usually constructed of 2-inch diameter, Schedule 40 or higher, polyvinyl chloride (PVC) pipe. The bottom of the well consists of approximately two feet of a pervious section (well screen or porous pipe diffuser) connected to a pipe extending from the well screen to the surface. The sparge well is completed by placing a sand pack around the well screen. A 1- to 2-foot thick bentonite or cement seal is placed around the sand pack. The well bore is then grouted to the top of the water table.

Air Blower - Air is injected into sparging wells under pressure with a mechanical blower. A pipe manifold constructed of small diameter PVC pipe is usually used to convey air from the blower to each well. Air injection pressure is governed by the static water head above the sparge point, the entry pressure of the saturated soils, and the injection flow rate. Working

pressures are generally on the order of 15 psi and air flow under field conditions varies between 3 and 10 scfm. In some cases, aquifer characteristics require that air flow be pulsed in order to improve transfer rates.

Soil Vapor Extraction System - Vapors mobilized by the AS system are controlled by application of an SVE system. The vapor extraction wells are typically constructed of larger diameter PVC piping which extends to just above the water table.

Monitoring - A number of parameters may be used to monitor the performance of an air sparging system. The most common are dissolved oxygen (DO), induced pressure, water table elevation, soil gas vacuum from the SVE system, and VOC concentration.

The effectiveness of an AS/SVE system is dependent upon:

- Permeability of soil
- Soil structure and stratification
- Soil moisture
- Depth to groundwater

A pilot test would be necessary to evaluate AS/SVE effectiveness and identify design parameters, and typically includes short term extraction of vapors from a single well (or existing monitoring well) at different extraction rates and wellhead vacuums.

Advantages

- Proven technology; readily available equipment; easy installation
- May be implemented without significant disruption to ongoing Property operations
- Short treatment times (1 month to 3 years)
- Requires no removal, treatment, storage, or discharge considerations for groundwater

Disadvantages

- Typically relatively less effective in treating/removing LPH
- Effectiveness may be reduced when applied to sites with low-permeable or stratifiedsoil
- Concentration reductions >90 percent are likely to be difficult to achieve, so it is unlikely to be technically possible to achieve cleanup levels throughout the Site within a reasonable restoration time frame

- Treatment of discharge air for extracted vapor emissions to atmosphere is required

9.4.3 IN SITU CHEMICAL OXIDATION (ISCO)

In situ chemical oxidation (ISCO) is based on delivery of chemical oxidants directly to media affected by Site contaminants (e.g., soil and/or groundwater) in order to chemically convert contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, or inert. Although oxidizing agents can include ozone, hydrogen peroxide, permanganate and Fenton's Reagent (hydrogen peroxide mixed with an iron catalyst), this analysis will be restricted to Fenton's Reagent because of its effectiveness at reducing BTEX and TPH concentrations.

For example, the oxidation of BTEX using Fenton's Reagent although dependent on pH, may yield a variety of intermediates such as carboxylic acids and alcohols which are rapidly degraded by microbes, and are less toxic than BTEX. The high level of groundwater oxygenation that accompanies Fenton's reagent and hydrogen peroxide treatment stimulate microbial degradation of incomplete reaction byproducts, and direct microbial degradation of TPH and oxygenate contaminants of concern.

The basic stoichiometry for the oxidation of BTEX by Fenton's Reagent is as follows:

$$C_6H_6 \text{ (benzene)} + 15\ H_2O_2\ [\text{Fe (II) catalyst}] \rightarrow\ 6\ CO_2 + 18\ H_2O$$

Advantages

- Proven technology
- Technology is appropriate for a variety of contaminants (e.g., BTEX and TPH)
- Contaminants reduced/destroyed in situ
- Short treatment times under optimal conditions
- No permanent or semi-permanent facilities required

Disadvantages

- Limited by aquifer permeability and alkalinity of the groundwater and soils (need high permeability and low pH (less than 7))
- High concentrations of oxygen in off-gasses pose a danger of explosion from hydrocarbon volatization. The exothermic reaction will also generate significant heat in areas

containing LNAPL. Therefore, it is dangerous to apply where hydrocarbon free product is present

- Can not be used near buried metal piping, as it will oxidize (i.e., corrode) metal pipes
- Quick reaction rate does not allow for transport through the aquifer
- Concentration reductions >90 percent are likely to be difficult to achieve, so it is unlikely to be technically possible to achieve clean-up levels throughout the Site within a reasonable restoration time frame
- Additional health and safety concerns associated with handling of strong oxidants

9.4.4 MONITORED NATURAL ATTENUATION

The term "natural attenuation" refers to the reduction in mass or concentration of a compound in groundwater over time due to naturally-occurring physical, chemical, and/or biological processes. Physical processes include dispersion, dilution, sorption and volatilization of dissolved compounds to the vapor phase (e.g., atmosphere or soil gas). Typical chemical mechanisms include ion-exchange reactions (e.g., oxidation, reduction), hydrolysis and abiotic transformations. Biological degradation and/or transformation occur primarily by aerobic and anaerobic microbial processes, although plant uptake also occurs in some situations.

Monitored natural attenuation also involves sampling and analysis to verify that attenuation of the constituents is occurring. In some cases, natural attenuation processes can be modeled to predict long-term performance. However, regular groundwater monitoring is a more effective and reliable means of assessing natural attenuation.

WAC 173-340-370(7) states that natural attenuation is an appropriate remedy at sites where:

- Source control has been conducted to the maximum extent practicable
- The presence of residual contamination during the restoration time frame does not pose an unacceptable threat to human health or the environment
- There is evidence that natural biodegradation or chemical degradation is occurring and will continue to occur
- Appropriate monitoring is performed

MNA is not typically prescribed unless remedial action has been attempted or completed and further remediation is no longer effective.

Advantages

- Generally lower cost than other active remedies
- Does not result in byproducts or waste stream that causes secondary impacts to air or surface water
- Minimizes disruption to ongoing Site activities

Disadvantages

- Longer time to achieve cleanup levels
- Concentration reductions >90 percent are likely to be difficult to achieve, so it is unlikely to be technically possible to achieve cleanup levels throughout the Site within a reasonable restoration time frame

9.4.5 INSTITUTIONAL CONTROLS (IC)

Placement of an IC (e.g., deed restriction) on a site can be used as a component of several cleanup action alternatives to preclude a certain site use and therefore assure protectiveness of human health and the environment and enhanced through exposure prevention. WAC 173-340-440(4) identifies certain circumstances when Institutional Controls "shall be required to assure both the continued protection of human health and the environment, and the integrity of an interim action or cleanup action…" The cited circumstances include several that may be applicable to the Site:

- Sites where Method A or Method B cleanup levels apply and where hazardous substances remain at the Site at concentrations that exceed the applicable cleanup level
- Sites where a groundwater cleanup levels is established that exceeds the drinking water clean-up levels based on a Site-specific risk assessment
- Sites where a Conditional Point of Compliance is established

ICs are administrative and/or legal controls that prevent exposure to constituents by limiting land use. Institutional controls, such as land use covenants, can be employed as part of remedial actions to prevent exposure to impacted media and thus ensure protectiveness of the remedy. Several of the alternatives discussed herein assume the use of an IC as an additional exposure prevention measure. A restrictive covenant as applied to this Site could include the following elements:

- A restriction on installing drinking water wells in the shallow aquifer on-Site while contaminant concentrations exceed applicable cleanup levels
- A restriction on construction or relocation of buildings on Site that would prevent proper monitoring of groundwater concentrations
- A requirement to limit property zoning and use to industrial activities consistent with the current zoning and uses

Advantages

- Protects all parties to the Site cleanup by helping to ensure long-term integrity of the cleanup actions and prevents actions by future Property owners that may result in inadvertent exposure risks or cause migration of Site contamination to previously non-impacted areas.
- Relatively low cost for extra measure of protection

Disadvantages

- May not be utilized under MTCA rules as the primary remedy.

9.4.6 NO ACTION

Inclusion of the no action alternative serves as a baseline for the alternatives evaluation. The No Action alternative would not require remedial activities. It is anticipated that contaminant concentrations would continue to decline through natural biodegradation and chemical degradation processes provided no new releases occurred. Groundwater monitoring to date indicates that contamination would likely migrate beyond the property boundaries if the currently operating groundwater pump and treat systems were shut down. Therefore, the No Action alternative is not expected to be effective at protecting human health and the environment.

9.5 SCREENING OF ALTERNATIVES

Criteria for the evaluation of clean-up action alternatives are listed in WAC 173-340-360. These criteria include four threshold criteria (WAC 173-340-360(2)(a):

- Protective of human health and the environment

- Complies with cleanup standards
- Complies with applicable state and federal laws
- Provides for compliance monitoring

Any cleanup action alternative that fails to meet one or more of these threshold criteria was excluded from further detailed evaluation. Each of the alternatives that achieved these threshold requirements were then evaluated further on the following criteria (WAC 173-340-360(2)(b):

- Permanence
- Long-Term Effectiveness
- Management of Short-Term Risks
- Technical Implementability
- Administrative Implementability
- Cost
- Consideration of Public Concerns

All of the alternatives suggested (except No Action) meet the threshold criteria. A summary of the screening exercise is provided in the following table:

		Alternatives				
		1. Groundwater Extraction and Treatment and Soil Vapor Extraction	2. Air Sparging and Soil Vapor Extraction	3. In-Situ Chemical Oxidation	4. Monitored Natural Attenuation and Institutional Controls	5. No Action
Threshold Criteria	**Protection of Human Health and Environment**	Yes. Will hydraulically contain contaminant concentrations in presumed source areas.	Yes. Will reduce contaminant concentration in the presumed source areas and Site wide.	Yes. Will reduce contaminant concentration in the presumed source area.	Yes. Prevents exposure of receptors to impacted groundwater using institutional controls and monitors to confirm impacts are not migrating.	No. Contaminant concentrations would remain elevated for some time. No controls in place to ensure exposure prevention.
	Compliance with Cleanup Standards	No. This is considered an initial step to attaining cleanup levels. Contaminant concentrations will not be reduced below clean-up levels throughout site.	No. This is considered an interim step to attaining cleanup levels. Contaminant concentrations will not be reduced below clean-up levels throughout Site.	Application of ISCO in selected areas of residual contaminant concentrations could achieve cleanup levels.	Anticipated to comply with cleanup standards by attaining cleanup levels. The natural attenuation process occurs gradually and is not expected to reduce contaminant concentrations for a number of years.	As a result of natural attenuation of contaminants, it is likely that this alternative would reach clean-up levels over time. However, no monitoring would be conducted to confirm compliance.
	Compliance with Applicable State and Federal Laws	Yes, compliance is anticipated	Yes, compliance is anticipated	Yes, compliance is anticipated	Yes, compliance is anticipated	No, compliance would not be met
	Opportunity for Compliance Monitoring	Monitoring would be performed to confirm confinement of contaminants on site, removal of LPH and residual concentration reduction.	Monitoring would be performed to confirm reduction of residual contaminant concentrations.	Monitoring would be performed to confirm reduction of residual contaminant concentrations.	Compliance monitoring through existing monitoring wells is an integral part of the remedy and therefore satisfies this criteria.	No. This alternative fails to comply with this threshold requirement
Further Evacuation Criteria Per MTCA 173-340-360	**Permanence**	GWET/SVE is considered an initial phase aimed at containing contaminants. Additional steps would be needed to reduce concentrations to below clean-up levels.	AS/SVE is considered an interim phase aimed at reducing contaminant concentrations. Additional steps would be needed to reduce concentrations to below clean-up levels.	ISCO is expected to provide a permanent reduction in toxicity, mobility and volume of contaminant in the subsurface. ISCO application results in oxidation of the contaminant. It is not reversible.	Does not actively destroy or remove contaminants. MNA is regarded by USEPA as a proactive remedy.	Does not actively destroy or remove contaminants. No monitoring. This alternative fails to comply with this threshold requirement.
	Restoration Time Frame	1 year for pilot testing, design/construction; 2 years to operate GWET/SVE system	2 years for bench-scale testing, design/construction; 3 years to operate GWET/SVE system	1 years for bench-scale testing, design. One year for application and 2 years of follow-up monitoring.	This alternative would be applied following active remediation. MNA would be applied for > 2 years	Not monitored - alternative does not comply with threshold requirement
	Long-Term Effectiveness	No long term containment is provided	AS/SVE permanently reduces contaminant concentrations in the source area. Residual contaminants not completely addressed.	ISCO permanently reduces contaminant concentrations. Rebound is possible. At least 1 year of monitoring recommended.	MNA reduces the mass of contaminants in groundwater. It is not certain that contaminant reduction would result in reaching cleanup levels. The exposure routes will be limited with IC and therefore this approach is viable and effective.	Not monitored - alternative does not comply with threshold requirement
	Management of Short-Term Risks	Minimal due to limited potential for off-site impact. Extracted vapor and water treated prior to discharge resulting in limited potential for impact.	Minimal due to limited potential for off-site impact. Extracted vapor treated prior to discharge resulting in limited potential for impact.	Minimal because application would be limited to areas on Site. Short term risk associated with application will be addressed with a site specific health and Safety plan.	Minimal because there are no current groundwater receptors. Therefore short-term risks associated with contaminant concentrations are minimal. Short term risks are mitigated further through implementation of IC as an exposure prevention measure.	High. No management of risks from lack of monitoring.
	Technical and Administrative Implementability	Favorable	Favorable	Favorable based on: Permeable, unconfined aquifer; accessible target areas. To be confirmed based on DO and ORP readings	Favorable. MNA is readily implementable from a technical perspective. There are no known administrative barriers to implementation.	Technically feasible but not favorable from an administrative stand point.
	Cost	To be determined	To be determined	To be determined	To be determined	Minimal
	Consideration of Public Concerns	To be evaluated during public comment period. Possible concerns: Noise	To be evaluated during public comment period. Possible concerns: Noise	To be evaluated during public comment period. Possible concerns with application of chemicals in the subsurface.	To be evaluated during public comment period. Possible concerns: limitations on long term site use.	Public concerns expected to be elevated.

9.6 FINAL SELECTION

The data gaps previously identified need to be addressed in order to select a final remedial approach. The final selection will be presented in the RI/FS report to be completed once the RI/FS work plan has been implemented and results are available.

Results of the RI/FS will be employed to formulate an effective overall remediation plan for the Site.

10.0 CONCLUSIONS

This Draft RI/FS work plan fulfills Deliverable 1 of Agreed Order No DE 722; Issued by WDOE on August 5, 2010.

The purpose of the Draft RI/FS work plan is to summarize past investigations, identify data gaps, formulate a plan to address the data gaps and specify a work plan to complete the RI/FS.

A review of historical investigations and remedial activities conducted from 1986 to the present indicated the presence of significant data gaps. These data gaps need to be addressed to fully characterize the nature and extent of petroleum contamination in soil and groundwater at the Site. The data gaps will be addressed as specified in this work plan. An RI/FS report will summarize results of the historical data and additional information and will form the basis for a Clean-up Action Plan (CAP) to remediate the Site.

11.0 REFERENCES

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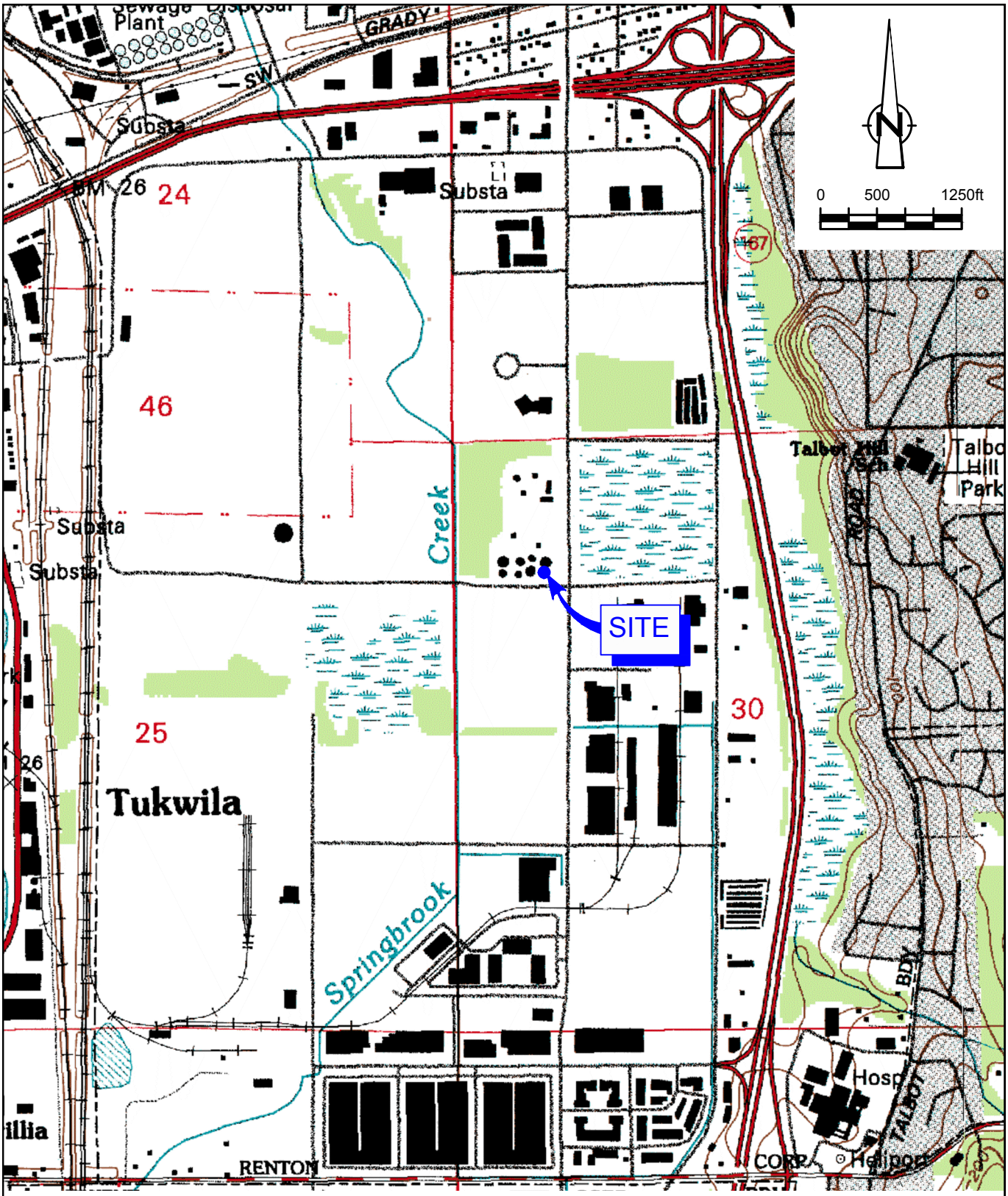
FIGURES



SOURCE: USGS QUADRANGLE MAP:
RENTON, WASHINGTON

figure 1

VICINITY MAP
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

WASHINGTON

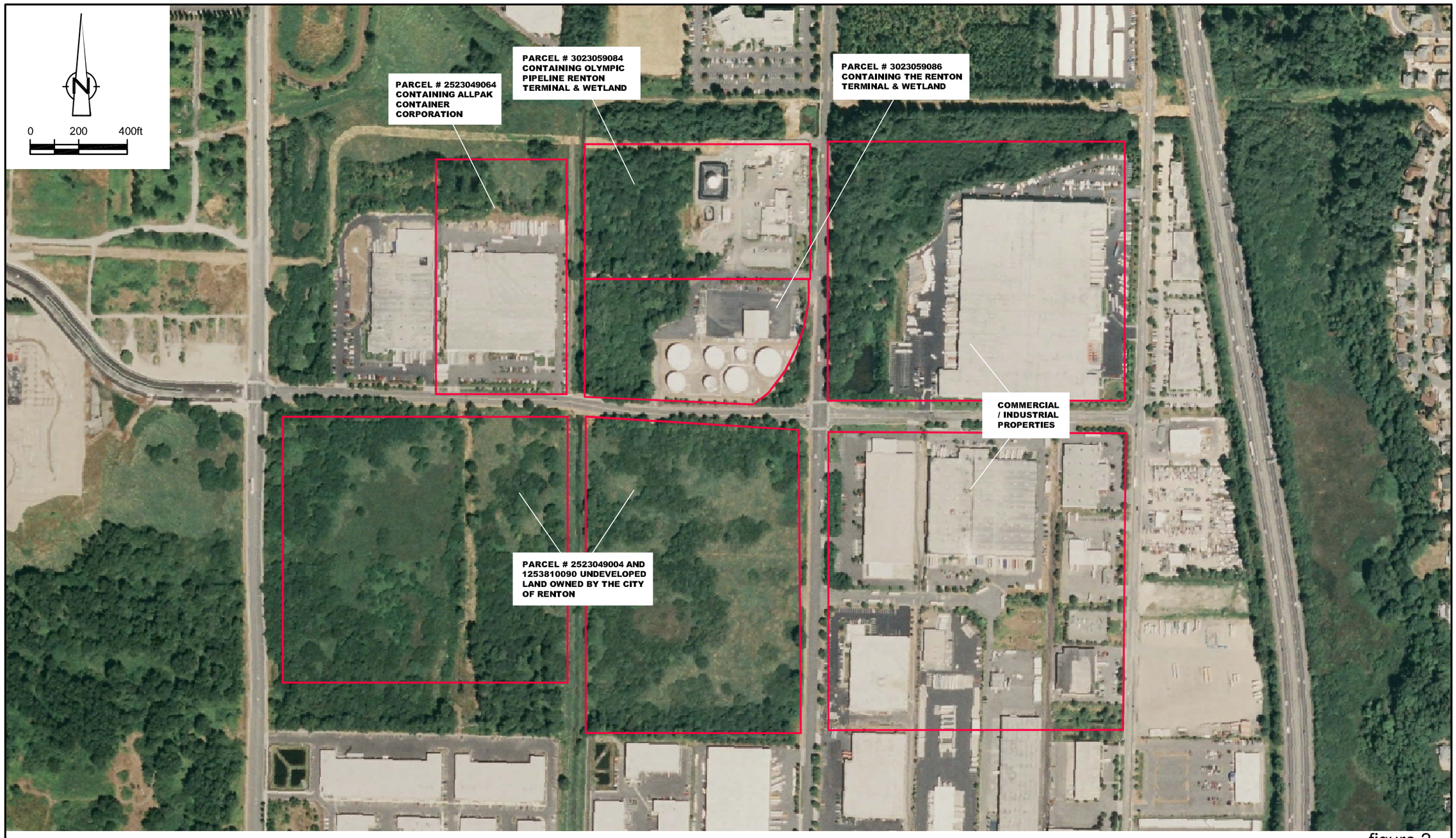


figure 2

SITE PLAN
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

SOURCE: STANTEC, FIGURE 2, SITE PLAN, DATED 08/26/2010. & NAIP, 2006.

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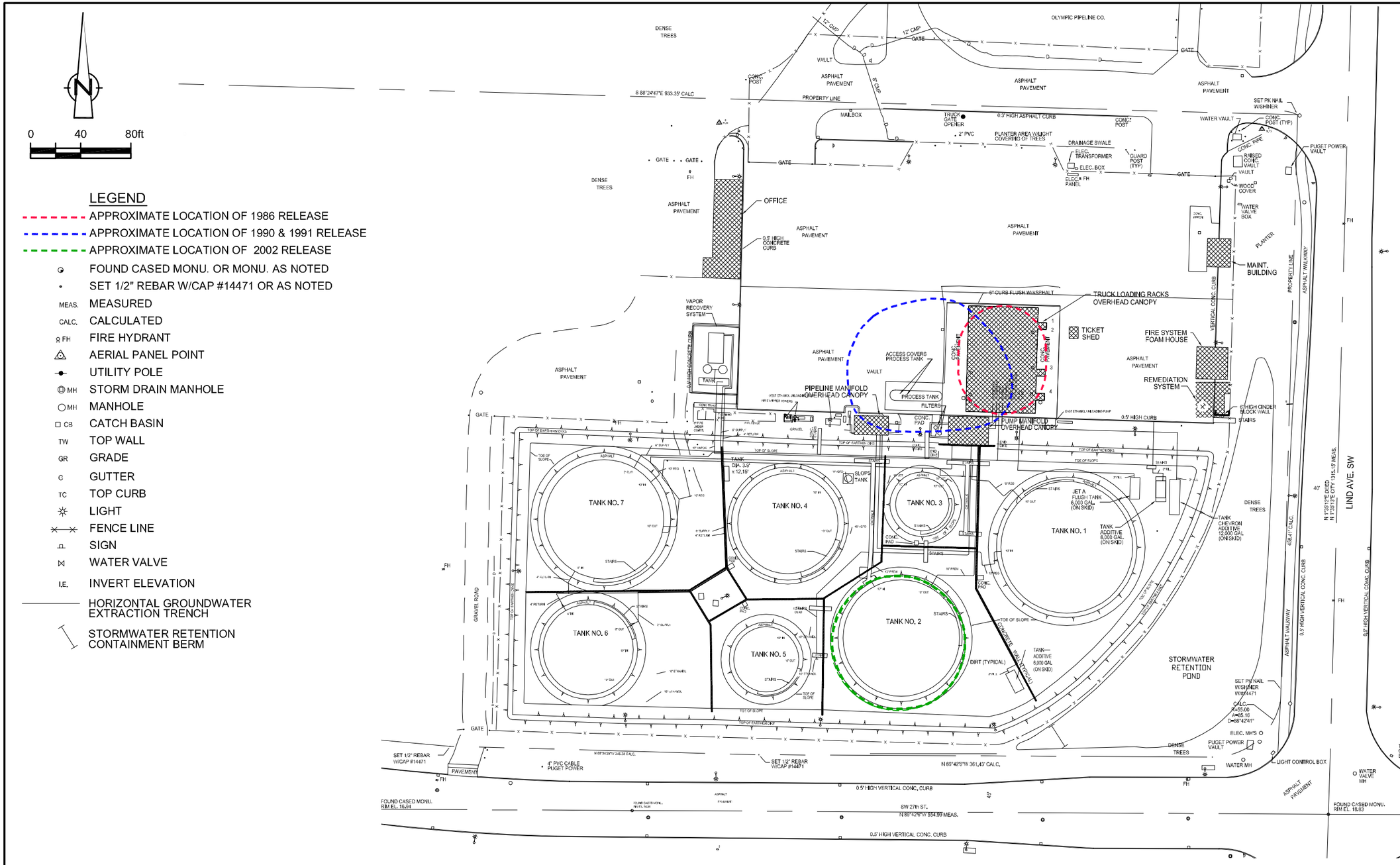


figure 3

SITE PLAN WITH LOCATIONS OF HISTORIC RELEASES
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

SOURCE: STANTEC, FIGURE 3, SITE PLAN WITH LOCATIONS OF HISTORIC RELEASES, DATED 08/26/2010.

0 40 80ft

LEGEND

B1-B6; HA-1-HA-11 ADVANCED IN 1986

D-1--D-8;W1-W-4;R1-R2; HA12-HA14 ADVANCED IN 1987

HA15-HA20; RW-1 RW3 RW4 RW6 ADVANCED IN 2002

LAI1 LAI10-LAI16 ADVANCED IN 2003

B1 B2 D1 ADVANCED IN 2004
EXACT LOCATION UNKNOWN

B1 - B7; HWx-1E; HWx-1W ADVANCED IN 2005

RWx-2 RWx-5 RWx-7 ORIGINALLY ADVACED IN 2002 & RE-ADVANCED IN 2005

LAIx2 - LAIx9 ORIGINALLY ADVACED IN 2003 & RE-ADVANCED IN 2005

SB-TR2A - SB-TR2H ADVANCED IN 2007

G1 - G17 ADVANCED IN 2009

G-1 ⊗ SOIL SAMPLE LOCATION

MONITORING WELL

ABANDONDED OR DESTROYED MONITORING WELL LOCATION

4" DIAMETER VERTICAL RECOVERY WELL (ACTIVELY PUMPING)

HORIZONTAL GROUNDWATER EXTRACTION TRENCH

4" DIAMETER VERTICAL RECOVERY WELL (INACTIVE- NOT PUMPING)

STORMWATER RETENTION CONTAINMENT BERM

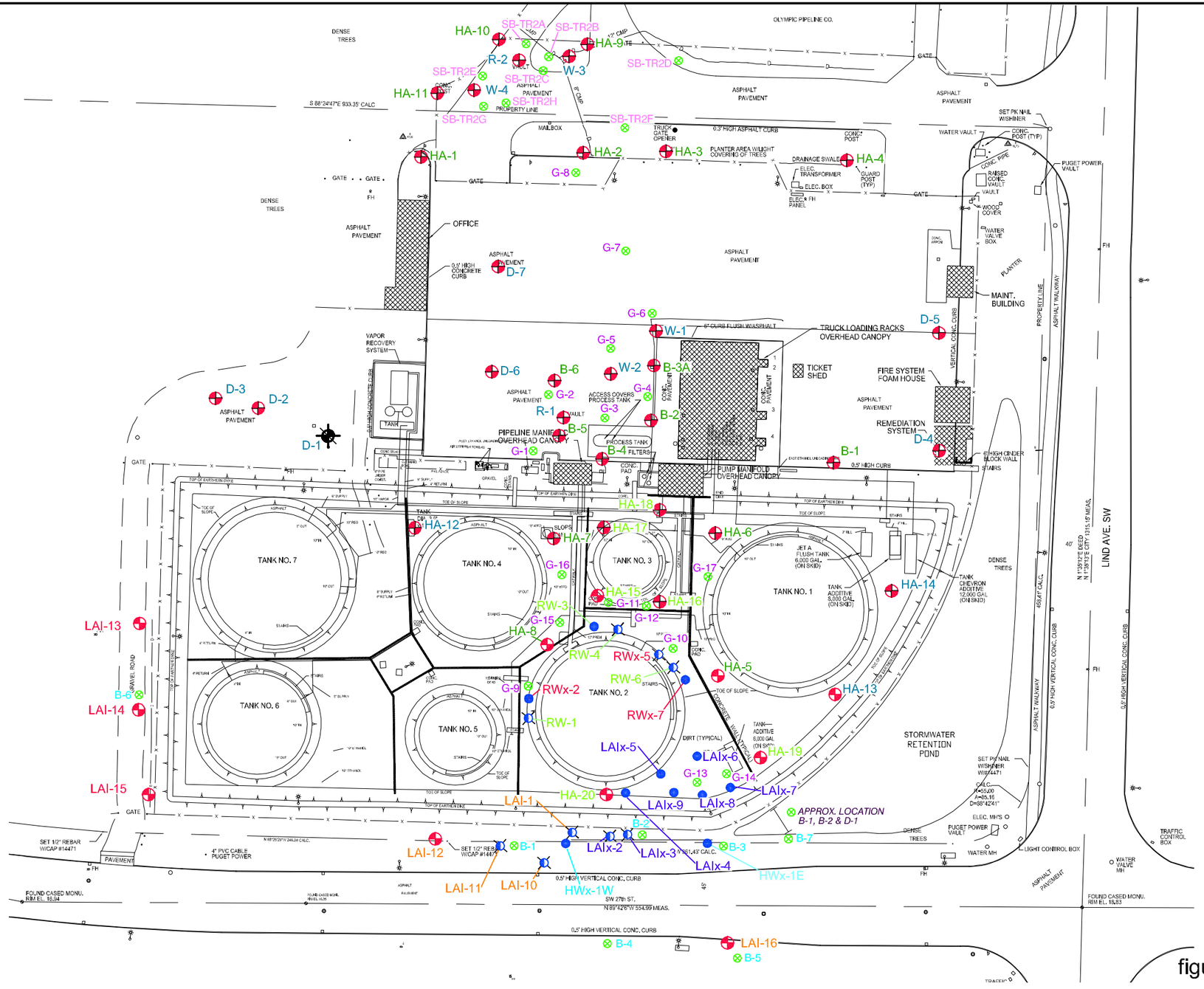
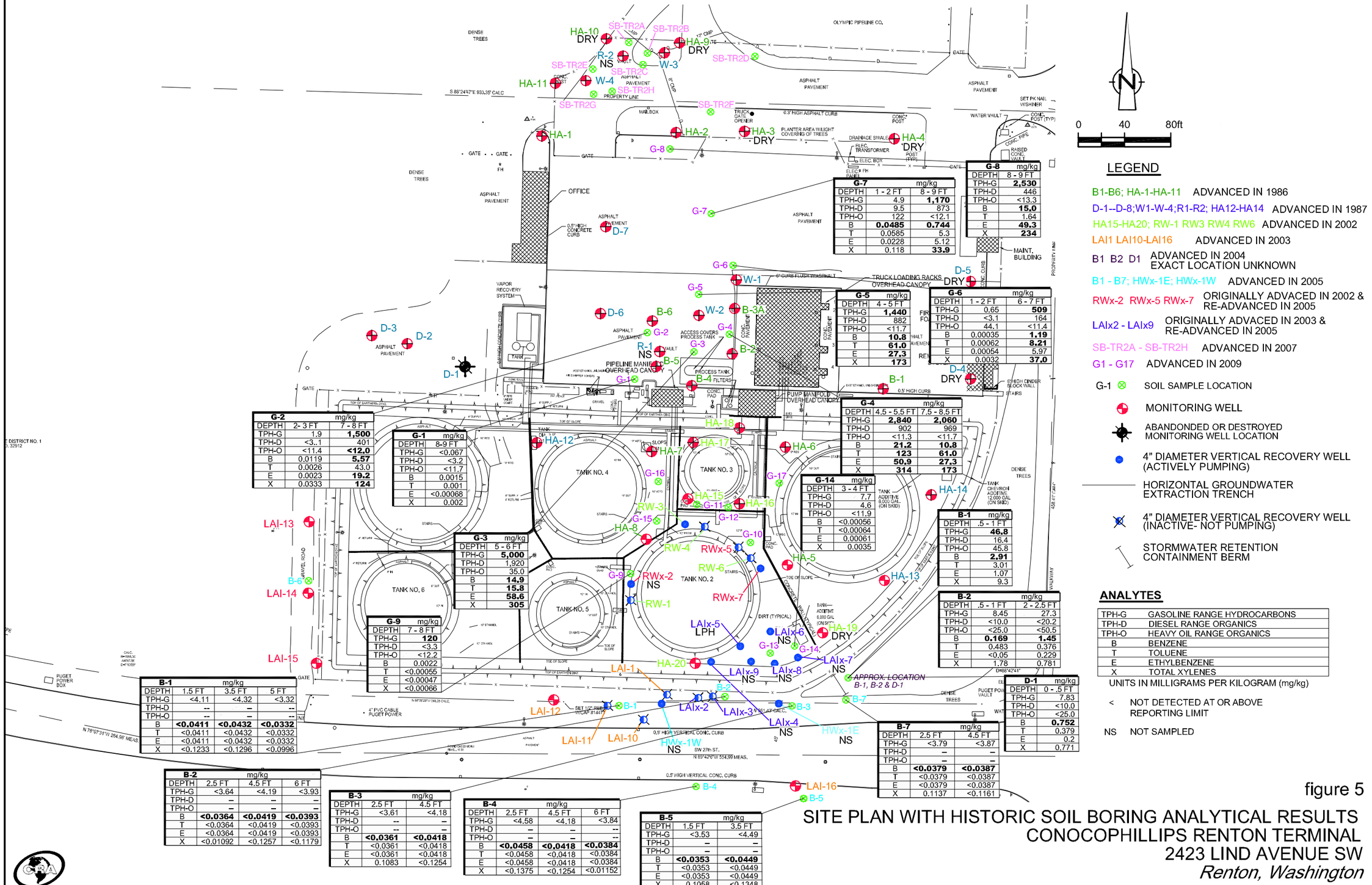


figure 4

SITE PLAN WITH HISTORIC SOIL BORING AND MONITORING WELL LOCATIONS
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

SOURCE: STANTEC, FIGURE 4, SITE PLAN WITH HISTORIC SOIL BORING AND MONITORING WELL LOCATIONS, DATED 08/26/2010.



G-2	mg/kg	
DEPTH	2- 3 FT	7 - 8 FT
TPH-G	1.9	**1,500**
TPH-D	<3..1	401
TPH-O	<11.4	**<12.0**
B	0.0119	**5.57**
T	0.0026	43.0
E	0.0023	**19.2**
X	0.0333	**124**

G-1	mg/kg	
DEPTH	8-9 FT	
TPH-G	<0.067	
TPH-D	<3.2	
TPH-O	<11.7	
B	0.0015	
T	0.001	
E	<0.00068	
X	0.002	

G-3	mg/kg	
DEPTH	5 - 6 FT	
TPH-G	**5,000**	
TPH-D	1,920	
TPH-O	35.0	
B	**14.9**	
T	**15.8**	
E	**58.6**	
X	**305**	

G-9	mg/kg	
DEPTH	7 - 8 FT	
TPH-G	**120**	
TPH-D	<3.3	
TPH-O	<12.2	
B	0.0022	
T	<0.00055	
E	<0.00047	
X	<0.00066	

G-7	mg/kg	
DEPTH	1 - 2 FT	8 - 9 FT
TPH-G	4.9	**1,170**
TPH-D	9.5	873
TPH-O	122	<12.1
B	**0.0485**	**0.744**
T	0.0585	5.3
E	0.0228	5.12
X	0.118	**33.9**

G-8	mg/kg	
DEPTH	8 - 9 FT	
TPH-G	**2,530**	
TPH-D	446	
TPH-O	<13.3	
B	**15.0**	
T	1.64	
E	**49.3**	
X	**234**	

G-5	mg/kg	
DEPTH	4 - 5 FT	
TPH-G	**1,440**	
TPH-D	882	
TPH-O	<11.7	
B	**10.8**	
T	**61.0**	
E	**27.3**	
X	**173**	

G-6	mg/kg	
DEPTH	1 - 2 FT	6 - 7 FT
TPH-G	0.65	**509**
TPH-D	<3.1	164
TPH-O	44.1	<11.4
B	0.00035	**1.19**
T	0.00062	**8.21**
E	0.00054	5.97
X	0.0032	**37.0**

G-4	mg/kg	
DEPTH	4.5 - 5.5 FT	7.5 - 8.5 FT
TPH-G	**2,840**	**2,060**
TPH-D	902	969
TPH-O	<11.3	<11.7
B	**21.2**	**10.8**
T	**123**	**61.0**
E	**50.9**	**27.3**
X	**314**	**173**

G-14	mg/kg	
DEPTH	3 - 4 FT	
TPH-G	7.7	
TPH-D	4.6	
TPH-O	<11.9	
B	<0.00056	
T	<0.00064	
E	0.00061	
X	0.0035	

B-1	mg/kg	
DEPTH	.5 - 1 FT	
TPH-G	**46.8**	
TPH-D	16.4	
TPH-O	45.8	
B	**2.91**	
T	3.01	
E	1.07	
X	9.3	

B-2	mg/kg	
DEPTH	.5 - 1 FT	2 - 2.5 FT
TPH-G	8.45	27.3
TPH-D	<10.0	<20.2
TPH-O	<25.0	<50.5
B	**0.169**	**1.45**
T	0.483	0.376
E	<0.05	0.229
X	1.78	0.781

D-1	mg/kg	
DEPTH	0 - .5 FT	
TPH-G	7.83	
TPH-D	<10.0	
TPH-O	<25.0	
B	**0.752**	
T	0.379	
E	0.2	
X	0.771	

B-1	mg/kg		
DEPTH	1.5 FT	3.5 FT	5 FT
TPH-G	<4.11	<4.32	<3.32
TPH-D	--	--	--
TPH-O	--	--	--
B	**<0.0411**	**<0.0432**	**<0.0332**
T	<0.0411	<0.0432	<0.0332
E	<0.0411	<0.0432	<0.0332
X	<0.1233	<0.1296	<0.0996

B-2	mg/kg		
DEPTH	2.5 FT	4.5 FT	6 FT
TPH-G	<3.64	<4.19	<3.93
TPH-D	–	–	–
TPH-O	–	–	–
B	**<0.0364**	**<0.0419**	**<0.0393**
T	<0.0364	<0.0419	<0.0393
E	<0.0364	<0.0419	<0.0393
X	<0.01092	<0.1257	<0.1179

B-3	mg/kg	
DEPTH	2.5 FT	4.5 FT
TPH-G	<3.61	<4.18
TPH-D	--	–
TPH-O	--	–
B	**<0.0361**	**<0.0418**
T	<0.0361	<0.0418
E	<0.0361	<0.0418
X	0.1083	<0.1254

B-4	mg/kg		
DEPTH	2.5 FT	4.5 FT	6 FT
TPH-G	<4.58	<4.18	<3.84
TPH-D	–	–	--
TPH-O	–	–	--
B	**<0.0458**	**<0.0418**	**<0.0384**
T	<0.0458	<0.0418	<0.0384
E	<0.0458	<0.0418	<0.0384
X	<0.1375	<0.1254	<0.01152

B-5	mg/kg	
DEPTH	1.5 FT	3.5 FT
TPH-G	<3.53	<4.49
TPH-D	–	–
TPH-O	–	–
B	**<0.0353**	**<0.0449**
T	<0.0353	<0.0449
E	<0.0353	<0.0449
X	0.1058	<0.1348

B-7	mg/kg	
DEPTH	2.5 FT	4.5 FT
TPH-G	<3.79	<3.87
TPH-D	–	–
TPH-O		
B	**<0.0379**	**<0.0387**
T	<0.0379	<0.0387
E	<0.0379	<0.0387
X	0.1137	<0.1161

LEGEND

- B1-B6; HA-1-HA-11 ADVANCED IN 1986
- D-1--D-8;W1-W-4;R1-R2; HA12-HA14 ADVANCED IN 1987
- HA15-HA20; RW-1 RW3 RW4 RW6 ADVANCED IN 2002
- LAI1 LAI10-LAI16 ADVANCED IN 2003
- B1 B2 D1 ADVANCED IN 2004 EXACT LOCATION UNKNOWN
- B1 - B7; HWx-1E; HWx-1W ADVANCED IN 2005
- RWx-2 RWx-5 RWx-7 ORIGINALLY ADVACED IN 2002 & RE-ADVANCED IN 2005
- LAIx2 - LAIx9 ORIGINALLY ADVACED IN 2003 & RE-ADVANCED IN 2005
- SB-TR2A - SB-TR2H ADVANCED IN 2007
- G1 - G17 ADVANCED IN 2009
- G-1 ⊗ SOIL SAMPLE LOCATION
- MONITORING WELL
- ABANDONDED OR DESTROYED MONITORING WELL LOCATION
- 4" DIAMETER VERTICAL RECOVERY WELL (ACTIVELY PUMPING)
- HORIZONTAL GROUNDWATER EXTRACTION TRENCH
- 4" DIAMETER VERTICAL RECOVERY WELL (INACTIVE- NOT PUMPING)
- STORMWATER RETENTION CONTAINMENT BERM

ANALYTES

TPH-G	GASOLINE RANGE HYDROCARBONS
TPH-D	DIESEL RANGE ORGANICS
TPH-O	HEAVY OIL RANGE ORGANICS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES

UNITS IN MILLIGRAMS PER KILOGRAM (mg/kg)

< NOT DETECTED AT OR ABOVE REPORTING LIMIT

NS NOT SAMPLED

figure 5

SITE PLAN WITH HISTORIC SOIL BORING ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

SOURCE: STANTEC, FIGURE 5, SITE PLAN WITH HISTORIC SOIL BORING ANALYTICAL RESULTS, DATED 08/26/2010.

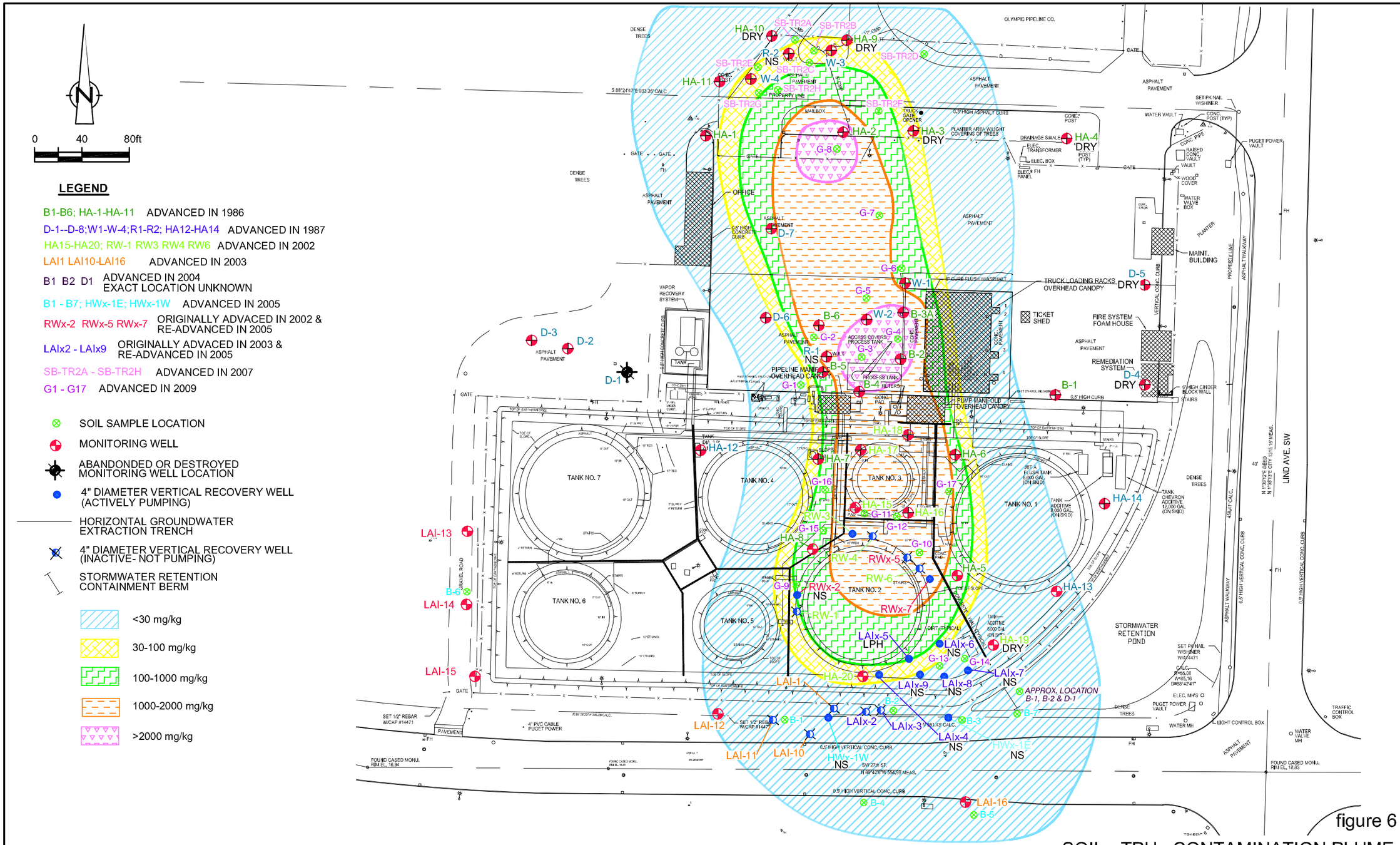


figure 6

SOIL - TPHg CONTAMINATION PLUME
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

SOURCE: STANTEC, FIGURE 6, SOIL - TPH-G CONTAMINATION PLUME, DATED 09/17/2010.

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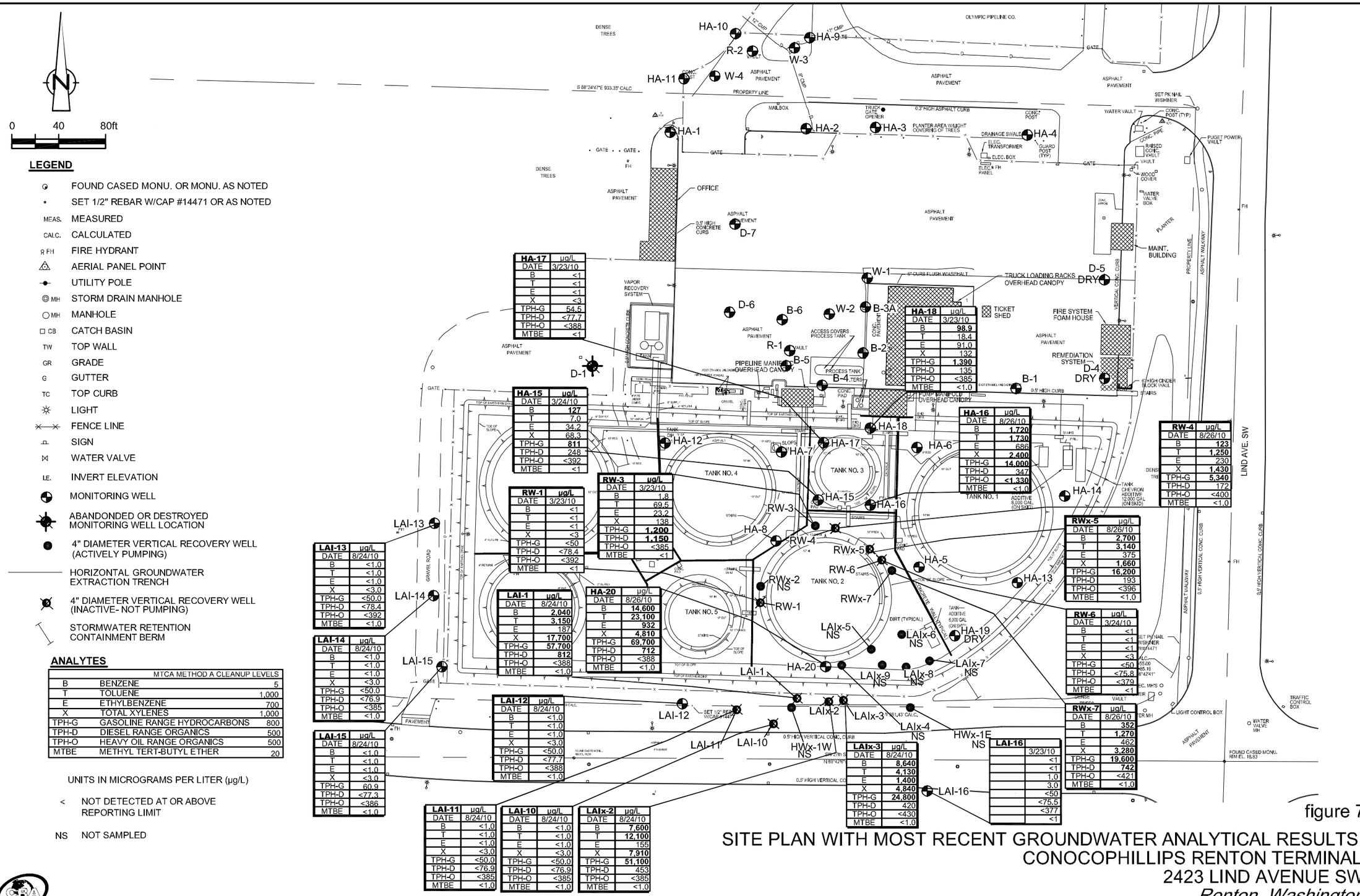


figure 7

SITE PLAN WITH MOST RECENT GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

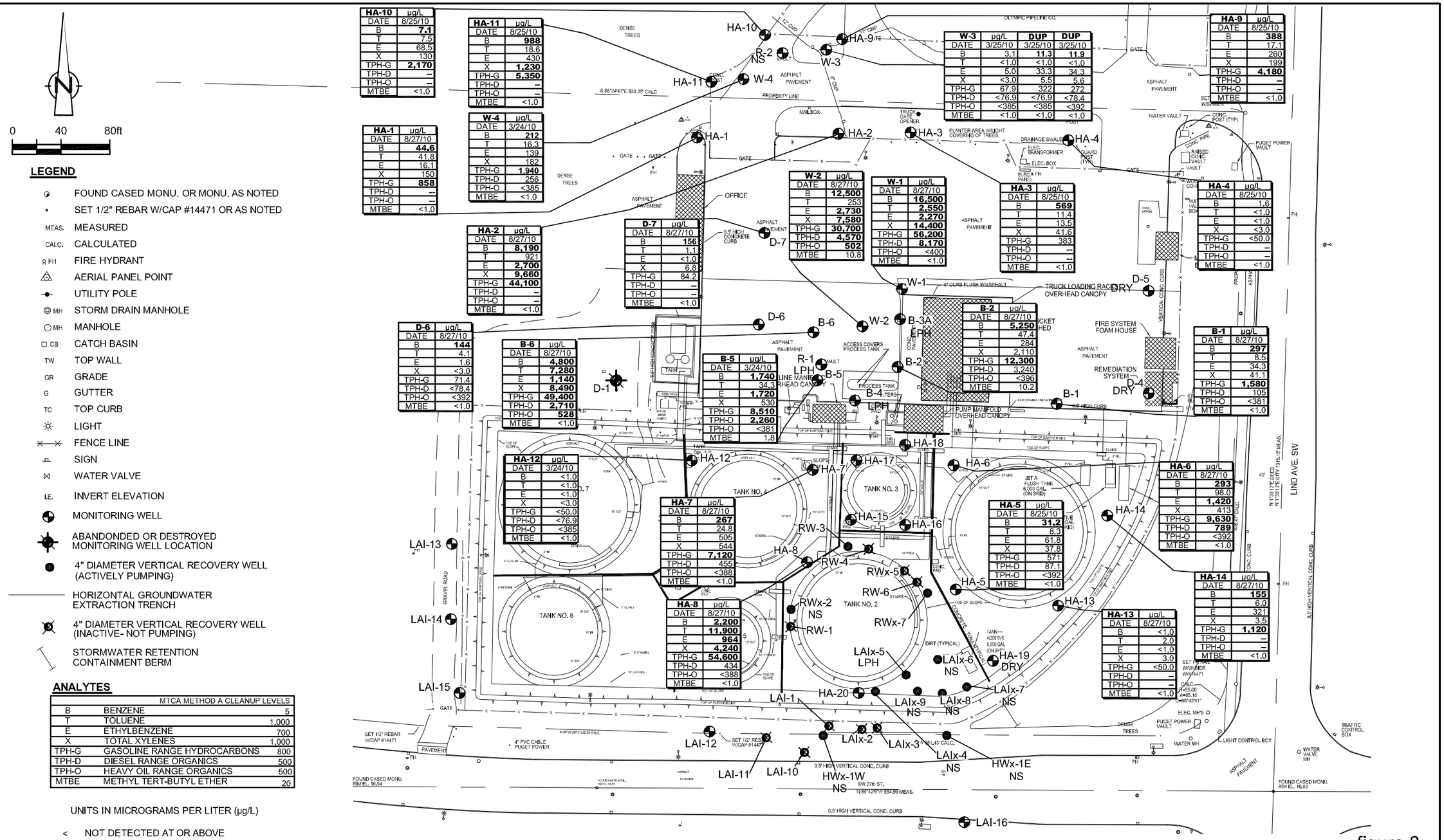
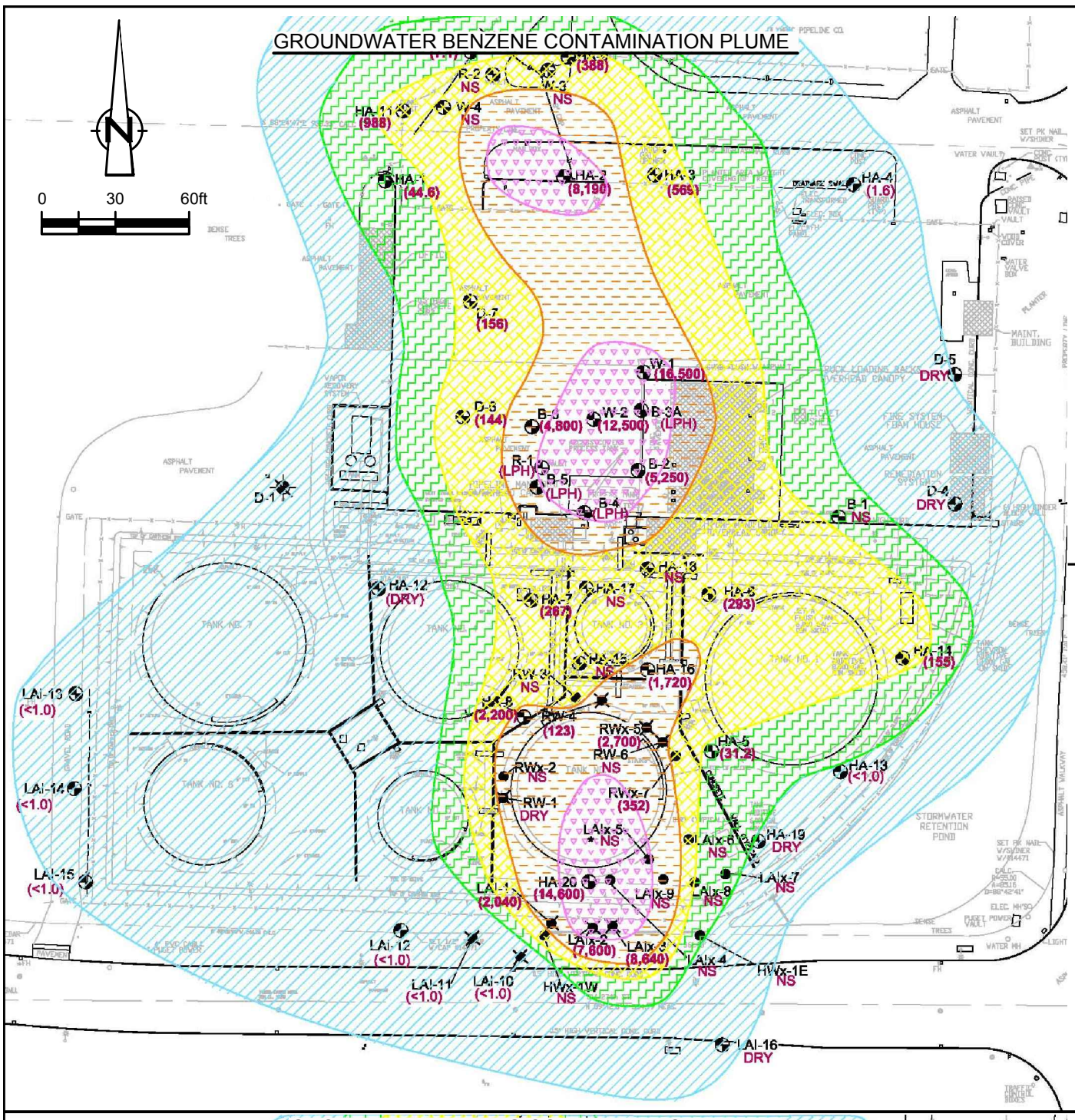


figure 8

SITE PLAN WITH MOST RECENT GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

SOURCE: STANTEC, FIGURE 8, SITE PLAN WITH MOST RECENT GROUNDWATER ANALYTICAL RESULTS, DATED 09/16/2010.

GROUNDWATER BENZENE CONTAMINATION PLUME

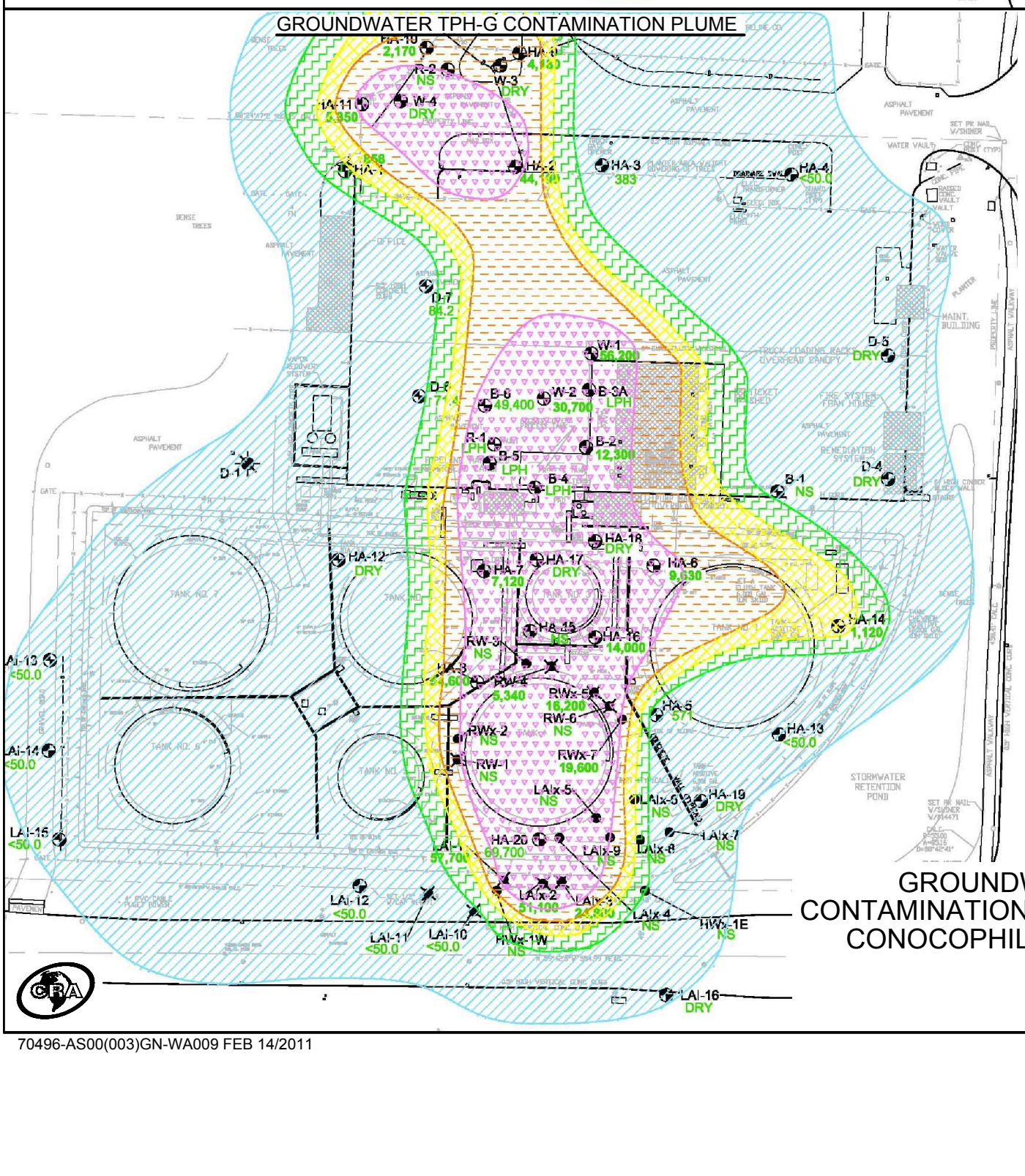


LEGEND

- FOUND CASED MONU. OR MONU. AS NOTED
- SET 1/2" REBAR W/CAP #14471 OR AS NOTED
- MEAS. MEASURED
- CALC. CALCULATED
- RFH FIRE HYDRANT
- AERIAL PANEL POINT
- UTILITY POLE
- SDMH STORM DRAIN MANHOLE
- MH MANHOLE
- CB CATCH BASIN
- TW TOP WALL
- GR GRADE
- G GUTTER
- TC TOP CURB
- LIGHT
- FENCE LINE
- SIGN
- WATER VALVE
- I.E. INVERT ELEVATION
- MONITORING WELL
- ABANDONDED OR DESTROYED MONITORING WELL LOCATION
- 4" DIAMETER VERTICAL RECOVERY WELL (ACTIVELY PUMPING)
- HORIZONTAL GROUNDWATER EXTRACTION TRENCH
- 4" DIAMETER VERTICAL RECOVERY WELL (INACTIVE- NOT PUMPING)
- STORMWATER RETENTION CONTAINMENT BERM
- (5,250) BENZENE CONCENTRATIONS IN UNITS OF MICROGRAMS PER LITER (µg/L)
- < LESS THAN THE LABORATORY DETECTION LIMIT THRESHOLD
- NS NOT SAMPLED
- * LPH MEASURED IN LAIx-5 (0.01 FEET) B-4 (0.46 FEET)

- <5 µg/L
- 5-100 µg/L
- 100-1,000 µg/L
- 1,000-5,000 µg/L
- >5,000 µg/L

GROUNDWATER TPH-G CONTAMINATION PLUME



- <800 µg/L
- 800-1,000 µg/L
- 1,000-2,000 µg/L
- 2,000-5,000 µg/L
- >5,000 µg/L

SOURCE:
STANTEC, FIGURE 9,
GROUNDWATER TPH-G & BENZENE CONTAMINATION PLUMES (AUGUST 2010),
DATED 09/22/2010.

figure 9

GROUNDWATER TPHg & BENZENE CONTAMINATION PLUMES (AUGUST 2010)
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

70496-AS00(003)GN-WA009 FEB 14/2011

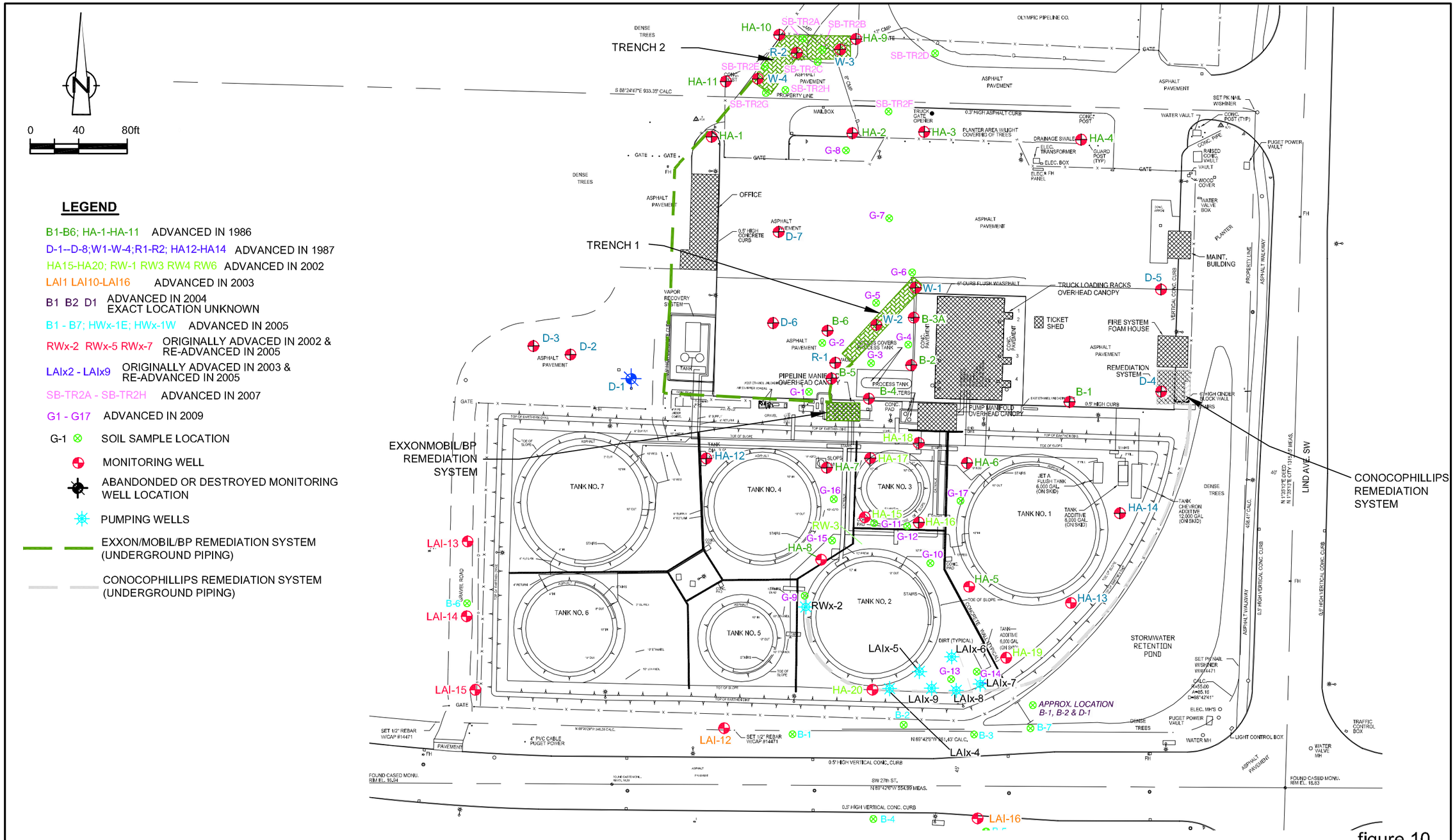


figure 10

REMEDIATION SYSTEMS LAYOUT
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

70496-AS00(003)GN-WA010 FEB 14/2011

0 40 80ft

LEGEND

- PROPOSED BORING LOCATIONS
- PROPOSED LOCATION OF NEW MONITORING WELL
- PROPOSED SURFACE WATER SAMPLE
- PROPOSED SOIL & SURFACE WATER SAMPLE

B1-B6; HA-1-HA-11 ADVANCED IN 1986
D-1--D-8;W1-W-4;R1-R2; HA12-HA14
HA15-HA20; RW-1 RW3 RW4 RW6
LAI1 LAI10-LAI16 ADVANCED IN 2003
B1 B2 D1 ADVANCED IN 2004 EXACT LOCATION UNKNOWN
B1 - B7; HWx-1E; HWx-1W
RWx-2 RWx-5 RWx-7 ORIGINALLY ADVACED IN 2002 & RE-ADVANCED IN 2005
LAIx2 - LAIx9 ORIGINALLY ADVACED IN 2003 & RE-ADVANCED IN 2005
SB-TR2A - SB-TR2H ADVANCED IN 2007
G1 - G17 ADVANCED IN 2009

- G-1 SOIL SAMPLE LOCATION
- MONITORING WELL
- ABANDONDED OR DESTROYED MONITORING WELL LOCATION
- 4" DIAMETER VERTICAL RECOVERY WELL (ACTIVELY PUMPING)
- HORIZONTAL GROUNDWATER EXTRACTION TRENCH
- 4" DIAMETER VERTICAL RECOVERY WELL (INACTIVE- NOT PUMPING)
- STORMWATER RETENTION CONTAINMENT BERM

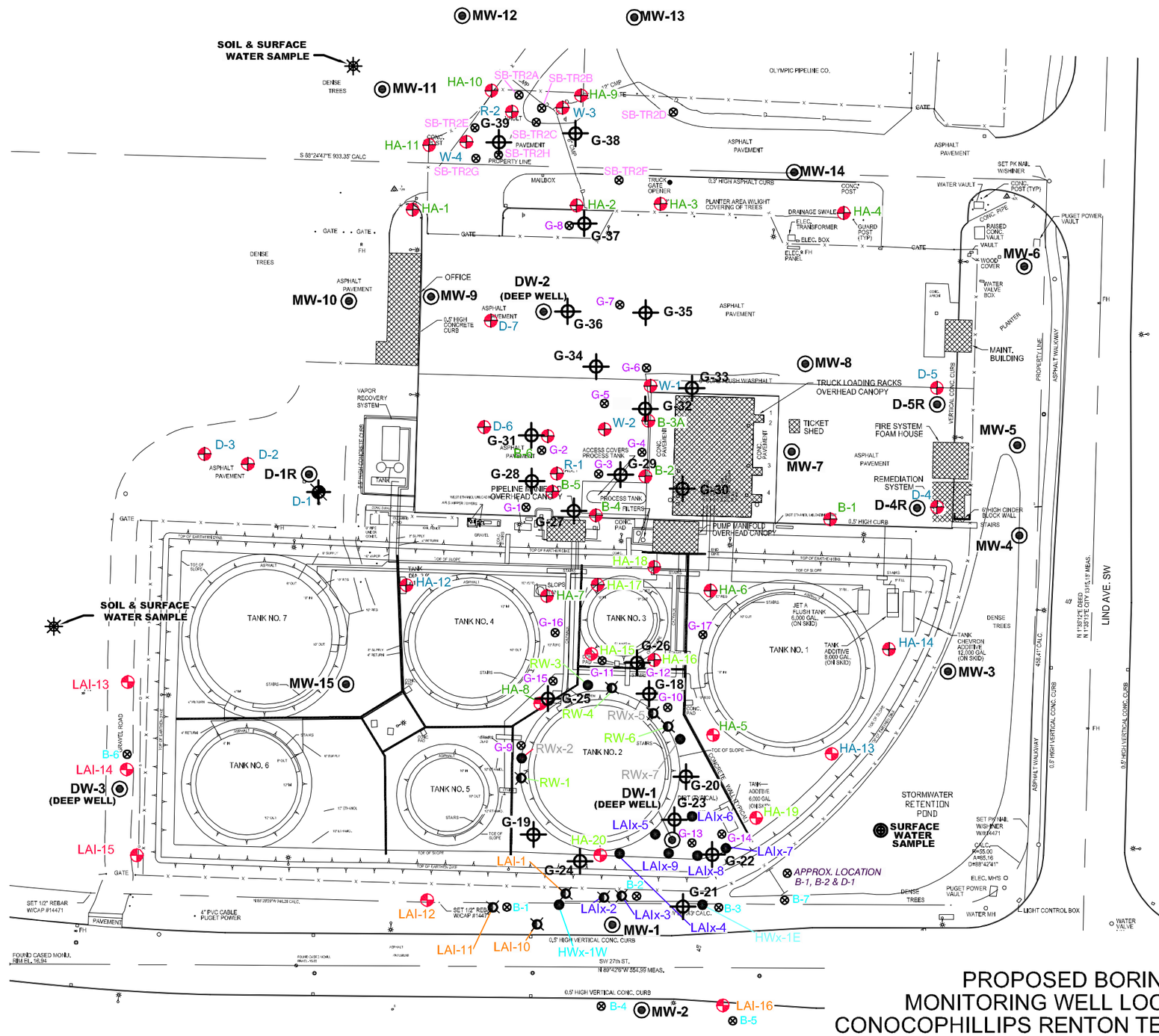
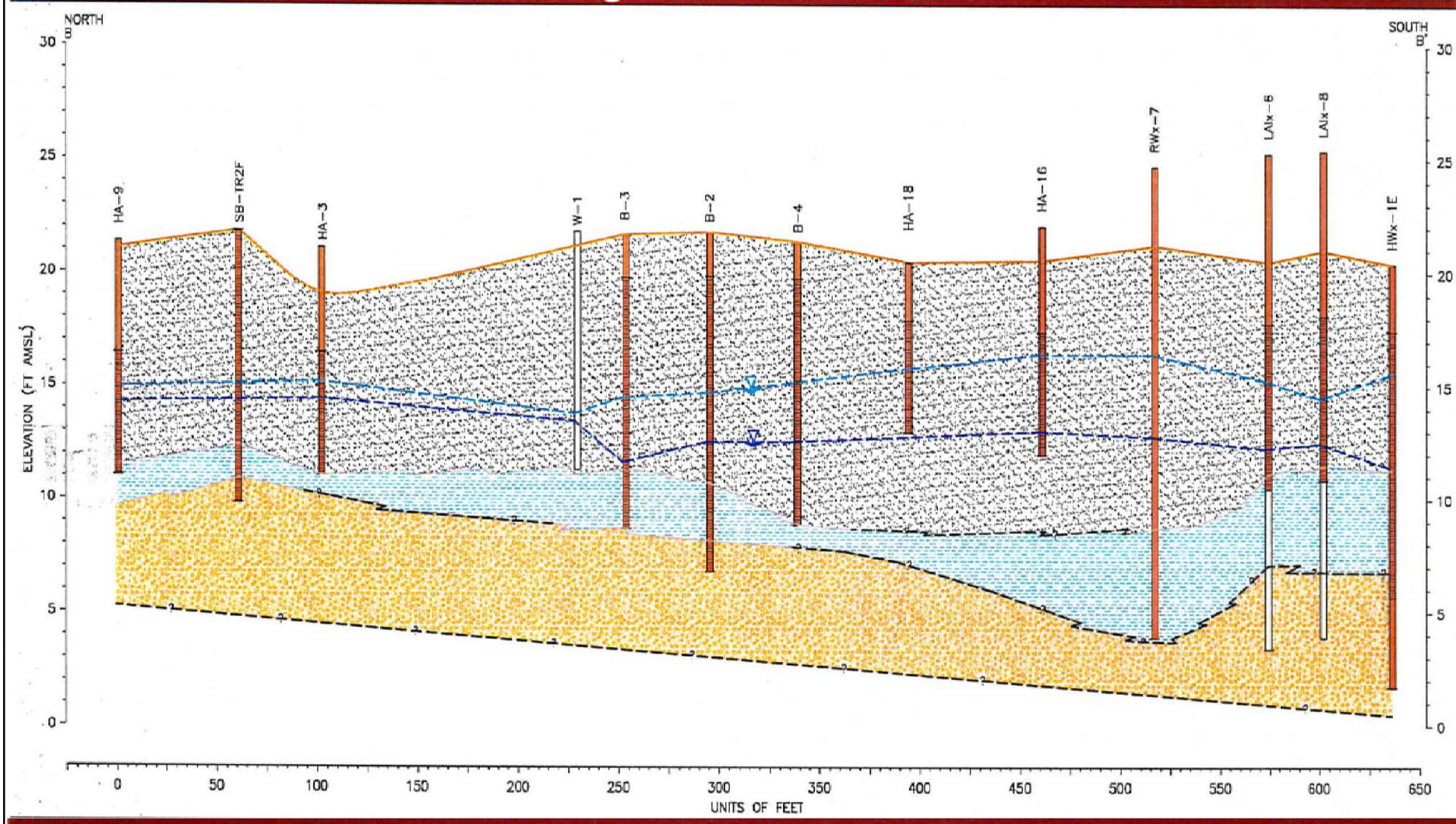


figure 11

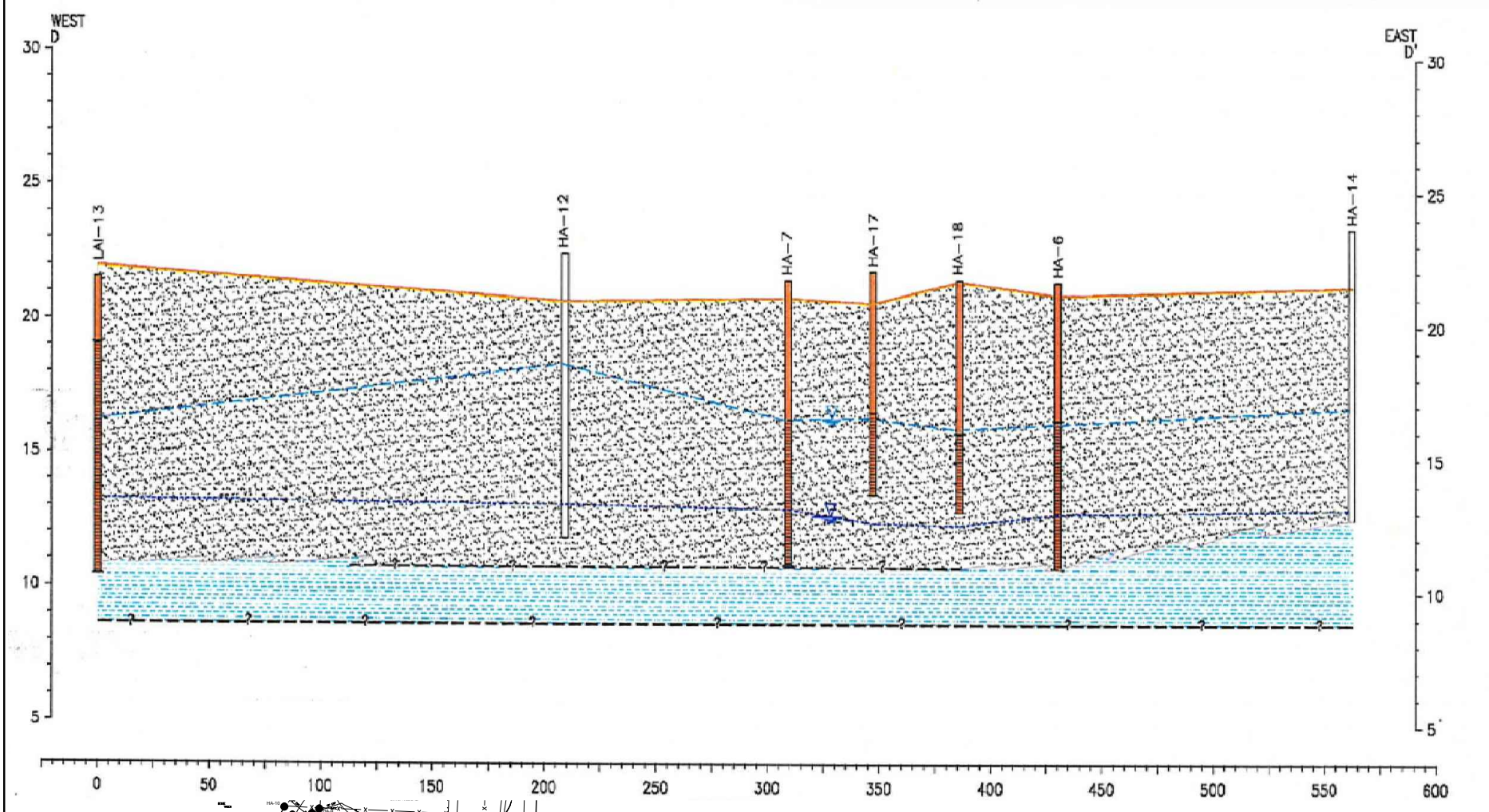
PROPOSED BORINGS AND MONITORING WELL LOCATIONS
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

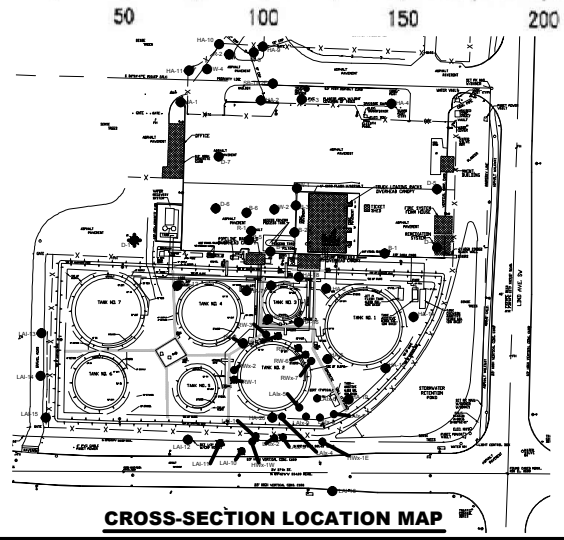
SOURCE: STANTEC, FIGURE 11, PROPOSED BORINGS AND MONITORING WELL LOCATIONS, DATED 08/26/2010.

Geologic Section B-B'



Geologic Section D-D'





LEGEND

- HA-1 — WELL NUMBER
- WELL CASING
- WELL SCREEN
- APPROXIMATE GROUND SURFACE (DASHED WHERE INFERRED)
- GEOLOGIC CONTACT
- GROUNDWATER LEVEL (SEPTEMBER, 2007)
- GROUNDWATER LEVEL (JANUARY, 2008)
- UNKNOWN BOUNDARY
- SILTY CLAY / CLAYEY SILT
- SILTY GRAVELY SAND
- POORLY GRADED SAND WITH SILT
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

figure 12

SOIL CROSS-SECTIONS
CONOCOPHILLIPS RENTON TERMINAL
2423 LIND AVENUE SW
Renton, Washington

SOURCE: STANTEC, FIGURE 12, SOIL CROSS-SECTIONS, DATED 09/16/2010.

TABLES

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

		Benzene		*Toluene*		*Ethylbenzene*		*Xylenes, total*		*TPH-g*		*TPH-d*	
Location	*Date*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*
Total	02/13/03	9.162	NA	14.379	NA	0.598	NA	NA	NA	708.44	NA	NA	NA
Influent	02/24/03	62.322	NA	226.045	NA	17.387	NA	NA	NA	1,859.64	NA	867.833	NA
	04/08/03	28.845	NA	106.648	NA	10.811	NA	NA	NA	1,124.3	NA	524.69	NA
	06/20/03	84	NA	189	NA	17.1	NA	93.5	NA	1,860	NA	NA	NA
	07/11/03	80.5	NA	101	NA	17.5	NA	81.6	NA	1,900	NA	NA	NA
	08/07/03	63.5	NA	111	NA	6.61	NA	31.4	NA	1,170	NA	NA	NA
	10/15/03	43.2	NA	91.5	NA	6.51	NA	34.1	NA	779	NA	NA	NA
	12/18/03	14.8	NA	64.4	NA	9.27	NA	54.8	NA	497	NA	NA	NA
	02/05/04	3.45	NA	6.8	NA	0.924	NA	6.7	NA	46	NA	NA	NA
	03/16/04	7.81	NA	15.5	NA	1.96	NA	15.6	NA	252	NA	NA	NA
	07/02/04	23.5	NA	68.5	NA	5.61	NA	57.6	NA	927	NA	NA	NA
	08/20/04	69.7	NA	181	NA	13.8	NA	93.7	NA	2,130	NA	NA	NA
	12/22/04	5.76	1.77	14.3	3.74	1.67	0.378	12.5	2.83	162	**38.2**	NA	NA
	06/08/05	5.08	1.57	11.7	3.05	1.05	0.238	9.96	2.26	167	**39.4**	NA	NA
	09/30/05	<2	NA	<3	NA	<2	NA	<3	NA	94	NA	NA	NA
	10/31/05	NA	8	NA	30	NA	3	NA	20	NA	**190**	NA	NA
	11/30/05	<2	<0.5	<3	<0.8	<2	<0.4	<3	<0.7	3.3	<1.0	NA	NA
	12/29/05	NA	4	NA	9	NA	0.7	NA	6	NA	**30**	NA	NA
	01/31/06	<2	<0.5	<3	<0.8	<2	<0.4	<3	<0.7	<3.5	<1.0	NA	NA
	02/23/06	20	7	50	10	3	0.7	40	9	100	29	NA	NA
	03/30/06	<2	<0.5	<3	<0.8	<2	<0.4	<3	<0.7	7.2	2	NA	NA
	06/09/06	10	4	30	9	2	0.5	30	6	160	**46**	NA	NA
	09/12/06	10	4	90	20	9	2	90	20	600	**170**	NA	NA
	01/31/07	40	10	60	20	2	0.5	10	3	120	**34**	NA	NA
	05/11/07	20	5	30	8	<2	<0.4	10	3	130	**36**	NA	NA
	06/21/07	3	1	20	5	<2	<0.4	9	2	180	**50**	NA	NA
	07/31/07	25.3	7.81	74.3	19.4	7.85	1.78	69	15.6	1,370	**323**	NA	NA
	08/22/07	47.6	14.7	114	29.8	<1	<0.454	84.8	19.2	2,190	**515**	NA	NA
	09/27/07	99.6	30.7	275	72	23	5.21	179	40.5	3,670	**865**	NA	NA

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

		Benzene		*Toluene*		*Ethylbenzene*		*Xylenes, total*		*TPH-g*		*TPH-d*	
Location	*Date*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*
Total	10/25/07	55.2	17	126	33	7.82	1.77	80.5	18.3	1,300	**306**	NA	NA
Influent	11/28/07	58.2	17.9	98.1	25.6	4.29	0.974	44.8	10.2	426	**100**	NA	NA
	12/18/07	6.43	1.98	8.51	2.22	0.461	0.105	7.49	1.7	104	24.4	NA	NA
	01/16/08	3.33	1.03	8.51	2.22	0.666	0.151	5.93	1.34	113	26.6	NA	NA
	02/14/08	1.79	0.551	4.14	1.08	0.454	0.103	5.35	1.21	42.8	10.1	NA	NA
	03/19/08	47.0	14.5	88.6	23.1	4.77	1.08	42.1	9.54	501	**118**	NA	NA
	04/09/08	21	6.47	34.6	9.05	1.84	0.418	25.5	5.77	232	**54.6**	NA	NA
	05/21/08	4.31	1.33	11.6	3.02	0.889	0.202	11.1	2.52	203	**47.9**	NA	NA
	06/25/08	8.2	2.53	23.1	6.03	1.57	0.356	17.8	4.04	260	**61.4**	NA	NA
	07/29/08	11.5	3.54	43.2	11.3	2.77	0.629	35.2	7.99	667	**157**	NA	NA
	08/13/08	13.8	4.26	60.3	15.8	3.76	0.853	44.3	10	765	**180**	NA	NA
	09/18/08	11.3	3.48	35.4	9.25	2.96	0.672	30.9	7.01	628	**148**	NA	NA
	10/13/08	18.6	5.73	54.1	14.1	4.50	1.02	41.3	9.37	336	**79.3**	NA	NA
	11/10/08	4.88	1.50	14.6	3.82	1.47	0.334	14.6	3.32	123	28.9	NA	NA
	12/15/08	**System down unable to sample**											
	01/13/09	**System down unable to sample**											
	02/25/09	1.77	0.546	3.45	0.902	0.138	0.0313	1.83	0.414	55.8	13.1	NA	NA
	03/30/09	2.17	0.668	5.36	1.4	0.384	0.0871	4.24	0.961	54.2	12.8	NA	NA
	04/21/09	8.40	2.59	14.5	3.79	0.487	0.111	6.32	1.43	71.2	16.8	NA	NA
	05/21/09	0.282	0.0869	0.483	0.126	<0.100	<0.0227	0.204	0.0464	20.4	4.81	NA	NA
	06/25/09	1.13	0.349	2.72	0.71	0.103	0.0233	2.66	0.602	54.6	12.9	NA	NA
	a 07/15/09	8.02	2.5	38	9.9	1.83	0.41	42.6	9.7	582	**134**	NA	NA
	08/18/09	110	34	801	157	49.9	11.3	500	113.2	12800	**2950**	NA	NA
	09/08/09	43.5	13.4	674	176	18.5	4.2	166.1	37.7	2560	**589**	NA	NA
	10/00/09	**System down unable to sample**											
	11/00/09	**System down unable to sample**											
	12/01/09	78.3	24.1	78.3	40.6	78.3	1.5	81.6	18.5	1320	**304**	NA	NA
	01/00/10	**System down unable to sample**											
	02/00/10	**System down unable to sample**											
	03/22/10	31.95	10.0	43.71	11.6	1.74	0.40	30.83	7.1	340.26	**78.3**	NA	NA
	04/20/10	6.71	2.1	29	7.7	1.52	0.35	20.71	4.7	364.6	**83.9**	NA	NA
	5/00/10	**System down unable to sample**											
	06/03/10	73.5	23.0	133.35	35.4	4.34	1.00	48.05	10.9	<95.77	<22.3	NA	NA

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

		Benzene		*Toluene*		*Ethylbenzene*		*Xylenes, total*		*TPH-g*		*TPH-d*	
Location	*Date*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*
Midpoint	07/31/07	<0.100	<0.0308	0.736	0.192	0.152	0.0346	1.95	0.442	18	4.13	NA	NA
1	08/22/07	166	51.1	3.54	0.926	<1.00	<0.227	4.42	1	3,160	**746**	NA	NA
	08/30/07	0.179	0.055	1.5	0.393	0.276	0.0625	2.86	0.648	5.44	5.44	NA	NA
	10/25/07	<.100	<0.0308	0.591	0.154	0.111	0.0251	1.41	0.319	10.8	2.54	NA	NA
	11/28/07	0.186	0.0573	1.05	0.274	0.129	0.0292	1.56	0.354	10.8	2.55	NA	NA
	12/18/07	<0.100	<0.0308	0.433	0.113	<0.100	<0.0227	1	0.228	<10	<2.36	NA	NA
	01/16/08	<0.100	<0.0308	0.488	0.127	<0.100	<0.0227	0.592	0.134	<10	<2.36	NA	NA
	02/14/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	03/19/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	0.219	0.0496	<10	<2.36	NA	NA
	04/09/08	<0.100	<0.0308	0.4	0.104	<0.100	<0.0227	0.754	0.171	<10	<2.36	NA	NA
	05/21/08	22.5	6.92	0.251	0.0655	<0.100	<0.0227	0.376	0.0853	<10	<2.36	NA	NA
	06/25/08	9.37	2.89	33.5	8.76	<0.100	<0.0227	<0.200	<0.0454	93.3	22	NA	NA
	07/29/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	0.227	0.0515	<10	<2.36	NA	NA
	08/13/08	28.3	8.71	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	148	34.9	NA	NA
	09/18/08	11.3	3.5	39.7	10.4	<0.100	<0.0227	<0.200	<0.0454	388	91.5	NA	NA
	10/13/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	11/10/08	1.86	0.574	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	12/15/08	**System down unable to sample**											
	01/13/09	**System down unable to sample**											
	02/25/09	3.68	1.13	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	20.2	4.76	NA	NA
	03/30/09	1.23	0.38	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	04/21/09	7.87	2.43	0.280	0.0731	<0.100	<0.0227	<0.200	<0.0454	62.3	14.7	NA	NA
	05/21/09	7.57	2.33	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	22	5.18	NA	NA
	06/25/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	07/15/09	0.00455	0.0014	0.0169	0.0044	<0.0037	<0.00084	0.0362	0.0082	5.12	1.2	NA	NA
	08/18/09	0.0779	0.024	0.36	0.094	0.03	0.0068	0.243	0.055	26	6.0	NA	NA
	09/08/09	0.0052	0.0016	0.0498	0.013	0.00428	0.00097	0.02518	0.0057	11.3	2.6	NA	NA
	10/00/09	**System down unable to sample**											
	11/00/09	**System down unable to sample**											
	12/01/09	0.117	0.036	0.199	0.052	0.0441	0.010	0.441	0.100	3.56	0.82	NA	NA
	01/00/10	**System down unable to sample**											
	02/00/10	**System down unable to sample**											
	03/22/10	0.00319	0.0010	0.1	0.027	<0.00317	<0.00073	<0.00968	<0.00223	3.04	0.70	NA	NA
	04/20/10	0.07987	0.025	0.11	0.028	<0.07816	<0.018	<0.238	<0.054	7.05	1.6	NA	NA
	5/00/10	**System down unable to sample**											
	06/03/10	43.77	13.7	0.00565	0.0015	<0.03778	<.00087	0.00529	0.0012	6.44	1.5	NA	NA

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

		Benzene		*Toluene*		*Ethylbenzene*		*Xylenes, total*		*TPH-g*		*TPH-d*	
Location	*Date*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*
Midpoint	11/28/07	0.258	0.0794	0.772	0.202	<0.100	<0.0227	1.62	0.367	12.9	3.05	NA	NA
2	12/18/07	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	01/16/08	0.140	0.0433	0.425	0.111	<0.100	<0.0227	0.379	0.0860	<10	<2.36	NA	NA
	02/14/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	03/19/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	04/09/08	<0.100	<0.0308	0.127	0.0332	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	05/21/08	0.198	0.0609	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	06/25/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	07/29/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	0.313	0.071	<10	<2.36	NA	NA
	08/13/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	09/18/08	0.107	0.0329	<0.100	<0.0261	<0.100	<0.0227	0.394	0.0893	<10	<2.36	NA	NA
	10/13/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	11/10/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	0.216	0.0489	<10	<2.36	NA	NA
	12/15/08	**System down unable to sample**											
	01/13/09	**System down unable to sample**											
	02/25/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	03/30/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	04/21/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	05/21/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	06/25/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	07/15/09	<0.0025	<0.00078	0.013	0.0034	<0.0034	<0.00078	0.0075	0.0017	0.881	0.2	NA	NA
	08/18/09	<0.0025	<0.00078	0.0919	0.024	<0.0034	<0.00078	0.0075	0.0017	1.61	0.37	NA	NA
	09/08/09	0.0747	0.023	0.0536	0.014	0.0216	0.0049	0.0865	0.0196	12.6	2.9	NA	NA
	10/00/09	**System down unable to sample**											
	11/00/09	**System down unable to sample**											
	12/01/09	0.0455	0.014	0.0843	0.022	0.0159	0.0036	0.1982	0.045	1.35	0.31	NA	NA
	01/00/10	**System down unable to sample**											
	02/00/10	**System down unable to sample**											
	03/22/10	0.00217	0.00068	0.06783	0.018	<0.00195	<0.00045	<0.00586	<0.00135	2.13	0.49	NA	NA
	04/20/10	<0.00479	<0.0015	0.02712	0.0072	<0.00651	<0.0015	<0.0198	<0.0045	<0.265	<0.060	NA	NA
	5/00/10	**System down unable to sample**											
	06/03/10	0.03514	0.011	0.22	0.058	0.02084	0.0048	0.3879	0.088	1.07	0.25	NA	NA

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

Location	Date	Benzene		Toluene		Ethylbenzene		Xylenes, total		TPH-g		TPH-d	
		mg/m3	ppmV	mg/m3	ppmV	mg/m3	ppmV	mg/m3	ppmV	mg/m3	ppmV	mg/m3	ppmV
AS	11/28/07	<.100	<0.0308	0.206	0.0539	<0.100	<0.0227	0.239	0.0541	<10	<2.36	NA	NA
Effluent	12/18/07	82.5	25.4	102	26.8	4.29	0.973	75.8	17.2	765	**180**	NA	NA
	02/14/08	259	79.7	381	99.5	27.3	6.20	246	55.7	3840	**904**	NA	NA
	03/19/08	115	35.3	181	47.3	9.51	2.16	83.0	18.8	933	**220**	NA	NA
	04/09/08	21.8	6.72	35.8	9.36	1.86	0.422	24.3	5.51	205	**48.4**	NA	NA
AS off	05/21/08	--	--	--	--	--	--	--	--	--	--	NA	NA
	06/25/08	--	--	--	--	--	--	--	--	--	--	NA	NA
	07/29/08	--	--	--	--	--	--	--	--	--	--	NA	NA
	08/13/08	--	--	--	--	--	--	--	--	--	--	NA	NA
	09/18/08	--	--	--	--	--	--	--	--	--	--	NA	NA
AS on	10/13/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	11/10/08	46.4	14.3	41.0	10.7	0.870	0.197	69.1	15.7	263	**62.0**	NA	NA
	12/15/08	**System down unable to sample**											
	01/13/09	**System down unable to sample**											
	02/25/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	03/30/09	315	97.1	494	129	21.5	4.87	165	37.5	2160	**508**	NA	NA
	04/21/09	3.69	1.14	6.79	1.77	0.262	0.0595	3.65	0.827	30.3	7.14	NA	NA
	05/21/09	**System down unable to sample**											
	06/25/09	**System down unable to sample**											
	07/15/09	0.109	0.034	0.93	0.24	0.0724	0.016	1.834	0.42	11.5	2.7	NA	NA
	08/18/09	0.143	0.044	0.291	0.076	<0.062	<0.014	0.358	0.081	9.55	2.2	NA	NA
	09/08/09	29.2	9	43.7	11.4	0.441	0.1	7.46	1.69	36.5	8.4	NA	NA
	10/00/09	**System down unable to sample**											
	11/00/09	**System down unable to sample**											
	12/01/09	893	275	1450	378	46.8	10.6	578	130.9	3160	**729**	NA	NA
	01/00/10	**System down unable to sample**											
	02/00/10	**System down unable to sample**											
	03/22/10	0.13	0.042	0.33	0.087	<0.03777	<0.0087	0.21	0.049	7.82	1.8	NA	NA
	04/20/10	46.32	14.5	52.74	14	<2.43	<0.56	63.5	14.4	350.95	**79.6**	NA	NA
	5/00/10	**System down unable to sample**											
	06/03/10	111.49	34.9	168	44.6	9.55	2.20	70.09	15.9	347.85	**81**	NA	NA

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

		Benzene		*Toluene*		*Ethylbenzene*		*Xylenes, total*		*TPH-g*		*TPH-d*	
Location	*Date*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*
SVE	08/22/07	210	64.6	418	109	41.2	9.35	332	75.3	10200	**2400**	NA	NA
Influent	12/18/07	8.32	2.57	13.4	3.51	1.17	0.265	13	2.96	323	**76.1**	NA	NA
	01/16/08	8.12	2.50	23.1	6.03	1.42	0.323	12.0	2.71	286	**67.4**	NA	NA
	02/14/08	28.6	8.82	118	30.7	20.4	4.63	222	50.3	1900	**448**	NA	NA
	03/19/08	45.2	13.9	145	38.0	15.3	3.47	169	38.3	2860	**675**	NA	NA
	04/09/08	50.8	15.6	110	28.6	7.36	1.67	97.9	22.2	1840	**433**	NA	NA
	05/21/08	38.9	12	86.7	22.6	6.77	1.53	57.5	13	1870	**441**	NA	NA
	06/25/08	55.2	17	10.7	144	37.6	2.42	130.0	29.5	2680	**632**	NA	NA
	07/29/08	52.6	16.2	311	81.3	25.9	5.88	252.0	57.2	5680	**1340**	NA	NA
	08/13/08	449	139	504	132	164	37.3	393.0	89.2	9330	**2200**	NA	NA
	09/18/08	69.6	21.4	181	47.4	9.95	2.26	134.0	30.4	3030	**713**	NA	NA
	10/13/08	3.88	1.19	11.1	2.90	0.829	0.188	7.23	1.64	1640	**387**	NA	NA
	11/10/08	18.1	5.59	51.2	13.4	5.18	1.17	47.9	10.9	669	**158**	NA	NA
	12/15/08	**System down unable to sample**											
	01/13/09	**System down unable to sample**											
	02/25/09	3.83	1.18	7.61	1.99	0.262	0.0593	3.76	0.852	174	**40.9**	NA	NA
	03/30/09	3.33	1.03	7.9	2.06	0.589	0.134	6.43	1.46	97.1	22.9	NA	NA
	04/21/09	3.46	1.07	8.38	2.19	0.563	0.128	5.28	1.2	82.0	19.3	NA	NA
	05/21/09	0.996	0.307	2.35	0.615	0.120	0.0273	1.77	0.401	43.8	10.3	NA	NA
	06/25/09	5.62	1.73	12.3	3.21	0.47	0.107	11.1	2.52	278	**65.5**	NA	NA
	07/15/09	32.3	9.9	211	55.2	7.55	1.7	147.7	33.5	2410	**556**	NA	NA
	08/18/09	149	46	789	206	64	14.5	595	134.9	14200	**3970**	NA	NA
	09/08/09	307	94.5	1490	389	173	39.2	1411	319.9	24000	**5530**	NA	NA
	10/00/09	**System down unable to sample**											
	11/00/09	**System down unable to sample**											
	12/01/09	2.11	0.65	11.1	2.9	1.24	0.28	9.8	2.22	107	24.7	NA	NA
	01/00/10	**System down unable to sample**											
	02/00/10	**System down unable to sample**											
	03/22/10	9.9	3.1	19.6	5.2	<0.61	<0.14	10.51	2.42	185.56	42.7	NA	NA
	04/20/10	11.5	3.6	22.22	5.9	<1.22	<0.28	24.68	5.6	24.69	14.9	NA	NA
	5/00/10	**System down unable to sample**											
	06/03/10	8.95	2.8	42.19	11.2	0.87	0.20	31.3	7.1	85.46	19.9	NA	NA

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

		Benzene		*Toluene*		*Ethylbenzene*		*Xylenes, total*		*TPH-g*		*TPH-d*	
Location	*Date*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*
Effluent	02/13/03	<0.002	NA	0.002	NA	<0.001	NA	NA	NA	0.023	NA	NA	NA
	02/24/03	NA	0.3	NA	1.4	NA	0.3	NA	NA	NA	NA	NA	NA
	04/08/03	<0.002	NA	<0.001	NA	<0.001	NA	NA	NA	0.022	NA	<0.013	NA
	06/20/03	0.064	NA	<0.026	NA	<0.023	NA	<0.045	NA	<2.36	NA	NA	NA
	07/11/03	0.641	NA	0.086	NA	<0.023	NA	<0.045	NA	<2.36	NA	NA	NA
	08/07/03	<0.031	NA	0.089	NA	<0.023	NA	0.067	NA	<2.36	NA	NA	NA
	10/15/03	<0.0308	NA	<0.026	NA	<0.023	NA	<0.045	NA	<2.36	NA	NA	NA
	12/18/03	<0.100	NA	<0.100	NA	<0.100	NA	<0.200	NA	<10	NA	NA	NA
	02/05/04	<0.100	NA	0.359	NA	<0.100	NA	0.338	NA	<10	NA	NA	NA
	03/16/04	0.156	NA	0.134	NA	<0.100	NA	<0.200	NA	<10	NA	NA	NA
	07/02/04	0.358	NA	0.436	NA	<0.100	NA	0.397	NA	21.2	NA	NA	NA
	12/22/04	<0.100	<0.031	0.146	0.038	<0.100	<0.023	1.69	0.383	15.1	3.55	NA	NA
	06/08/05	<0.447	0.138	0.731	0.191	<0.100	<0.023	1.32	0.299	19.5	4.6	NA	NA
	09/30/05	<2	NA	<3	NA	<2	NA	0.233	0.0528	<10.0	<2.36	NA	NA
	10/31/05	NA	<0.5	NA	1	NA	<0.4	#VALUE!	#VALUE!	NA	11	NA	NA
	11/30/05	<2	<0.5	<3	<0.8	<2	<0.4	0.233	0.0528	18.3	1.8	NA	NA
	12/29/05	NA	<0.5	NA	<0.8	NA	<0.4	NA	<0.7	NA	3.9	NA	NA
	01/31/06	<2	<0.5	<3	<0.8	<2	<0.4	#VALUE!	#VALUE!	<3.5	<1.0	NA	NA
	02/23/06	<2	<0.5	<3	<0.8	<2	<0.4	<3	#VALUE!	3.8	1.1	NA	NA
	03/30/06	<2	<0.5	<3	<0.8	<2	<0.4	<3	#VALUE!	13	3.7	NA	NA
	06/09/06	<2	<0.5	<3	<0.8	<2	<0.4	#VALUE!	#VALUE!	3.8	1.1	NA	NA
	09/12/06	<2	<0.5	<3	<0.8	<2	<0.4	<3	<0.7	35	10	NA	NA
	01/31/07	<2	<0.5	<3	<0.8	<2	<0.4	<3	<0.7	<3.5	<1.0	NA	NA
	05/11/07	<2	<0.5	<3	<0.8	<2	<0.4	<3	<0.7	8.1	2.3	NA	NA
	06/21/07	<2	<0.5	4	1	<2	<0.4	6	1	19	5.5	NA	NA
	07/31/07	<0.1	<0.0308	0.379	0.099	<0.1	<0.0227	0.954	0.216	10.3	2.43	NA	NA
	08/22/07	0.154	0.0475	0.77	0.201	0.149	0.0338	1.69	0.383	15.1	3.55	NA	NA
	09/27/07	0.523	0.161	1.96	0.511	0.167	0.0371	1.32	0.299	19.5	4.6	NA	NA
	10/25/07	<0.100	<0.0308	0.128	0.0344	<0.100	<0.0227	0.233	0.0528	<10.0	<2.36	NA	NA
	11/28/07	0.256	0.0789	1.57	0.41	0.208	0.0471	2.59	0.587	15.3	3.6	NA	NA
	12/18/07	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	01/16/08	<0.100	<0.0308	0.232	0.0607	<0.100	<0.0227	0.244	0.0553	<10	<2.36	NA	NA
	02/14/08	<0.100	<0.0308	0.104	0.0273	<0.100	<0.0227	0.269	0.0610	<10	<2.36	NA	NA

TABLE 1

VAPOR ANALYTICAL RESULTS - REMEDIATION SYSTEM
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

		Benzene		*Toluene*		*Ethylbenzene*		*Xylenes, total*		*TPH-g*		*TPH-d*	
Location	*Date*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*	*mg/m3*	*ppmV*
Effluent	03/19/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	04/09/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	05/21/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	06/25/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	0.266	0.0603	<10	<2.36	NA	NA
	07/29/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	0.367	0.0832	<10	<2.36	NA	NA
	08/13/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	09/18/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	10/13/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	11/10/08	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	12/15/08	**System down unable to sample**											
	01/13/09	**System down unable to sample**											
	02/25/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	03/30/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	04/21/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	05/21/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	10.3	2.42	NA	NA
	06/25/09	<0.100	<0.0308	<0.100	<0.0261	<0.100	<0.0227	<0.200	<0.0454	<10	<2.36	NA	NA
	a 07/15/09	0.00974	0.0030	0.0421	0.011	0.00486	0.0011	0.0512	0.0116	4.99	1.1	NA	NA
	08/18/09	0	<0.00084	0.00881	0.0023	<0.0037	<0.00084	0.01894	0.0043	0.477	0.11	NA	NA
	09/08/09	<0.0027	<0.00084	0.0138	0.0036	<0.0037	<0.00084	0.00216	0.00049	0.825	0.19	NA	NA
	10/00/09	**System down unable to sample**											
	11/00/09	**System down unable to sample**											
	12/01/09	0.104	0.032	0.268	0.07	0.0212	0.0048	0.2733	0.062	2.26	0.52	NA	NA
	01/00/10	**System down unable to sample**											
	02/00/10	**System down unable to sample**											
	03/22/10	<0.00259	<0.00081	0.04522	0.012	<0.00352	<0.00081	<0.01047	<0.00241	0.87	0.2		
	04/20/10	0.0845	0.026	1.495	0.39	<0.07382	<0.017	0.4717	0.107	4.08	0.94	NA	NA
	5/00/10	**System down unable to sample**											
	06/03/10	0.00511	0.0016	0.0452	0.012	0.00738	0.0017	0.097	0.022	0.17	0.04	NA	NA
Effluent Permit Limits											**30**		

Notes:

TPH-G & TPH-D	Gasoline and Diesel Range Total Petroleum Hydrocarbons
ppmv	Parts per million by volume
mg/m3	Milligrams per cubic meter (assuming 60 degrees F and 1 atmosphere of pressure)
a	Analytical results for total influent and effluent samples for this sampling date appear to have been reversed. Although not confirmed or denied by the analytical lab or flagged as such in the lab report, historical and recent analytical results for air influent and effluent samples strongly support this interpretation. The results posted in this table (for this date only) are reversed based om this interpretation.

TABLE 2

GROUNDWATER TREATMENT SYSTEM ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL RM&R #03485
RENTON, WASHINGTON

Location	*Date*	*Benzene ug/l*	*Toluene ug/l*	*Ethylbenzene ug/l*	*Xylenes (total) ug/l*	*TPH-g ug/l*	*TPH-d ug/l*	*TPH-o ug/l*	*Oil & Grease (HEM) mg/l*	*TPH (SGT-HEM) mg/l*
Influent	07/07/03	**45,200**	**81,200**	**3,840**	21,700	33,100	3.47	0.63	NA	NA
	09/11/03	**37,500**	**76,700**	**2,810**	22,400	**320,000**	2.74	<0.500	NA	NA
	12/18/03	**4,060**	**14,500**	**1,690**	11,800	73,100	34.8	<10	NA	NA
	01/23/04	**389**	**3,900**	69	7,140	34,700	NA	NA	NA	NA
	02/05/04	**3,180**	**6,930**	783	5,350	40,000	NA	NA	NA	NA
	03/16/04	**5,530**	**9,480**	520	4,810	43,500	NA	NA	NA	NA
	07/02/04	3	11	4	104	967	1.37	<0.500	20.2	10.5
	12/22/04	**11,000**	**15,300**	1,100	8,030	79,300	NA	<5.00	<5.00	NA
	06/08/05	**28,300**	**36,500**	1,370	15,300	**173,000**	NA	NA	NA	NA
	09/30/05	**12,000**	**17,000**	720	10,000	81,000	2,800	530	NA	NA
	12/29/05	**11,000**	**26,000**	**2,100**	17,000	**160,000**	3,100	<200	NA	NA
	02/24/06	**11,000**	**25,000**	**1,800**	16,000	**160,000**	3,500	<480	NA	NA
	03/30/06	**7,400**	**16,000**	1,000	1,000	**110,000**	NA	NA	NA	NA
	09/12/06	**4,000**	**5,400**	200	4,100	36,000	NA	NA	NA	NA
	01/31/07	**14,000**	**27,000**	**1,800**	13,000	**160,000**	4,000	<480	NA	NA
	05/11/07	**15,000**	**24,000**	1,300	12,000	**140,000**	7,100	650	NA	NA
	06/21/07	**17,000**	**26,000**	720	13,000	**130,000**	41,000	<4700	NA	NA
	07/26/07	**7,400**	**8,900**	120	6,000	70,000	5,800	<960	NA	NA
	08/22/07	**3,800**	**4,300**	110	5,000	46,000	3,400	<500	NA	NA
	09/20/07	**5,800**	**11,000**	380	8,900	85,000	5,700	1,000	NA	NA
	10/25/07	**5,000**	**14,000**	1,200	13,000	**120,000**	29,000	11,000	NA	NA
	11/28/07	**6,000**	**10,000**	550	14,000	**110,000**	6,800	<940	NA	NA
	12/18/07	**4,900**	**8,900**	450	11,000	**100,000**	22,000	<4,900	NA	NA
	01/16/08	**6,500**	**12,000**	630	15,000	**130,000**	17,000	<4,800	NA	NA
	02/14/08	**6,200**	**12,000**	700	15,000	**130,000**	11,000	<2,400	NA	NA
	03/19/08	**6,000**	**12,000**	690	13,000	**130,000**	16,000	<2,400	NA	NA
	04/22/08	**12,000**	**25,000**	**1,400**	15,000	**150,000**	5,100	<1,900	NA	NA
	10/13/08	**9,900**	**16,000**	480	9,600	80,000	4,800	<470	NA	NA
	11/10/08	**2,100**	**3,200**	78	3,600	26,000	3,200	<330	NA	NA
	12/15/08	**System down unable to sample**								
	01/13/09	**System down unable to sample**								
	02/25/09	**18,000**	**30,000**	1,300	12,000	**142,000**	3,000	760	NA	NA
	03/26/09	**14,000**	**29,000**	**1,400**	11,000	81,500	980	<400	NA	NA
	04/21/09	**15,000**	**27,000**	**1,600**	12,000	**105,000**	1,100	<400	NA	NA
	05/21/09	**System down unable to sample**								
	06/25/09	**System down unable to sample**								
	07/15/09	**12,200**	**20,000**	1,060	9,430	95,400	884	<404	NA	NA
	08/18/09	**10,000**	**17,300**	1,240	9,570	75,800	877	261	NA	NA
	09/08/09	**2,010**	**3,160**	96.9	2,220	21,900	559	<408	NA	NA
	10/00/09	**System down unable to sample**								
	11/00/09	**System down unable to sample**								
	12/01/09	**10,400**	**18,000**	1,030	12,500	79,400	1,480	*230*	NA	NA
	01/00/10	**System down unable to sample**								
	02/00/10	**System down unable to sample**								
	03/22/10	**6,310**	**8,710**	315	6,550	42,600	1,270	<*377*	NA	NA
	04/20/10	**3,900**	**6,370**	237	7,870	50,900	3,900	<*377*	NA	NA
	06/03/10	**16,800**	**25,800**	1,710	14,600	**120,000**	1,530	<*379*	NA	NA
Air Stripper Effluent	01/23/04	10.5	28.4	3.38	119	4,010	NA	NA	NA	NA
	02/05/04	24.7	39.9	9.38	76.9	2,370	NA	NA	NA	NA
	03/16/04	**244**	**483**	34.7	359	4,710	NA	NA	NA	NA
	07/02/04	<0.5	<0.5	0.513	1.57	104	0.324	<0.5	<5	<5
	12/22/04	2.32	5.27	1.54	10.7	529	NA	NA	<5	<5
	06/08/05	16.5	11.5	<5	7.89	97.9	NA	NA	NA	NA

TABLE 2

GROUNDWATER TREATMENT SYSTEM ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL RM&R #03485
RENTON, WASHINGTON

Location	*Date*	*Benzene ug/l*	*Toluene ug/l*	*Ethylbenzene ug/l*	*Xylenes (total) ug/l*	*TPH-g ug/l*	*TPH-d ug/l*	*TPH-o ug/l*	*Oil & Grease (HEM) mg/l*	*TPH (SGT-HEM) mg/l*
	12/29/05	**280**	**640**	45	480	4,900	2,800	<100	NA	NA
	02/24/06	**210**	**450**	28	350	4,100	3,300	<520	NA	NA
	03/30/06	68	82	1	73	490	NA	NA	NA	NA
	09/12/06	14	16	0.4	20	230	NA	NA	NA	NA
	01/31/07	**510**	**930**	54	580	6,300	4,000	<480	NA	NA
	05/11/07	**1,100**	**1,600**	47	1,100	10,000	3,600	<480	NA	NA
	06/21/07	**4,000**	**5,500**	77	3,200	31,000	3,300	<510	NA	NA
	07/26/07	16	14	1	53	720	2,500	<510	NA	NA
	08/22/07	NA	NA	NA	NA	NA	2,600	<200	NA	NA
	09/20/07	**2,900**	**4,400**	42	4,800	36,000	1,700	<480	NA	NA
	10/25/07	**530**	**1,400**	79	1,300	12,000	2,700	<480	NA	NA
	11/28/07	56	110	3.6	190	2,500	3,800	<1,100	NA	NA
	12/18/08	25	34	0.8	140	1,900	4,000	<490	NA	NA
	01/16/08	**4,500**	**7,200**	120	10,000	82,000	6,700	<990	NA	NA
	02/14/08	**5,600**	**9,200**	140	7,100	64,000	5,200	<2,000	NA	NA
	03/19/08	110	**210**	8.1	150	1,800	3,200	<500	NA	NA
	04/22/08	15	24	0.9	45	630	3,600	<1000	NA	NA
	10/13/08	29	43	0.8	66	340	3,700	<470	NA	NA
	11/10/08	**580**	**780**	22	1,100	620	2,400	<330	NA	NA
	12/15/08	**System down unable to sample**								
	01/13/09	**System down unable to sample**								
	02/25/09	**240**	**350**	15	330	2,110	250	<380	NA	NA
	03/26/09	**5,200**	**9,000**	430	4,400	39,300	490	<430	NA	NA
	04/21/09	**280**	**5,700**	<1.0	2,800	19,700	820	<530	NA	NA
	05/21/09	**System down unable to sample**								
	06/25/09	**System down unable to sample**								
	07/15/09	**606**	**477**	59.7	477	8,760	320	<408	NA	NA
	08/18/09	**663**	**851**	20.5	667	5,580	252	158	NA	NA
	09/08/09	**528**	**666**	17.3	578	5,680	353	<379	NA	NA
	10/00/09	**System down unable to sample**								
	11/00/09	**System down unable to sample**								
	12/01/09	**2,130**	**3,620**	148.0	1,940	21,700	939	*165*	NA	NA
	01/00/10	**System down unable to sample**								
	02/00/10	**System down unable to sample**								
	03/22/10	**151**	**193**	8.2	247	963	405	<*377*	NA	NA
	04/20/10	**278**	**258**	9	467	2,740	620	<*385*	NA	NA
	06/03/10	<1.0	<1.0	<1.0	<3.0	<50.0	683	<*385*	NA	NA
	06/21/07	<0.2	<0.2	<0.2	<0.6	<50	NA	NA	NA	NA
Carbon Mid Point	07/26/07	<0.5	<0.7	<0.8	<0.8	<50	NA	NA	NA	NA
	08/22/07	<0.2	<0.2	<0.2	<0.6	<50	NA	NA	NA	NA
	09/20/07	0.3	0.6	<0.2	0.7	NA	NA	NA	NA	NA
	10/25/07	<0.2	0.2	<0.2	<0.6	<50	NA	NA	NA	NA
	11/28/07	<0.2	<0.2	<0.2	<0.6	<50	NA	NA	NA	NA
	12/18/07	0.8	0.4	<0.2	1.6	85	NA	NA	NA	NA
	01/16/08	2.8	3.7	<0.2	7.6	120	NA	NA	NA	NA
	02/14/08	0.3	<0.2	<0.2	<0.6	<50	NA	NA	NA	NA
	03/19/08	0.9	0.3	<0.2	<0.6	<50	NA	NA	NA	NA
	04/22/08	1.1	0.3	<0.2	<0.6	<50	NA	NA	NA	NA
	10/13/08	<0.5	<0.7	<0.8	<0.8	<50	<75	<94	NA	NA
	11/10/08	<0.5	<0.7	<0.8	<0.8	<50	3,500	770	NA	NA
	12/15/08	**System down unable to sample**								
	01/13/09	**System down unable to sample**								
	02/25/09	21	12	<1.0	5	58	<82	<410	NA	NA
	03/26/09	20	7.9	<1.0	3.1	<50	<80	<400	NA	NA
	04/21/09	<1.0	1.9	<1.0	<1.0	63.5	<100			

TABLE 2

GROUNDWATER TREATMENT SYSTEM ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL RM&R #03485
RENTON, WASHINGTON

Location	*Date*	*Benzene ug/l*	*Toluene ug/l*	*Ethylbenzene ug/l*	*Xylenes (total) ug/l*	*TPH-g ug/l*	*TPH-d ug/l*	*TPH-o ug/l*	*Oil & Grease (HEM) mg/l*	*TPH (SGT-HEM) mg/l*
	05/21/09	**System down unable to sample**								
	06/25/09	**System down unable to sample**								
	07/15/09	3.4	<1.0	<1.0	<3.0	<50	<82.5	<412	NA	NA
	08/18/09	3.5	<1.0	<1.0	<3.0	<50	<81.6	<408	NA	NA
	09/08/09	<1.0	<1.0	<1.0	<3.0	19.6	<80.8	<404	NA	NA
	10/00/09	**System down unable to sample**								
	11/00/09	**System down unable to sample**								
	12/01/09	5.2	1.2	<1.0	<3.0	<50.0	*40.4*	<400	NA	NA
	01/00/10	**System down unable to sample**								
	02/00/10	**System down unable to sample**								
	03/22/10	7.2	<1.0	<1.0	<3.0	51.2	<75.5	<377	NA	NA
	04/20/10	12	1.1	<1.0	<3.0	<50.0	<88.9	<444	NA	NA
	06/03/10	10.7	1.2	<1.0	<3.0	<50.0	<76.2	<381	NA	NA
Effluent	07/07/03	4.87	18.5	1.63	16.7	345	2.42	<0.500	NA	NA
	09/11/03	11.6	23.7	<5	68.7	2480	NA	NA	NA	NA
	12/18/03	**284**	**1,110**	135	1080	7550	22.1	<5	NA	NA
	01/23/04	<0.500	<0.500	<0.500	<1.00	<50.0	NA	NA	NA	NA
	02/05/04	<0.500	<0.500	<0.500	<1.00	<50.0	NA	NA	NA	NA
	03/16/04	<0.500	<0.500	<0.500	<1.00	<50.0	NA	NA	NA	NA
	07/02/04	<0.500	<0.500	<0.500	<1.00	<50.0	<0.250	<0.500	<5.00	<5.00
	12/22/04	<0.500	<0.500	<0.500	<1.00	<50.0	<0.250	<0.500	<5.00	<5.00
	09/30/05	3.1	0.4	<0.2	<0.6	<48	<75	<94	NA	NA
	12/29/05	93	**170**	7.3	120	1300	900	<100	NA	NA
	02/24/06	<0.5	<0.7	<0.8	<0.8	<48	<79	<98	NA	NA
	03/30/06	<0.5	<0.7	<0.8	<0.8	<48	NA	NA	NA	NA
	09/12/06	<0.2	0.3	<0.2	<0.6	<48	NA	NA	NA	NA
	01/31/07	**370**	**620**	30	500	4900	679	<100	NA	NA
	05/11/07	<0.2	<0.2	<0.2	<0.6	<50	<77	<97	NA	NA
	06/21/07	<0.2	<0.2	<0.2	<0.6	<50	<76	<95	NA	NA
	07/26/07	<0.5	<0.7	<0.8	<0.8	<50	<77	<96	NA	NA
	08/22/07	<0.2	<0.2	<0.2	<0.6	<50	<77	<97	NA	NA
	09/20/07	0.3	0.6	<0.2	0.9	<50	<78	<97	NA	NA
	10/25/07	<0.2	<0.2	<0.2	<0.6	<50	<79	<99	NA	NA
	11/28/07	<0.2	<0.2	<0.2	<0.6	<50	<82	<100	NA	NA
	12/18/07	<0.2	<0.2	<0.2	<0.6	<50	NA	NA	NA	NA
	01/16/08	<0.2	0.3	<0.2	0.7	<50	<78	<98	NA	NA
	02/14/08	<0.2	0.3	<0.2	0.6	<50	120	<96	NA	NA
	03/19/08	0.9	0.7	<0.2	0.9	<50	<77	<97	NA	NA
	04/22/08	<0.2	<0.2	<0.2	<0.6	<50	<78	<98	NA	NA
	10/13/08	<0.5	<0.7	<0.8	<0.8	<50	<75	<94	NA	NA
	11/10/08	<0.5	<0.7	<0.8	<0.8	<50	3,200	1,400	NA	NA
	12/15/08	**System down unable to sample**								
	01/13/09	**System down unable to sample**								
	02/25/09	<1.0	<1.0	<1.0	<1.0	<50.0	<76	<380	NA	NA
	03/26/09	<1.0	<1.0	<1.0	<1.0	<50.0	<80	<400	NA	NA
	04/21/09	<1.0	<1.0	<1.0	<1.0	<50.0	<100	<520	NA	NA
	05/21/09	**System down unable to sample**								
	06/25/09	**System down unable to sample**								
	07/15/09	<1.0	<1.0	<1.0	<3.0	<50.0	<82.5	<412	NA	NA
	08/18/09	<1.0	<1.0	<1.0	<3.0	<50.0	<82.5	<412	NA	NA
	09/08/09	2.9	<1.0	<1.0	<3.0	<50.0	<76.2	<381	NA	NA
	10/00/09	**System down unable to sample**								
	11/00/09	**System down unable to sample**								
	12/01/09	<1.0	<1.0	<1.0	<3.0	<50.0	*38.2*	<400	NA	NA
	01/00/10	**System down unable to sample**								

TABLE 2

GROUNDWATER TREATMENT SYSTEM ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL RM&R #03485
RENTON, WASHINGTON

Location	*Date*	*Benzene ug/l*	*Toluene ug/l*	*Ethylbenzene ug/l*	*Xylenes (total) ug/l*	*TPH-g ug/l*	*TPH-d ug/l*	*TPH-o ug/l*	*Oil & Grease (HEM) mg/l*	*TPH (SGT-HEM) mg/l*
	02/00/10	**System down unable to sample**								
	03/22/10	<1.0	<1.0	<1.0	<3.0	<50.0	937	919	NA	NA
	04/20/10	<1.0	<1.0	<1.0	<3.0	<50.0	<76.2	<381	NA	NA
	06/03/10	<1.0	<1.0	<1.0	<3.0	<50.0	<76.2	<381	NA	NA
Effluent Permit Limits		**130**	**150**	**1400**		**100,000**	**100,000**	**100,000**		

Notes:

ug/l	Micrograms per liter
mg/l	Milligrams per liter
TPH-g	Ecology Method NWTPH-Gx
TPH-d	Ecology Method NWTPH-Dx with acid/silica gel cleanup
TPH-o	Ecology Method NWTPH-Dx with acid/silica gel cleanup
Oil/Grease Method	Ecology Method NWTPH-Dx with acid/silica gel cleanup
BTEX	USEPA Method 8021B
Bold	Above Effluent Permit Limits
Italic print	J qualifier, Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

TABLE 3

ESTIMATED DPVE MASS REMOVAL SUMMARY
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Date	*Influen tPID reading (ppmv)*	*TPH-G&D (mg/m3)*	*Benzene (mg/m3)*	*Toluene (mg/m3)*	*Ethyl-benzene (mg/m3)*	*Xylenes (b) (mg/m3)*	*Flow Rate (scfm)*	*TPH (lbs/day)*	*Benzene (lbs/day)*	*Panel Hour Meter (hrs)*	*Duration of Operation (days)*	*TPH Monthly Removed (lbs)*	*Benzene Monthly Removed (lbs)*	*Total TPH (lbs)*	*Total Benzene (lbs)*	*Total TPH (Gallo ns)*	*Total Benzene (Gallons)*
February-03	330	NC	NC	NC	NC	NC	300	0	NC	21591	0			0			
February-03	200	2842.15	30.22	55.95	2.68	11.03	300	77	1	21610	1	61	1	0	0	0	0
February-03	942	14716.94	205.57	879.55	77.83	375.14	300	397	6	21875	12	4396	61	4,396	61	687	10
April-03	NR	8897.86	95.15	414.97	48.39	278.44	290	232	2	22610	42	7110	76	11,506	137	1,798	21
April-03	801	12275.96	115.03	596.79	74.81	469.00	290	320	3	22823	51	2841	27	14,347	164	2,242	26
June-03	1479	7890.00	273.00	531.00	75.60	412.00	290	206	7	23802	92	8404	291	22,751	455	3,555	71
July-03	1099	8070.00	261.00	387.00	77.20	360.00	291	211	7	24040	102	2092	68	24,842	522	3,882	82
August-03	NR	4980.00	206.00	425.00	29.10	138.00	420	188	8	24540	123	3925	162	28,767	685	4,495	107
October-03	NR	3310.00	140.00	350.00	28.70	151.00	420	125	5	25993	183	7575	320	36,342	1,005	5,678	157
November-03	86	376.00	10.00	21.7	2.52	19.40	185	6	0.2	26464	203	123	3	36,465	1,009	5,698	158
December-03	23.8	497.00	14.80	64.4	9.27	54.80	270	12	0.4	27112 (c)	230	326	10	36,791	1,018	5,749	159
December-03	NR						270 (c)	12 (c)	0.4 (c)	27289	237	89	3	36,880	1,021	5,763	160
January-04	NR						290	12 (c)	0.4 (c)	27289	237	0	0	36,880	1,021	5,762	160
February-04	7.6	45.50	3.45	6.8	0.92	6.69	270	1.1	0.1	27758	257	22	2	36,902	1,023	5,766	160
March-04	45	252.00	7.81	15.5	1.96	15.60	270	6.1	0.2	28563	291	205	6	37,107	1,029	5,798	161
April-04	58	252.00	7.81	15.5	1.96	15.60	288	6.5	0.2	29137	314	156	5	37,263	1,034	5,822	162
May-04	NR	252.00	7.81	15.5	1.96	15.60	288	6.5	0.2	29137	314	0	0	37,263	1,034	5,822	162
June-04	NR	252.00	7.81	15.5	1.96	15.60	316	7.2	0.2	30036	352	268	8	37,532	1,042	5,864	163
July-04	NR	927.00	23.50	68.5	5.61	57.60	316	26.4	0.7	30131	356	104	3	37,636	1,045	5,881	163
December-04	63	162.00	5.76	14.3	1.67	12.50	310	4.5	0.2	31818	426	318	11	37,954	1,056	5,930	165
April-05	NR	162.00	5.76	14.3	1.67	12.50	150	2.2	0.1	33562	499	159	6	38,113	1,062	5,955	166
May-05	287	162.00	5.76	14.3	1.67	12.50	140	2.0	0.1	33749	507	16	1	38,129	1,062	5,958	166
June-05	40	167.00	5.08	11.7	1.05	9.96	300	4.5	0.1	34146	523	75	2	38,203	1,065	5,969	166
July-05	140	167.00	5.08	11.7	1.05	9.96	300	4.5	0.1	34930	556	147	4	38,350	1,069	5,992	167
September-05	140	167.00	5.08	11.7	1.05	9.96	300	4.5	0.1	35500	580	107	3	38,457	1,072	6,009	168
September-05	131	60	<2	<3	<2	<3	300	1.6	0.0	35627	585	9	0	38,466	1,072	6,010	168
October-05	166	715	26	113.0	13	87	200 est	12.9	0.5	36079	604	242	9	38,708	1,081	6,048	169
November-05	NA	715	26	113.0	13	87	200 est	12.9	0.5	36713	630	340	12	39,049	1,093	6,101	171
December-05	NA	113	13	33.9	3	26	170	1.7	0.2	37148	648	31	4	39,080	1,097	6,106	171
January-06	0.4	113	13	33.9	3	26	170	1.7	0.2	37337	656	14	2	39,093	1,098	6,108	172
February-06	90	100	20	37.7	3	39	168	1.5	0.3	37662	670	20	4	39,114	1,102	6,112	172
March-06	5	100	20	37.7	3	39	168	1.5	0.3	38445	702	49	10	39,163	1,112	6,119	174
April-06	7	100	20	37.7	3	39	168	1.5	0.3	39078	729	40	8	39,203	1,120	6,125	175
June-06	42	160	10	30.0	2	30	168	2.4	0.2	39484	746	41	3	39,244	1,123	6,132	175
June-06	42	100	20	33.9	2	26	168 est	1.5	0.3	39509	747	2	0	39,246	1,123	6,132	175
July-06	42	100	20	33.9	2	26	168 est	1.5	0.3	39552	749	4	1	39,249	1,124	6,133	176
August-06	42	100	20	33.9	2	26	168 est	1.5	0.3	39624	752	5	1	39,254	1,125	6,133	176
September-06	414	600	10	90.0	9	90	168 est	9.1	0.2	39854	762	91	2	39,345	1,126	6,148	176
October-06	414	600	10	90.0	9	90	168 est	9.1	0.2	39981	767	45	1	39,390	1,127	6,155	176
November-06	414	600	10	90.0	9	90	0	0.0	0.0	39981	767	0	0	39,390	1,127	6,155	176
December-06	414	600	10	90.0	9	90	0	0.0	0.0	39981	767	0	0	39,390	1,127	6,155	176
January-07	230	120	40	90.0	2	10	308 est	3.3	1.1	40095.2	772	16	5	39,406	1,132	6,157	177
February-07	230	120	40	90.0	2	10	308 est	3.3	1.1	40335.2	782	33	11	39,439	1,143	6,162	179
March-07	230	120	40	90.0	2	10	0	0.0	0.0	40335.2	782	0	0	39,439	1,143	6,162	179
April-07	230	120	40	90.0	2	10	308	3.3	1.1	40339.2	782	1	0	39,440	1,143	6,162	179
June-07	316	130	20	30.0	0	10	308	3.6	0.6	40729.5	798	59	9	39,498	1,153	6,172	180
June-07	305	180	3	20.0	0	9	308	5.0	0.1	41210.4	818	100	2	39,598	1,154	6,187	180
July-07	364	1370	25	74.3	8	69	308	38.0	0.7	41619.7	836	648	12	40,246	1,166	6,288	182
August-07	476	2760	64.7	150.0	11	80.0	219	54.4	1.3	42075.9	855	1034	24	41,280	1,190	6,450	186
September-07	2300	3670	99.6	275.0	23	179.0	210	69.4	1.9	42437.9	870	1046	28	42,326	1,219	6,613	190
October-07	300	1300	55.2	126.0	8	80.5	196	22.9	1.0	42801.9	885	348	15	42,674	1,234	6,668	193
November-07	210	426	58.2	98.1	4	44.8	190	7.3	1.0	43185.9	901	117	16	42,790	1,249	6,686	195
December-07	52.2	104	6.4	8.5	0.5	7.5	168	1.6	0.1	43635.8	920	29	2	42,820	1,251	6,691	196

TABLE 3

ESTIMATED DPVE MASS REMOVAL SUMMARY
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Date	*Influen tPID reading (ppmv)*	*TPH-G&D (mg/m3)*	*Benzene (mg/m3)*	*Toluene (mg/m3)*	*Ethyl-benzene (mg/m3)*	*Xylenes (b) (mg/m3)*	*Flow Rate (scfm)*	*TPH (lbs/day)*	*Benzene (lbs/day)*	*Panel Hour Meter (hrs)*	*Duration of Operation (days)*	*TPH Monthly Removed (lbs)*	*Benzene Monthly Removed (lbs)*	*Total TPH (lbs)*	*Total Benzene (lbs)*	*Total TPH (Gallons)*	*Total Benzene (Gallons)*
January-08	20.1	113	3.3	8.5	0.7	5.9	154	1.6	0.0	44282.8	946	42	1	42,862	1,253	6,697	196
February-08	76	42.8	1.79	4.1	0.454	5.35	196	0.8	0.0	44982.8	976	22	1	42,884	1,253	6,701	196
March-08	269	501	47.0	88.6	4.77	42.1	203	9.2	0.9	45482.8	996	191	18	43,075	1,271	6,730	199
April-08	50.6	232	21.0	34.6	1.84	25.5	210	4.4	0.4	45914.2	1014	79	7	43,154	1,278	6,743	200
May-08	87.4	203	4.3	11.6	0.89	11.1	168	3.1	0.1	46908.2	1056	127	3	43,281	1,281	6,763	200
June-08	68.7	260	8.2	23.1	1.57	17.8	154	3.6	0.1	47746.6	1091	126	4	43,407	1,285	6,782	201
July-08	129	667	11.5	43.2	2.77	35.2	175	10.5	0.2	48561.6	1125	357	6	43,763	1,291	6,838	202
August-08	186	765	13.8	60.3	3.76	44.3	182	12.5	0.2	48920.2	1140	187	3	43,951	1,295	6,867	202
September-08	122	628	11.3	35.4	2.96	30.9	182	10.3	0.2	49396.7	1160	204	4	44,155	1,298	6,899	203
October-08	222	336	18.6	54.1	4.50	41.3	224	6.8	0.4	49711.5	1173	89	5	44,244	1,303	6,913	204
November-08	44	123	5.0	14.6	1.47	14.6	210	2.3	0.1	50234.7	1194	51	2	44,294	1,305	6,921	204
December-09								**System down unable to sample**									
January-09								**System down unable to sample**									
February-09	15.5	55.8	1.8	3.5	0.14	1.8	200	1.0	0.0	50902.4	1222	28	1	44,322	1,306	6,925	204
March-09	16.5	54.2	2.2	5.4	0.38	4.2	210	1.0	0.0	51330.9	1240	18	1	44,341	1,307	6,928	204
April-09	63.1	71.2	8.4	14.5	0.49	6.3	210	1.3	0.2	51519.4	1248	11	1	44,351	1,308	6,930	204
May-09	2	20.4	0.3	0.5	<0.100	0.2	210	0.4	0.0	52565.9	1292	17	0	44,368	1,308	6,932	204
June-09	15	54.6	1.1	2.7	0.10	2.7	196	1.0	0.0	53258.3	1320	28	1	44,396	1,309	6,937	205
July-09	128	582	8.02	38	1.83	42.6	196	10.3	0.1	53528.8	1332	116	2	44,511	1,311	6,955	205
August-09	446	12800	110	801	49.9	500	103	118.7	1.0	53963.5	1350	2149	18	46,661	1,329	7,291	208
September-09	403	2560	43.5	674	18.5	166.1	210	48.4	0.8	54229.4	1361	536	9	47,197	1,338	7,374	209
October-09								**System down unable to sample**									
Novemer-09								**System down unable to sample**									
December-09	160	1320	78.3	78.3	78.3	81.6	210	25	1.5	54520.9	1373	303	18	47,500	1,356	7,422	212
January-10								**System down unable to sample**									
February-10								**System down unable to sample**									
March-10	55.2	340.26	31.95	43.71	1.74	30.83	210	6	0.6	55000.9	1393	129	12	47,628	1,368	7,442	214
April-10	18.5	364.60	6.71	29	1.52	20.71	210	6.9	0.1	54666.5	1379	-96	-2	47,532	1,366	7,427	214
May-10								**System down unable to sample**									
June-10	40.0	95.77	73.48	133.35	4.34	48.05	200	1.7	1.3	56730.7	1465	148	114	47,681	1,480	7,450	231
Reporting Period:											**72**			**52**			
Since Startup:											**1465**			**47,681**			

Notes:

TPH-G & D	Gasoline and Diesel Range Total Petroleum Hydrocarbons
ppmv	Parts per million by volume
mg/m3	Milligrams per cubic meter (assuming 60 degrees F and 1 atmosphere of pressure)
mg/m3	Concentration for TPH based on a molecular weight of 92 g/g-mol
lbs/day	Pounds per day
NC	Not Collected
(a)	Only TPH-G analyzed
(b)	Combined total reported for m, p, and o-xylenes
(c)	Extrapolated value
	Analytical results prior to June 20, 2003 reported from TO-14/15 analysis using Suma canisters.
	Analytical results from June 20, 2003 forward reported from NWTPH Modified Method analysis using tedlar bags.
est	Estimated

TABLE 4
ESTIMATED GROUNDWATER EXTRACTION SYSTEM MASS REMOVAL
CONOCOPHILLIPS
RENTON, WASHINGTON

Date	*Cumulative Discharge, gallons*	*Discharge between samplings, gallons*	*Influent Benzene Concentration, ug/liter*	*Effluent Benzene Concentration, ug/liter*	*Benzene Concentration Difference, ug/liter*	*Influent TPH-G Concentration, ug/liter*	*Effleuent TPH-G Concentration, ug/liter*	*TPH-G Concentration Difference, ug/liter*	*Benzene Removed, lbs*	*Cumulative Benzene Removed, lbs*	*Monthly TPH-G Removed, lbs*	*Cumulative TPH-G Removed, lbs*
07/07/03	3,340	3,340	45,200	4.87	45,195	33,100	345	32,755	1.26	1.26	0.91	0.91
09/11/03	20,637	17,297	37,500	11.6	37,488	320,000	2480	317,520	5.40	6.66	45.73	46.64
12/18/03	50,761	30,124	4,060	284	3,776	73,100	7550	65,550	0.95	7.60	16.44	63.08
01/23/04	64,987	14,226	389	<0.500	389	34,700	<50.0	34,700	0.05	7.65	4.11	67.19
02/05/04	80,559	15,573	3,180	<0.500	3,180	40,000	<50.0	40,000	0.41	8.06	5.19	72.37
03/16/04	198,110	117,551	5,530	<0.500	5,530	43,500	<50.0	43,500	5.41	13.47	42.57	114.95
07/02/04	244,377	46,267	3	<0.500	3	967	<50.0	967	0.00	13.47	0.37	115.32
12/22/04	544,353	299,976	11,000	<0.500	11,000	79,300	<50.0	79,300	27.47	40.95	198.06	313.38
12/29/05	1,206,383	662,030	11,000	93	10,907	160,000	1300	158,700	60.12	101.07	874.76	1188.14
02/24/06	1,259,923	53,540	11,000	<0.5	11,000	160,000	<48	160,000	4.90	105.97	71.32	1259.47
03/30/06	1,345,773	85,850	7,400	<0.5	7,400	110,000	<48	110,000	5.29	111.26	78.63	1338.09
01/31/07	1,562,937	217,164	14,000	370	13,630	160,000	4900	155,100	24.64	135.91	280.44	1618.53
11/28/07	1,931,403	368,466	6,000	<0.2	6,000	110,000	<50	110,000	18.41	154.31	337.46	1955.99
12/18/07	2,031,297	99,895	4,900	<0.2	4,900	100,000	<50	100,000	4.08	158.39	83.17	2039.17
01/16/08	2,154,961	123,664	6,500	<0.2	6,500	130,000	<50	130,000	6.69	165.08	133.85	2173.02
03/19/08	2,254,648	99,687	6,000	0.9	5,999	130,000	<50	130,000	4.98	170.06	107.90	2280.92
10/13/08	2,376,633	121,986	9,900	<0.5	9,900	80,000	<50	80,000	10.05	180.11	81.25	2362.17
11/10/08	2,430,613	53,980	2,100	<0.5	2,100	26,000	<50	26,000	0.94	181.06	11.69	2373.85
02/25/09	2,518,613	88,000	18,000	<1.0	18,000	2,110	<50	2,110	13.19	194.25	1.55	2375.40
03/26/09	2,542,273	23,660	14,000	<1.0	14,000	39,300	<50	39,300	2.76	197.00	7.74	2383.14
04/21/09	2,544,013	1,740	15,000	<1.0	15,000	105,000	<50	105,000	0.22	197.22	1.52	2384.66
05/21/09	--	--	--	--	--	--	--	--	--	--	--	--
06/25/09	--	--	--	--	--	--	--	--	--	--	--	--
07/15/09	2,544,663	650	12,200	<1.0	12,200	95,400	<50.0	95,400	0.07	197.29	0.52	2385.18
08/18/09	2,549,405	4,742	10,000	<1.0	10,000	75,800	<50.0	75,800	0.39	197.68	2.99	2388.17
09/08/09	2,551,413	2,008	2,010	2.9	2,007	21,900	<50.0	21,900	0.03	197.72	0.37	2388.54
10/00/09	--	--	**System Down Unable to Sample**									
11/00/09	--	--	**System Down Unable to Sample**									
12/01/09	2,557,135	5,723	10,400	<1.0	10,400	79,400	<50.0	79,400	0.50	198.21	3.78	2392.32
01/00/10												
02/00/10												
03/22/10	2,574,004	16,869	6,310	<1.0	6,310	42,600	<50.0	42,600	0.89	199.10	5.98	2398.30
04/20/10	#REF!	#REF!	3,900	<1.0	3,900	50,900	<50.0	50,900	#REF!	#REF!	#REF!	#REF!
5/00/10	--	--	**System Down Unable to Sample**									
06/03/10	2,587,621	5,296	1,530	<1.0	1,530	120,000	<50.0	120,000	0.07	#REF!	5.29	#REF!
	Reporting Period:										#REF!	
	Since Startup:											#REF!

Notes:

-- Not Applicable, system down for repairs

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
HA-15	1/31/2003	22.87	N/A	N/A	N/A	5.56	17.31	17.31	
	2/7/2003	22.87	N/A	N/A	N/A	5.31	17.56	17.56	
	2/12/2003	22.87	N/A	N/A	N/A	5.64	17.23	17.23	
	2/18/2003	22.87	N/A	N/A	N/A	6.09	16.78	16.78	
	2/21/2003	22.87	N/A	N/A	N/A	7.92	14.95	14.95	
	2/24/2003	22.87	N/A	N/A	N/A	6.04	16.83	16.83	
	3/4/2003	22.87	N/A	N/A	N/A	6.62	16.25	16.25	
	3/12/2003	22.87	N/A	N/A	N/A	6.02	16.85	16.85	
	3/26/2003	22.87	N/A	N/A	N/A	5.46	17.41	17.41	
	3/28/2003	22.87	N/A	N/A	N/A	5.96	16.91	16.91	
	4/2/2003	22.87	N/A	N/A	N/A	5.91	16.96	16.96	
	4/4/2003	22.87	N/A	N/A	N/A	6.22	16.65	16.65	
	4/8/2003	22.87	N/A	N/A	N/A	6.42	16.45	16.45	
	4/11/2003	22.87	N/A	N/A	N/A	6.63	16.24	16.24	
	4/15/2003	22.87	N/A	N/A	N/A	6.28	16.59	16.59	
	4/17/2003	22.87	N/A	N/A	N/A	6.49	16.38	16.38	
	4/22/2003	22.87	N/A	N/A	N/A	6.66	16.21	16.21	
	4/25/2003	22.87	N/A	N/A	N/A	7.07	15.80	15.80	
	5/2/2003	22.87	N/A	N/A	N/A	7.06	15.81	15.81	
	5/6/2003	22.87	N/A	N/A	N/A	7.32	15.55	15.55	
	5/9/2003	22.87	N/A	N/A	N/A	7.52	15.35	15.35	
	5/23/2003	22.87	N/A	N/A	N/A	7.83	15.04	15.04	
	5/28/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	6/13/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	6/18/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	6/27/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	7/7/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	7/16/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	7/31/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	8/5/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	8/11/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	8/22/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	8/26/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	9/2/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
HA-15	9/9/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
(cont.)	9/19/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	10/14/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	11/20/2003	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	12/3/2003	22.87	N/A	N/A	N/A	6.08	16.79	16.79	
	1/19/2004	22.87	N/A	N/A	N/A	5.49	17.38	17.38	
	2/24/2004	22.87	N/A	N/A	N/A	6.32	16.55	16.55	
	3/15/2004	22.87	N/A	N/A	N/A	7.32	15.55	15.55	
	4/19/2004	22.87	N/A	N/A	N/A	7.80	15.07	15.07	
	5/17/2004	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	6/22/2004	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	8/18/2004	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	9/21/2004	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	10/19/2004	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	11/23/2004	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	12/21/2004	22.87	N/A	N/A	N/A	6.03	16.84	16.84	
	1/13/2005	22.87	N/A	N/A	N/A	6.73	16.14	16.14	
	4/28/2005	22.87	N/A	N/A	N/A	5.93	16.94	16.94	
	6/1/2005	22.87	N/A	N/A	N/A	6.06	16.81	16.81	
	6/29/2005	22.87	N/A	N/A	N/A	7.53	15.34	15.34	
	7/20/2005	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	8/22/2005	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	9/12/2005	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	10/12/2005	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	11/21/2005	22.87	N/A	N/A	N/A	7.65	15.22	15.22	
	12/27/2005	22.87	N/A	N/A	N/A	6.63	16.24	16.24	
	1/30/2006	22.87	N/A	N/A	N/A	3.40	19.47	19.47	
	2/16/2006	22.87	N/A	N/A	N/A	4.91	17.96	17.96	
	3/13/2006	22.87	N/A	N/A	N/A	5.88	16.99	16.99	
	4/18/2006	22.87	N/A	N/A	N/A	6.29	16.58	16.58	
	5/12/2006	22.87	N/A	N/A	N/A	6.67	16.20	16.20	
	6/9/2006	22.87	N/A	N/A	N/A	6.26	16.61	16.61	
	7/13/2006	22.87	N/A	N/A	N/A	7.40	15.47	15.47	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	8/16/2006	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	9/19/2006	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	10/13/2006	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	11/20/2006	22.87	N/A	N/A	N/A	4.87	18.00	18.00	
	12/8/2006	22.87	N/A	N/A	N/A	4.53	18.34	18.34	
	1/19/2007	22.87	N/A	N/A	N/A	4.21	18.66	18.66	
	2/19/2007	22.87	N/A	N/A	N/A	6.55	16.32	16.32	
	3/15/2007	22.87	N/A	N/A	N/A	5.30	17.57	17.57	
	4/16/2007	22.87	N/A	N/A	N/A	5.83	17.04	17.04	
	5/14/2007	22.87	N/A	N/A	N/A	7.30	15.57	15.57	
	6/29/2007	22.87	N/A	N/A	N/A	7.83	15.04	15.04	
	7/20/2007	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	8/21/2007	22.87	N/A	N/A	N/A	7.85	15.02	15.02	
	9/10/2007	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	10/22/2007	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	11/28/2007	22.87	N/A	N/A	N/A	7.62	15.25	15.25	
	12/13/2007	22.87	N/A	N/A	N/A	6.53	16.34	16.34	
	1/21/2008	22.87	N/A	N/A	N/A	6.46	16.41	16.41	
	2/24/2008	22.87	N/A	N/A	N/A	6.95	15.92	15.92	
	3/24/2008	22.87	N/A	N/A	N/A	7.24	15.63	15.63	
	8/25/2008	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	2/18/2009	22.87	N/A	N/A	N/A	7.35	15.52	15.52	
	8/25/2009	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
	3/22/2010	22.87	N/A	N/A	N/A	6.26	16.61	16.61	
	8/23/2010	22.87	N/A	N/A	N/A	Dry	Dry	Dry	
HA-16	12/5/2002	22.07	7.60	14.47	0.05	7.65	14.42	14.46	
	12/11/2002	22.07	7.40	14.67	0.68	8.08	13.99	14.50	
	12/13/2002	22.07	7.33	14.74	0.96	8.29	13.78	14.50	
	12/17/2002	22.07	6.67	15.40	1.54	8.21	13.86	15.02	
	1/2/2003	22.07	5.60	16.47	0.22	5.82	16.25	16.42	
	1/6/2003	22.07	5.08	16.99	0.02	5.10	16.97	16.99	
	1/7/2003	22.07	5.05	17.02	0.02	5.07	17.00	17.02	
	1/8/2003	22.07	4.95	17.12	0.03	4.98	17.09	17.11	
	1/9/2003	22.07	4.92	17.15	0.02	4.94	17.13	17.15	
	1/10/2003	22.07	4.94	17.13	0.02	4.96	17.11	17.13	
	1/14/2003	22.07	3.09	18.98	2.03	5.12	16.95	18.47	
	1/15/2003	22.07	5.00	17.07	0.05	5.05	17.02	17.06	
	1/16/2003	22.07	4.92	17.15	0.04	4.96	17.11	17.14	
	1/17/2003	22.07	4.95	17.12	0.02	4.97	17.10	17.12	
	1/20/2003	22.07	4.98	17.09	0.04	5.02	17.05	17.08	
	5/28/2003	22.07	7.35	14.72	0.77	8.12	13.95	14.53	
	12/21/2004	22.07	N/A	N/A	N/A	5.23	16.84	16.84	Strong odor
HA-16	1/13/2005	22.07	N/A	N/A	N/A	6.10	15.97	15.97	Strong odor
(cont.)	4/28/2005	22.07	N/A	N/A	N/A	5.40	16.67	16.67	
	6/1/2005	22.07	N/A	N/A	N/A	5.66	16.41	16.41	
	6/29/2005	22.07	N/A	N/A	N/A	7.14	14.93	14.93	
	7/20/2005	22.07	7.77	14.30	0.01	7.78	14.29	14.30	Strong odor
	8/22/2005	22.07	N/A	N/A	N/A	8.00	14.07	14.07	
	9/12/2005	22.07	N/A	N/A	N/A	8.58	13.49	13.49	
	10/12/2005	22.07	N/A	N/A	N/A	9.29	12.78	12.78	
	11/21/2005	22.07	N/A	N/A	N/A	6.99	15.08	15.08	
	12/27/2005	22.07	N/A	N/A	N/A	6.14	15.93	15.93	
	1/31/2006	22.07	2.75	19.32	0.01	2.76	19.31	19.32	
	2/16/2006	22.07	N/A	N/A	N/A	4.26	17.81	17.81	
	3/13/2006	22.07	N/A	N/A	N/A	5.25	16.82	16.82	
	4/18/2006	22.07	N/A	N/A	N/A	5.71	16.36	16.36	
	5/12/2006	22.07	N/A	N/A	N/A	6.10	15.97	15.97	
	6/9/2006	22.07	N/A	N/A	N/A	5.75	16.32	16.32	
	7/13/2006	22.07	N/A	N/A	N/A	7.00	15.07	15.07	
	8/16/2006	22.07	N/A	N/A	N/A	8.00	14.07	14.07	
	9/19/2006	22.07	N/A	N/A	N/A	8.60	13.47	13.47	
	10/13/2006	22.07	N/A	N/A	N/A	8.36	13.71	13.71	
	11/20/2006	22.07	N/A	N/A	N/A	4.42	17.65	17.65	
	12/8/2006	22.07	N/A	N/A	N/A	3.96	18.11	18.11	
	1/19/2007	22.07	N/A	N/A	N/A	3.66	18.41	18.41	
	2/19/2007	22.07	N/A	N/A	N/A	5.84	16.23	16.23	
	3/15/2007	22.07	N/A	N/A	N/A	4.60	17.47	17.47	
	4/16/2007	22.07	N/A	N/A	N/A	5.13	16.94	16.94	
	5/14/2007	22.07	N/A	N/A	N/A	6.70	15.37	15.37	
	6/29/2007	22.07	N/A	N/A	N/A	7.91	14.16	14.16	
	7/20/2007	22.07	N/A	N/A	N/A	8.37	13.70	13.70	
	8/21/2007	22.07	N/A	N/A	N/A	9.05	13.02	13.02	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	9/10/2007	22.07	N/A	N/A	N/A	9.11	12.96	12.96	
	10/22/2007	22.07	N/A	N/A	N/A	7.95	14.12	14.12	
	11/28/2007	22.07	N/A	N/A	N/A	7.20	14.87	14.87	
	12/13/2007	22.07	5.77	16.30	0.01	5.78	16.29	16.30	residual product
	1/21/2008	22.07	N/A	N/A	N/A	5.75	16.32	16.32	
	2/24/2008	22.07	N/A	N/A	N/A	6.32	15.75	15.75	
	3/24/2008	22.07	N/A	N/A	N/A	6.65	15.42	15.42	
	8/25/2008	22.07	N/A	N/A	N/A	8.60	13.47	13.47	
	2/18/2009	22.07	N/A	N/A	N/A	6.64	15.43	15.43	
	8/25/2009	22.07	N/A	N/A	N/A	9.87	12.20	12.20	
	3/22/2010	22.07	N/A	N/A	N/A	5.53	16.54	16.54	
	8/23/2010	22.07	N/A	N/A	N/A	8.08	13.99	13.99	
HA-17	8/11/2003	21.92	N/A	N/A	N/A	Dry	Dry	Dry	
	3/15/2004	21.92	N/A	N/A	N/A	6.66	15.26	15.26	
	9/21/2004	21.92	N/A	N/A	N/A	7.75	14.17	14.17	
	12/21/2004	21.92	N/A	N/A	N/A	5.07	16.85	16.85	
	1/13/2005	21.92	N/A	N/A	N/A	5.85	16.07	16.07	
	4/28/2005	21.92	N/A	N/A	N/A	4.85	17.07	17.07	
	6/1/2005	21.92	N/A	N/A	N/A	5.09	16.83	16.83	
	6/29/2005	21.92	N/A	N/A	N/A	6.97	14.95	14.95	
	7/20/2005	21.92	N/A	N/A	N/A	7.63	14.29	14.29	
	8/22/2005	21.92	N/A	N/A	N/A	7.82	14.10	14.10	
	9/12/2005	21.92	N/A	N/A	N/A	Dry	Dry	Dry	
	10/12/2005	21.92	N/A	N/A	N/A	Dry	Dry	Dry	
	11/21/2005	21.92	N/A	N/A	N/A	6.43	15.49	15.49	
	12/27/2005	21.92	N/A	N/A	N/A	5.10	16.82	16.82	
	1/30/2006	21.92	N/A	N/A	N/A	2.81	19.11	19.11	
	2/16/2006	21.92	N/A	3.68	0.01	3.69	18.23	18.24	
	3/13/2006	21.92	N/A	N/A	N/A	4.63	17.29	17.29	
	4/18/2006	21.92	N/A	N/A	N/A	5.00	16.92	16.92	
	5/12/2006	21.92	N/A	N/A	N/A	5.54	16.38	16.38	
	6/9/2006	21.92	N/A	N/A	N/A	4.97	16.95	16.95	
	7/13/2006	21.92	N/A	N/A	N/A	9.50	12.42	12.42	
	8/16/2006	21.92	N/A	N/A	N/A	7.50	14.42	14.42	
	9/19/2006	21.92	N/A	N/A	N/A	Dry	Dry	Dry	
	10/13/2006	21.92	N/A	N/A	N/A	Dry	Dry	Dry	
	11/20/2006	21.92	N/A	N/A	N/A	4.12	17.80	17.80	
	12/8/2006	21.92	N/A	N/A	N/A	3.48	18.44	18.44	
	1/19/2007	21.92	N/A	N/A	N/A	3.02	18.90	18.90	
	2/19/2007	21.92	N/A	N/A	N/A	5.85	16.07	16.07	
	3/15/2007	21.92	N/A	N/A	N/A	3.97	17.95	17.95	
	4/16/2007	21.92	N/A	N/A	N/A	4.51	17.41	17.41	
	5/14/2007	21.92	N/A	N/A	N/A	6.71	15.21	15.21	
	6/29/2007	21.92	N/A	N/A	N/A	7.58	14.34	14.34	
	7/20/2007	21.92	Dry	Dry	Dry	Dry	Dry	Dry	
	8/21/2007	21.92	Dry	Dry	Dry	Dry	Dry	Dry	
	9/10/2007	21.92	Dry	Dry	Dry	Dry	Dry	Dry	
HA-17	10/22/2007	21.82	N/A	N/A	N/A	7.36	14.46	14.46	
(cont.)	11/28/2007	21.82	N/A	N/A	N/A	6.95	14.87	14.87	
	12/13/2007	21.82	N/A	N/A	N/A	5.89	15.93	15.93	
	1/21/2008	21.82	N/A	N/A	N/A	5.45	16.37	16.37	
	2/24/2008	21.82	N/A	N/A	N/A	6.09	15.73	15.73	
	3/24/2008	21.82	N/A	N/A	N/A	6.41	15.41	15.41	
	8/25/2008	21.82	Dry	Dry	Dry	Dry	Dry	Dry	
	2/18/2009	21.82	N/A	N/A	N/A	6.68	15.14	15.14	
	8/25/2009	21.82	N/A	N/A	N/A	8.10	13.72	13.72	
	3/22/2010	21.82	N/A	N/A	N/A	4.92	16.90	16.90	
	8/23/2010	21.82	N/A	N/A	N/A	Dry	Dry	Dry	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
HA-18	8/11/2003	21.51	N/A	N/A	N/A	Dry	Dry	Dry	
	3/15/2004	21.51	6.47	15.04	0.00	6.47	15.04	15.04	
	12/21/2004	21.51	N/A	N/A	N/A	4.98	16.53	16.53	
	1/13/2005	21.51	N/A	N/A	N/A	5.61	15.90	15.90	Trace product
	4/28/2005	21.51	N/A	N/A	N/A	4.79	16.72	16.72	
	6/1/2005	21.51	N/A	N/A	N/A	5.00	16.51	16.51	Strong odor
	6/29/2005	21.51	N/A	N/A	N/A	6.76	14.75	14.75	
	7/20/2005	21.51	N/A	N/A	N/A	7.46	14.05	14.05	
	8/22/2005	21.51	N/A	N/A	N/A	7.45	14.06	14.06	
	9/12/2005	21.51	N/A	N/A	N/A	7.80	13.71	13.71	
	10/12/2005	21.51	N/A	N/A	N/A	Dry	Dry	Dry	
	11/21/2005	21.51	N/A	N/A	N/A	7.00	14.51	14.51	
	12/27/2005	21.51	N/A	N/A	N/A	5.88	15.63	15.63	
	1/30/2006	21.51	N/A	N/A	N/A	2.52	18.99	18.99	
	2/16/2006	21.51	N/A	N/A	N/A	3.59	17.92	17.92	
	3/13/2006	21.51	N/A	N/A	N/A	4.52	16.99	16.99	
	4/18/2006	21.51	N/A	N/A	N/A	5.11	16.40	16.40	
	5/12/2006	21.51	N/A	N/A	N/A	5.39	16.12	16.12	
	6/9/2006	21.51	N/A	N/A	N/A	5.15	16.36	16.36	
	7/13/2006	21.51	N/A	N/A	N/A	6.21	15.30	15.30	
	8/16/2006	21.51	N/A	N/A	N/A	7.21	14.30	14.30	
	9/19/2006	21.51	N/A	N/A	N/A	Dry	Dry	Dry	
	10/13/2006	21.51	N/A	N/A	N/A	7.75	13.76	13.76	
	11/20/2006	21.51	N/A	N/A	N/A	4.47	17.04	17.04	
	12/8/2006	21.51	N/A	N/A	N/A	3.58	17.93	17.93	
	1/19/2007	21.51	N/A	N/A	N/A	3.15	18.36	18.36	
	2/19/2007	21.51	N/A	N/A	N/A	5.84	15.67	15.67	
	3/15/2007	21.51	N/A	N/A	N/A	4.32	17.19	17.19	
	4/16/2007	21.51	N/A	N/A	N/A	4.43	17.08	17.08	
	5/14/2007	21.51	N/A	N/A	N/A	6.45	15.06	15.06	
	6/29/2007	21.51	N/A	N/A	N/A	7.27	14.24	14.24	
	7/20/2007	21.51	N/A	N/A	N/A	7.87	13.64	13.64	
	8/21/2007	21.51	N/A	N/A	N/A	Dry	Dry	Dry	
	9/10/2007	21.51	N/A	N/A	N/A	Dry	Dry	Dry	
	10/22/2007	21.51	N/A	N/A	N/A	Dry	Dry	Dry	
	11/28/2007	21.51	N/A	N/A	N/A	6.92	14.59	14.59	
	12/13/2007	21.51	N/A	N/A	N/A	5.86	15.65	15.65	
	1/21/2008	21.51	N/A	N/A	N/A	5.62	15.89	15.89	
	2/24/2008	21.51	N/A	N/A	N/A	4.36	17.15	17.15	
	3/24/2008	21.51	N/A	N/A	N/A	6.29	15.22	15.22	
	8/25/2008	21.51	N/A	N/A	N/A	8.07	13.44	13.44	
	2/18/2009	21.51	N/A	N/A	N/A	6.32	15.19	15.19	
	8/25/2009	21.51	N/A	N/A	N/A	Dry	Dry	Dry	
	3/22/2010	21.51	N/A	N/A	N/A	4.81	16.70	16.70	
	8/23/2010	21.51	N/A	N/A	N/A	7.26	14.25	14.25	Purged Dry
HA-19	--	22.92	--	--	--	--	--	--	
	4/2/2003	22.92	N/A	N/A	N/A	4.61	18.31	18.31	
	4/4/2003	22.92	7.10	N/A	N/A	7.13	15.79	15.79	
	4/8/2003	22.92	6.61			6.62	16.31	16.31	
	4/11/2003	22.92	5.69	17.23	0.00	5.69	17.23	17.23	
	4/15/2003	22.92	N/A	N/A	N/A	4.26	18.66	18.66	
	4/17/2003	22.92	N/A	N/A	N/A	5.62	17.30	17.30	
	4/22/2003	22.92	7.21	15.71	0.01	7.22	15.70	15.71	
	4/25/2003	22.92	7.23	15.69	0.00	7.23	15.69	15.69	
	5/2/2003	22.92	N/A	N/A	N/A	7.87	15.05	15.05	
	5/6/2003	22.92	N/A	N/A	N/A	7.80	15.12	15.12	
	5/9/2003	22.92	N/A	N/A	N/A	8.00	14.92	14.92	
	5/23/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	5/28/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	6/13/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	6/18/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	6/27/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	7/7/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	7/16/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
HA-19	7/31/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
(cont.)	8/5/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	8/11/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	8/22/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	8/26/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	9/2/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	9/9/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	9/19/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	10/14/2003	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	11/20/2003	22.92	N/A	N/A	N/A	4.74	18.18	18.18	
	12/3/2003	22.92	N/A	N/A	N/A	5.35	17.57	17.57	
	1/19/2004	22.92	5.51	17.41	0.005	5.52	17.41	17.41	
	2/24/2004	22.92	7.18	15.74	0.005	7.19	15.74	15.74	
	3/15/2004	22.92	N/A	N/A	N/A	7.94	14.98	14.98	
	4/19/2004	22.92	N/A	N/A	N/A	8.01	14.91	14.91	
	5/17/2004	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	6/22/2004	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	8/18/2004	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	9/21/2004	22.92	N/A	N/A	N/A	6.85	16.07	16.07	
	10/19/2004	22.92	N/A	N/A	N/A	4.21	18.71	18.71	
	11/23/2004	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	12/21/2004	22.92	N/A	N/A	N/A	5.13	17.79	17.79	
	1/13/2005	22.92	N/A	N/A	N/A	7.35	15.57	15.57	
	4/28/2005	22.92	N/A	N/A	N/A	6.97	15.95	15.95	
	6/1/2005	22.92	N/A	N/A	N/A	7.39	15.53	15.53	
	6/29/2005	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	7/20/2005	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	8/22/2005	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	9/12/2005	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	10/12/2005	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	11/21/2005	22.92	N/A	N/A	N/A	8.81	14.11	14.11	
	12/27/2005	22.92	N/A	N/A	N/A	4.17	18.75	18.75	
	1/30/2006	22.92	N/A	N/A	N/A	4.14	18.78	18.78	
	2/16/2006	22.92	N/A	N/A	N/A	6.13	16.79	16.79	
	3/13/2006	22.92	N/A	N/A	N/A	7.16	15.76	15.76	
	4/18/2006	22.92	N/A	N/A	N/A	6.68	16.24	16.24	
	5/12/2006	22.92	N/A	N/A	N/A	7.79	15.13	15.13	
	6/9/2006	22.92	N/A	N/A	N/A	7.33	15.59	15.59	
	7/13/2006	22.92	N/A	N/A	N/A	8.00	14.92	14.92	
	8/16/2006	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	9/19/2006	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	10/16/2006	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	11/20/2006	22.92	N/A	N/A	N/A	4.40	18.52	18.52	
	12/8/2006	22.92	N/A	N/A	N/A	5.54	17.38	17.38	
	1/19/2007	22.92	N/A	N/A	N/A	5.20	17.72	17.72	
	2/19/2007	22.92	N/A	N/A	N/A	7.20	15.72	15.72	
	3/15/2007	22.92	N/A	N/A	N/A	6.09	16.83	16.83	
	4/16/2007	22.92	N/A	N/A	N/A	6.99	16.83	16.83	
	5/14/2007	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	6/29/2007	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	7/20/2007	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	8/21/2007	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	9/10/2007	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	10/22/2007	22.92	N/A	N/A	N/A	3.99	18.93	18.93	
	11/28/2007	22.92	N/A	N/A	N/A	5.71	17.21	17.21	
	12/13/2007	22.92	N/A	N/A	N/A	4.60	18.32	18.32	
	1/21/2008	22.92	N/A	N/A	N/A	6.37	16.55	16.55	
	2/24/2008	22.92	N/A	N/A	N/A	7.41	15.51	15.51	
	3/24/2008	22.92	N/A	N/A	N/A	4.37	18.55	18.55	
	8/25/2008	22.92	N/A	N/A	N/A	6.02	16.90	16.90	
	2/18/2009	22.92	N/A	N/A	N/A	7.75	15.17	15.17	
	8/25/2009	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
	3/22/2010	22.92	N/A	N/A	N/A	7.48	15.44	15.44	Purged Dry
	8/23/2010	22.92	N/A	N/A	N/A	Dry	Dry	Dry	
HA-20	11/24/2002	23.10	N/A	N/A	N/A	7.49	15.61	15.61	
	11/27/2002	23.10	6.46	16.64	3.51	9.97	13.13	15.76	
	12/5/2002	23.10	6.25	16.85	3.57	9.82	13.28	15.96	
	12/11/2002	23.10	6.25	16.85	3.48	9.73	13.37	15.98	
	12/13/2002	23.10	6.12	16.98	3.55	9.67	13.43	16.09	
	12/17/2002	23.10	5.29	17.81	4.20	9.49	13.61	16.76	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/3/2003	23.10	3.26	19.84	4.39	7.65	15.45	18.74	
	1/6/2003	23.10	3.83	19.27	3.10	6.93	16.17	18.50	
	1/7/2003	23.10	4.45	18.65	1.16	5.61	17.49	18.36	
	1/8/2003	23.10	4.22	18.88	1.57	5.79	17.31	18.49	
	1/9/2003	23.10	3.97	19.13	3.11	7.08	16.02	18.35	
HA-20	1/10/2003	23.10	4.04	19.06	3.24	7.28	15.82	18.25	
(cont.)	1/13/2003	23.10	4.75	18.35	0.92	5.67	17.43	18.12	
	1/14/2003	23.10	4.15	18.95	3.47	7.62	15.48	18.08	
	1/15/2003	23.10	4.05	19.05	3.10	7.15	15.95	18.28	
	1/16/2003	23.10	4.15	18.95	2.90	7.05	16.05	18.23	
	1/17/2003	23.10	4.18	18.92	2.82	7.00	16.10	18.22	
	1/20/2003	23.10	4.15	18.95	3.09	7.24	15.86	18.18	
	1/22/2003	23.10	3.30	19.80	6.50	9.80	13.30	18.18	
	1/23/2003	23.10	4.80	18.30	3.78	8.58	14.52	17.36	
	1/24/2003	23.10	4.55	18.55	3.66	8.21	14.89	17.64	
	1/27/2003	23.10	3.68	19.42	2.96	6.64	16.46	18.68	
	1/28/2003	23.10	3.82	19.28	3.68	7.50	15.60	18.36	
	1/29/2003	23.10	4.05	19.05	4.44	8.49	14.61	17.94	
	1/30/2003	23.10	4.26	18.84	4.06	8.32	14.78	17.83	
	2/3/2003	23.10	4.33	18.77	3.17	7.50	15.60	17.98	
	2/6/2003	23.10	4.59	18.51	1.80	6.39	16.71	18.06	
	2/11/2003	23.10	6.18	16.92	2.39	8.57	14.53	16.32	
	2/18/2003	23.10	7.40	15.70	0.88	8.28	14.82	15.48	
	2/21/2003	23.10	7.34	15.76	0.73	8.07	15.03	15.58	
	2/26/2003	23.10	6.09	17.01	0.11	6.20	16.90	16.98	
	3/4/2003	23.10	7.47	15.63	1.87	9.34	13.76	15.16	
	3/12/2003	23.10	7.05	16.05	2.63	9.68	13.42	15.39	
	3/14/2003	23.10	7.14	15.96	2.27	9.41	13.69	15.39	
	3/26/2003	23.10	5.64	17.46	3.93	9.57	13.53	16.48	
	3/28/2003	23.10	6.91	16.19	2.50	9.41	13.69	15.57	
	4/2/2003	23.10	6.47	16.63	2.65	9.12	13.98	15.97	
	4/4/2003	23.10	7.01	16.09	2.13	9.14	13.96	15.56	
	4/8/2003	23.10	7.16	15.94	1.49	8.65	14.45	15.57	
	4/11/2003	23.10	7.21	15.89	1.66	8.87	14.23	15.48	
	4/15/2003	23.10	6.91	16.19	0.40	7.31	15.79	16.09	
	4/17/2003	23.10	7.71	15.39	1.00	8.71	14.39	15.14	
	4/22/2003	23.10	7.28	15.82	1.39	8.67	14.43	15.47	
	4/25/2003	23.10	7.72	15.38	1.24	8.96	14.14	15.07	
	5/2/2003	23.10	7.46	15.64	2.41	9.87	13.23	15.04	
	5/6/2003	23.10	7.38	15.72	2.49	9.87	13.23	15.10	
	5/9/2003	23.10	8.05	15.05	1.95	10.00	13.10	14.56	
	5/23/2003	23.10	8.69	14.41	1.76	10.45	12.65	13.97	
	5/28/2003	23.10	8.50	14.60	1.49	9.99	13.11	14.23	
	6/13/2003	23.10	8.75	14.35	1.46	10.21	12.89	13.99	
	6/18/2003	23.10	8.68	14.42	1.57	10.25	12.85	14.03	
	6/27/2003	23.10	8.70	14.40	1.64	10.34	12.76	13.99	
	7/7/2003	23.10	9.64	13.46	0.73	10.37	12.73	13.28	
	7/16/2003	23.10	9.11	13.99	1.43	10.54	12.56	13.63	
	7/31/2003	23.10	9.40	13.70	1.48	10.88	12.22	13.33	
	8/5/2003	23.10	9.50	13.60	1.25	10.75	12.35	13.29	
	8/11/2003	23.10	10.65	12.45	1.37	12.02	11.08	12.11	
	8/22/2003	23.10	10.91	12.19	1.29	12.20	10.90	11.87	
	8/26/2003	23.10	N/A	N/A	N/A	9.81	13.29	13.29	
	9/2/2003	23.10	9.94	13.16	1.33	11.27	11.83	12.83	
	9/9/2003	23.10	10.40	12.70	0.36	10.76	12.34	12.61	
	9/19/2003	23.10	10.38	12.72	0.24	10.62	12.48	12.66	
	10/14/2003	23.10	10.26	12.84	0.75	11.01	12.09	12.65	
	11/20/2003	23.10	N/A	N/A	N/A	7.20	15.90	15.90	
	12/3/2003	23.10	N/A	N/A	N/A	6.21	16.89	16.89	
	1/19/2004	23.10	N/A	N/A	N/A	5.84	17.26	17.26	
	2/24/2004	23.10	N/A	N/A	N/A	7.46	15.64	15.64	
	3/15/2004	23.10	N/A	N/A	N/A	8.44	14.66	14.66	Oily trace
	4/19/2004	23.10	N/A	N/A	N/A	8.51	14.59	14.59	Trace product
	5/17/2004	23.10	N/A	N/A	N/A	8.99	14.11	14.11	
	6/22/2004	23.10	N/A	N/A	N/A	8.83	14.27	14.27	
	8/18/2004	23.10	N/A	N/A	N/A	10.02	13.08	13.08	
	9/21/2004	23.10	N/A	N/A	N/A	9.03	14.07	14.07	
	10/19/2004	23.10	N/A	N/A	N/A	8.17	14.93	14.93	
	11/23/2004	23.10	N/A	N/A	N/A	8.44	14.66	14.66	
	12/21/2004	23.10	N/A	N/A	N/A	6.50	16.60	16.60	Sheen observed
	1/13/2005	23.10	N/A	N/A	N/A	7.35	15.75	15.75	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	4/28/2005	23.10	N/A	N/A	N/A	6.80	16.30	16.30	Odor
	6/1/2005	23.10	N/A	N/A	N/A	7.10	16.00	16.00	
	6/29/2005	23.10	N/A	N/A	N/A	9.72	13.38	13.38	
	7/20/2005	23.10	N/A	N/A	N/A	9.92	13.18	13.18	
	8/22/2005	23.10	N/A	N/A	N/A	9.10	14.00	14.00	
	9/12/2005	23.10	N/A	N/A	N/A	9.73	13.37	13.37	
	10/12/2005	23.10	N/A	N/A	N/A	10.26	12.84	12.84	
	11/21/2005	23.10	N/A	N/A	N/A	8.09	15.01	15.01	
HA-20	12/27/2005	23.10	N/A	N/A	N/A	7.20	15.90	15.90	
(cont.)	1/30/2006	23.10	N/A	N/A	N/A	4.50	18.60	18.60	
	2/16/2006	23.10	6.23	16.87	0.01	6.24	16.86	16.87	
	3/13/2006	23.10	N/A	N/A	N/A	7.14	15.96	15.96	
	4/18/2006	23.10	N/A	N/A	N/A	7.40	15.70	15.70	
	5/12/2006	23.10	N/A	N/A	N/A	7.69	15.41	15.41	
	6/9/2006	23.10	N/A	N/A	N/A	7.38	15.72	15.72	
	7/13/2006	23.10	N/A	N/A	N/A	8.37	14.73	14.73	
	8/16/2006	23.10	N/A	N/A	N/A	9.13	13.97	13.97	
	9/19/2006	23.10	N/A	N/A	N/A	9.75	13.35	13.35	
	10/16/2006	23.10	N/A	N/A	N/A	9.55	13.55	13.55	
	11/20/2006	23.10	N/A	N/A	N/A	5.70	17.40	17.40	
	12/8/2006	23.10	N/A	N/A	N/A	5.71	17.39	17.39	
	1/19/2007	23.10	N/A	N/A	N/A	5.42	17.68	17.68	
	2/19/2007	23.10	N/A	N/A	N/A	7.20	15.90	15.90	
	3/15/2007	23.10	N/A	N/A	N/A	6.37	16.73	16.73	
	4/16/2007	23.10	N/A	N/A	N/A	6.78	16.32	16.32	
	5/14/2007	23.10	N/A	N/A	N/A	8.00	15.10	15.10	
	6/29/2007	23.10	N/A	N/A	N/A	9.11	13.99	13.99	
	7/20/2007	23.10	N/A	N/A	N/A	9.46	13.64	13.64	
	8/21/2007	23.10	N/A	N/A	N/A	10.09	13.01	13.01	
	9/10/2007	23.10	N/A	N/A	N/A	10.13	12.97	12.97	
	10/22/2007	23.10	N/A	N/A	N/A	9.04	14.06	14.06	
	11/28/2007	23.10	N/A	N/A	N/A	8.30	14.80	14.80	
	12/13/2007	23.10	N/A	N/A	N/A	7.10	16.00	16.00	
	1/21/2008	23.10	N/A	N/A	N/A	7.31	15.79	15.79	
	2/24/2008	23.10	N/A	N/A	N/A	7.83	15.27	15.27	
	3/24/2008	23.10	N/A	N/A	N/A	8.08	15.02	15.02	
	8/25/2008	23.10	N/A	N/A	N/A	8.34	14.76	14.76	
	2/18/2009	23.10	N/A	N/A	N/A	7.90	15.20	15.20	
	8/25/2009	23.10	N/A	N/A	N/A	10.30	12.80	12.80	
	3/22/2010	23.10	N/A	N/A	N/A	8.07	15.03	15.03	
	8/23/2010	23.10	N/A	N/A	N/A	9.67	13.43	13.43	
LAI-1	1/17/2003	20.94	N/A	N/A	N/A	4.17	16.77	16.77	
	1/20/2003	20.94	N/A	N/A	N/A	4.18	16.76	16.76	
	1/31/2003	20.94	N/A	N/A	N/A	4.28	16.66	16.66	
	2/7/2003	20.94	4.06	16.88	0.48	4.54	16.40	16.76	
	2/12/2003	20.94	4.38	16.56	1.08	5.46	15.48	16.29	
	2/18/2003	20.94	N/A	N/A	N/A	5.40	15.54	15.54	
	2/21/2003	20.94	N/A	N/A	N/A	5.52	15.42	15.42	
	2/24/2003	20.94	N/A	N/A	N/A	5.96	14.98	14.98	
	3/3/2003	20.94	N/A	N/A	N/A	5.76	15.18	15.18	
	3/12/2003	20.94	N/A	N/A	N/A	5.48	15.46	15.46	
	3/14/2003	20.94	N/A	N/A	N/A	5.09	15.85	15.85	
	3/26/2003	20.94	N/A	N/A	N/A	4.76	16.18	16.18	
	3/28/2003	20.94	N/A	N/A	N/A	4.86	16.08	16.08	
	4/2/2003	20.94	5.21	15.73	0.01	5.22	15.72	15.73	
	4/4/2003	20.94	5.19	15.75	0.01	5.20	15.74	15.75	
	4/8/2003	20.94	5.67	15.27	0.01	5.68	15.26	15.27	
	4/11/2003	20.94	5.07	15.87	0.01	5.08	15.86	15.87	
	4/15/2003	20.94	4.62	16.32	0.01	4.63	16.31	16.32	
	4/17/2003	20.94	6.14	14.80	0.01	6.15	14.79	14.80	
	4/22/2003	20.94	N/A	N/A	N/A	5.21	15.73	15.73	
	4/25/2003	20.94	N/A	N/A	N/A	5.43	15.51	15.51	
	5/2/2003	20.94	N/A	N/A	N/A	5.53	15.41	15.41	
	5/6/2003	20.94	N/A	N/A	N/A	5.66	15.28	15.28	
	5/9/2003	20.94	N/A	N/A	N/A	6.15	14.79	14.79	
	5/16/2003	20.94	N/A	N/A	N/A	6.40	14.54	14.54	
	5/23/2003	20.94	6.50	14.44	0.01	6.51	14.43	14.44	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/28/2003	20.94	6.45	14.49	0.01	6.46	14.48	14.49	
	6/13/2003	20.94	6.79	14.15	0.01	6.80	14.14	14.15	
	6/18/2003	20.94	N/A	N/A	N/A	6.78	14.16	14.16	
	6/27/2003	20.94	N/A	N/A	N/A	6.81	14.13	14.13	
	7/7/2003	20.94	N/A	N/A	N/A	7.41	13.53	13.53	
	7/16/2003	20.94	N/A	N/A	N/A	6.43	14.51	14.51	
	7/31/2003	20.94	N/A	N/A	N/A	7.49	13.45	13.45	
	8/5/2003	20.94	N/A	N/A	N/A	7.61	13.33	13.33	
	8/11/2003	20.94	N/A	N/A	N/A	8.80	12.14	12.14	
	8/22/2003	20.94	N/A	N/A	N/A	8.98	11.96	11.96	
	8/26/2003	20.94	N/A	N/A	N/A	7.91	13.03	13.03	
	9/2/2003	20.94	N/A	N/A	N/A	8.07	12.87	12.87	
	9/9/2003	20.94	8.39	12.55	0.01	8.40	12.54	12.55	
LAI-1	9/19/2003	20.94	N/A	N/A	N/A	8.27	12.67	12.67	
(cont.)	10/14/2003	20.94	N/A	N/A	N/A	8.34	12.60	12.60	
	11/20/2003	20.94	N/A	N/A	N/A	4.63	16.31	16.31	
	12/3/2003	20.94	N/A	N/A	N/A	4.10	16.84	16.84	
	1/19/2004	20.94	N/A	N/A	N/A	3.82	17.12	17.12	
	2/24/2004	20.94	N/A	N/A	N/A	5.22	15.72	15.72	
	3/15/2004	20.94	N/A	N/A	N/A	6.16	14.78	14.78	
	4/19/2004	20.94	N/A	N/A	N/A	6.29	14.65	14.65	
	5/17/2004	20.94	N/A	N/A	N/A	6.81	14.13	14.13	
	6/22/2004	20.94	N/A	N/A	N/A	6.64	14.30	14.30	
	8/18/2004	20.94	N/A	N/A	N/A	7.81	13.13	13.13	
	9/21/2004	20.94	N/A	N/A	N/A	6.90	14.04	14.04	
	10/19/2004	20.94	N/A	N/A	N/A	6.00	14.94	14.94	
	11/23/2004	20.94	N/A	N/A	N/A	6.25	14.69	14.69	
	12/21/2004	20.94	N/A	N/A	N/A	4.38	16.56	16.56	
	1/13/2005	20.94	N/A	N/A	N/A	5.22	15.72	15.72	
	4/28/2005	20.94	N/A	N/A	N/A	4.72	16.22	16.22	Sheen observed, strong odor
	6/1/2005	20.94	N/A	N/A	N/A	4.98	15.96	15.96	Strong odor
	6/29/2005	20.94	N/A	N/A	N/A	6.59	14.35	14.35	
	7/20/2005	20.94	N/A	N/A	N/A	6.77	14.17	14.17	Strong odor
	8/22/2005	20.94	N/A	N/A	N/A	6.95	13.99	13.99	
	9/12/2005	20.94	N/A	N/A	N/A	7.50	13.44	13.44	
	10/12/2005	20.94	N/A	N/A	N/A	8.04	12.90	12.90	
	11/21/2005	20.94	N/A	N/A	N/A	5.89	15.05	15.05	
	12/27/2005	20.94	N/A	N/A	N/A	4.99	15.95	15.95	
	1/30/2006	20.94	N/A	N/A	N/A	2.50	18.44	18.44	
	2/16/2006	20.94	N/A	N/A	N/A	4.27	16.67	16.67	
	3/13/2006	20.94	N/A	N/A	N/A	5.07	15.87	15.87	
	4/18/2006	20.94	N/A	N/A	N/A	5.25	15.69	15.69	
	5/12/2006	20.94	N/A	N/A	N/A	5.52	15.42	15.42	
	6/9/2006	20.94	N/A	N/A	N/A	5.23	15.71	15.71	
	7/13/2006	20.94	N/A	N/A	N/A	6.20	14.74	14.74	
	8/16/2006	20.94	N/A	N/A	N/A	7.00	13.94	13.94	
	9/19/2006	20.94	N/A	N/A	N/A	7.54	13.40	13.40	
	10/13/2006	20.94	N/A	N/A	N/A	7.33	13.61	13.61	
	11/20/2006	20.94	N/A	N/A	N/A	3.62	17.32	17.32	
	12/8/2006	20.94	N/A	N/A	N/A	3.70	17.24	17.24	
	1/19/2007	20.94	N/A	N/A	N/A	3.57	17.37	17.37	Strong odor
	2/19/2007	20.94	N/A	N/A	N/A	5.05	15.89	15.89	
	3/15/2007	20.94	N/A	N/A	N/A	4.50	16.44	16.44	
	4/16/2007	20.94	N/A	N/A	N/A	4.75	16.19	16.19	
	5/14/2007	20.94	N/A	N/A	N/A	4.82	16.12	16.12	
	6/29/2007	20.94	N/A	N/A	N/A	6.92	14.02	14.02	
	7/20/2007	20.94	N/A	N/A	N/A	7.22	13.72	13.72	
	8/21/2007	20.94	N/A	N/A	N/A	7.88	13.06	13.06	
	9/10/2007	20.94	N/A	N/A	N/A	7.91	13.03	13.03	
	10/22/2007	20.94	N/A	N/A	N/A	6.84	14.10	14.10	
	11/28/2007	20.94	N/A	N/A	N/A	6.11	14.83	14.83	
	12/13/2007	20.94	N/A	N/A	N/A	4.96	15.98	15.98	
	1/21/2008	20.94	N/A	N/A	N/A	5.19	15.75	15.75	
	2/24/2008	20.94	N/A	N/A	N/A	5.66	15.28	15.28	
	3/24/2008	20.94	N/A	N/A	N/A	5.90	15.04	15.04	
	8/25/2008	20.94	N/A	N/A	N/A	7.45	13.49	13.49	
	2/18/2009	20.94	N/A	N/A	N/A	5.89	15.05	15.05	
	8/25/2009	20.94	N/A	N/A	N/A	8.10	12.84	12.84	
	3/22/2010	20.94	N/A	N/A	N/A	6.10	14.84	14.84	
	8/23/2010	20.94	N/A	N/A	N/A	7.52	13.42	13.42	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
LAI-2	1/17/2003	20.89	N/A	N/A	N/A	4.14	16.75	16.75	
	1/20/2003	20.89	N/A	N/A	N/A	4.25	16.64	16.64	
	1/31/2003	20.89	N/A	N/A	N/A	4.55	16.34	16.34	
	2/7/2003	20.89	N/A	N/A	N/A	4.41	16.48	16.48	
	2/12/2003	20.89	N/A	N/A	N/A	4.71	16.18	16.18	
	2/18/2003	20.89	N/A	N/A	N/A	5.44	15.45	15.45	
	2/21/2003	20.89	N/A	N/A	N/A	5.61	15.28	15.28	
	2/24/2003	20.89	N/A	N/A	N/A	5.89	15.00	15.00	
	3/3/2003	20.89	N/A	N/A	N/A	5.17	15.72	15.72	
	3/12/2003	20.89	N/A	N/A	N/A	5.37	15.52	15.52	
	3/14/2003	20.89	N/A	N/A	N/A	5.24	15.65	15.65	
	3/26/2003	20.89	N/A	N/A	N/A	4.61	16.28	16.28	
	3/28/2003	20.89	N/A	N/A	N/A	4.72	16.17	16.17	
	4/2/2003	20.89	N/A	N/A	N/A	5.51	15.38	15.38	
	4/4/2003	20.89	N/A	N/A	N/A	5.48	15.41	15.41	
	4/8/2003	20.89	N/A	N/A	N/A	5.55	15.34	15.34	
	4/11/2003	20.89	N/A	N/A	N/A	5.19	15.70	15.70	
	4/15/2003	20.89	N/A	N/A	N/A	4.80	16.09	16.09	
LAI-2	4/17/2003	20.89	N/A	N/A	N/A	5.96	14.93	14.93	
(cont.)	4/22/2003	20.89	N/A	N/A	N/A	5.33	15.56	15.56	
	4/25/2003	20.89	N/A	N/A	N/A	5.49	15.40	15.40	
	5/2/2003	20.89	N/A	N/A	N/A	5.78	15.11	15.11	
	5/6/2003	20.89	N/A	N/A	N/A	5.42	15.47	15.47	
	5/9/2003	20.89	N/A	N/A	N/A	6.30	14.59	14.59	
	5/16/2003	20.89	N/A	N/A	N/A	6.54	14.35	14.35	
	5/23/2003	20.89	N/A	N/A	N/A	6.63	14.26	14.26	
	5/28/2003	20.89	N/A	N/A	N/A	6.51	14.38	14.38	
	6/13/2003	20.89	N/A	N/A	N/A	6.91	13.98	13.98	
	6/18/2003	20.89	N/A	N/A	N/A	6.86	14.03	14.03	
	6/27/2003	20.89	N/A	N/A	N/A	6.87	14.02	14.02	
	7/7/2003	20.89	N/A	N/A	N/A	7.40	13.49	13.49	
	7/16/2003	20.89	N/A	N/A	N/A	6.52	14.37	14.37	
	7/31/2003	20.89	N/A	N/A	N/A	7.48	13.41	13.41	
	8/5/2003	20.89	N/A	N/A	N/A	7.56	13.33	13.33	
	8/11/2003	20.89	N/A	N/A	N/A	8.81	12.08	12.08	
	8/22/2003	20.89	N/A	N/A	N/A	8.99	11.90	11.90	
	8/26/2003	20.89	N/A	N/A	N/A	7.86	13.03	13.03	
	9/2/2003	20.89	8.03	12.86	0.01	8.04	12.85	12.86	
	9/9/2003	20.89	N/A	N/A	N/A	8.46	12.43	12.43	
	9/19/2003	20.89	N/A	N/A	N/A	8.15	12.74	12.74	
	10/14/2003	20.89	N/A	N/A	N/A	8.25	12.64	12.64	
	11/20/2003	20.89	N/A	N/A	N/A	4.82	16.07	16.07	
	12/3/2003	20.89	N/A	N/A	N/A	4.13	16.76	16.76	
	1/19/2004	20.89	N/A	N/A	N/A	3.80	17.09	17.09	
	2/24/2004	20.89	N/A	N/A	N/A	5.26	15.63	15.63	
	3/15/2004	20.89	N/A	N/A	N/A	6.21	14.68	14.68	
	4/19/2004	20.89	N/A	N/A	N/A	6.31	14.58	14.58	
	5/17/2004	20.89	N/A	N/A	N/A	6.75	14.14	14.14	
	6/22/2004	20.89	N/A	N/A	N/A	6.61	14.28	14.28	
	8/18/2004	20.89	N/A	N/A	N/A	7.82	13.07	13.07	
	9/21/2004	20.89	N/A	N/A	N/A	6.81	14.08	14.08	
	10/19/2004	20.89	N/A	N/A	N/A	5.96	14.93	14.93	
	11/23/2004	20.89	N/A	N/A	N/A	6.34	14.55	14.55	
	12/21/2004	20.89	N/A	N/A	N/A	4.35	16.54	16.54	
	1/13/2005	20.89	N/A	N/A	N/A	5.15	15.74	15.74	
	4/28/2005	20.89	N/A	N/A	N/A	4.68	16.21	16.21	
	6/1/2005	20.89	N/A	N/A	N/A	4.95	15.94	15.94	
	6/29/2005	20.89	N/A	N/A	N/A	6.69	14.20	14.20	
	7/20/2005	20.89	N/A	N/A	N/A	6.80	14.09	14.09	Strong odor
	8/22/2005	20.89	N/A	N/A	N/A	6.93	13.96	13.96	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
LAIx-2	9/12/2005	20.67	N/A	N/A	N/A	10.23	10.44	10.44	
	10/12/2005	20.67	N/A	N/A	N/A	9.91	10.76	10.76	
	11/21/2005	20.67	N/A	N/A	N/A	8.23	12.44	12.44	
	12/27/2005	20.67	N/A	N/A	N/A	6.92	13.75	13.75	
	1/30/2006	20.67	N/A	N/A	N/A	5.34	15.33	15.33	
	2/16/2006	20.67	7.39	13.28	0.01	7.40	13.27	13.28	
	3/13/2006	20.67	N/A	N/A	N/A	7.71	12.96	12.96	
	4/18/2006	20.67	N/A	N/A	N/A	7.89	12.78	12.78	
	5/12/2006	20.67	N/A	N/A	N/A	8.83	11.84	11.84	
	6/9/2006	20.67	N/A	N/A	N/A	8.16	12.51	12.51	
	7/13/2006	20.67	N/A	N/A	N/A	9.43	11.24	11.24	
	8/16/2006	20.67	N/A	N/A	N/A	10.17	10.50	10.50	
	9/19/2006	20.67	N/A	N/A	N/A	9.65	11.02	11.02	
	10/13/2006	20.67	N/A	N/A	N/A	9.62	11.05	11.05	
	11/20/2006	20.67	N/A	N/A	N/A	5.33	15.34	15.34	
	12/8/2006	20.67	N/A	N/A	N/A	6.14	14.53	14.53	
	1/19/2007	20.67	N/A	N/A	N/A	5.75	14.92	14.92	
	2/19/2007	20.67	N/A	N/A	N/A	7.51	13.16	13.16	
	3/15/2007	20.67	N/A	N/A	N/A	6.50	14.17	14.17	
	4/16/2007	20.67	N/A	N/A	N/A	7.14	13.53	13.53	
	5/14/2007	20.67	N/A	N/A	N/A	8.17	12.50	12.50	
	6/29/2007	20.67	N/A	N/A	N/A	8.86	11.81	11.81	
	7/20/2007	20.67	N/A	N/A	N/A	9.13	11.54	11.54	
	8/21/2007	20.67	N/A	N/A	N/A	9.30	11.37	11.37	
	9/10/2007	20.67	N/A	N/A	N/A	9.18	11.49	11.49	
	10/22/2007	20.67	N/A	N/A	N/A	7.30	13.37	13.37	
	11/28/2007	20.67	N/A	N/A	N/A	6.72	13.95	13.95	
	12/13/2007	20.67	N/A	N/A	N/A	4.96	15.71	15.71	
	1/21/2008	20.67	N/A	N/A	N/A	5.24	15.43	15.43	
	2/24/2008	20.67	N/A	N/A	N/A	5.94	14.73	14.73	
LAIx-2	3/24/2008	20.67	N/A	N/A	N/A	6.37	14.30	14.30	
(cont.)	8/25/2008	20.67	N/A	N/A	N/A	7.96	12.71	12.71	
	2/18/2009	20.67	N/A	N/A	N/A	6.04	14.63	14.63	
	8/25/2009	20.67	N/A	N/A	N/A	8.78	11.89	11.89	
	3/22/2010	20.67	N/A	N/A	N/A	6.42	14.25	14.25	
	8/23/2010	20.67	N/A	N/A	N/A	8.20	12.47	12.47	
LAI-3	1/17/2003	20.74	N/A	N/A	N/A	4.37	16.37	16.37	
	1/20/2003	20.74	N/A	N/A	N/A	4.28	16.46	16.46	
	1/31/2003	20.74	N/A	N/A	N/A	4.94	15.80	15.80	
	2/7/2003	20.74	N/A	N/A	N/A	4.41	16.33	16.33	
	2/12/2003	20.74	N/A	N/A	N/A	4.70	16.04	16.04	
	2/18/2003	20.74	N/A	N/A	N/A	5.21	15.53	15.53	
	2/21/2003	20.74	N/A	N/A	N/A	5.58	15.16	15.16	
	2/24/2003	20.74	N/A	N/A	N/A	5.66	15.08	15.08	
	3/3/2003	20.74	N/A	N/A	N/A	5.13	15.61	15.61	
	3/12/2003	20.74	N/A	N/A	N/A	5.32	15.42	15.42	
	3/14/2003	20.74	N/A	N/A	N/A	5.16	15.58	15.58	
	3/26/2003	20.74	N/A	N/A	N/A	4.65	16.09	16.09	
	3/28/2003	20.74	N/A	N/A	N/A	4.75	15.99	15.99	
	4/2/2003	20.74	N/A	N/A	N/A	5.57	15.17	15.17	
	4/4/2003	20.74	N/A	N/A	N/A	5.53	15.21	15.21	
	4/8/2003	20.74	N/A	N/A	N/A	5.69	15.05	15.05	
	4/11/2003	20.74	N/A	N/A	N/A	5.15	15.59	15.59	
	4/15/2003	20.74	N/A	N/A	N/A	4.75	15.99	15.99	
	4/17/2003	20.74	N/A	N/A	N/A	6.08	14.66	14.66	
	4/22/2003	20.74	N/A	N/A	N/A	5.27	15.47	15.47	
	4/25/2003	20.74	N/A	N/A	N/A	5.45	15.29	15.29	
	5/2/2003	20.74	N/A	N/A	N/A	5.76	14.98	14.98	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
LAI-3	5/6/2003	20.74	N/A	N/A	N/A	5.61	15.13	15.13	
(cont.)	5/9/2003	20.74	N/A	N/A	N/A	6.30	14.44	14.44	
	5/16/2003	20.74	N/A	N/A	N/A	6.53	14.21	14.21	
	5/23/2003	20.74	N/A	N/A	N/A	6.57	14.17	14.17	
	5/28/2003	20.74	N/A	N/A	N/A	6.44	14.30	14.30	
	6/13/2003	20.74	N/A	N/A	N/A	6.85	13.89	13.89	
	6/18/2003	20.74	N/A	N/A	N/A	6.81	13.93	13.93	
	6/27/2003	20.74	N/A	N/A	N/A	6.83	13.91	13.91	
	7/7/2003	20.74	N/A	N/A	N/A	7.32	13.42	13.42	
	7/16/2003	20.74	N/A	N/A	N/A	6.47	14.27	14.27	
	7/31/2003	20.74	N/A	N/A	N/A	7.37	13.37	13.37	
	8/5/2003	20.74	N/A	N/A	N/A	7.49	13.25	13.25	
	8/11/2003	20.74	N/A	N/A	N/A	7.68	13.06	13.06	
	8/22/2003	20.74	N/A	N/A	N/A	8.74	12.00	12.00	
	8/26/2003	20.74	N/A	N/A	N/A	7.74	13.00	13.00	
	9/2/2003	20.74	N/A	N/A	N/A	8.03	12.71	12.71	
	9/9/2003	20.74	N/A	N/A	N/A	8.45	12.29	12.29	
	9/19/2003	20.74	N/A	N/A	N/A	8.10	12.64	12.64	
	10/14/2003	20.74	N/A	N/A	N/A	8.20	12.54	12.54	
	11/20/2003	20.74	N/A	N/A	N/A	4.77	15.97	15.97	
	12/3/2003	20.74	N/A	N/A	N/A	4.08	16.66	16.66	
	1/19/2004	20.74	N/A	N/A	N/A	3.55	17.19	17.19	
	2/24/2004	20.74	N/A	N/A	N/A	5.23	15.51	15.51	
	3/15/2004	20.74	N/A	N/A	N/A	6.20	14.54	14.54	
	4/19/2004	20.74	N/A	N/A	N/A	6.21	14.53	14.53	
	5/17/2004	20.74	N/A	N/A	N/A	6.66	14.08	14.08	
	6/22/2004	20.74	N/A	N/A	N/A	6.46	14.28	14.28	
	8/18/2004	20.74	N/A	N/A	N/A	7.76	12.98	12.98	
	9/21/2004	20.74	N/A	N/A	N/A	6.70	14.04	14.04	
	10/19/2004	20.74	N/A	N/A	N/A	5.82	14.92	14.92	
	11/23/2004	20.74	N/A	N/A	N/A	6.14	14.60	14.60	
	12/21/2004	20.74	N/A	N/A	N/A	4.22	16.52	16.52	
	1/13/2005	20.74	N/A	N/A	N/A	5.03	15.71	15.71	
	4/28/2005	20.74	N/A	N/A	N/A	4.55	16.19	16.19	
	6/1/2005	20.74	N/A	N/A	N/A	4.86	15.88	15.88	
	6/29/2005	20.74	N/A	N/A	N/A	6.69	14.05	14.05	
	7/20/2005	20.74	N/A	N/A	N/A	6.71	14.03	14.03	Strong odor
	8/22/2005	20.74	N/A	N/A	N/A	6.82	13.92	13.92	
LAIx-3	9/12/2005	20.74	N/A	N/A	N/A	10.31	10.43	10.43	
	10/12/2005	20.74	N/A	N/A	N/A	9.99	10.75	10.75	
	11/21/2005	20.74	8.31	12.43	0.01	8.32	12.42	12.43	
	12/27/2005	20.74	N/A	N/A	N/A	7.15	13.59	13.59	
	1/30/2006	20.74	6.00	14.74	0.01	6.01	14.73	14.74	
	2/16/2006	20.74	N/A	N/A	N/A	7.85	12.89	12.89	
	3/13/2006	20.74	N/A	N/A	N/A	8.18	12.56	12.56	
	4/18/2006	20.74	N/A	N/A	N/A	8.36	12.38	12.38	
	5/12/2006	20.74	N/A	N/A	N/A	8.87	11.87	11.87	
	6/9/2006	20.74	N/A	N/A	N/A	8.65	12.09	12.09	
	7/13/2006	20.74	N/A	N/A	N/A	9.90	10.84	10.84	
	8/16/2006	20.74	N/A	N/A	N/A	10.63	10.11	10.11	
	9/19/2006	20.74	N/A	N/A	N/A	10.25	10.49	10.49	
	10/13/2006	20.74	N/A	N/A	N/A	10.28	10.46	10.46	
	11/20/2006	20.74	N/A	N/A	N/A	7.14	13.60	13.60	
	12/8/2006	20.74	N/A	N/A	N/A	7.84	12.90	12.90	
	1/19/2007	20.74	N/A	N/A	N/A	7.61	13.13	13.13	Strong odor
	2/19/2007	20.74	N/A	N/A	N/A	7.86	12.88	12.88	
	3/15/2007	20.74	N/A	N/A	N/A	7.34	13.40	13.40	
	4/16/2007	20.74	N/A	N/A	N/A	7.86	12.88	12.88	
	5/14/2007	20.74	N/A	N/A	N/A	8.61	12.13	12.13	
	6/29/2007	20.74	N/A	N/A	N/A	9.27	11.47	11.47	
	7/20/2007	20.74	N/A	N/A	N/A	9.59	11.15	11.15	
	8/21/2007	20.74	N/A	N/A	N/A	9.80	10.94	10.94	
	9/10/2007	20.74	N/A	N/A	N/A	9.92	10.82	10.82	
	10/22/2007	20.74	N/A	N/A	N/A	8.48	12.26	12.26	
	11/28/2007	20.74	N/A	N/A	N/A	8.10	12.64	12.64	
	12/13/2007	20.74	N/A	N/A	N/A	6.13	14.61	14.61	
	1/21/2008	20.74	N/A	N/A	N/A	6.73	14.01	14.01	
	2/24/2008	20.74	N/A	N/A	N/A	7.31	13.43	13.43	
	3/24/2008	20.74	N/A	N/A	N/A	7.45	13.29	13.29	
	8/25/2008	20.74	N/A	N/A	N/A	9.91	10.83	10.83	
	2/18/2009	20.74	N/A	N/A	N/A	7.68	13.06	13.06	
	8/25/2009	20.74	N/A	N/A	N/A	9.83	10.91	10.91	
	3/22/2010	20.74	N/A	N/A	N/A	7.60	13.14	13.14	
	8/23/2010	20.74	N/A	N/A	N/A	9.31	11.43	11.43	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
LAI-4	1/22/2003	22.43	6.87	15.56	0.43	7.30	15.13	15.45	
	1/23/2003	22.43	7.48	14.95	0.20	7.68	14.75	14.90	
	1/24/2003	22.43	6.72	15.71	0.67	7.39	15.04	15.54	
	1/27/2003	22.43	4.47	17.96	4.67	9.14	13.29	16.79	
	1/28/2003	22.43	4.97	17.46	4.43	9.40	13.03	16.35	
	1/29/2003	22.43	7.40	15.03	0.05	7.45	14.98	15.02	
	1/30/2003	22.43	7.88	14.55	0.06	7.94	14.49	14.54	
	2/3/2003	22.43	6.25	16.18	2.16	8.41	14.02	15.64	
	2/6/2003	23.88	6.28	17.60	1.04	7.32	16.56	17.34	
	2/11/2003	23.88	7.54	16.34	1.44	8.98	14.90	15.98	
	2/18/2003	23.88	9.28	14.60	0.17	9.45	14.43	14.56	
	2/21/2003	23.88	9.11	14.77	0.09	9.20	14.68	14.75	
	2/26/2003	23.88	8.37	15.51	1.35	9.72	14.16	15.17	
	3/3/2003	23.88	8.57	15.31	0.86	9.43	14.45	15.10	
	3/12/2003	23.88	8.80	15.08	0.14	8.94	14.94	15.05	
	3/14/2003	23.88	8.68	15.20	0.14	8.82	15.06	15.17	
	3/26/2003	23.88	N/A	N/A	N/A	9.06	14.82	14.82	
	3/28/2003	23.88	N/A	N/A	N/A	9.28	14.60	14.60	
	4/2/2003	23.88	8.21	15.67	0.08	8.29	15.59	15.65	
	4/4/2003	23.88	8.58	15.30	0.04	8.62	15.26	15.29	
	4/8/2003	23.88	8.51	15.37	0.13	8.64	15.24	15.34	
	4/11/2003	23.88	8.78	15.10	0.14	8.92	14.96	15.07	
	4/15/2003	23.88	7.86	16.02	0.95	8.81	15.07	15.78	
	4/17/2003	23.88	9.19	14.69	0.02	9.21	14.67	14.69	
	4/22/2003	23.88	6.61	17.27	0.19	6.80	17.08	17.22	
	4/25/2003	23.88	8.96	14.92	0.25	9.21	14.67	14.86	
	5/2/2003	23.88	9.06	14.82	0.10	9.16	14.72	14.80	
	5/6/2003	23.88	8.56	15.32	1.85	10.41	13.47	14.86	
	5/9/2003	23.88	10.96	12.92	0.02	10.98	12.90	12.92	
	5/23/2003	23.88	10.17	13.71	0.02	10.19	13.69	13.71	
	5/28/2003	23.88	9.81	14.07	0.03	9.84	14.04	14.06	
	6/13/2003	23.88	10.09	13.79	0.03	10.12	13.76	13.78	
	6/18/2003	23.88	10.05	13.83	0.08	10.13	13.75	13.81	
	6/27/2003	23.88	9.92	13.96	0.82	10.74	13.14	13.76	
	7/7/2003	23.88	10.27	13.61	1.44	11.71	12.17	13.25	
	7/16/2003	23.88	9.92	13.96	2.10	12.02	11.86	13.44	
	7/31/2003	23.88	10.58	13.30	1.12	11.70	12.18	13.02	
	8/5/2003	23.88	10.32	13.56	1.97	12.29	11.59	13.07	
	8/11/2003	23.88	11.70	12.18	1.09	12.79	11.09	11.91	
	8/22/2003	23.88	11.96	11.92	1.28	13.24	10.64	11.60	
	8/26/2003	23.88	11.09	12.79	1.15	12.24	11.64	12.50	
	9/2/2003	23.88	11.04	12.84	1.32	12.36	11.52	12.51	
LAI-4	9/9/2003	23.88	11.10	12.78	2.16	13.26	10.62	12.24	
(cont.)	9/19/2003	23.88	11.14	12.74	1.35	12.49	11.39	12.40	
	10/14/2003	23.88	11.21	12.67	1.59	12.80	11.08	12.27	
	11/20/2003	23.88	8.21	15.67	0.09	8.30	15.58	15.65	
	12/3/2003	23.88	7.12	16.76	1.06	8.18	15.70	16.50	
	1/19/2004	23.88	6.84	17.04	0.72	7.56	16.32	16.86	
	2/24/2004	23.88	8.25	15.63	0.65	8.90	14.98	15.47	
	3/15/2004	23.88	9.42	14.46	0.09	9.51	14.37	14.44	Oily trace
	4/19/2004	23.88	9.19	14.69	0.01	9.20	14.68	14.69	
	5/17/2004	23.88	N/A	N/A	N/A	10.05	13.83	13.83	Trace product
	6/22/2004	23.88	N/A	N/A	N/A	9.98	13.90	13.90	
	8/18/2004	23.88	11.20	12.68	0.05	11.25	12.63	12.67	
	9/21/2004	23.88	N/A	N/A	N/A	10.05	13.83	13.83	Product odor
	10/19/2004	24.88	N/A	N/A	N/A	9.23	15.65	15.65	
	11/23/2004	24.88	N/A	N/A	N/A	9.45	15.43	15.43	
	12/21/2004	24.88	N/A	N/A	N/A	7.60	17.28	17.28	Sheen
	1/13/2005	24.88	N/A	N/A	N/A	8.37	16.51	16.51	
	4/28/2005	24.88	N/A	N/A	N/A	8.57	16.31	16.31	
	6/1/2005	24.88	N/A	N/A	N/A	8.15	16.73	16.73	Mild odor
	6/29/2005	24.88	N/A	N/A	N/A	10.05	14.83	14.83	Odor
	7/20/2005	24.88	N/A	N/A	N/A	10.45	14.43	14.43	Strong odor
	8/22/2005	24.88	N/A	N/A	N/A	10.12	14.76	14.76	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
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Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
LAIx-4	9/12/2005	25.50	N/A	N/A	N/A	14.15	11.35	11.35	
	10/12/2005	25.50	N/A	N/A	N/A	14.78	10.72	10.72	
	11/21/2005	25.50	12.76	12.74	0.01	12.77	12.73	12.74	
	12/27/2005	25.50	N/A	N/A	N/A	11.95	13.55	13.55	
	1/30/2006	25.50	N/A	N/A	N/A	10.60	14.90	14.90	
	2/16/2006	25.50	N/A	N/A	N/A	12.68	12.82	12.82	
	3/13/2006	25.50	N/A	N/A	N/A	12.95	12.55	12.55	
	4/18/2006	25.50	N/A	N/A	N/A	13.05	12.45	12.45	
	5/12/2006	25.50	N/A	N/A	N/A	13.70	11.80	11.80	
	6/9/2006	25.50	N/A	N/A	N/A	13.45	12.05	12.05	
	7/13/2006	25.50	N/A	N/A	N/A	15.65	9.85	9.85	
	8/16/2006	25.50	15.41	10.09	0.02	15.43	10.07	10.09	
	9/19/2006	25.50	N/A	N/A	N/A	15.05	10.45	10.45	
	10/13/2006	25.50	N/A	N/A	N/A	15.13	10.37	10.37	
	11/20/2006	25.50	N/A	N/A	N/A	12.43	13.07	13.07	
	12/8/2006	25.50	N/A	N/A	N/A	12.76	12.74	12.74	
	1/19/2007	25.50	N/A	N/A	N/A	12.38	13.12	13.12	Strong odor
	2/19/2007	25.50	N/A	N/A	N/A	12.96	12.54	12.54	
	3/15/2007	25.50	N/A	N/A	N/A	12.70	12.80	12.80	
	4/16/2007	25.50	N/A	N/A	N/A	13.11	12.39	12.39	
	5/14/2007	25.50	N/A	N/A	N/A	13.73	11.77	11.77	
	6/29/2007	25.50	N/A	N/A	N/A	14.19	11.31	11.31	
	7/20/2007	25.50	N/A	N/A	N/A	14.57	10.93	10.93	
	8/21/2007	25.50	N/A	N/A	N/A	14.74	10.76	10.76	
	9/10/2007	25.50	N/A	N/A	N/A	14.82	10.68	10.68	
	10/22/2007	25.50	N/A	N/A	N/A	13.64	11.86	11.86	
	11/28/2007	25.50	N/A	N/A	N/A	13.45	12.05	12.05	
	12/13/2007	25.50	N/A	N/A	N/A	12.80	12.70	12.70	
	1/21/2008	25.50	N/A	N/A	N/A	8.78	16.72	16.72	
	2/24/2008	25.50	N/A	N/A	N/A	13.23	12.27	12.27	
	3/24/2008	25.50	N/A	N/A	N/A	12.81	12.69	12.69	
	8/25/2008	25.50	N/A	N/A	N/A	13.97	11.53	11.53	
	2/18/2009	22.50	N/A	N/A	N/A	13.44	9.06	9.06	
	8/25/2009	22.50	N/A	N/A	N/A	15.09	7.41	7.41	
	3/22/2010	22.50	N/A	N/A	N/A	13.20	9.30	9.30	
	8/23/2010	25.50	N/A	N/A	N/A	12.67	12.83	12.83	
LAI-5	1/22/2003	23.04	6.55	16.49	4.18	10.73	12.31	15.45	
	1/23/2003	23.04	6.54	16.50	4.02	10.56	12.48	15.50	
	1/24/2003	23.04	6.40	16.64	3.92	10.32	12.72	15.66	
	1/27/2003	23.04	5.51	17.53	3.66	9.17	13.87	16.62	
	1/28/2003	23.04	6.85	16.19	0.55	7.40	15.64	16.05	
	1/29/2003	23.04	6.20	16.84	4.20	10.40	12.64	15.79	
	1/30/2003	23.04	6.31	16.73	4.04	10.35	12.69	15.72	
	2/3/2003	23.04	6.36	16.68	3.29	9.65	13.39	15.86	
	2/6/2003	24.52	7.18	17.34	3.57	10.75	13.77	16.45	
	2/11/2003	24.52	7.53	16.99	3.64	11.17	13.35	16.08	
	2/18/2003	24.52	6.50	18.02	4.75	11.25	13.27	16.83	
	2/21/2003	24.52	8.21	16.31	3.30	11.51	13.01	15.49	
	2/26/2003	24.52	7.78	16.74	3.23	11.01	13.51	15.93	
	3/4/2003	24.52	7.78	16.74	3.23	11.01	13.51	15.93	
	3/12/2003	24.52	8.32	16.20	3.36	11.68	12.84	15.36	
	3/14/2003	24.52	8.36	16.16	3.08	11.44	13.08	15.39	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
LAI-5	3/26/2003	24.52	N/A	N/A	N/A	10.01	14.51	14.51	
(cont.)	3/28/2003	24.52	N/A	N/A	N/A	9.96	14.56	14.56	
	4/2/2003	24.52	8.52	16.00	0.83	9.35	15.17	15.79	
	4/4/2003	24.52	8.90	15.62	0.68	9.58	14.94	15.45	
	4/8/2003	24.52	8.96	15.56	0.55	9.51	15.01	15.42	
	4/11/2003	24.52	8.72	15.80	1.62	10.34	14.18	15.40	
	4/15/2003	24.52	8.01	16.51	2.43	10.44	14.08	15.90	
	4/17/2003	24.52	9.60	14.92	0.16	9.76	14.76	14.88	
	4/22/2003	24.52	9.04	15.48	0.39	9.43	15.09	15.38	
	4/25/2003	24.52	9.05	15.47	2.10	11.15	13.37	14.95	
	5/2/2003	24.52	9.48	15.04	0.24	9.72	14.80	14.98	
	5/6/2003	24.52	8.94	15.58	2.24	11.18	13.34	15.02	
	5/9/2003	24.52	10.28	14.24	0.07	10.35	14.17	14.22	
	5/23/2003	24.52	10.65	13.87	0.02	10.67	13.85	13.87	
	5/28/2003	24.52	10.36	14.16	0.09	10.45	14.07	14.14	
	6/13/2003	24.52	10.58	13.94	0.05	10.63	13.89	13.93	
	6/18/2003	24.52	10.51	14.01	0.01	10.52	14.00	14.01	
	6/27/2003	24.52	10.08	14.44	1.63	11.71	12.81	14.03	
	7/7/2003	24.52	10.52	14.00	1.85	12.37	12.15	13.54	
	7/16/2003	24.52	10.30	14.22	2.15	12.45	12.07	13.68	
	7/31/2003	24.52	10.77	13.75	1.67	12.44	12.08	13.33	
	8/5/2003	24.52	11.30	13.22	2.35	13.65	10.87	12.63	
	8/11/2003	24.52	N/A	N/A	N/A	12.22	12.30	12.30	
	8/22/2003	24.52	N/A	N/A	N/A	12.34	12.18	12.18	
	8/26/2003	24.52	12.39	12.13	1.29	13.68	10.84	11.81	
	9/2/2003	24.52	11.57	12.95	0.03	11.60	12.92	12.94	
	9/9/2003	24.52	11.14	13.38	2.49	13.63	10.89	12.76	
	9/19/2003	24.52	11.89	12.63	0.57	12.46	12.06	12.49	
	10/14/2003	24.52	12.13	12.39	0.45	12.58	11.94	12.28	
	11/20/2003	24.52	N/A	N/A	N/A	8.72	15.80	15.80	
	12/3/2003	24.52	7.76	16.76	0.33	8.09	16.43	16.68	
	1/19/2004	24.52	7.38	17.14	0.07	7.45	17.07	17.12	
	2/24/2004	24.52	8.65	15.87	0.11	8.76	15.76	15.84	
	3/15/2004	24.52	N/A	N/A	N/A	9.94	14.58	14.58	Oily trace
	4/19/2004	24.52	N/A	N/A	N/A	10.19	14.33	14.33	Trace product
	5/17/2004	24.52	N/A	N/A	N/A	11.14	13.38	13.38	Trace product
	6/22/2004	24.52	11.10	13.42	0.01	11.11	13.41	13.42	
	8/18/2004	24.52	N/A	N/A	N/A	12.17	12.35	12.35	
	9/21/2004	24.52	N/A	N/A	N/A	11.16	13.36	13.36	Strong product odor
	10/19/2004	25.52	N/A	N/A	N/A	10.29	15.23	15.23	
	11/23/2004	25.52	N/A	N/A	N/A	10.48	15.04	15.04	Trace product
	12/21/2004	25.52	N/A	N/A	N/A	8.99	16.53	16.53	Strong odor
	1/13/2005	25.52	N/A	N/A	N/A	9.47	16.05	16.05	
	4/28/2005	25.52	N/A	N/A	N/A	9.32	16.20	16.20	Strong odor
	6/1/2005	25.52	N/A	N/A	N/A	9.61	15.91	15.91	Strong odor
	6/29/2005	25.52	N/A	N/A	N/A	11.40	14.12	14.12	Strong odor
	7/20/2005	25.52	N/A	N/A	N/A	11.47	14.05	14.05	Strong odor
	8/22/2005	25.52	N/A	N/A	N/A	11.44	14.08	14.08	
LAIx-5	9/12/2005	25.63	N/A	N/A	N/A	14.18	11.45	11.45	
	10/12/2005	25.63	N/A	N/A	N/A	14.58	11.05	11.05	
	11/21/2005	25.63	N/A	N/A	N/A	12.08	13.55	13.55	
	12/27/2005	25.63	11.10	14.53	0.05	11.15	14.48	14.52	
	1/30/2006	25.63	7.33	18.30	2.73	10.06	15.57	17.62	
	2/16/2006	25.63	12.10	13.53	0.00	12.10	13.53	13.53	
	3/13/2006	25.63	N/A	N/A	N/A	12.71	12.92	12.92	
	4/18/2006	25.63	10.60	15.03	2.69	13.29	12.34	14.36	
	5/12/2006	25.63	11.10	14.53	3.33	14.43	11.20	13.70	
	6/9/2006	25.63	12.54	13.09	0.01	12.55	13.08	13.09	
	7/13/2006	25.63	13.10	12.53	0.15	13.25	12.38	12.49	
	8/16/2006	25.63	N/A	N/A	N/A	13.80	11.83	11.83	
	9/19/2006	25.63	N/A	N/A	N/A	14.35	11.28	11.28	
	10/13/2006	25.63	N/A	N/A	N/A	13.80	11.83	11.83	
	11/20/2006	25.63	9.82	15.81	0.27	10.09	15.54	15.74	
	12/8/2006	25.63	9.92	15.71	0.80	10.72	14.91	15.51	
	1/19/2007	25.63	8.94	16.69	1.31	10.25	15.38	16.36	
	2/19/2007	25.63	10.04	15.59	0.25	10.29	15.34	15.53	
	3/15/2007	25.63	9.29	16.34	0.25	9.54	16.09	16.28	
	4/16/2007	25.63	10.46	15.17	0.16	10.62	15.01	15.13	
	5/14/2007	25.63	11.63	14.00	0.02	11.65	13.98	14.00	
	6/29/2007	25.63	N/A	N/A	N/A	11.88	13.75	13.75	
	7/20/2007	25.63	N/A	N/A	N/A	12.59	13.04	13.04	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	8/21/2007	25.63	N/A	N/A	N/A	13.18	12.45	12.45	
	9/10/2007	25.63	N/A	N/A	N/A	15.47	10.16	10.16	
	10/22/2007	25.63	N/A	N/A	N/A	11.95	13.68	13.68	
LAIx-5	11/28/2007	25.63	N/A	N/A	N/A	11.37	14.26	14.26	
(cont.)	12/13/2007	25.63	10.82	14.81	0.13	10.95	14.68	14.78	sheen
	1/21/2008	25.63	N/A	N/A	N/A	11.68	13.95	13.95	
	2/24/2008	25.63	N/A	N/A	N/A	10.13	15.50	15.50	
	3/24/2008	25.63	N/A	N/A	N/A	11.11	14.52	14.52	
	8/25/2008	25.63	N/A	N/A	N/A	12.30	13.33	13.33	
	2/18/2009	25.63	N/A	N/A	N/A	10.65	14.98	14.98	
	8/25/2009	25.63	N/A	N/A	N/A	12.92	12.71	12.71	
	3/22/2010	25.63	10.79	14.84	0.01	10.80	14.83	14.86	
	8/23/2010	25.63	N/A	N/A	N/A	Dry	Dry	Dry	
LAI-6	1/22/2003	22.86	6.67	16.19	3.78	10.45	12.41	15.25	
	1/23/2003	22.86	6.45	16.41	3.85	10.30	12.56	15.45	
	1/24/2003	22.86	6.32	16.54	4.00	10.32	12.54	15.54	
	1/27/2003	22.86	5.68	17.18	3.37	9.05	13.81	16.34	
	1/28/2003	22.86	6.91	15.95	0.93	7.84	15.02	15.72	
	1/29/2003	22.86	6.51	16.35	2.53	9.04	13.82	15.72	
	1/30/2003	22.86	6.36	16.50	3.60	9.96	12.90	15.60	
	2/3/2003	22.86	6.27	16.59	3.69	9.96	12.90	15.67	
	2/6/2003	22.86	5.79	17.07	3.79	9.58	13.28	16.12	
	2/11/2003	22.86	6.03	16.83	3.61	9.64	13.22	15.93	
	2/18/2003	22.86	7.98	14.88	0.42	8.40	14.46	14.78	
	2/21/2003	22.86	7.57	15.29	0.54	8.11	14.75	15.16	
	2/26/2003	22.86	7.15	15.71	0.47	7.62	15.24	15.59	
	3/3/2003	22.86	8.01	14.85	0.45	8.46	14.40	14.74	
	3/12/2003	22.86	7.46	15.40	0.23	7.69	15.17	15.34	
	3/14/2003	22.86	7.72	15.14	0.19	7.91	14.95	15.09	
	3/26/2003	22.86	6.37	16.49	1.45	7.82	15.04	16.13	
	3/28/2003	22.86	7.10	15.76	1.65	8.75	14.11	15.35	
	4/2/2003	22.86	6.65	16.21	2.15	8.80	14.06	15.67	
	4/4/2003	22.86	7.06	15.80	1.74	8.80	14.06	15.37	
	4/8/2003	22.86	7.13	15.73	1.70	8.83	14.03	15.31	
	4/11/2003	22.86	7.22	15.64	0.88	8.10	14.76	15.42	
	4/15/2003	22.86	6.56	16.30	1.82	8.38	14.48	15.85	
	4/17/2003	22.86	7.61	15.25	1.74	9.35	13.51	14.82	
	4/22/2003	22.86	7.16	15.70	1.65	8.81	14.05	15.29	
	4/25/2003	22.86	7.70	15.16	0.83	8.53	14.33	14.95	
	5/2/2003	22.86	7.61	15.25	1.65	9.26	13.60	14.84	
	5/6/2003	22.86	8.45	14.41	0.99	9.44	13.42	14.16	
	5/9/2003	22.86	8.00	14.86	1.95	9.95	12.91	14.37	
	5/23/2003	22.86	8.41	14.45	2.00	10.41	12.45	13.95	
	5/28/2003	22.86	8.23	14.63	1.78	10.01	12.85	14.19	
	6/13/2003	22.86	8.50	14.36	2.11	10.61	12.25	13.83	
	6/18/2003	22.86	8.46	14.40	2.10	10.56	12.30	13.88	
	6/27/2003	22.86	9.91	12.95	0.77	10.68	12.18	12.76	
	7/7/2003	22.86	8.98	13.88	2.08	11.06	11.80	13.36	
	7/16/2003	22.86	8.75	14.11	2.20	10.95	11.91	13.56	
	7/31/2003	22.86	9.14	13.72	2.06	11.20	11.66	13.21	
	8/5/2003	22.86	9.15	13.71	2.01	11.16	11.70	13.21	
	8/11/2003	22.86	10.24	12.62	1.97	12.21	10.65	12.13	
	8/22/2003	22.86	10.45	12.41	1.90	12.35	10.51	11.94	
	8/26/2003	22.86	9.78	13.08	0.02	9.80	13.06	13.08	
	9/2/2003	22.86	10.13	12.73	0.90	11.03	11.83	12.51	
	9/9/2003	22.86	10.48	12.38	0.79	11.27	11.59	12.18	
	9/19/2003	22.86	10.44	12.42	0.61	11.05	11.81	12.27	
	10/14/2003	22.86	9.11	13.75	0.91	10.02	12.84	13.52	
	11/20/2003	22.86	7.22	15.64	0.01	7.23	15.63	15.64	
	12/3/2003	22.86	6.30	16.56	0.35	6.65	16.21	16.47	
	1/19/2004	22.86	5.85	17.01	0.71	6.56	16.30	16.83	
	2/24/2004	22.86	7.52	15.34	0.11	7.63	15.23	15.31	
	3/15/2004	22.86	8.32	14.54	0.50	8.82	14.04	14.42	
	4/19/2004	22.86	8.52	14.34	0.02	8.54	14.32	14.34	
	5/17/2004	22.86	9.05	13.81	0.03	9.08	13.78	13.80	
	6/22/2004	22.86	N/A	N/A	N/A	8.85	14.01	14.01	Trace product
	8/18/2004	22.86	N/A	N/A	N/A	10.08	12.78	12.78	
	9/21/2004	22.86	N/A	N/A	N/A	8.95	13.91	13.91	
	10/19/2004	22.86	N/A	N/A	N/A	8.08	14.78	14.78	
	11/23/2004	22.86	N/A	N/A	N/A	8.49	14.37	14.37	
	12/21/2004	22.86	N/A	N/A	N/A	6.55	16.31	16.31	Sheen, strong odor

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/13/2005	22.86	7.26	15.60	0.01	7.27	15.59	15.60	Sheen, strong odor
	4/28/2005	22.86	N/A	N/A	N/A	7.05	15.81	15.81	Strong odor
	6/1/2005	22.86	N/A	N/A	N/A	7.68	15.18	15.18	Strong odor
	6/29/2005	22.86	N/A	N/A	N/A	9.20	13.66	13.66	Strong odor
	7/20/2005	22.86	N/A	N/A	N/A	9.43	13.43	13.43	
	8/22/2005	22.86	N/A	N/A	N/A	9.47	13.39	13.39	
LAIx-6	9/12/2005	25.25	N/A	N/A	N/A	11.56	13.69	13.69	
	10/12/2005	25.25	N/A	N/A	N/A	12.27	12.98	12.98	
	11/21/2005	25.25	N/A	N/A	N/A	10.37	14.88	14.88	
	12/27/2005	25.25	N/A	N/A	N/A	9.88	15.37	15.37	
	12/21/2004	25.25	N/A	N/A	N/A	9.88	15.37	15.37	
	1/30/2006	25.25	7.28	17.97	0.01	7.29	17.96	17.97	
	2/16/2006	25.25	N/A	N/A	N/A	8.81	16.44	16.44	
	3/13/2006	25.25	9.54	15.71	0.54	10.08	15.17	15.58	
	4/18/2006	25.25	N/A	N/A	N/A	9.80	15.45	15.45	
	5/12/2006	25.25	N/A	N/A	N/A	10.11	15.14	15.14	
	6/9/2006	25.25	N/A	N/A	N/A	9.77	15.48	15.48	
	7/13/2006	25.25	N/A	N/A	N/A	10.75	14.50	14.50	
	8/16/2006	25.25	N/A	N/A	N/A	11.43	13.82	13.82	
	9/19/2006	25.25	N/A	N/A	N/A	12.00	13.25	13.25	
	10/13/2006	25.25	N/A	N/A	N/A	11.84	13.41	13.41	
	11/20/2006	25.25	N/A	N/A	N/A	8.31	16.94	16.94	
	12/8/2006	25.25	N/A	N/A	N/A	8.28	16.97	16.97	
	1/19/2007	25.25	N/A	N/A	N/A	7.89	17.36	17.36	
	2/19/2007	25.25	N/A	N/A	N/A	9.58	15.67	15.67	
	3/15/2007	25.25	N/A	N/A	N/A	8.85	16.40	16.40	
	4/16/2007	25.25	N/A	N/A	N/A	9.25	16.00	16.00	
	5/14/2007	25.25	N/A	N/A	N/A	10.30	14.95	14.95	
	6/29/2007	25.25	N/A	N/A	N/A	11.93	13.32	13.32	
	7/20/2007	25.25	N/A	N/A	N/A	12.50	12.75	12.75	
	8/21/2007	25.25	N/A	N/A	N/A	12.97	12.28	12.28	
	9/10/2007	25.25	N/A	N/A	N/A	13.00	12.25	12.25	
	10/22/2007	25.25	N/A	N/A	N/A	11.44	13.81	13.81	
	11/28/2007	25.25	N/A	N/A	N/A	10.84	14.41	14.41	
	12/13/2007	25.25	N/A	N/A	N/A	10.82	14.43	14.43	
	1/21/2008	25.25	N/A	N/A	N/A	10.11	15.14	15.14	
	2/24/2008	25.25	N/A	N/A	N/A	10.45	14.80	14.80	
	3/24/2008	25.25	N/A	N/A	N/A	10.59	14.66	14.66	
	8/25/2008	25.25	N/A	N/A	N/A	11.98	13.27	13.27	
	2/18/2009	25.25	N/A	N/A	N/A	10.38	14.87	14.87	
	8/25/2009	25.25	N/A	N/A	N/A	12.63	12.62	12.62	
	3/22/2010	25.25	N/A	N/A	N/A	10.67	14.58	14.58	
	8/23/2010	25.25	N/A	N/A	N/A	10.80	14.45	14.45	
LAI-7	1/22/2003	21.82	8.10	13.72	1.10	9.20	12.62	13.45	
	1/23/2003	21.82	7.58	14.24	1.07	8.65	13.17	13.97	
	1/24/2003	21.82	6.99	14.83	2.36	9.35	12.47	14.24	
	1/27/2003	21.82	5.18	16.64	5.30	10.48	11.34	15.32	
	1/28/2003	21.82	7.08	14.74	0.90	7.98	13.84	14.52	
	1/29/2003	21.82	7.41	14.41	0.44	7.85	13.97	14.30	
	1/30/2003	21.82	8.11	13.71	0.26	8.37	13.45	13.65	
	2/3/2003	21.82	8.90	12.92	0.06	8.96	12.86	12.91	
	2/6/2003	24.28	7.82	16.46	1.56	9.38	14.90	16.07	
	2/11/2003	24.28	8.23	16.05	1.56	9.79	14.49	15.66	
	2/18/2003	24.28	9.45	14.83	0.20	9.65	14.63	14.78	
	2/21/2003	24.28	8.57	15.71	2.34	10.91	13.37	15.13	
	2/26/2003	24.28	8.53	15.75	3.18	11.71	12.57	14.96	
	3/3/2003	24.28	9.53	14.75	0.18	9.71	14.57	14.71	
	3/12/2003	24.28	8.99	15.29	0.19	9.18	15.10	15.24	
	3/14/2003	24.28	9.18	15.10	0.18	9.36	14.92	15.06	
	3/26/2003	24.28	N/A	N/A	N/A	9.97	14.31	14.31	
	3/28/2003	24.28	N/A	N/A	N/A	9.95	14.33	14.33	
	4/2/2003	24.28	8.79	15.49	0.08	8.87	15.41	15.47	
	4/4/2003	24.28	9.04	15.24	0.08	9.12	15.16	15.22	
	4/8/2003	24.28	8.53	15.75	0.10	8.63	15.65	15.73	
	4/11/2003	24.28	9.06	15.22	0.17	9.23	15.05	15.18	
	4/15/2003	24.28	8.41	15.87	0.94	9.35	14.93	15.64	
	4/17/2003	24.28	9.55	14.73	0.17	9.72	14.56	14.69	
	4/22/2003	24.28	9.03	15.25	0.34	9.37	14.91	15.17	
	4/25/2003	24.28	9.00	15.28	0.31	9.31	14.97	15.20	
	5/2/2003	24.28	9.60	14.68	0.05	9.65	14.63	14.67	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/6/2003	24.28	9.17	15.11	1.19	10.36	13.92	14.81	
	5/9/2003	24.28	10.04	14.24	0.06	10.10	14.18	14.23	
	5/23/2003	24.28	10.60	13.68	0.02	10.62	13.66	13.68	
	5/28/2003	24.28	10.21	14.07	0.01	10.22	14.06	14.07	
	6/13/2003	24.28	9.90	14.38	0.55	10.45	13.83	14.24	
	6/18/2003	24.28	10.57	13.71	0.02	10.59	13.69	13.71	
	6/27/2003	24.28	10.42	13.86	0.63	11.05	13.23	13.70	
	7/7/2003	24.28	10.85	13.43	0.52	11.37	12.91	13.30	
	7/16/2003	24.28	10.43	13.85	1.65	12.08	12.20	13.44	
	7/31/2003	24.28	11.06	13.22	0.31	11.37	12.91	13.14	
	8/5/2003	24.28	10.66	13.62	0.90	11.56	12.72	13.40	
LAI-7	8/11/2003	24.28	12.45	11.83	0.01	12.46	11.82	11.83	
(cont.)	8/22/2003	24.28	12.40	11.88	0.20	12.60	11.68	11.83	
	8/26/2003	24.28	11.32	12.96	1.43	12.75	11.53	12.60	
	9/2/2003	24.28	11.61	12.67	0.20	11.81	12.47	12.62	
	9/9/2003	24.28	11.66	12.62	1.64	13.30	10.98	12.21	
	9/19/2003	24.28	11.66	12.62	1.35	13.01	11.27	12.28	
	10/14/2003	24.28	11.59	12.69	1.46	13.05	11.23	12.33	
	11/20/2003	24.28	N/A	N/A	N/A	8.67	15.61	15.61	
	12/3/2003	24.28	7.98	16.30	0.23	8.21	16.07	16.24	
	1/19/2004	24.28	7.59	16.69	0.32	7.91	16.37	16.61	
	2/24/2004	24.28	N/A	N/A	N/A	8.72	15.56	15.56	
	3/15/2004	24.28	N/A	N/A	N/A	9.71	14.57	14.57	Oily trace
	4/19/2004	24.28	N/A	N/A	N/A	9.65	14.63	14.63	Trace product
	5/17/2004	24.28	N/A	N/A	N/A	10.43	13.85	13.85	Trace product
	6/22/2004	24.28	10.33	13.95	0.01	10.34	13.94	13.95	
	8/18/2004	24.28	11.28	13.00	0.88	12.16	12.12	12.78	
	9/21/2004	24.28	10.57	13.71	0.23	10.80	13.48	13.65	Strong product odor
	10/19/2004	24.28	N/A	N/A	N/A	9.53	14.75	14.75	
	11/23/2004	24.28	9.85	14.43	0.19	10.04	14.24	14.38	
	12/21/2004	24.28	8.14	16.14	0.52	8.66	15.62	16.01	Strong odor
	1/13/2005	24.28	8.83	15.45	0.19	9.02	15.26	15.40	Strong odor
	4/28/2005	24.28	N/A	N/A	N/A	8.44	15.84	15.84	Strong odor
	6/1/2005	24.28	N/A	N/A	N/A	8.72	15.56	15.56	Strong odor
	6/29/2005	24.28	N/A	N/A	N/A	10.41	13.87	13.87	Strong odor
	7/20/2005	24.28	N/A	N/A	N/A	10.93	13.35	13.35	Strong odor
	8/22/2005	24.28	N/A	N/A	N/A	10.47	13.81	13.81	
LAIx-7	9/12/2005	25.24	N/A	N/A	N/A	13.81	11.43	11.43	
	10/12/2005	25.24	14.46	10.78	0.12	14.58	10.66	10.75	
	11/21/2005	25.24	12.00	13.24	2.96	14.96	10.28	12.50	
	12/27/2005	25.24	11.08	14.16	2.82	13.90	11.34	13.46	
	1/30/2006	25.24	9.69	15.55	3.34	13.03	12.21	14.72	
	2/16/2006	25.24	11.52	13.72	3.81	15.33	9.91	12.77	
	3/13/2006	25.24	11.09	14.15	4.51	15.60	9.64	13.02	
	4/18/2006	25.24	11.98	13.26	1.62	13.60	11.64	12.86	
	5/12/2006	25.24	13.22	12.02	0.30	13.52	11.72	11.95	
	6/9/2006	25.24	12.94	12.30	0.40	13.34	11.90	12.20	
	7/13/2006	25.24	14.14	11.10	0.94	15.08	10.16	10.87	
	8/16/2006	25.24	14.95	10.29	0.80	15.75	9.49	10.09	
	9/19/2006	25.24	14.55	10.69	0.95	15.50	9.74	10.45	
	10/13/2006	25.24	14.60	10.64	1.55	16.15	9.09	10.25	
	11/20/2006	25.24	11.89	13.35	0.71	12.60	12.64	13.17	
	12/8/2006	25.24	12.13	13.11	0.31	12.44	12.80	13.03	
	1/19/2007	25.24	11.75	13.49	1.20	12.95	12.29	13.19	Strong odor
	2/19/2007	25.24	12.52	12.72	0.62	13.14	12.10	12.57	
	3/15/2007	25.24	12.14	13.10	0.51	12.65	12.59	12.97	
	4/16/2007	25.24	12.58	12.66	0.92	13.50	11.74	12.43	
	5/14/2007	25.24	13.25	11.99	0.07	13.32	11.92	11.97	
	6/29/2007	25.24	13.68	11.56	0.82	14.50	10.74	11.36	
	7/20/2007	25.24	14.20	11.04	0.10	14.30	10.94	11.02	
	8/21/2007	25.24	N/A	N/A	N/A	14.20	11.04	11.04	
	9/10/2007	25.24	N/A	N/A	N/A	14.47	10.77	10.77	
	10/22/2007	25.24	12.72	N/A	N/A	15.64	9.60	9.60	
	11/28/2007	25.24	12.95	N/A	N/A	13.50	11.74	11.74	
	12/13/2007	25.24	N/A	N/A	N/A	11.92	13.32	13.32	
	1/21/2008	25.24	N/A	N/A	N/A	7.63	17.61	17.61	
	2/24/2008	25.24	N/A	N/A	N/A	10.21	15.03	15.03	
	3/24/2008	25.24	12.24	13.00	0.22	12.46	12.78	12.95	
	8/25/2008	25.24	N/A	N/A	N/A	13.34	11.90	11.90	
	2/18/2009	25.24	N/A	N/A	N/A	12.00	13.24	13.24	
	8/25/2009	25.24	N/A	N/A	N/A	14.56	10.68	10.68	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	3/22/2010	25.24	N/A	N/A	N/A	10.95	14.29	14.29	
	8/23/2010	25.24	N/A	N/A	N/A	10.05	15.19	15.19	
LAI-8	1/22/2003	23.08	8.10	14.98	0.91	9.01	14.07	14.75	
	1/23/2003	23.08	7.72	15.36	0.88	8.60	14.48	15.14	
	1/24/2003	23.08	7.50	15.58	1.55	9.05	14.03	15.19	
	1/27/2003	23.08	5.34	17.74	5.08	10.42	12.66	16.47	
	1/28/2003	23.08	6.90	16.18	1.75	8.65	14.43	15.74	
	1/29/2003	23.08	7.99	15.09	0.31	8.30	14.78	15.01	
	1/30/2003	23.08	7.90	15.18	0.69	8.59	14.49	15.01	
	2/3/2003	23.08	8.47	14.61	0.01	8.48	14.60	14.61	
	2/6/2003	24.50	6.46	18.04	2.95	9.41	15.09	17.30	
	2/11/2003	24.50	8.45	16.05	1.22	9.67	14.83	15.75	
	2/18/2003	24.50	6.85	17.65	5.75	12.60	11.90	16.21	
	2/21/2003	24.50	8.49	16.01	3.16	11.65	12.85	15.22	
LAI-8	2/26/2003	24.50	7.92	16.58	4.02	11.94	12.56	15.58	
(cont.)	3/4/2003	24.50	7.46	17.04	5.02	12.48	12.02	15.79	
	3/12/2003	24.50	8.67	15.83	3.03	11.70	12.80	15.07	
	3/14/2003	24.50	8.88	15.62	2.53	11.41	13.09	14.99	
	3/26/2003	24.50	8.63	15.87	0.88	9.51	14.99	15.65	
	3/28/2003	24.50	N/A	N/A	N/A	9.48	15.02	15.02	
	4/2/2003	24.50	8.97	15.53	0.14	9.11	15.39	15.50	
	4/4/2003	24.50	9.32	15.18	0.04	9.36	15.14	15.17	
	4/8/2003	24.50	9.25	15.25	0.03	9.28	15.22	15.24	
	4/11/2003	24.50	9.21	15.29	0.46	9.67	14.83	15.18	
	4/15/2003	24.50	8.57	15.93	1.13	9.70	14.80	15.65	
	4/17/2003	24.50	9.82	14.68	0.08	9.90	14.60	14.66	
	4/22/2003	24.50	9.28	15.22	0.23	9.51	14.99	15.16	
	4/25/2003	24.50	9.61	14.89	0.25	9.86	14.64	14.83	
	5/2/2003	24.50	9.71	14.79	0.40	10.11	14.39	14.69	
	5/6/2003	24.50	9.36	15.14	1.40	10.76	13.74	14.79	
	5/9/2003	24.50	N/A	N/A	N/A	10.23	14.27	14.27	
	5/23/2003	24.50	10.80	13.70	0.01	10.81	13.69	13.70	
	5/28/2003	24.50	10.51	13.99	0.03	10.54	13.96	13.98	
	6/13/2003	24.50	10.20	14.30	1.56	11.76	12.74	13.91	
	6/18/2003	24.50	10.35	14.15	1.85	12.20	12.30	13.69	
	6/27/2003	24.50	10.62	13.88	0.49	11.11	13.39	13.76	
	7/7/2003	24.50	10.67	13.83	2.18	12.85	11.65	13.29	
	7/16/2003	24.50	10.45	14.05	1.37	11.82	12.68	13.71	
	7/31/2003	24.50	10.96	13.54	1.79	12.75	11.75	13.09	
	8/5/2003	24.50	10.82	13.68	2.23	13.05	11.45	13.12	
	8/11/2003	24.50	12.12	12.38	1.57	13.69	10.81	11.99	
	8/22/2003	24.50	12.40	12.10	1.66	14.06	10.44	11.69	
	8/26/2003	24.50	11.44	13.06	1.44	12.88	11.62	12.70	
	9/2/2003	24.50	11.45	13.05	1.78	13.23	11.27	12.61	
	9/9/2003	24.50	11.54	12.96	1.68	13.22	11.28	12.54	
	9/19/2003	24.50	11.61	12.89	1.64	13.25	11.25	12.48	
	10/14/2003	24.50	11.58	12.92	1.60	13.18	11.32	12.52	
	11/20/2003	24.50	8.87	15.63	0.07	8.94	15.56	15.61	
	12/3/2003	24.50	8.01	16.49	0.41	8.42	16.08	16.39	
	1/19/2004	24.50	7.70	16.80	0.44	8.14	16.36	16.69	
	2/24/2004	24.50	N/A	N/A	N/A	9.15	15.35	15.35	
	3/15/2004	24.50	N/A	N/A	N/A	9.71	14.79	14.79	
	4/19/2004	24.50	N/A	N/A	N/A	9.91	14.59	14.59	Trace product
	5/17/2004	24.50	N/A	N/A	N/A	10.59	13.91	13.91	Trace product
	6/22/2004	24.50	10.48	14.02	0.030	10.51	13.99	14.01	
	8/18/2004	24.50	11.70	12.80	0.010	11.71	12.79	12.80	
	9/21/2004	24.50	N/A	N/A	N/A	10.60	13.90	13.90	
	10/19/2004	24.50	N/A	N/A	N/A	9.73	14.77	14.77	
	11/23/2004	24.50	N/A	N/A	N/A	10.04	14.46	14.46	
	12/21/2004	24.50	8.31	16.19	0.02	8.33	16.17	16.19	Strong odor
	1/13/2005	24.50	N/A	N/A	N/A	8.89	15.61	15.61	Strong odor
	4/28/2005	24.50	N/A	N/A	N/A	8.64	15.86	15.86	Sheen, strong odor
	6/1/2005	24.50	N/A	N/A	N/A	8.88	15.62	15.62	Strong odor
	6/29/2005	24.50	N/A	N/A	N/A	10.55	13.95	13.95	Strong odor
	7/20/2005	24.50	N/A	N/A	N/A	11.05	13.45	13.45	Strong odor
	8/22/2005	24.50	N/A	N/A	N/A	10.65	13.85	13.85	Strong odor
LAIx-8	9/12/2005	25.59	N/A	N/A	N/A	12.48	13.11	13.11	
	10/12/2005	25.59	N/A	N/A	N/A	14.08	11.51	11.51	
	11/21/2005	25.59	10.74	14.85	0.01	10.75	14.84	14.85	
	12/27/2005	25.59	N/A	N/A	N/A	10.11	15.48	15.48	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/30/2006	25.59	N/A	N/A	N/A	7.88	17.71	17.71	
	2/16/2006	25.59	N/A	N/A	N/A	9.34	16.25	16.25	
	3/13/2006	25.59	N/A	N/A	N/A	10.00	15.59	15.59	
	4/18/2006	25.59	N/A	N/A	N/A	9.72	15.87	15.87	
	5/12/2006	25.59	N/A	N/A	N/A	10.59	15.00	15.00	
	12/21/2004	25.59	N/A	N/A	N/A	10.59	15.00	15.00	
	6/9/2006	25.59	N/A	N/A	N/A	10.10	15.49	15.49	
	7/13/2006	25.59	N/A	N/A	N/A	11.30	14.29	14.29	
	8/16/2006	25.59	N/A	N/A	N/A	11.95	13.64	13.64	
	9/19/2006	25.59	N/A	N/A	N/A	12.49	13.10	13.10	
	10/13/2006	25.59	N/A	N/A	N/A	12.30	13.29	13.29	
	11/20/2006	25.59	N/A	N/A	N/A	8.90	16.69	16.69	
	12/8/2006	25.59	N/A	N/A	N/A	8.92	16.67	16.67	
	1/19/2007	25.59	N/A	N/A	N/A	8.57	17.02	17.02	
	2/19/2007	25.59	N/A	N/A	N/A	10.06	15.53	15.53	
	3/15/2007	25.59	N/A	N/A	N/A	9.35	16.24	16.24	
	4/16/2007	25.59	N/A	N/A	N/A	9.75	15.84	15.84	
	5/14/2007	25.59	N/A	N/A	N/A	10.77	14.82	14.82	
LAIx-8	6/29/2007	25.59	N/A	N/A	N/A	12.07	13.52	13.52	
(cont.)	7/20/2007	25.59	N/A	N/A	N/A	12.52	13.07	13.07	
	8/21/2007	25.59	N/A	N/A	N/A	12.97	12.62	12.62	
	9/10/2007	25.59	N/A	N/A	N/A	13.24	12.35	12.35	
	10/22/2007	25.59	N/A	N/A	N/A	11.91	13.68	13.68	
	11/28/2007	25.59	N/A	N/A	N/A	11.50	14.09	14.09	
	12/13/2007	25.59	11.55	14.04	0.08	11.63	13.96	14.02	
	1/21/2008	25.59	N/A	N/A	N/A	11.04	14.55	14.55	
	2/24/2008	25.59	N/A	N/A	N/A	11.19	14.40	14.40	
	3/24/2008	25.59	N/A	N/A	N/A	11.15	14.44	14.44	
	8/25/2008	25.59	N/A	N/A	N/A	7.67	17.92	17.92	
	2/18/2009	25.59	N/A	N/A	N/A	11.02	14.57	14.57	
	8/25/2009	25.59	N/A	N/A	N/A	12.95	12.64	12.64	
	3/22/2010	25.59	N/A	N/A	N/A	10.86	14.73	14.73	
	8/23/2010	25.59	N/A	N/A	N/A	10.18	15.41	15.41	
LAI-9	1/22/2003	22.48	N/A	N/A	N/A	7.90	14.58	14.58	
	1/23/2003	22.48	N/A	N/A	N/A	8.38	14.10	14.10	
	1/24/2003	22.48	7.10	15.38	0.04	7.14	15.34	15.37	
	1/27/2003	22.48	5.32	17.16	1.54	6.86	15.62	16.78	
	1/28/2003	22.48	5.90	16.58	1.50	7.40	15.08	16.21	
	1/29/2003	22.48	N/A	N/A	N/A	8.44	14.04	14.04	
	1/30/2003	22.48	N/A	N/A	N/A	8.40	14.08	14.08	
	2/3/2003	22.48	6.57	15.91	0.70	7.27	15.21	15.74	
	2/6/2003	23.93	7.53	16.40	0.15	7.68	16.25	16.36	
	2/11/2003	23.93	7.93	16.00	0.11	8.04	15.89	15.97	
	2/18/2003	23.93	5.50	18.43	2.50	8.00	15.93	17.81	
	2/21/2003	23.93	7.63	16.30	3.68	11.31	12.62	15.38	
	2/26/2003	23.93	6.94	16.99	3.54	10.48	13.45	16.11	
	3/4/2003	23.93	6.98	16.95	3.94	10.92	13.01	15.97	
	3/12/2003	23.93	7.82	16.11	3.39	11.21	12.72	15.26	
	3/14/2003	23.93	8.09	15.84	2.21	10.30	13.63	15.29	
	3/26/2003	23.93	N/A	N/A	N/A	8.95	14.98	14.98	
	3/28/2003	23.93	N/A	N/A	N/A	9.04	14.89	14.89	
	4/2/2003	23.93	8.08	15.85	0.32	8.40	15.53	15.77	
	4/4/2003	23.93	8.34	15.59	0.48	8.82	15.11	15.47	
	4/8/2003	23.93	8.10	15.83	0.49	8.59	15.34	15.71	
	4/11/2003	23.93	8.36	15.57	0.49	8.85	15.08	15.45	
	4/15/2003	23.93	7.81	16.12	0.21	8.02	15.91	16.07	
	4/17/2003	23.93	9.11	14.82	0.13	9.24	14.69	14.79	
	4/22/2003	23.93	8.41	15.52	0.35	8.76	15.17	15.43	
	4/25/2003	23.93	8.32	15.61	0.80	9.12	14.81	15.41	
	5/2/2003	23.93	8.99	14.94	0.01	9.00	14.93	14.94	
	5/6/2003	23.93	8.66	15.27	0.85	9.51	14.42	15.06	
	5/9/2003	23.93	9.75	14.18	0.02	9.77	14.16	14.18	
	5/23/2003	23.93	N/A	N/A	N/A	10.10	13.83	13.83	
	5/28/2003	23.93	10.50	13.43	0.01	10.51	13.42	13.43	
	6/13/2003	23.93	9.91	14.02	0.37	10.28	13.65	13.93	
	6/18/2003	23.93	9.81	14.12	0.51	10.32	13.61	13.99	
	6/27/2003	23.93	9.91	14.02	0.33	10.24	13.69	13.94	
	7/7/2003	23.93	10.21	13.72	0.83	11.04	12.89	13.51	
	7/16/2003	23.93	10.03	13.90	0.84	10.87	13.06	13.69	
	7/31/2003	23.93	10.44	13.49	0.95	11.39	12.54	13.25	
	8/5/2003	23.93	10.25	13.68	1.19	11.44	12.49	13.38	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	8/11/2003	23.93	11.89	12.04	0.12	12.01	11.92	12.01	
	8/22/2003	23.93	11.92	12.01	0.08	12.00	11.93	11.99	
	8/26/2003	23.93	11.03	12.90	0.64	11.67	12.26	12.74	
	9/2/2003	23.93	10.96	12.97	1.03	11.99	11.94	12.71	
	9/9/2003	23.93	11.12	12.81	0.51	11.63	12.30	12.68	
	9/19/2003	23.93	10.89	13.04	1.58	12.47	11.46	12.65	
	10/14/2003	23.93	11.75	12.18	1.07	12.82	11.11	11.91	
	11/20/2003	23.93	N/A	N/A	N/A	8.05	15.88	15.88	
	12/3/2003	23.93	7.21	16.72	0.01	7.22	16.71	16.72	
	1/19/2004	23.93	6.83	17.10	0.01	6.84	17.09	17.10	
	2/24/2004	23.93	N/A	N/A	N/A	8.11	15.82	15.82	
	3/15/2004	23.93	N/A	N/A	N/A	9.08	14.85	14.85	Trace product
	4/19/2004	23.93	N/A	N/A	N/A	8.85	15.08	15.08	Trace product
	5/17/2004	23.93	N/A	N/A	N/A	9.91	14.02	14.02	Trace product
	8/18/2004	23.93	N/A	N/A	N/A	11.10	12.83	12.83	Trace product
	8/18/2004	23.93	N/A	N/A	N/A	11.10	12.83	12.83	Trace product
	9/21/2004	23.93	10.91	13.02	0.53	11.44	12.49	12.89	
	10/19/2004	23.93	8.92	9.35	0.43	9.35	14.58	14.90	
	11/23/2004	23.93	9.03	14.90	0.31	9.34	14.59	14.82	
	12/21/2004	23.93	7.44	16.49	0.02	7.46	16.47	16.49	Strong odor
	1/13/2005	23.93	N/A	N/A	N/A	8.19	15.74	15.74	Strong odor
	4/28/2005	23.93	N/A	N/A	N/A	7.73	16.20	16.20	
LAI-9	6/1/2005	23.93	N/A	N/A	N/A	8.10	15.83	15.83	Strong odor
(cont.)	6/29/2005	23.93	N/A	N/A	N/A	9.77	14.16	14.16	Strong odor
	7/20/2005	23.93	N/A	N/A	N/A	10.10	13.83	13.83	Strong odor
	8/22/2005	23.93	N/A	N/A	N/A	9.96	13.97	13.97	Strong odor
LAIx-9	9/12/2005	25.55	N/A	N/A	N/A	14.13	11.42	11.42	
	10/12/2005	25.55	N/A	N/A	N/A	14.79	10.76	10.76	
	11/21/2005	25.55	N/A	N/A	N/A	12.98	12.57	12.57	
	12/27/2005	25.55	N/A	N/A	N/A	11.42	14.13	14.13	
	1/30/2006	25.55	N/A	N/A	N/A	10.27	15.28	15.28	
	2/16/2006	25.55	12.35	13.20	0.03	12.38	13.17	13.19	
	3/13/2006	25.55	N/A	N/A	N/A	12.78	12.77	12.77	
	4/18/2006	25.55	N/A	N/A	N/A	12.34	13.21	13.21	
	5/12/2006	25.55	N/A	N/A	N/A	13.33	12.22	12.22	
	6/9/2006	25.55	N/A	N/A	N/A	12.86	12.69	12.69	
	7/13/2006	25.55	14.48	11.07	0.06	14.57	10.98	11.03	
	8/16/2006	25.55	N/A	N/A	N/A	15.30	10.25	10.25	
	9/19/2006	25.55	N/A	N/A	N/A	14.98	10.57	10.57	
	10/13/2006	25.55	N/A	N/A	N/A	15.01	10.54	10.54	
	11/20/2006	25.55	N/A	N/A	N/A	11.77	13.78	13.78	
	12/8/2006	25.55	11.72	13.83	0.06	11.78	13.77	13.82	
	1/19/2007	25.55	11.24	14.31	0.04	11.28	14.27	14.30	
	2/19/2007	25.55	12.23	13.32	0.04	12.27	13.28	13.31	
	3/15/2007	25.55	12.55	13.00	0.05	12.60	12.95	12.99	
	4/16/2007	25.55	12.30	13.25	0.03	12.33	13.22	13.24	
	5/14/2007	25.55	N/A	N/A	N/A	13.41	12.14	12.14	
	6/29/2007	25.55	N/A	N/A	N/A	13.92	11.63	11.63	
	7/20/2007	25.55	N/A	N/A	N/A	14.34	11.21	11.21	
	8/21/2007	25.55	N/A	N/A	N/A	14.25	11.30	11.30	
	9/10/2007	25.55	N/A	N/A	N/A	14.52	11.03	11.03	
	10/22/2007	25.55	N/A	N/A	N/A	13.31	12.24	12.24	
	11/28/2007	25.55	N/A	N/A	N/A	12.50	13.05	13.05	
	12/13/2007	25.55	N/A	N/A	N/A	11.40	14.15	14.15	
	1/21/2008	25.55	N/A	N/A	N/A	8.61	16.94	16.94	
	2/24/2008	25.55	N/A	N/A	N/A	12.30	13.25	13.25	
	3/24/2008	25.55	N/A	N/A	N/A	12.06	13.49	13.49	
	8/25/2008	25.55	N/A	N/A	N/A	13.30	12.25	12.25	
	2/18/2009	25.55	N/A	N/A	N/A	Dry	Dry	Dry	
	8/25/2009	25.55	N/A	N/A	N/A	14.23	11.32	11.32	
	3/22/2010	25.55	N/A	N/A	N/A	12.25	13.30	13.30	
	8/23/2010	25.55	N/A	N/A	N/A	Dry	Dry	Dry	
LAI-10	1/31/2003	19.87	N/A	N/A	N/A	4.34	15.53	15.53	
	2/12/2003	19.87	N/A	N/A	N/A	3.93	15.94	15.94	
	2/18/2003	19.87	N/A	N/A	N/A	4.51	15.36	15.36	
	2/21/2003	19.87	N/A	N/A	N/A	4.50	15.37	15.37	
	2/24/2003	19.87	N/A	N/A	N/A	4.48	15.39	15.39	
	3/3/2003	19.87	N/A	N/A	N/A	4.38	15.49	15.49	
	3/12/2003	19.87	N/A	N/A	N/A	4.31	15.56	15.56	
	3/14/2003	19.87	N/A	N/A	N/A	4.08	15.79	15.79	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	3/26/2003	19.87	N/A	N/A	N/A	4.78	15.09	15.09	
	3/28/2003	19.87	N/A	N/A	N/A	4.82	15.05	15.05	
	4/2/2003	19.87	N/A	N/A	N/A	4.25	15.62	15.62	
	4/4/2003	19.87	N/A	N/A	N/A	4.21	15.66	15.66	
	4/8/2003	19.87	N/A	N/A	N/A	4.50	15.37	15.37	
	4/11/2003	19.87	N/A	N/A	N/A	4.48	15.39	15.39	
	4/15/2003	19.87	N/A	N/A	N/A	4.09	15.78	15.78	
	4/17/2003	19.87	N/A	N/A	N/A	4.50	15.37	15.37	
	4/22/2003	19.87	N/A	N/A	N/A	4.45	15.42	15.42	
	4/25/2003	19.87	N/A	N/A	N/A	4.58	15.29	15.29	
	5/2/2003	19.87	N/A	N/A	N/A	4.23	15.64	15.64	
	5/6/2003	19.87	N/A	N/A	N/A	4.86	15.01	15.01	
	5/9/2003	19.87	N/A	N/A	N/A	5.10	14.77	14.77	
	5/16/2003	19.87	N/A	N/A	N/A	5.38	14.49	14.49	
	5/23/2003	19.87	N/A	N/A	N/A	6.50	13.37	13.37	
	5/28/2003	19.87	N/A	N/A	N/A	5.55	14.32	14.32	
	6/13/2003	19.87	N/A	N/A	N/A	6.17	13.70	13.70	
	6/18/2003	19.87	N/A	N/A	N/A	5.86	14.01	14.01	
	6/27/2003	19.87	N/A	N/A	N/A	5.89	13.98	13.98	
	7/7/2003	19.87	N/A	N/A	N/A	6.51	13.36	13.36	
	7/16/2003	19.87	N/A	N/A	N/A	5.53	14.34	14.34	
	7/31/2003	19.87	N/A	N/A	N/A	6.61	13.26	13.26	
	8/5/2003	19.87	N/A	N/A	N/A	6.68	13.19	13.19	
	8/11/2003	19.87	N/A	N/A	N/A	7.15	12.72	12.72	
	8/22/2003	19.87	N/A	N/A	N/A	8.68	11.19	11.19	
	8/26/2003	19.87	N/A	N/A	N/A	7.03	12.84	12.84	
LAI-10	9/2/2003	19.87	N/A	N/A	N/A	7.15	12.72	12.72	
(cont.)	9/9/2003	19.87	7.33	12.54	0.01	7.34	12.53	12.54	
	9/19/2003	19.87	N/A	N/A	N/A	7.37	12.50	12.50	
	10/14/2003	19.87	N/A	N/A	N/A	7.75	12.12	12.12	
	11/20/2003	19.87	N/A	N/A	N/A	4.48	15.39	15.39	
	12/3/2003	19.87	N/A	N/A	N/A	3.58	16.29	16.29	
	1/19/2004	19.87	N/A	N/A	N/A	3.29	16.58	16.58	
	2/24/2004	19.87	N/A	N/A	N/A	4.16	15.71	15.71	
	3/15/2004	19.87	N/A	N/A	N/A	5.01	14.86	14.86	
	4/19/2004	19.87	N/A	N/A	N/A	5.30	14.57	14.57	
	5/17/2004	19.87	N/A	N/A	N/A	5.79	14.08	14.08	
	6/22/2004	19.87	N/A	N/A	N/A	5.71	14.16	14.16	
	8/18/2004	19.87	6.71	13.16	0.01	6.72	13.15	13.16	
	9/21/2004	19.87	N/A	N/A	N/A	6.10	13.77	13.77	
	10/19/2004	19.87	N/A	N/A	N/A	5.23	14.64	14.64	
	11/23/2004	19.87	N/A	N/A	N/A	5.45	14.42	14.42	
	12/21/2004	19.87	N/A	N/A	N/A	3.99	15.88	15.88	
	1/13/2005	19.87	N/A	N/A	N/A	4.64	15.23	15.23	
	4/28/2005	19.87	N/A	N/A	N/A	4.23	15.64	15.64	
	6/1/2005	19.87	4.40	13.52	0.03	4.43	15.44	14.30	Strong odor
	6/29/2005	19.87	N/A	N/A	N/A	5.45	14.42	12.47	
	7/20/2005	19.87	N/A	N/A	N/A	5.75	14.12	12.17	
	8/22/2005	19.87	6.22	13.65	0.01	6.23	13.64	13.65	
	9/12/2005	19.87	6.62	13.25	0.01	6.61	13.26	13.27	
	10/12/2005	19.87	N/A	N/A	N/A	7.11	12.76	12.76	
	11/21/2005	19.87	5.08	14.79	0.01	5.09	14.78	14.79	
	12/27/2005	19.87	N/A	N/A	N/A	4.14	15.73	15.73	
	1/30/2006	19.87	N/A	N/A	N/A	2.45	17.42	17.42	
	2/16/2006	19.87	N/A	N/A	N/A	3.62	16.25	16.25	
	3/13/2006	19.87	N/A	N/A	N/A	4.37	15.50	15.50	
	4/18/2006	19.87	N/A	N/A	N/A	4.51	15.36	15.36	
	5/12/2006	19.87	N/A	N/A	N/A	4.82	15.05	15.05	
	6/9/2006	19.87	N/A	N/A	N/A	4.57	15.30	15.30	
	7/13/2006	19.87	N/A	N/A	N/A	5.41	14.46	14.46	
	8/16/2006	19.87	N/A	N/A	N/A	6.15	13.72	13.72	
	9/19/2006	19.87	N/A	N/A	N/A	5.80	14.07	14.07	
	10/13/2006	19.87	N/A	N/A	N/A	6.60	13.27	13.27	
	11/20/2006	19.87	N/A	N/A	N/A	3.16	16.71	16.71	
	12/8/2006	19.87	N/A	N/A	N/A	3.29	16.58	16.58	
	1/19/2007	19.87	N/A	N/A	N/A	3.39	16.48	16.48	
	2/19/2007	19.87	N/A	N/A	N/A	4.37	15.50	15.50	
	3/15/2007	19.87	N/A	N/A	N/A	3.90	15.97	15.97	
	4/16/2007	19.87	N/A	N/A	N/A	4.20	15.67	15.67	
	5/14/2007	19.87	N/A	N/A	N/A	5.07	14.80	14.80	
	6/29/2007	19.87	N/A	N/A	N/A	6.06	13.81	13.81	
	7/20/2007	19.87	N/A	N/A	N/A	6.32	13.55	13.55	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	8/21/2007	19.87	N/A	N/A	N/A	7.81	12.06	12.06	
	9/10/2007	19.87	N/A	N/A	N/A	6.92	12.95	12.95	
	10/22/2007	19.87	N/A	N/A	N/A	5.99	13.88	13.88	
	11/28/2007	19.87	N/A	N/A	N/A	4.95	14.92	14.92	
	12/13/2007	19.87	N/A	N/A	N/A	4.32	15.55	15.55	
	1/21/2008	19.87	N/A	N/A	N/A	4.49	15.38	15.38	
	2/24/2008	19.87	N/A	N/A	N/A	4.89	14.98	14.98	
	3/24/2008	19.87	N/A	N/A	N/A	4.96	14.91	14.91	
	8/25/2008	19.87	N/A	N/A	N/A	5.63	14.24	14.24	
	2/18/2009	19.87	N/A	N/A	N/A	5.10	14.77	14.77	
	8/25/2009	19.87	N/A	N/A	N/A	7.22	12.65	12.65	
	3/22/2010	19.87	N/A	N/A	N/A	4.90	14.97	14.97	
	8/23/2010	19.87	N/A	N/A	N/A	6.34	13.53	13.53	
LAI-11	1/31/2003	20.61	N/A	N/A	N/A	4.55	16.06	16.06	
	2/12/2003	20.61	N/A	N/A	N/A	4.92	15.69	15.69	
	2/18/2003	20.61	N/A	N/A	N/A	5.41	15.20	15.20	
	2/21/2003	20.61	N/A	N/A	N/A	5.51	15.10	15.10	
	2/24/2003	20.61	N/A	N/A	N/A	5.48	15.13	15.13	
	3/3/2003	20.61	N/A	N/A	N/A	5.38	15.23	15.23	
	3/12/2003	20.61	N/A	N/A	N/A	5.32	15.29	15.29	
	3/14/2003	20.61	N/A	N/A	N/A	5.19	15.42	15.42	
	3/26/2003	20.61	N/A	N/A	N/A	4.81	15.80	15.80	
	3/28/2003	20.61	N/A	N/A	N/A	4.89	15.72	15.72	
	4/2/2003	20.61	N/A	N/A	N/A	5.28	15.33	15.33	
	4/4/2003	20.61	N/A	N/A	N/A	5.33	15.28	15.28	
	4/8/2003	20.61	N/A	N/A	N/A	5.41	15.20	15.20	
	4/11/2003	20.61	N/A	N/A	N/A	5.42	15.19	15.19	
	4/15/2003	20.61	N/A	N/A	N/A	5.08	15.53	15.53	
	4/17/2003	20.61	N/A	N/A	N/A	5.46	15.15	15.15	
LAI-11	4/22/2003	20.61	N/A	N/A	N/A	5.47	15.14	15.14	
(cont.)	4/25/2003	20.61	N/A	N/A	N/A	5.67	14.94	14.94	
	5/2/2003	20.61	N/A	N/A	N/A	5.12	15.49	15.49	
	5/6/2003	20.61	N/A	N/A	N/A	5.81	14.80	14.80	
	5/9/2003	20.61	N/A	N/A	N/A	6.00	14.61	14.61	
	5/16/2003	20.61	N/A	N/A	N/A	6.30	14.31	14.31	
	5/23/2003	20.61	N/A	N/A	N/A	6.58	14.03	14.03	
	5/28/2003	20.61	N/A	N/A	N/A	6.44	14.17	14.17	
	6/13/2003	20.61	N/A	N/A	N/A	6.70	13.91	13.91	
	6/18/2003	20.61	N/A	N/A	N/A	6.80	13.81	13.81	
	6/27/2003	20.61	N/A	N/A	N/A	6.81	13.80	13.80	
	7/7/2003	20.61	N/A	N/A	N/A	7.51	13.10	13.10	
	7/16/2003	20.61	N/A	N/A	N/A	6.42	14.19	14.19	
	7/31/2003	20.61	N/A	N/A	N/A	8.91	11.70	11.70	
	8/5/2003	20.61	N/A	N/A	N/A	8.51	12.10	12.10	
	8/11/2003	20.61	N/A	N/A	N/A	8.79	11.82	11.82	
	8/22/2003	20.61	N/A	N/A	N/A	8.43	12.18	12.18	
	8/26/2003	20.61	N/A	N/A	N/A	8.92	11.69	11.69	
	9/2/2003	20.61	N/A	N/A	N/A	8.95	11.66	11.66	
	9/9/2003	20.61	N/A	N/A	N/A	9.24	11.37	11.37	
	9/19/2003	20.61	N/A	N/A	N/A	8.99	11.62	11.62	
	10/14/2003	20.61	N/A	N/A	N/A	9.15	11.46	11.46	
	11/20/2003	20.61	N/A	N/A	N/A	5.31	15.30	15.30	
	12/3/2003	20.61	N/A	N/A	N/A	4.50	16.11	16.11	
	1/19/2004	20.61	N/A	N/A	N/A	4.33	16.28	16.28	
	2/24/2004	20.61	N/A	N/A	N/A	5.19	15.42	15.42	
	3/15/2004	20.61	N/A	N/A	N/A	5.94	14.67	14.67	
	4/19/2004	20.61	N/A	N/A	N/A	6.23	14.38	14.38	
	5/17/2004	20.61	N/A	N/A	N/A	6.80	13.81	13.81	
	6/22/2004	20.61	N/A	N/A	N/A	6.70	13.91	13.91	
	8/18/2004	20.61	N/A	N/A	N/A	8.19	12.42	12.42	
	9/21/2004	20.61	N/A	N/A	N/A	7.03	13.58	13.58	
	10/19/2004	20.61	N/A	N/A	N/A	6.10	14.51	14.51	
	11/23/2004	20.61	N/A	N/A	N/A	6.35	14.26	14.26	
	12/21/2004	20.61	N/A	N/A	N/A	4.81	15.80	15.80	
	1/13/2005	20.61	N/A	N/A	N/A	5.40	15.21	15.21	
	4/28/2005	20.61	N/A	N/A	N/A	5.13	15.48	15.48	
	6/1/2005	20.61	N/A	N/A	N/A	5.32	15.29	15.29	
	6/29/2005	20.61	N/A	N/A	N/A	6.28	14.33	14.33	
	7/20/2005	20.61	N/A	N/A	N/A	6.55	14.06	14.06	
	8/22/2005	20.61	6.94	13.67	0.01	6.95	13.66	13.67	
	9/12/2005	20.61	6.90	13.71	0.46	7.36	13.25	13.60	

TABLE 5

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CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	10/12/2005	20.61	8.185	12.43	0.005	8.19	12.42	12.42	
	11/21/2005	20.61	N/A	N/A	N/A	5.81	14.80	14.80	
	12/27/2005	20.61	N/A	N/A	N/A	5.24	15.37	15.37	
	1/30/2016	20.61	N/A	N/A	N/A	2.99	17.62	17.62	
	2/16/2006	20.61	N/A	N/A	N/A	4.44	16.17	16.17	
	3/13/2006	20.61	N/A	N/A	N/A	5.20	15.41	15.41	
	4/18/2006	20.61	N/A	N/A	N/A	5.43	15.18	15.18	
	5/12/2006	20.61	N/A	N/A	N/A	5.65	14.96	14.96	
	6/9/2006	20.61	N/A	N/A	N/A	5.48	15.13	15.13	
	7/13/2006	20.61	N/A	N/A	N/A	6.25	14.36	14.36	
	8/16/2006	20.61	N/A	N/A	N/A	7.05	13.56	13.56	
	9/19/2006	20.61	N/A	N/A	N/A	7.65	12.96	12.96	
	10/13/2006	20.61	N/A	N/A	N/A	7.46	13.15	13.15	
	11/20/2006	20.61	N/A	N/A	N/A	4.03	16.58	16.58	
	12/8/2006	20.61	N/A	N/A	N/A	4.12	16.49	16.49	
	1/19/2007	20.61	N/A	N/A	N/A	4.16	16.45	16.45	
	2/19/2007	20.61	N/A	N/A	N/A	5.31	15.30	15.30	
	3/15/2007	20.61	N/A	N/A	N/A	4.80	15.81	15.81	
	4/16/2007	20.61	N/A	N/A	N/A	5.10	15.51	15.51	
	5/14/2007	20.61	N/A	N/A	N/A	5.92	14.69	14.69	
	6/29/2007	20.61	N/A	N/A	N/A	6.82	13.79	13.79	
	7/20/2007	20.61	N/A	N/A	N/A	7.12	13.49	13.49	
	8/21/2007	20.61	N/A	N/A	N/A	7.76	12.85	12.85	
	9/10/2007	20.61	N/A	N/A	N/A	7.87	12.74	12.74	
	10/22/2007	20.61	N/A	N/A	N/A	7.26	13.35	13.35	
	11/28/2007	20.61	N/A	N/A	N/A	6.00	14.61	14.61	
LAI-11	12/13/2007	20.61	N/A	N/A	N/A	5.06	15.55	15.55	
(cont.)	1/21/2008	20.61	N/A	N/A	N/A	4.38	16.23	16.23	
	2/24/2008	20.61	N/A	N/A	N/A	5.71	14.90	14.90	
	3/24/2008	20.61	N/A	N/A	N/A	5.88	14.73	14.73	
	8/25/2008	20.61	N/A	N/A	N/A	6.40	14.21	14.21	
	2/18/2009	20.61	N/A	N/A	N/A	5.84	14.77	14.77	
	8/25/2009	20.61	N/A	N/A	N/A	7.95	12.66	12.66	
	3/22/2010	20.61	N/A	N/A	N/A	5.56	15.05	15.05	
	8/23/2010	20.61	N/A	N/A	N/A	7.36	13.25	13.25	
LAI-12	1/31/2003	19.34	N/A	N/A	N/A	3.28	16.06	16.06	
	2/12/2003	19.34	N/A	N/A	N/A	3.98	15.36	15.36	
	2/18/2003	19.34	N/A	N/A	N/A	4.50	14.84	14.84	
	2/21/2003	19.34	N/A	N/A	N/A	4.60	14.74	14.74	
	2/24/2003	19.34	N/A	N/A	N/A	4.58	14.76	14.76	
	3/3/2003	19.34	N/A	N/A	N/A	4.61	14.73	14.73	
	3/12/2003	19.34	N/A	N/A	N/A	4.38	14.96	14.96	
	3/14/2003	19.34	N/A	N/A	N/A	4.17	15.17	15.17	
	3/26/2003	19.34	N/A	N/A	N/A	4.04	15.30	15.30	
	3/28/2003	19.34	N/A	N/A	N/A	4.10	15.24	15.24	
	4/2/2003	19.34	N/A	N/A	N/A	4.34	15.00	15.00	
	4/4/2003	19.34	N/A	N/A	N/A	4.45	14.89	14.89	
	4/8/2003	19.34	N/A	N/A	N/A	4.58	14.76	14.76	
	4/11/2003	19.34	N/A	N/A	N/A	4.65	14.69	14.69	
	4/15/2003	19.34	N/A	N/A	N/A	4.25	15.09	15.09	
	4/17/2003	19.34	N/A	N/A	N/A	4.69	14.65	14.65	
	4/22/2003	19.34	N/A	N/A	N/A	4.69	14.65	14.65	
	4/25/2003	19.34	N/A	N/A	N/A	4.81	14.53	14.53	
	5/2/2003	19.34	N/A	N/A	N/A	4.98	14.36	14.36	
	5/6/2003	19.34	N/A	N/A	N/A	5.22	14.12	14.12	
	5/9/2003	19.34	N/A	N/A	N/A	5.46	13.88	13.88	
	5/16/2003	19.34	N/A	N/A	N/A	5.74	13.60	13.60	
	5/23/2003	19.34	N/A	N/A	N/A	5.27	14.07	14.07	
	5/28/2003	19.34	N/A	N/A	N/A	5.88	13.46	13.46	
	6/13/2003	19.34	N/A	N/A	N/A	5.45	13.89	13.89	
	6/18/2003	19.34	N/A	N/A	N/A	6.18	13.16	13.16	
	6/27/2003	19.34	N/A	N/A	N/A	6.22	13.12	13.12	
	7/7/2003	19.34	N/A	N/A	N/A	6.95	12.39	12.39	
	7/16/2003	19.34	N/A	N/A	N/A	5.84	13.50	13.50	
	7/31/2003	19.34	N/A	N/A	N/A	6.97	12.37	12.37	
	8/5/2003	19.34	N/A	N/A	N/A	7.05	12.29	12.29	
	8/11/2003	19.34	N/A	N/A	N/A	6.80	12.54	12.54	
	8/22/2003	19.34	N/A	N/A	N/A	8.19	11.15	11.15	
	8/26/2003	19.34	N/A	N/A	N/A	7.33	12.01	12.01	
	9/2/2003	19.34	N/A	N/A	N/A	7.45	11.89	11.89	
	9/9/2003	19.34	N/A	N/A	N/A	7.64	11.70	11.70	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	9/19/2003	19.34	N/A	N/A	N/A	7.93	11.41	11.41	
	10/14/2003	19.34	N/A	N/A	N/A	7.48	11.86	11.86	
	11/20/2003	19.34	N/A	N/A	N/A	4.06	15.28	15.28	
	12/3/2003	19.34	N/A	N/A	N/A	3.37	15.97	15.97	
	1/19/2004	19.34	N/A	N/A	N/A	3.81	15.53	15.53	
	2/24/2004	19.34	N/A	N/A	N/A	4.32	15.02	15.02	
	3/15/2004	19.34	N/A	N/A	N/A	5.13	14.21	14.21	
	4/19/2004	19.34	N/A	N/A	N/A	5.61	13.73	13.73	
	5/17/2004	19.34	N/A	N/A	N/A	6.23	13.11	13.11	
	6/22/2004	19.34	N/A	N/A	N/A	6.14	13.20	13.20	
	8/18/2004	19.34	N/A	N/A	N/A	7.15	12.19	12.19	
	9/21/2004	19.34	N/A	N/A	N/A	6.18	13.16	13.16	
	10/19/2004	20.34	N/A	N/A	N/A	5.39	14.95	14.95	
	11/23/2004	20.34	N/A	N/A	N/A	5.68	14.66	14.66	
	12/21/2004	20.34	N/A	N/A	N/A	3.86	16.48	16.48	
	1/13/2005	20.34	N/A	N/A	N/A	4.95	15.39	15.39	
	4/28/2005	20.34	N/A	N/A	N/A	4.41	15.93	15.93	
	6/1/2005	20.34	N/A	N/A	N/A	4.61	15.73	15.73	
	6/29/2005	20.34	N/A	N/A	N/A	5.77	14.57	14.57	
	7/20/2005	20.34	9.15	11.19	0.01	9.16	11.18	11.19	
	8/22/2005	20.34	6.48	13.86	0.01	6.49	13.85	13.86	
	9/12/2005	20.34	N/A	N/A	N/A	6.90	13.44	13.44	
	10/12/2005	20.34	7.40	12.94	0.01	7.41	12.93	12.94	
	11/21/2005	20.34	N/A	N/A	N/A	4.48	15.86	15.86	
	12/27/2005	20.34	N/A	N/A	N/A	3.95	16.39	16.39	
	1/30/2006	20.34	N/A	N/A	N/A	2.33	18.01	18.01	
	2/16/2006	20.34	N/A	N/A	N/A	3.33	17.01	17.01	
	3/13/2006	20.34	N/A	N/A	N/A	4.34	16.00	16.00	
	4/18/2006	20.34	N/A	N/A	N/A	4.69	15.65	15.65	
	5/12/2006	20.34	N/A	N/A	N/A	4.99	15.35	15.35	
LAI-12	6/9/2006	20.34	N/A	N/A	N/A	4.61	15.73	15.73	
(cont.)	7/13/2006	20.34	N/A	N/A	N/A	5.68	14.66	14.66	
	8/16/2006	20.34	N/A	N/A	N/A	6.41	13.93	13.93	
	9/19/2006	20.34	N/A	N/A	N/A	6.98	13.36	13.36	
	10/13/2006	20.34	N/A	N/A	N/A	6.78	13.56	13.56	
	11/20/2006	20.34	N/A	N/A	N/A	3.18	17.16	17.16	
	12/8/2006	20.34	N/A	N/A	N/A	2.89	17.45	17.45	
	1/19/2007	20.34	N/A	N/A	N/A	2.85	17.49	17.49	
	2/19/2007	20.34	N/A	N/A	N/A	4.55	15.79	15.79	
	3/15/2007	20.34	N/A	N/A	N/A	3.73	16.61	16.61	
	4/16/2007	20.34	N/A	N/A	N/A	4.19	16.15	16.15	
	5/14/2007	20.34	N/A	N/A	N/A	5.37	14.97	14.97	
	6/29/2007	20.34	N/A	N/A	N/A	6.30	14.04	14.04	
	7/20/2007	20.34	N/A	N/A	N/A	6.56	13.78	13.78	
	8/21/2007	20.34	N/A	N/A	N/A	7.19	13.15	13.15	
	9/10/2007	20.34	N/A	N/A	N/A	7.21	13.13	13.13	
	10/22/2007	20.34	N/A	N/A	N/A	6.09	14.25	14.25	
	11/28/2007	20.34	N/A	N/A	N/A	5.34	15.00	15.00	
	12/13/2007	20.34	N/A	N/A	N/A	3.97	16.37	16.37	
	1/21/2008	20.34	N/A	N/A	N/A	5.24	15.10	15.10	
	2/24/2008	20.34	N/A	N/A	N/A	5.08	15.26	15.26	
	3/24/2008	20.34	N/A	N/A	N/A	6.25	14.09	14.09	
	8/25/2008	20.34	N/A	N/A	N/A	6.82	13.52	13.52	
	2/18/2009	20.34	N/A	N/A	N/A	5.32	15.02	15.02	
	8/25/2009	20.34	N/A	N/A	N/A	7.44	12.90	12.90	
	3/22/2010	20.34	N/A	N/A	N/A	4.70	15.64	15.64	
	8/23/2010	20.34	N/A	N/A	N/A	6.62	13.72	13.72	
LAI-13	1/31/2003	21.53	N/A	N/A	N/A	5.25	16.28	16.28	
	2/12/2003	21.53	N/A	N/A	N/A	6.28	15.25	15.25	
	2/18/2003	21.53	N/A	N/A	N/A	6.15	15.38	15.38	
	2/21/2003	21.53	N/A	N/A	N/A	6.29	15.24	15.24	
	2/24/2003	21.53	N/A	N/A	N/A	6.65	14.88	14.88	
	3/3/2003	21.53	N/A	N/A	N/A	6.88	14.65	14.65	
	3/12/2003	21.53	N/A	N/A	N/A	6.87	14.66	14.66	
	3/14/2003	21.53	N/A	N/A	N/A	6.62	14.91	14.91	
	3/26/2003	21.53	6.16	15.37	0.00	6.16	15.37	15.37	
	3/28/2003	21.53	N/A	N/A	N/A	6.21	15.32	15.32	
	4/2/2003	21.53	N/A	N/A	N/A	6.25	15.28	15.28	
	4/4/2003	21.53	N/A	N/A	N/A	6.25	15.28	15.28	
	4/8/2003	21.53	N/A	N/A	N/A	6.69	14.84	14.84	
	4/11/2003	21.53	N/A	N/A	N/A	6.69	14.84	14.84	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	4/15/2003	21.53	N/A	N/A	N/A	6.61	14.92	14.92	
	4/17/2003	21.53	N/A	N/A	N/A	6.66	14.87	14.87	
	4/22/2003	21.53	N/A	N/A	N/A	6.87	14.66	14.66	
	4/25/2003	21.53	N/A	N/A	N/A	6.92	14.61	14.61	
	5/2/2003	21.53	N/A	N/A	N/A	6.71	14.82	14.82	
	5/6/2003	21.53	N/A	N/A	N/A	7.25	14.28	14.28	
	5/9/2003	21.53	N/A	N/A	N/A	7.36	14.17	14.17	
	5/16/2003	21.53	N/A	N/A	N/A	7.63	13.90	13.90	
	5/23/2003	21.53	N/A	N/A	N/A	7.78	13.75	13.75	
	5/28/2003	21.53	N/A	N/A	N/A	7.80	13.73	13.73	
	6/13/2003	21.53	N/A	N/A	N/A	8.01	13.52	13.52	
	6/18/2003	21.53	N/A	N/A	N/A	8.02	13.51	13.51	
	6/27/2003	21.53	N/A	N/A	N/A	8.06	13.47	13.47	
	7/7/2003	21.53	N/A	N/A	N/A	8.45	13.08	13.08	
	7/16/2003	21.53	N/A	N/A	N/A	7.71	13.82	13.82	
	7/31/2003	21.53	N/A	N/A	N/A	8.51	13.02	13.02	
	8/5/2003	21.53	N/A	N/A	N/A	8.54	12.99	12.99	
	8/11/2003	21.53	N/A	N/A	N/A	8.62	12.91	12.91	
	8/22/2003	21.53	N/A	N/A	N/A	9.81	11.72	11.72	
	8/26/2003	21.53	N/A	N/A	N/A	8.81	12.72	12.72	
	9/2/2003	21.53	N/A	N/A	N/A	8.88	12.65	12.65	
	9/9/2003	21.53	N/A	N/A	N/A	8.91	12.62	12.62	
	9/19/2003	21.53	N/A	N/A	N/A	10.94	10.59	10.59	
	10/14/2003	21.53	N/A	N/A	N/A	9.08	12.45	12.45	
	11/20/2003	21.53	N/A	N/A	N/A	5.94	15.59	15.59	
	12/3/2003	21.53	N/A	N/A	N/A	5.52	16.01	16.01	
	1/19/2004	21.53	N/A	N/A	N/A	5.39	16.14	16.14	
	2/24/2004	21.53	N/A	N/A	N/A	5.77	15.76	15.76	
	3/15/2004	21.53	N/A	N/A	N/A	6.66	14.87	14.87	
	4/19/2004	21.53	N/A	N/A	N/A	7.58	13.95	13.95	
	5/17/2004	21.53	N/A	N/A	N/A	8.05	13.48	13.48	
	6/22/2004	21.53	N/A	N/A	N/A	7.91	13.62	13.62	
	8/18/2004	21.53	N/A	N/A	N/A	8.57	12.96	12.96	
	9/21/2004	21.53	N/A	N/A	N/A	7.28	14.25	14.25	
LAI-13	10/19/2004	21.53	N/A	N/A	N/A	7.10	14.43	14.43	
(cont.)	11/23/2004	21.53	N/A	N/A	N/A	7.39	14.14	14.14	
	12/21/2004	21.53	N/A	N/A	N/A	5.69	15.84	15.84	
	1/13/2005	21.53	N/A	N/A	N/A	6.76	14.77	14.77	
	4/28/2005	21.53	N/A	N/A	N/A	6.71	14.82	14.82	
	6/1/2005	21.53	N/A	N/A	N/A	6.78	14.75	14.75	
	6/29/2005	21.53	N/A	N/A	N/A	7.51	14.02	14.02	
	7/20/2005	21.53	N/A	N/A	N/A	7.80	13.73	13.73	
	8/22/2005	21.53	N/A	N/A	N/A	8.17	13.36	13.36	
	9/12/2005	21.53	N/A	N/A	N/A	9.41	12.12	12.12	
	10/12/2005	21.53	N/A	N/A	N/A	8.63	12.90	12.90	
	11/21/2005	21.53	N/A	N/A	N/A	7.05	14.48	14.48	
	12/27/2005	21.53	N/A	N/A	N/A	5.70	15.83	15.83	
	1/30/2006	21.53	N/A	N/A	N/A	4.63	16.90	16.90	
	2/16/2006	21.53	N/A	N/A	N/A	5.42	16.11	16.11	
	3/13/2006	21.53	N/A	N/A	N/A	6.24	15.29	15.29	
	4/18/2006	21.53	N/A	N/A	N/A	6.82	14.71	14.71	
	5/12/2006	21.53	N/A	N/A	N/A	7.25	14.28	14.28	
	6/9/2006	21.53	N/A	N/A	N/A	6.86	14.67	14.67	
	7/13/2006	21.53	N/A	N/A	N/A	7.71	13.82	13.82	
	8/16/2006	21.53	N/A	N/A	N/A	8.16	13.37	13.37	
	9/19/2006	21.53	N/A	N/A	N/A	8.69	12.84	12.84	
	10/13/2006	21.53	N/A	N/A	N/A	8.37	13.16	13.16	
	11/20/2006	21.53	N/A	N/A	N/A	4.28	17.25	17.25	
	12/8/2006	21.53	N/A	N/A	N/A	4.01	17.52	17.52	
	1/19/2007	21.53	N/A	N/A	N/A	5.02	16.51	16.51	
	2/19/2007	21.53	N/A	N/A	N/A	6.60	14.93	14.93	
	3/15/2007	21.53	N/A	N/A	N/A	5.87	15.66	15.66	
	4/16/2007	21.53	N/A	N/A	N/A	6.35	15.18	15.18	
	5/14/2007	21.53	N/A	N/A	N/A	7.40	14.13	14.13	
	6/29/2007	21.53	N/A	N/A	N/A	8.05	13.48	13.48	
	7/20/2007	21.53	N/A	N/A	N/A	8.05	13.48	13.48	
	8/21/2007	21.53	N/A	N/A	N/A	8.22	13.31	13.31	
	9/10/2007	21.53	N/A	N/A	N/A	8.30	13.23	13.23	
	10/22/2007	21.53	N/A	N/A	N/A	7.27	14.26	14.26	
	11/28/2007	21.53	N/A	N/A	N/A	6.87	14.66	14.66	
	12/13/2007	21.53	N/A	N/A	N/A	5.06	16.47	16.47	
	1/21/2008	21.53	N/A	N/A	N/A	5.36	16.17	16.17	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	2/24/2008	21.53	N/A	N/A	N/A	6.51	15.02	15.02	
	3/24/2008	21.53	N/A	N/A	N/A	7.14	14.39	14.39	
	8/25/2008	21.53	N/A	N/A	N/A	7.89	13.64	13.64	
	2/18/2009	21.53	N/A	N/A	N/A	6.93	14.60	14.60	
	8/25/2009	21.53	N/A	N/A	N/A	8.60	12.93	12.93	
	3/22/2010	21.53	N/A	N/A	N/A	5.95	15.58	15.58	
	8/23/2010	21.53	N/A	N/A	N/A	7.76	13.77	13.77	
LAI-14	1/31/2003	21.69	N/A	N/A	N/A	6.12	15.57	15.57	
	2/12/2003	21.69	N/A	N/A	N/A	7.11	14.58	14.58	
	2/18/2003	21.69	N/A	N/A	N/A	7.17	14.52	14.52	
	2/21/2003	21.69	N/A	N/A	N/A	7.25	14.44	14.44	
	2/24/2003	21.69	N/A	N/A	N/A	7.25	14.44	14.44	
	3/3/2003	21.69	N/A	N/A	N/A	7.50	14.19	14.19	
	3/12/2003	21.69	N/A	N/A	N/A	7.40	14.29	14.29	
	3/14/2003	21.69	N/A	N/A	N/A	7.23	14.46	14.46	
	3/26/2003	21.69	N/A	N/A	N/A	7.04	14.65	14.65	
	3/28/2003	21.69	N/A	N/A	N/A	7.07	14.62	14.62	
	4/2/2003	21.69	N/A	N/A	N/A	7.00	14.69	14.69	
	4/4/2003	21.69	N/A	N/A	N/A	7.24	14.45	14.45	
	4/8/2003	21.69	N/A	N/A	N/A	7.41	14.28	14.28	
	4/11/2003	21.69	N/A	N/A	N/A	7.36	14.33	14.33	
	4/15/2003	21.69	N/A	N/A	N/A	7.34	14.35	14.35	
	4/17/2003	21.69	N/A	N/A	N/A	7.39	14.30	14.30	
	4/22/2003	21.69	N/A	N/A	N/A	7.53	14.16	14.16	
	4/25/2003	21.69	N/A	N/A	N/A	7.62	14.07	14.07	
	5/2/2003	21.69	N/A	N/A	N/A	7.20	14.49	14.49	
	5/6/2003	21.69	N/A	N/A	N/A	7.82	13.87	13.87	
	5/9/2003	21.69	N/A	N/A	N/A	7.86	13.83	13.83	
	5/16/2003	21.69	N/A	N/A	N/A	8.00	13.69	13.69	
	5/23/2003	21.69	N/A	N/A	N/A	8.03	13.66	13.66	
	5/28/2003	21.69	N/A	N/A	N/A	8.14	13.55	13.55	
	6/13/2003	21.69	N/A	N/A	N/A	8.30	13.39	13.39	
	6/18/2003	21.69	N/A	N/A	N/A	8.33	13.36	13.36	
	6/27/2003	21.69	N/A	N/A	N/A	8.35	13.34	13.34	
	7/7/2003	21.69	N/A	N/A	N/A	8.65	13.04	13.04	
	7/16/2003	21.69	N/A	N/A	N/A	7.83	13.86	13.86	
	7/31/2003	21.69	N/A	N/A	N/A	8.41	13.28	13.28	
LAI-14	8/5/2003	21.69	N/A	N/A	N/A	8.73	12.96	12.96	
(cont.)	8/11/2003	21.69	N/A	N/A	N/A	8.80	12.89	12.89	
	8/22/2003	21.69	N/A	N/A	N/A	9.89	11.80	11.80	
	8/26/2003	21.69	N/A	N/A	N/A	9.04	12.65	12.65	
	9/2/2003	21.69	N/A	N/A	N/A	9.07	12.62	12.62	
	9/9/2003	21.69	N/A	N/A	N/A	9.14	12.55	12.55	
	9/19/2003	21.69	N/A	N/A	N/A	9.14	12.55	12.55	
	10/14/2003	21.69	N/A	N/A	N/A	9.30	12.39	12.39	
	11/20/2003	21.69	N/A	N/A	N/A	6.59	15.10	15.10	
	12/3/2003	21.69	N/A	N/A	N/A	6.53	15.16	15.16	
	1/19/2004	21.69	N/A	N/A	N/A	6.45	15.24	15.24	
	2/24/2004	21.69	N/A	N/A	N/A	7.03	14.66	14.66	
	3/15/2004	21.69	N/A	N/A	N/A	7.52	14.17	14.17	
	4/19/2004	21.69	N/A	N/A	N/A	8.03	13.66	13.66	
	5/17/2004	21.69	N/A	N/A	N/A	8.32	13.37	13.37	
	6/22/2004	21.69	N/A	N/A	N/A	8.26	13.43	13.43	
	8/18/2004	21.69	N/A	N/A	N/A	8.86	12.83	12.83	
	9/21/2004	21.69	N/A	N/A	N/A	8.00	13.69	13.69	
	10/19/2004	21.69	N/A	N/A	N/A	8.00	13.69	13.69	
	11/23/2004	21.69	N/A	N/A	N/A	8.00	13.69	13.69	
	12/21/2004	21.69	N/A	N/A	N/A	7.11	14.58	14.58	
	1/13/2005	21.69	N/A	N/A	N/A	7.68	14.01	14.01	
	4/28/2005	21.69	N/A	N/A	N/A	7.47	14.22	14.22	
	6/1/2005	21.69	N/A	N/A	N/A	7.58	14.11	14.11	
	6/29/2005	21.69	N/A	N/A	N/A	8.02	13.67	13.67	
	7/20/2005	21.69	8.23	13.46	0.01	8.24	13.45	13.46	
	8/22/2005	21.69	N/A	N/A	N/A	8.50	13.19	10.79	
	9/12/2005	21.69	N/A	N/A	N/A	8.63	13.06	10.66	
	10/12/2005	21.69	N/A	N/A	N/A	8.86	12.83	12.83	
	11/21/2005	21.69	N/A	N/A	N/A	7.41	14.28	14.28	
	12/27/2005	21.69	N/A	N/A	N/A	6.48	15.21	15.21	
	1/30/2006	21.69	N/A	N/A	N/A	4.68	17.01	17.01	
	2/16/2006	21.69	6.30	15.39	0.07	6.37	15.32	15.37	
	3/13/2006	21.69	N/A	N/A	N/A	7.43	14.26	14.26	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	4/18/2006	21.69	N/A	N/A	N/A	7.56	14.13	14.13	
	5/12/2006	21.69	N/A	N/A	N/A	7.75	13.94	13.94	
	6/9/2006	21.69	N/A	N/A	N/A	7.58	14.11	14.11	
	7/13/2006	21.69	N/A	N/A	N/A	8.10	13.59	13.59	
	8/16/2006	21.69	N/A	N/A	N/A	8.43	13.26	13.26	
	9/19/2006	21.69	N/A	N/A	N/A	8.70	12.99	12.99	
	10/13/2006	21.69	N/A	N/A	N/A	8.56	13.13	13.13	
	11/20/2006	21.69	N/A	N/A	N/A	5.64	16.05	16.05	
	12/8/2006	21.69	N/A	N/A	N/A	6.12	15.57	15.57	
	1/19/2007	21.69	N/A	N/A	N/A	6.12	15.57	15.57	
	2/19/2007	21.69	N/A	N/A	N/A	7.45	14.24	14.24	
	3/15/2007	21.69	N/A	N/A	N/A	6.95	14.74	14.74	
	4/16/2007	21.69	N/A	N/A	N/A	7.38	14.31	14.31	
	5/14/2007	21.69	N/A	N/A	N/A	7.84	13.85	13.85	
	6/29/2007	21.69	N/A	N/A	N/A	8.27	13.42	13.42	
	7/20/2007	21.69	N/A	N/A	N/A	8.31	13.38	13.38	
	8/21/2007	21.69	N/A	N/A	N/A	8.48	13.21	13.21	
	9/10/2007	21.69	N/A	N/A	N/A	8.59	13.10	13.10	
	10/22/2007	21.69	N/A	N/A	N/A	7.82	13.87	13.87	
	11/28/2007	21.69	N/A	N/A	N/A	5.50	16.19	16.19	
	12/13/2007	21.69	N/A	N/A	N/A	6.45	15.24	15.24	
	1/21/2008	21.69	N/A	N/A	N/A	6.77	14.92	14.92	
	2/24/2008	21.69	N/A	N/A	N/A	7.37	14.32	14.32	
	3/24/2008	21.69	N/A	N/A	N/A	7.59	14.10	14.10	
	8/25/2008	21.69	N/A	N/A	N/A	8.36	13.33	13.33	
	2/18/2009	21.69	N/A	N/A	N/A	7.60	14.09	14.09	
	8/25/2009	21.69	N/A	N/A	N/A	8.78	12.91	12.91	
	3/22/2010	21.69	N/A	N/A	N/A	7.17	14.52	14.52	
	8/23/2010	21.69	N/A	N/A	N/A	8.13	13.56	13.56	
LAI-15	1/31/2003	19.76	N/A	N/A	N/A	6.13	13.63	13.63	
	2/12/2003	19.76	N/A	N/A	N/A	4.23	15.53	15.53	
	2/18/2003	19.76	N/A	N/A	N/A	4.51	15.25	15.25	
	2/21/2003	19.76	N/A	N/A	N/A	4.72	15.04	15.04	
	2/24/2003	19.76	N/A	N/A	N/A	4.74	15.02	15.02	
	3/3/2003	19.76	N/A	N/A	N/A	4.96	14.80	14.80	
	3/12/2003	19.76	N/A	N/A	N/A	4.81	14.95	14.95	
	3/14/2003	19.76	N/A	N/A	N/A	4.14	15.62	15.62	
	3/26/2003	19.76	N/A	N/A	N/A	3.82	15.94	15.94	
	3/28/2003	19.76	N/A	N/A	N/A	3.85	15.91	15.91	
	4/2/2003	19.76	N/A	N/A	N/A	4.40	15.36	15.36	
	4/4/2003	19.76	N/A	N/A	N/A	4.49	15.27	15.27	
LAI-15	4/8/2003	19.76	N/A	N/A	N/A	4.71	15.05	15.05	
(cont.)	4/11/2003	19.76	N/A	N/A	N/A	4.80	14.96	14.96	
	4/15/2003	19.76	N/A	N/A	N/A	4.75	15.01	15.01	
	4/17/2003	19.76	N/A	N/A	N/A	4.77	14.99	14.99	
	4/22/2003	19.76	N/A	N/A	N/A	4.99	14.77	14.77	
	4/25/2003	19.76	N/A	N/A	N/A	5.09	14.67	14.67	
	5/2/2003	19.76	N/A	N/A	N/A	5.13	14.63	14.63	
	5/6/2003	19.76	N/A	N/A	N/A	5.55	14.21	14.21	
	5/9/2003	19.76	N/A	N/A	N/A	5.68	14.08	14.08	
	5/16/2003	19.76	N/A	N/A	N/A	4.90	14.86	14.86	
	5/23/2003	19.76	N/A	N/A	N/A	6.12	13.64	13.64	
	5/28/2003	19.76	N/A	N/A	N/A	6.13	13.63	13.63	
	6/13/2003	19.76	N/A	N/A	N/A	6.33	13.43	13.43	
	6/18/2003	19.76	N/A	N/A	N/A	6.35	13.41	13.41	
	6/27/2003	19.76	N/A	N/A	N/A	6.39	13.37	13.37	
	7/7/2003	19.76	N/A	N/A	N/A	6.75	13.01	13.01	
	7/16/2003	19.76	N/A	N/A	N/A	6.03	13.73	13.73	
	7/31/2003	19.76	N/A	N/A	N/A	6.83	12.93	12.93	
	8/5/2003	19.76	N/A	N/A	N/A	6.85	12.91	12.91	
	8/11/2003	19.76	N/A	N/A	N/A	6.93	12.83	12.83	
	8/22/2003	19.76	N/A	N/A	N/A	8.04	11.72	11.72	
	8/26/2003	19.76	N/A	N/A	N/A	7.11	12.65	12.65	
	9/2/2003	19.76	N/A	N/A	N/A	7.21	12.55	12.55	
	9/9/2003	19.76	N/A	N/A	N/A	7.23	12.53	12.53	
	9/19/2003	19.76	N/A	N/A	N/A	N/A	N/A	N/A	
	10/14/2003	19.76	N/A	N/A	N/A	7.45	12.31	12.31	
	11/20/2003	19.76	N/A	N/A	N/A	4.11	15.65	15.65	
	12/3/2003	19.76	N/A	N/A	N/A	3.65	16.11	16.11	
	1/19/2004	19.76	N/A	N/A	N/A	3.59	16.17	16.17	
	2/24/2004	19.76	N/A	N/A	N/A	4.26	15.50	15.50	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	3/15/2004	19.76	N/A	N/A	N/A	5.19	14.57	14.57	
	4/19/2004	19.76	N/A	N/A	N/A	5.97	13.79	13.79	
	5/17/2004	19.76	N/A	N/A	N/A	6.42	13.34	13.34	
	6/22/2004	19.76	N/A	N/A	N/A	6.09	13.67	13.67	
	8/18/2004	19.76	N/A	N/A	N/A	6.93	12.83	12.83	
	9/21/2004	19.76	N/A	N/A	N/A	6.05	13.71	13.71	
	10/19/2004	19.76	N/A	N/A	N/A	5.75	14.01	14.01	
	11/23/2004	19.76	N/A	N/A	N/A	5.91	13.85	13.85	
	12/21/2004	19.76	N/A	N/A	N/A	4.28	15.48	15.48	
	1/13/2005	19.76	N/A	N/A	N/A	5.32	14.44	14.44	
	4/28/2005	19.76	N/A	N/A	N/A	4.91	14.85	14.85	
	6/1/2005	20.03	N/A	N/A	N/A	5.17	14.86	14.86	
	6/29/2005	20.03	N/A	N/A	N/A	5.67	14.36	14.36	
	7/20/2005	20.03	N/A	N/A	N/A	6.32	13.71	13.71	
	8/22/2005	20.03	N/A	N/A	N/A	6.62	13.41	13.41	
	9/12/2005	20.03	N/A	N/A	N/A	6.82	13.21	13.21	
	10/12/2005	20.03	N/A	N/A	N/A	7.08	12.95	12.95	
	11/21/2005	20.03	N/A	N/A	N/A	5.04	14.99	14.99	
	12/27/2005	20.03	N/A	N/A	N/A	3.84	16.19	16.19	
	1/30/2006	20.03	N/A	N/A	N/A	1.11	18.92	18.92	
	2/16/2006	20.03	N/A	N/A	N/A	3.52	16.51	16.51	
	3/13/2006	20.03	N/A	N/A	N/A	4.92	15.11	15.11	
	4/18/2006	20.03	N/A	N/A	N/A	5.35	14.68	14.68	
	5/12/2006	20.03	N/A	N/A	N/A	5.61	14.42	14.42	
	6/9/2006	20.03	N/A	N/A	N/A	5.32	14.71	14.71	
	7/13/2006	20.03	N/A	N/A	N/A	6.20	13.83	13.83	
	8/16/2006	20.03	N/A	N/A	N/A	6.60	13.43	13.43	
	9/19/2006	20.03	N/A	N/A	N/A	7.05	12.98	12.98	
	10/13/2006	20.03	N/A	N/A	N/A	6.80	13.23	13.23	
	11/20/2006	20.03	N/A	N/A	N/A	2.53	17.50	17.50	
	12/8/2006	20.03	N/A	N/A	N/A	3.11	16.92	16.92	
	1/19/2007	20.03	N/A	N/A	N/A	3.12	16.91	16.91	
	2/19/2007	20.03	N/A	N/A	N/A	5.10	14.93	14.93	
	3/15/2007	20.03	N/A	N/A	N/A	4.32	15.71	15.71	
	4/16/2007	20.03	N/A	N/A	N/A	4.76	15.27	15.27	
	5/14/2007	20.03	N/A	N/A	N/A	5.88	14.15	14.15	
	6/29/2007	20.03	N/A	N/A	N/A	6.44	13.59	13.59	
	7/20/2007	20.03	N/A	N/A	N/A	6.55	13.48	13.48	
	8/21/2007	20.03	N/A	N/A	N/A	6.74	13.29	13.29	
	9/10/2007	20.03	N/A	N/A	N/A	6.84	13.19	13.19	
	10/22/2007	20.03	N/A	N/A	N/A	6.03	14.00	14.00	
	11/28/2007	20.03	N/A	N/A	N/A	5.34	14.69	14.69	
	12/13/2007	20.03	N/A	N/A	N/A	3.50	16.53	16.53	
	1/21/2008	20.03	N/A	N/A	N/A	4.12	15.91	15.91	
	2/24/2008	20.03	N/A	N/A	N/A	5.14	14.89	14.89	
LAI-15	3/24/2008	20.03	N/A	N/A	N/A	5.52	14.51	14.51	
(cont.)	8/25/2008	20.03	N/A	N/A	N/A	6.62	13.41	13.41	
	2/18/2009	20.03	N/A	N/A	N/A	5.50	14.53	14.53	
	8/25/2009	20.03	N/A	N/A	N/A	6.94	13.09	13.09	
	3/22/2010	20.03	N/A	N/A	N/A	4.71	15.32	15.32	
	8/23/2010	20.03	N/A	N/A	N/A	6.36	13.67	13.67	
LAI-16	1/31/2003	20.59	N/A	N/A	N/A	6.28	14.31	14.31	
	2/12/2003	20.59	N/A	N/A	N/A	6.65	13.94	13.94	
	2/18/2003	20.59	N/A	N/A	N/A	6.70	13.89	13.89	
	2/21/2003	20.59	N/A	N/A	N/A	6.73	13.86	13.86	
	2/24/2003	20.59	N/A	N/A	N/A	6.74	13.85	13.85	
	3/3/2003	20.59	N/A	N/A	N/A	6.86	13.73	13.73	
	3/12/2003	20.59	N/A	N/A	N/A	6.52	14.07	14.07	
	3/14/2003	20.59	N/A	N/A	N/A	6.39	14.20	14.20	
	3/26/2003	20.59	N/A	N/A	N/A	6.48	14.11	14.11	
	3/28/2003	20.59	N/A	N/A	N/A	7.46	13.13	13.13	
	4/2/2003	20.59	N/A	N/A	N/A	6.63	13.96	13.96	
	4/4/2003	20.59	N/A	N/A	N/A	6.71	13.88	13.88	
	4/8/2003	20.59	N/A	N/A	N/A	6.90	13.69	13.69	
	4/11/2003	20.59	N/A	N/A	N/A	6.75	13.84	13.84	
	4/15/2003	20.59	N/A	N/A	N/A	6.68	13.91	13.91	
	4/17/2003	20.59	N/A	N/A	N/A	6.73	13.86	13.86	
	4/22/2003	20.59	N/A	N/A	N/A	6.87	13.72	13.72	
	4/25/2003	20.59	N/A	N/A	N/A	6.99	13.60	13.60	
	5/2/2003	20.59	N/A	N/A	N/A	6.78	13.81	13.81	
	5/6/2003	20.59	N/A	N/A	N/A	7.26	13.33	13.33	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/9/2003	20.59	N/A	N/A	N/A	7.35	13.24	13.24	
	5/16/2003	20.59	N/A	N/A	N/A	7.60	12.99	12.99	
	5/23/2003	20.59	N/A	N/A	N/A	8.08	12.51	12.51	
	5/28/2003	20.59	N/A	N/A	N/A	7.87	12.72	12.72	
	6/13/2003	20.59	N/A	N/A	N/A	8.31	12.28	12.28	
	6/18/2003	20.59	N/A	N/A	N/A	8.45	12.14	12.14	
	6/27/2003	20.59	N/A	N/A	N/A	8.08	12.51	12.51	
	7/7/2003	20.59	N/A	N/A	N/A	N/A	N/A	N/A	Faulty meter
	7/16/2003	20.59	N/A	N/A	N/A	8.00	12.59	12.59	
	7/31/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	8/5/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	8/11/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	8/22/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	8/26/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	9/2/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	9/9/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	9/19/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	10/14/2003	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	11/20/2003	20.59	N/A	N/A	N/A	6.95	13.64	13.64	
	12/3/2003	20.59	N/A	N/A	N/A	6.68	13.91	13.91	
	1/19/2004	20.59	N/A	N/A	N/A	6.49	14.10	14.10	
	2/24/2004	20.59	N/A	N/A	N/A	6.62	13.97	13.97	
	3/15/2004	20.59	N/A	N/A	N/A	7.02	13.57	13.57	
	4/19/2004	20.59	N/A	N/A	N/A	7.64	12.95	12.95	
	5/17/2004	20.59	N/A	N/A	N/A	8.35	12.24	12.24	
	6/22/2004	20.59	N/A	N/A	N/A	8.52	12.07	12.07	
	8/18/2004	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	9/21/2004	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	10/19/2004	20.59	N/A	N/A	N/A	9.30	11.29	11.29	
	11/23/2004	20.59	N/A	N/A	N/A	8.38	12.21	12.21	
	12/21/2004	20.59	N/A	N/A	N/A	6.87	13.72	13.72	
	1/13/2005	20.59	N/A	N/A	N/A	7.12	13.47	13.47	
	4/28/2005	20.59	N/A	N/A	N/A	6.95	13.64	13.64	
	6/1/2005	20.59	N/A	N/A	N/A	7.35	13.24	13.24	
	6/29/2005	20.59	N/A	N/A	N/A	7.95	12.64	12.64	
	7/20/2005	20.59	N/A	N/A	N/A	8.78	11.81	11.81	
	8/22/2005	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	9/12/2005	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	10/12/2005	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	11/21/2005	20.59	N/A	N/A	N/A	8.48	12.11	10.13	
	12/27/2005	20.59	N/A	N/A	N/A	6.71	13.88	11.13	
	1/30/2006	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	2/16/2006	20.59	N/A	N/A	N/A	6.45	14.14	11.13	
	3/13/2006	20.59	N/A	N/A	N/A	6.75	13.84	11.13	
	4/18/2006	20.59	N/A	N/A	N/A	7.18	13.41	13.41	
	5/12/2006	20.59	N/A	N/A	N/A	7.50	13.09	13.09	
	6/9/2006	20.59	N/A	N/A	N/A	7.62	12.97	12.97	
	7/13/2006	20.59	N/A	N/A	N/A	6.10	14.49	14.49	
	8/16/2006	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
LAI-16	9/19/2006	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
(cont.)	10/13/2006	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	11/20/2006	20.59	N/A	N/A	N/A	6.33	14.26	14.26	
	12/8/2006	20.59	N/A	N/A	N/A	6.45	14.14	14.14	
	1/19/2007	20.59	N/A	N/A	N/A	6.11	14.48	14.48	
	2/19/2007	20.59	N/A	N/A	N/A	6.67	13.92	13.92	
	3/15/2007	20.59	N/A	N/A	N/A	6.55	14.04	14.04	
	4/16/2007	20.59	N/A	N/A	N/A	6.89	13.70	13.70	
	5/14/2007	20.59	N/A	N/A	N/A	7.54	13.05	13.05	
	6/29/2007	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	7/20/2007	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	8/21/2007	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	9/10/2007	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	10/22/2007	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	11/28/2007	20.59	N/A	N/A	N/A	8.41	12.18	12.18	
	12/13/2007	20.59	N/A	N/A	N/A	6.65	13.94	13.94	
	1/21/2008	20.59	N/A	N/A	N/A	6.43	14.16	14.16	
	2/24/2008	20.59	N/A	N/A	N/A	6.87	13.72	13.72	
	3/24/2008	20.59	N/A	N/A	N/A	6.95	13.64	13.64	
	8/25/2008	20.59	N/A	N/A	N/A	7.12	13.47	13.47	
	2/18/2009	20.59	N/A	N/A	N/A	7.00	13.59	13.59	
	8/25/2009	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
	3/22/2010	20.59	N/A	N/A	N/A	6.93	13.66	13.66	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	8/23/2010	20.59	N/A	N/A	N/A	Dry	Dry	Dry	
R-1	11/24/2002	19.83	N/A	N/A	N/A	5.90	13.93	13.93	
	6/29/2007	19.83	N/A	N/A	N/A	5.66	14.17	14.17	
	10/22/2007	19.83	NM	NM	NM	NM	NM	NM	
	11/28/2007	19.83	NM	NM	NM	NM	NM	NM	
	12/13/2007	19.83	N/A	N/A	N/A	9.10	10.73	10.73	
	1/21/2008	19.83	N/A	N/A	N/A	6.98	12.85	12.85	
	2/24/2008	19.83		Well not gauged		--	--	--	
	3/24/2008	19.83	N/A	N/A	N/A	5.35	14.48	14.48	
	8/25/2008	19.83		Well not gauged		--	--	--	
	2/18/2009	19.83	NM	NM	NM	NM	NM	NM	
	8/25/2009	19.83	NM	NM	NM	NM	NM	NM	
R-2	11/24/2002	20.28	N/A	N/A	N/A	6.69	13.59	13.59	
	6/29/2007	20.28	N/A	N/A	N/A	6.72	13.56	13.56	
	10/22/2007	20.28	NM	NM	NM	NM	NM	NM	
	11/28/2007	20.28	NM	NM	NM	NM	NM	NM	
	12/13/2007	20.28	N/A	N/A	N/A	7.76	12.52	12.52	
	1/21/2008	20.28	N/A	N/A	N/A	5.83	14.45	14.45	
	2/24/2008	20.28		Well not gauged		--	--	--	
	3/24/2008	20.28	N/A	N/A	N/A	6.19	14.09	14.09	
	8/25/2008	20.28		Well not gauged		--	--	--	
	2/18/2009	20.28	NM	NM	NM	NM	NM	NM	
	8/25/2009	20.28	NM	NM	NM	NM	NM	NM	
RW-1	11/20/2002	24.60	8.25	16.35	0.95	9.20	15.40	16.11	
	11/21/2002	24.60	8.25	16.35	1.15	9.40	15.20	16.06	
	11/22/2002	24.60	8.22	16.38	1.20	9.42	15.18	16.08	
	11/24/2002	24.60	8.35	16.25	1.06	9.41	15.19	15.99	
	1/2/2003	24.60	5.61	18.99	0.21	5.82	18.78	18.94	
	1/3/2003	24.60	5.51	19.09	0.21	5.72	18.88	19.04	
	1/6/2003	24.60	5.35	19.25	0.29	5.64	18.96	19.18	
	1/7/2003	24.60	5.68	18.92	0.28	5.96	18.64	18.85	
	1/8/2003	24.60	5.95	18.65	0.28	6.23	18.37	18.58	
	1/9/2003	24.60	6.03	18.57	0.29	6.32	18.28	18.50	
	1/10/2003	24.60	6.20	18.40	0.30	6.50	18.10	18.33	
	1/13/2003	24.60	6.00	18.60	0.32	6.32	18.28	18.52	
	1/14/2003	24.60	5.72	18.88	0.73	6.45	18.15	18.70	
	1/15/2003	24.60	5.99	18.61	0.19	6.18	18.42	18.56	
	1/16/2003	24.60	6.10	18.50	0.30	6.40	18.20	18.43	
	1/17/2003	24.60	6.15	18.45	0.30	6.45	18.15	18.38	
	1/20/2003	24.60	6.34	18.26	0.35	6.69	17.91	18.17	
	1/22/2003	24.60	5.60	19.00	0.29	5.89	18.71	18.93	
	1/23/2003	24.60	5.80	18.80	0.35	6.15	18.45	18.71	
	1/24/2003	24.60	5.37	19.23	0.38	5.75	18.85	19.14	
	1/27/2003	24.60	4.68	19.92	0.47	5.15	19.45	19.80	
	1/28/2003	24.60	4.66	19.94	0.45	5.11	19.49	19.83	
	1/29/2003	24.60	4.67	19.93	0.46	5.13	19.47	19.82	
	1/30/2003	24.60	4.90	19.70	0.44	5.34	19.26	19.59	
	2/3/2003	24.60	5.65	18.95	0.41	6.06	18.54	18.85	
	2/6/2003	24.24	6.76	17.48	0.40	7.16	17.08	17.38	
	2/11/2003	24.24	7.35	16.89	0.42	7.77	16.47	16.79	
RW-1	2/18/2003	24.24	N/A	N/A	N/A	6.55	17.69	17.69	
(cont.)	2/21/2003	24.24	7.90	16.34	0.93	8.83	15.41	16.11	
	2/26/2003	24.24	7.70	16.54	0.81	8.51	15.73	16.34	
	3/4/2003	24.24	7.11	17.13	0.63	7.74	16.50	16.97	
	3/12/2003	24.24	7.30	16.94	0.46	7.76	16.48	16.83	
	3/14/2003	24.24	6.85	17.39	N/A	7.31	16.93	16.93	
	3/26/2003	24.24	6.39	17.85	0.13	6.52	17.72	17.82	
	3/28/2003	24.24	7.41	16.83	0.15	7.56	16.68	16.79	
	4/2/2003	24.24	7.45	16.79	0.10	7.55	16.69	16.77	
	4/4/2003	24.24	7.70	16.54	0.05	7.75	16.49	16.53	
	4/8/2003	24.24	7.25	16.99	0.02	7.27	16.97	16.99	
	4/11/2003	24.24	7.15	17.09	0.03	7.18	17.06	17.08	
	4/15/2003	24.24	6.57	17.67	0.02	6.59	17.65	17.67	
	4/17/2003	24.24	7.52	16.72	0.02	7.54	16.70	16.72	
	4/22/2003	24.24	7.53	16.71	0.02	7.55	16.69	16.71	
	4/25/2003	24.24	7.42	16.82	0.01	7.43	16.81	16.82	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/2/2003	24.24	8.84	15.40	0.01	8.85	15.39	15.40	
	5/6/2003	24.24	N/A	N/A	N/A	9.02	15.22	15.22	
	5/9/2003	24.24	N/A	N/A	N/A	9.21	15.03	15.03	
	5/23/2003	24.24	N/A	N/A	N/A	9.26	14.98	14.98	
	5/28/2003	24.24	9.35	14.89	0.01	9.36	14.88	14.89	
	6/13/2003	24.24	9.52	14.72	0.49	10.01	14.23	14.60	
	6/18/2003	24.24	9.22	15.02	0.91	10.13	14.11	14.79	
	6/27/2003	24.24	N/A	N/A	N/A	9.81	14.43	14.43	
	7/7/2003	24.24	10.26	13.98	0.03	10.29	13.95	13.97	
	7/16/2003	24.24	10.09	14.15	0.26	10.35	13.89	14.09	
	7/31/2003	24.24	10.34	13.90	0.01	10.35	13.89	13.90	
	8/5/2003	24.24	10.32	13.92	0.08	10.40	13.84	13.90	
	8/11/2003	24.24	11.34	12.90	0.01	11.35	12.89	12.90	
	8/22/2003	24.24	11.34	12.90	0.01	11.35	12.89	12.90	
	8/26/2003	24.24	N/A	N/A	N/A	10.36	13.88	13.88	
	9/2/2003	24.24	N/A	N/A	N/A	10.36	13.88	13.88	
	9/9/2003	24.24	10.33	13.91	0.05	10.38	13.86	13.90	
	9/19/2003	24.24	10.33	13.91	0.03	10.36	13.88	13.90	
	10/14/2003	24.24	N/A	N/A	N/A	10.30	13.94	13.94	
	11/20/2003	24.24	N/A	N/A	N/A	5.52	18.72	18.72	
	12/3/2003	24.24	N/A	N/A	N/A	5.44	18.80	18.80	
	1/19/2004	24.24	N/A	N/A	N/A	5.57	18.67	18.67	
	2/24/2004	24.24	N/A	N/A	N/A	7.45	16.79	16.79	
	3/15/2004	24.24	N/A	N/A	N/A	8.87	15.37	15.37	
	4/19/2004	24.24	N/A	N/A	N/A	9.56	14.68	14.68	
	5/17/2004	24.24	N/A	N/A	N/A	10.14	14.10	14.10	
	6/22/2004	24.24	N/A	N/A	N/A	9.91	14.33	14.33	
	8/18/2004	24.24	10.30	13.94	0.01	10.31	13.93	13.94	
	9/21/2004	24.24	N/A	N/A	N/A	10.05	14.19	14.19	
	10/19/2004	24.24	N/A	N/A	N/A	9.73	14.51	14.51	
	11/23/2004	24.24	N/A	N/A	N/A	9.50	14.74	14.74	
	12/21/2004	24.24	N/A	N/A	N/A	6.86	17.38	17.38	Strong odor
	1/13/2005	24.24	N/A	N/A	N/A	8.32	15.92	15.92	
	4/28/2005	24.24	N/A	N/A	N/A	7.15	17.09	17.09	Strong odor, sheen
	6/1/2005	24.24	N/A	N/A	N/A	7.60	16.64	16.64	
	6/29/2005	24.24	NM	NM	NM	NM	NM	NM	Unable to remove well cap
	7/20/2005	24.24	NM	NM	NM	NM	NM	NM	Unable to remove well cap
	8/22/2005	24.24	N/A	N/A	N/A	10.35	13.89	10.97	
	9/12/2005	24.24	N/A	N/A	N/A	10.36	13.88	13.88	
	10/12/2005	24.24	N/A	N/A	N/A	10.40	13.84	13.84	
	11/21/2005	24.24	N/A	N/A	N/A	9.09	15.15	15.15	
	12/27/2005	24.24	N/A	N/A	N/A	5.72	18.52	18.52	
	1/30/2006	24.24	N/A	N/A	N/A	4.34	19.90	19.90	
	2/16/2006	24.24	N/A	N/A	N/A	5.86	18.38	18.38	
	3/13/2006	24.24	N/A	N/A	N/A	7.51	16.73	16.73	
	4/18/2006	24.24	N/A	N/A	N/A	7.05	17.19	17.19	
	5/12/2006	24.24	N/A	N/A	N/A	8.53	15.71	15.71	
	6/9/2006	24.24	N/A	N/A	N/A	7.70	16.54	16.54	
	7/13/2006	24.24	N/A	N/A	N/A	9.44	14.80	14.80	
	8/16/2006	24.24	N/A	N/A	N/A	10.35	13.89	13.89	
	9/19/2006	24.24	N/A	N/A	N/A	10.42	13.82	13.82	
	10/13/2006	24.24	N/A	N/A	N/A	10.45	13.79	13.79	
	11/20/2006	24.24	N/A	N/A	N/A	5.15	19.09	19.09	
	12/8/2006	24.24	N/A	N/A	N/A	5.51	18.73	18.73	
	1/19/2007	24.24	N/A	N/A	N/A	5.02	19.22	19.22	
	2/19/2007	24.24	N/A	N/A	N/A	6.70	17.54	17.54	
	3/15/2007	24.24	N/A	N/A	N/A	5.51	18.73	18.73	
	4/16/2007	24.24	N/A	N/A	N/A	7.32	16.92	16.92	
	5/14/2007	24.24	N/A	N/A	N/A	9.05	15.19	15.19	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
RW-1	6/29/2007	24.24	N/A	N/A	N/A	10.21	14.03	14.03	
(cont.)	7/20/2007	24.24	N/A	N/A	N/A	Dry	Dry	Dry	
	8/21/2007	24.24	N/A	N/A	N/A	10.35	13.89	13.89	
	9/10/2007	24.24	N/A	N/A	N/A	Dry	Dry	Dry	
	10/22/2007	24.24	N/A	N/A	N/A	7.38	16.86	16.86	
	11/28/2007	24.24	N/A	N/A	N/A	7.98	16.26	16.26	
	12/13/2007	24.24	N/A	N/A	N/A	6.57	17.67	17.67	
	1/21/2008	24.24	N/A	N/A	N/A	5.97	18.27	18.27	
	2/24/2008	24.24	N/A	N/A	N/A	8.78	15.46	15.46	
	3/24/2008	24.24	N/A	N/A	N/A	5.95	18.29	18.29	
	8/25/2008	24.24	N/A	N/A	N/A	6.02	18.22	18.22	
	2/18/2009	24.24	N/A	N/A	N/A	9.13	15.11	15.11	
	8/25/2009	24.24	N/A	N/A	N/A	10.39	13.85	13.85	
	3/22/2010	24.24	N/A	N/A	N/A	7.96	16.28	16.28	
	8/23/2010	24.24	N/A	N/A	N/A	10.37	13.87	13.87	Purged Dry
RW-2	11/20/2002	24.58	8.05	16.53	1.35	9.40	15.18	16.19	
	11/21/2002	24.58	8.00	16.58	1.40	9.40	15.18	16.23	
	11/22/2002	24.58	8.00	16.58	1.41	9.41	15.17	16.23	
	11/24/2002	24.58	8.21	16.37	1.49	9.70	14.88	16.00	
	1/2/2003	24.58	6.11	18.47	2.27	8.38	16.20	17.90	
	1/6/2003	24.58	5.40	19.18	2.78	8.18	16.40	18.49	
	1/7/2003	24.58	6.41	18.17	0.54	6.95	17.63	18.04	
	1/8/2003	24.58	7.67	16.91	0.01	7.68	16.90	16.91	
	1/9/2003	24.58	8.72	15.86	0.01	8.73	15.85	15.86	
	1/10/2003	24.58	6.38	18.20	0.54	6.92	17.66	18.07	
	1/13/2003	24.58	8.42	16.16	0.10	8.52	16.06	16.14	
	1/14/2003	24.58	6.17	18.41	1.32	7.49	17.09	18.08	
	1/15/2003	24.58	5.95	18.63	0.85	6.80	17.78	18.42	
	1/16/2003	24.58	6.51	18.07	1.00	7.51	17.07	17.82	
	1/17/2003	24.58	6.40	18.18	1.12	7.52	17.06	17.90	
	1/20/2003	24.58	6.35	18.23	1.59	7.94	16.64	17.83	
	1/22/2003	24.58	5.86	18.72	2.74	8.60	15.98	18.04	
	1/23/2003	24.58	5.92	18.66	3.23	9.15	15.43	17.85	
	1/24/2003	24.58	5.37	19.21	0.62	5.99	18.59	19.06	
	1/27/2003	24.58	4.69	19.89	0.53	5.22	19.36	19.76	
	1/28/2003	24.58	4.83	19.75	3.71	8.54	16.04	18.82	
	1/29/2003	24.58	4.82	19.76	3.66	8.48	16.10	18.85	
	1/30/2003	24.58	4.95	19.63	0.94	5.89	18.69	19.40	
	2/3/2003	24.58	5.29	19.29	3.82	9.11	15.47	18.34	
	2/6/2003	24.19	6.16	18.03	3.48	9.64	14.55	17.16	
	2/11/2003	24.19	6.61	17.58	3.17	9.78	14.41	16.79	
	2/18/2003	24.19	7.46	16.73	2.72	10.18	14.01	16.05	
	2/21/2003	24.19	7.40	16.79	2.76	10.16	14.03	16.10	
	2/26/2003	24.19	7.66	16.53	0.69	8.35	15.84	16.36	
	3/4/2003	24.19	7.15	17.04	1.42	8.57	15.62	16.69	
	3/12/2003	24.19	7.60	16.59	0.02	7.62	16.57	16.59	
	3/14/2003	24.19	7.38	16.81	1.61	8.99	15.20	16.41	
	3/26/2003	24.19	6.85	17.34	0.70	7.55	16.64	17.17	
	3/28/2003	24.19	7.48	16.71	0.87	8.35	15.84	16.49	
	4/2/2003	24.19	7.55	16.64	0.86	8.41	15.78	16.43	
	4/4/2003	24.19	7.95	16.24	0.56	8.51	15.68	16.10	
	4/8/2003	24.19	8.02	16.17	0.03	8.05	16.14	16.16	
	4/11/2003	24.19	8.22	15.97	0.01	8.23	15.96	15.97	
	4/15/2003	24.19	N/A	N/A	N/A	7.68	16.51	16.51	
	4/17/2003	24.19	8.34	15.85	0.06	8.40	15.79	15.84	
	4/22/2003	24.19	8.36	15.83	0.16	8.52	15.67	15.79	
	4/25/2003	24.19	8.30	15.89	0.11	8.41	15.78	15.86	
	5/2/2003	24.19	8.75	15.44	0.31	9.06	15.13	15.36	
	5/6/2003	24.19	8.82	15.37	0.61	9.43	14.76	15.22	
	5/9/2003	24.19	9.16	15.03	0.62	9.78	14.41	14.88	
	5/23/2003	24.19	9.15	15.04	1.42	10.57	13.62	14.69	
	5/28/2003	24.19	8.95	15.24	1.49	10.44	13.75	14.87	
	6/13/2003	24.19	9.24	14.95	1.35	10.59	13.60	14.61	
	6/18/2003	24.19	9.20	14.99	1.31	10.51	13.68	14.66	
	6/27/2003	24.19	9.23	14.96	1.26	10.49	13.70	14.65	
	7/7/2003	24.19	10.01	14.18	0.42	10.43	13.76	14.08	
	7/16/2003	24.19	9.83	14.36	0.71	10.54	13.65	14.18	Had to pull pump to measure
	7/31/2003	24.19	10.31	13.88	0.15	10.46	13.73	13.84	
	8/5/2003	24.19	10.28	13.91	0.22	10.50	13.69	13.86	
	8/11/2003	24.19	N/A	N/A	N/A	11.38	12.81	12.81	
	8/22/2003	24.19	N/A	N/A	N/A	11.38	12.81	12.81	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
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Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	8/26/2003	24.19	N/A	N/A	N/A	11.26	12.93	12.93	
	9/2/2003	24.19	N/A	N/A	N/A	10.40	13.79	13.79	
	9/9/2003	24.19	10.34	13.85	0.06	10.40	13.79	13.84	
	9/19/2003	24.19	N/A	N/A	N/A	10.70	13.49	13.49	
RW-2	10/14/2003	24.19	N/A	N/A	N/A	10.38	13.81	13.81	
(cont.)	11/20/2003	24.19	N/A	N/A	N/A	7.66	16.53	16.53	
	12/3/2003	24.19	N/A	N/A	N/A	6.65	17.54	17.54	
	1/19/2004	24.19	N/A	N/A	N/A	7.13	17.06	17.06	
	2/24/2004	24.19	N/A	N/A	N/A	7.92	16.27	16.27	
	3/15/2004	24.19	N/A	NA	N/A	N/A	N/A	N/A	No water above pump
	4/19/2004	24.19	N/A	NA	N/A	10.01	N/A	N/A	
	5/17/2004	24.19	N/A	NA	N/A	N/A	N/A	N/A	
	6/22/2004	24.19	N/A	NA	N/A	10.08	14.11	14.11	Trace product
	8/18/2004	24.19	N/A	NA	N/A	10.44	13.75	13.75	Trace product
	9/21/2004	24.19	9.95	14.24	0.18	10.13	14.06	14.20	Strong product odor
	10/19/2004	24.19	9.04	15.15	0.08	9.12	15.07	15.13	
	11/23/2004	24.19	7.82	16.37	0.50	8.32	15.87	16.25	
	12/21/2004	24.19	N/A	N/A	N/A	6.95	17.24	17.24	Strong odor
	1/13/2005	24.19	N/A	N/A	N/A	8.39	15.80	15.80	
	4/28/2005	24.19	N/A	N/A	N/A	8.20	15.99	15.99	
	6/1/2005	24.19	N/A	N/A	N/A	9.62	14.57	14.57	
	6/29/2005	24.19	N/A	N/A	N/A	10.41	13.78	13.78	
	7/20/2005	24.19	N/A	N/A	N/A	10.90	13.29	13.29	Strong odor
	8/22/2005	24.19	10.94	13.25	0.04	10.98	13.21	13.24	
RWx-2	9/12/2005	26.20	N/A	N/A	N/A	12.55	13.65	13.65	
	10/12/2005	26.20	13.81	12.39	0.61	14.42	11.78	12.24	
	11/21/2005	26.20	11.20	15.00	1.13	12.33	13.87	14.72	
	12/27/2005	26.20	N/A	N/A	N/A	9.50	16.70	16.70	
	1/30/2006	26.20	N/A	N/A	N/A	6.55	19.65	19.65	
	2/16/2006	26.20	N/A	N/A	N/A	9.00	17.20	17.20	
	3/13/2006	26.20	N/A	N/A	N/A	9.85	16.35	16.35	
	4/18/2006	26.20	N/A	N/A	N/A	10.16	16.04	16.04	
	5/12/2006	26.20	N/A	N/A	N/A	10.56	15.64	15.64	
	6/9/2006	26.20	N/A	N/A	N/A	10.13	16.07	16.07	
	7/13/2006	26.20	N/A	N/A	N/A	12.61	13.59	13.59	
	8/16/2006	26.20	12.28	13.92	0.62	12.90	13.30	13.77	
	9/19/2006	26.20	N/A	N/A	N/A	12.95	13.25	13.25	
	10/13/2006	26.20	12.66	13.54	0.97	13.63	12.57	13.30	
	11/20/2006	26.20	7.13	19.07	0.37	7.50	18.70	18.98	
	12/8/2006	26.20	7.83	18.37	0.34	8.17	18.03	18.29	
	1/19/2007	26.20	7.06	19.14	0.25	7.31	18.89	19.08	
	2/19/2007	26.20	9.95	16.25	0.30	10.25	15.95	16.18	
	3/15/2007	26.20	8.50	17.70	0.04	8.54	17.66	17.69	
	4/16/2007	26.20	N/A	N/A	N/A	9.57	16.63	16.63	
	5/14/2007	26.20	11.12	15.08	0.00	11.12	15.08	15.08	trace amount of product
	6/29/2007	26.20	N/A	N/A	N/A	12.04	14.16	14.16	
	7/20/2007	26.20	N/A	N/A	N/A	12.51	13.69	13.69	
	8/21/2007	26.20	N/A	N/A	N/A	13.80	12.40	12.40	
	9/10/2007	26.20	N/A	N/A	N/A	13.84	12.36	12.36	
	10/22/2007	26.20	N/A	N/A	N/A	12.33	13.87	13.87	
	11/28/2007	26.20	9.80	16.40	1.00	10.80	15.40	16.15	
	12/13/2007	26.20	N/A	N/A	N/A	10.56	15.64	15.64	
	1/21/2008	26.20	10.41	15.79	0.09	10.50	15.70	15.77	
	2/24/2008	26.20	N/A	N/A	N/A	11.17	15.03	15.03	
	3/24/2008	26.20	N/A	N/A	N/A	11.10	15.10	15.10	
	8/25/2008	26.20	12.48	13.72	0.02	12.50	13.70	13.72	
	2/18/2009	26.20	N/A	N/A	N/A	11.15	15.05	15.05	
	8/25/2009	26.20	N/A	N/A	N/A	13.81	12.39	12.39	
	3/22/2010	26.20	N/A	N/A	N/A	9.40	16.80	16.80	
	8/23/2010	26.20	N/A	N/A	N/A	10.60	15.60	15.60	
RW-3	11/20/2002	22.03	8.45	13.58	0.80	9.25	12.78	13.38	
	11/21/2002	22.03	8.27	13.76	1.20	9.47	12.56	13.46	
	11/22/2002	22.03	8.18	13.85	1.28	9.46	12.57	13.53	
	11/24/2002	22.03	7.94	14.09	1.68	9.62	12.41	13.67	
	1/2/2003	22.03	6.52	15.51	0.04	6.56	15.47	15.50	
	1/3/2003	22.03	6.38	15.65	0.23	6.61	15.42	15.59	
	1/6/2003	22.03	5.92	16.11	0.03	5.95	16.08	16.10	
	1/7/2003	22.03	5.81	16.22	0.04	5.85	16.18	16.21	
	1/8/2003	22.03	5.74	16.29	0.05	5.79	16.24	16.28	
	1/9/2003	22.03	5.78	16.25	0.05	5.83	16.20	16.24	

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Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/10/2003	22.03	5.88	16.15	0.05	5.93	16.10	16.14	
	1/13/2003	22.03	6.02	16.01	0.08	6.10	15.93	15.99	
	1/14/2003	22.03	5.97	16.06	0.09	6.06	15.97	16.04	
	1/15/2003	22.03	5.87	16.16	0.12	5.99	16.04	16.13	
	1/16/2003	22.03	5.89	16.14	0.09	5.98	16.05	16.12	
	1/17/2003	22.03	5.85	16.18	0.07	5.92	16.11	16.16	
	1/20/2003	22.03	5.98	16.05	0.13	6.11	15.92	16.02	
	1/22/2003	22.03	5.91	16.12	0.09	6.00	16.03	16.10	
RW-3	1/23/2003	22.03	6.20	15.83	0.49	6.69	15.34	15.71	
(cont.)	1/24/2003	22.03	6.02	16.01	0.24	6.26	15.77	15.95	
	1/27/2003	22.03	5.57	16.46	0.08	5.65	16.38	16.44	
	1/28/2003	22.03	5.55	16.48	0.07	5.62	16.41	16.46	
	1/29/2003	22.03	5.44	16.59	0.06	5.50	16.53	16.58	
	1/30/2003	22.03	5.56	16.47	0.06	5.62	16.41	16.46	
	2/3/2003	22.03	5.75	16.28	0.10	5.85	16.18	16.26	
	2/6/2003	22.85	6.44	16.41	0.12	6.56	16.29	16.38	
	2/11/2003	22.85	6.81	16.04	0.32	7.13	15.72	15.96	
	2/18/2003	22.85	7.29	15.56	0.88	8.17	14.68	15.34	
	2/21/2003	22.85	7.19	15.66	0.75	7.94	14.91	15.47	
	2/26/2003	22.85	6.73	16.12	0.31	7.04	15.81	16.04	
	3/4/2003	22.85	6.83	16.02	0.34	7.17	15.68	15.94	
	3/12/2003	22.85	7.38	15.47	0.06	7.44	15.41	15.46	
	3/14/2003	22.85	7.21	15.64	0.07	7.28	15.57	15.62	
	3/26/2003	22.85	6.52	16.33	0.01	6.53	16.32	16.33	
	3/28/2003	22.85	N/A	N/A	N/A	7.09	15.76	15.76	
	4/2/2003	22.85	N/A	N/A	N/A	7.05	15.80	15.80	
	4/4/2003	22.85	N/A	N/A	N/A	7.26	15.59	15.59	
	4/8/2003	22.85	N/A	N/A	N/A	6.90	15.95	15.95	
	4/11/2003	22.85	N/A	N/A	N/A	7.51	15.34	15.34	
	4/15/2003	22.85	N/A	N/A	N/A	6.67	16.18	16.18	
	4/17/2003	22.85	N/A	N/A	N/A	7.61	15.24	15.24	
	4/22/2003	22.85	N/A	N/A	N/A	7.61	15.24	15.24	
	4/25/2003	22.85	N/A	N/A	N/A	7.22	15.63	15.63	
	5/2/2003	22.85	8.21	14.64	0.25	8.46	14.39	14.58	
	5/6/2003	22.85	8.51	14.34	0.24	8.75	14.10	14.28	
	5/9/2003	22.85	8.71	14.14	0.12	8.83	14.02	14.11	
	5/23/2003	22.85	9.74	13.11	0.03	9.77	13.08	13.10	
	5/28/2003	22.85	8.75	14.10	0.01	8.76	14.09	14.10	
	6/13/2003	22.85	9.19	13.66	0.02	9.21	13.64	13.66	
	6/18/2003	22.85	9.16	13.69	0.06	9.22	13.63	13.68	
	6/27/2003	22.85	N/A	N/A	N/A	9.50	13.35	13.35	
	7/7/2003	22.85	10.05	12.80	0.06	10.11	12.74	12.79	
	7/16/2003	22.85	10.02	12.83	0.01	10.03	12.82	12.83	
	7/31/2003	22.85	10.18	12.67	0.11	10.29	12.56	12.64	
	8/5/2003	22.85	N/A	N/A	N/A	Dry	Dry	Dry	
	8/11/2003	22.85	11.00	11.85	0.30	11.30	11.55	11.78	
	8/22/2003	22.85	10.98	11.87	0.29	11.27	11.58	11.80	
	8/26/2003	22.85	N/A	N/A	N/A	11.14	11.71	11.71	
	9/2/2003	22.85	N/A	N/A	N/A	10.28	12.57	12.57	
	9/9/2003	22.85	N/A	N/A	N/A	10.29	12.56	12.56	
	9/19/2003	22.85	N/A	N/A	N/A	10.29	12.56	12.56	
	10/14/2003	22.85	N/A	N/A	N/A	10.30	12.55	12.55	
	11/20/2003	22.85	7.16	15.69	1.29	8.45	14.40	15.37	
	12/3/2003	22.85	6.72	16.13	0.05	6.77	16.08	16.12	
	1/19/2004	22.85	N/A	N/A	N/A	6.26	16.59	16.59	
	2/24/2004	22.85	N/A	N/A	N/A	6.72	16.13	16.13	
	3/15/2004	22.85	N/A	N/A	N/A	7.78	15.07	15.07	
	4/19/2004	22.85	N/A	N/A	N/A	8.71	14.14	14.14	
	5/17/2004	22.85	9.73	13.12	0.01	9.74	13.11	13.12	
	6/22/2004	22.85	9.36	13.49	0.02	9.38	13.47	13.49	
	8/18/2004	22.85	N/A	N/A	N/A	10.26	12.59	12.59	
	9/21/2004	22.85	N/A	N/A	N/A	10.00	12.85	12.85	Strong product odor
	10/19/2004	22.85	N/A	N/A	N/A	8.21	14.64	14.64	
	11/23/2004	22.85	N/A	N/A	N/A	9.18	13.67	13.67	
	12/21/2004	22.85	N/A	N/A	N/A	6.71	16.14	16.14	Strong odor
	1/13/2005	22.85	N/A	N/A	N/A	7.73	15.12	15.12	
	4/28/2005	22.85	N/A	N/A	N/A	6.78	16.07	16.07	
	6/1/2005	22.85	N/A	N/A	N/A	7.10	15.75	15.75	
	6/29/2005	22.85	N/A	N/A	N/A	8.72	14.13	14.13	
	7/20/2005	22.85	N/A	N/A	N/A	9.20	13.65	13.65	Strong odor
	8/22/2005	22.85	N/A	N/A	N/A	9.50	13.35	13.35	
	9/12/2005	22.85	N/A	N/A	N/A	9.28	13.57	13.57	

TABLE 5

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Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	10/12/2005	22.85	N/A	N/A	N/A	9.29	13.56	13.56	
	11/21/2005	22.85	N/A	N/A	N/A	7.25	15.60	15.60	
	12/27/2005	22.85	N/A	N/A	N/A	4.12	18.73	18.73	
	1/30/2006	22.85	N/A	N/A	N/A	2.41	20.44	20.44	
	2/16/2006	22.85	N/A	N/A	N/A	4.69	18.16	18.16	
	3/13/2006	22.85	N/A	N/A	N/A	5.89	16.96	16.96	
	4/18/2006	22.85	N/A	N/A	N/A	6.02	16.83	16.83	
	5/12/2006	22.85	N/A	N/A	N/A	6.74	16.11	16.11	
	6/9/2006	22.85	N/A	N/A	N/A	6.28	16.57	16.57	
	7/13/2006	22.85	N/A	N/A	N/A	7.56	15.29	15.29	
	8/16/2006	22.85	N/A	N/A	N/A	8.75	14.10	14.10	
RW-3	9/19/2006	22.85	N/A	N/A	N/A	9.30	13.55	13.55	
(cont.)	10/13/2006	22.85	N/A	N/A	N/A	9.13	13.72	13.72	
	11/20/2006	22.85	N/A	N/A	N/A	3.63	19.22	19.22	
	12/8/2006	22.85	N/A	N/A	N/A	4.01	18.84	18.84	
	1/19/2007	22.85	N/A	N/A	N/A	3.48	19.37	19.37	
	2/19/2007	22.85	N/A	N/A	N/A	6.21	16.64	16.64	
	3/15/2007	22.85	N/A	N/A	N/A	4.97	17.88	17.88	
	4/16/2007	22.85	N/A	N/A	N/A	5.81	17.04	17.04	
	5/14/2007	22.85	N/A	N/A	N/A	7.30	15.55	15.55	
	6/29/2007	22.85	N/A	N/A	N/A	8.57	14.28	14.28	
	7/20/2007	22.85	N/A	N/A	N/A	9.05	13.80	13.80	
	8/21/2007	22.85	N/A	N/A	N/A	9.30	13.55	13.55	
	9/10/2007	22.85	N/A	N/A	N/A	9.29	13.56	13.56	
	10/22/2007	22.85	N/A	N/A	N/A	8.02	14.83	14.83	
	11/28/2007	22.85	N/A	N/A	N/A	7.51	15.34	15.34	
	12/13/2007	22.85	N/A	N/A	N/A	6.82	16.03	16.03	
	1/21/2008	22.85	N/A	N/A	N/A	6.29	16.56	16.56	
	2/24/2008	22.85	N/A	N/A	N/A	7.00	15.85	15.85	
	3/24/2008	22.85	N/A	N/A	N/A	6.68	16.17	16.17	
	8/25/2008	22.85	N/A	N/A	N/A	8.15	14.70	14.70	
	2/18/2009	22.85	N/A	N/A	N/A	7.24	15.61	15.61	
	8/25/2009	22.85	N/A	N/A	N/A	9.33	13.52	13.52	
	3/22/2010	22.85	N/A	N/A	N/A	6.24	16.61	16.61	
	8/23/2010	22.85	N/A	N/A	N/A	8.85	14.00	14.00	Purged Dry
RW-4	11/20/2002	23.02	7.50	15.52	2.64	10.14	12.88	14.86	
	11/21/2002	23.02	7.50	15.52	2.64	10.14	12.88	14.86	
	11/22/2002	23.02	8.37	14.65	0.77	9.14	13.88	14.46	
	11/24/2002	23.02	7.57	15.45	2.52	10.09	12.93	14.82	
	1/3/2003	23.02	6.31	16.71	0.50	6.81	16.21	16.59	
	1/6/2003	23.02	6.02	17.00	0.04	6.06	16.96	16.99	
	1/7/2003	23.02	5.74	17.28	0.18	5.92	17.10	17.24	
	1/8/2003	23.02	5.67	17.35	0.14	5.81	17.21	17.32	
	1/9/2003	23.02	5.67	17.35	0.19	5.86	17.16	17.30	
	1/10/2003	23.02	5.76	17.26	0.25	6.01	17.01	17.20	
	1/13/2003	23.02	5.80	17.22	0.35	6.15	16.87	17.13	
	1/14/2003	23.02	5.85	17.17	0.29	6.14	16.88	17.10	
	1/15/2003	23.02	5.05	17.97	1.80	6.85	16.17	17.52	
	1/16/2003	23.02	5.78	17.24	0.27	6.05	16.97	17.17	
	1/17/2003	23.02	5.72	17.30	0.27	5.99	17.03	17.23	
	1/20/2003	23.02	5.84	17.18	0.30	6.14	16.88	17.11	
	1/22/2003	23.02	5.82	17.20	0.34	6.16	16.86	17.12	
	1/23/2003	23.02	6.12	16.90	0.58	6.70	16.32	16.76	
	1/24/2003	23.02	5.97	17.05	0.38	6.35	16.67	16.96	
	1/27/2003	23.02	5.51	17.51	0.13	5.64	17.38	17.48	
	1/28/2003	23.02	5.50	17.52	0.10	5.60	17.42	17.50	
	1/29/2003	23.02	5.36	17.66	0.07	5.43	17.59	17.64	
	1/30/2003	23.02	5.45	17.57	0.13	5.58	17.44	17.54	
	2/3/2003	23.02	5.66	17.36	0.21	5.87	17.15	17.31	
	2/6/2003	23.78	6.35	17.43	0.28	6.63	17.15	17.36	
	2/11/2003	23.78	6.75	17.03	0.39	7.14	16.64	16.93	
	2/18/2003	23.78	7.22	16.56	1.07	8.29	15.49	16.29	
	2/21/2003	23.78	7.10	16.68	0.97	8.07	15.71	16.44	
	2/26/2003	23.78	6.74	17.04	0.84	7.58	16.20	16.83	
	3/4/2003	23.78	7.08	16.70	0.14	7.22	16.56	16.67	
	3/12/2003	23.78	7.34	16.44	0.41	7.75	16.03	16.34	
	3/14/2003	23.78	7.20	16.58	0.64	7.84	15.94	16.42	
	3/26/2003	23.78	6.61	17.17	0.40	7.01	16.77	17.07	
	3/28/2003	23.78	7.15	16.63	0.47	7.62	16.16	16.51	
	4/2/2003	23.78	7.21	16.57	0.24	7.45	16.33	16.51	
	4/4/2003	23.78	7.52	16.26	0.15	7.67	16.11	16.22	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	4/8/2003	23.78	N/A	N/A	N/A	7.26	16.52	16.52	
	4/11/2003	23.78	7.72	16.06	0.03	7.75	16.03	16.05	
	4/15/2003	23.78	7.14	16.64	0.06	7.20	16.58	16.63	
	4/17/2003	23.78	7.82	15.96	0.08	7.90	15.88	15.94	
	4/22/2003	23.78	7.87	15.91	0.08	7.95	15.83	15.89	
	4/25/2003	23.78	7.91	15.87	0.11	8.02	15.76	15.84	
	5/2/2003	23.78	8.32	15.46	0.13	8.45	15.33	15.43	
	5/6/2003	23.78	8.50	15.28	0.31	8.81	14.97	15.20	
	5/9/2003	23.78	8.72	15.06	0.36	9.08	14.70	14.97	
	5/23/2003	23.78	8.92	14.86	1.11	10.03	13.75	14.58	
	5/28/2003	23.78	8.80	14.98	0.02	8.82	14.96	14.98	
	6/13/2003	23.78	8.90	14.88	1.72	10.62	13.16	14.45	
	6/18/2003	23.78	8.85	14.93	1.96	10.81	12.97	14.44	
	6/27/2003	23.78	9.40	14.38	1.42	10.82	12.96	14.03	
	7/7/2003	23.78	9.54	14.24	1.27	10.81	12.97	13.92	
RW-4	7/16/2003	23.78	9.41	14.37	1.40	10.81	12.97	14.02	
(cont.)	7/31/2003	23.78	9.95	13.83	0.85	10.80	12.98	13.62	
	8/5/2003	23.78	9.82	13.96	0.98	10.80	12.98	13.72	
	8/11/2003	23.78	10.84	12.94	0.94	11.78	12.00	12.71	
	8/22/2003	23.78	10.87	12.91	0.92	11.79	11.99	12.68	
	8/26/2003	23.78	10.36	13.42	0.44	10.80	12.98	13.31	
	9/2/2003	23.78	10.22	13.56	0.58	10.80	12.98	13.42	
	9/9/2003	23.78	N/A	N/A	N/A	10.80	12.98	12.98	
	9/19/2003	23.78	N/A	N/A	N/A	10.81	12.97	12.97	
	10/14/2003	23.78	N/A	N/A	N/A	10.80	12.98	12.98	
	11/20/2003	23.78	7.96	15.82	1.54	9.50	14.28	15.44	
	12/3/2003	23.78	6.75	17.03	1.03	7.78	16.00	16.77	
	1/19/2004	23.78	6.18	17.60	0.06	6.24	17.54	17.59	
	2/24/2004	23.78	6.97	16.81	0.06	7.03	16.75	16.80	
	3/15/2004	23.78	N/A	N/A	N/A	8.10	15.68	15.68	Oily trace
	4/19/2004	23.78	N/A	N/A	N/A	8.71	15.07	15.07	
	5/17/2004	23.78	N/A	N/A	N/A	9.73	14.05	14.05	
	6/22/2004	23.78	N/A	N/A	N/A	9.57	14.21	14.21	Trace product
	8/18/2004	23.78	10.35	13.43	0.42	10.77	13.01	13.33	Trace product
	9/21/2004	23.78	9.53	14.25	0.19	9.72	14.06	14.20	Strong product odor
	10/19/2004	23.78	8.63	15.15	0.39	9.02	14.76	15.05	
	11/23/2004	23.78	8.94	14.84	0.05	8.99	14.79	14.83	
	12/21/2004	23.78	6.68	17.10	0.08	6.76	17.02	17.08	Strong product odor
	1/13/2005	23.78	N/A	N/A	N/A	7.74	16.04	16.04	Strong product odor
	4/28/2005	23.78	N/A	N/A	N/A	6.77	17.01	17.01	
	6/1/2005	23.78	N/A	N/A	N/A	7.02	16.76	16.76	
	6/29/2005	23.78	NM	NM	NM	NM	NM	NM	Unable to remove well cap
	7/20/2005	23.78	NM	NM	NM	NM	NM	NM	Unable to remove well cap
	8/22/2005	23.78	N/A	N/A	N/A	9.50	14.28	11.18	
	9/12/2005	23.78	N/A	N/A	N/A	10.31	13.47	13.47	
	10/12/2005	23.78	10.69	13.09	0.13	10.82	12.96	13.06	
	11/21/2005	23.78	N/A	N/A	N/A	8.40	15.38	15.38	
	12/27/2005	23.78	N/A	N/A	N/A	5.14	18.64	18.64	
	1/30/2006	23.78	N/A	N/A	N/A	3.40	20.38	20.38	
	2/16/2006	23.78	N/A	N/A	N/A	5.65	18.13	18.13	
	3/13/2006	23.78	N/A	N/A	N/A	6.81	16.97	16.97	
	4/18/2006	23.78	N/A	N/A	N/A	6.95	16.83	16.83	
	5/12/2006	23.78	N/A	N/A	N/A	7.69	16.09	16.09	
	6/9/2006	23.78	N/A	N/A	N/A	7.25	16.53	16.53	
	7/13/2006	23.78	N/A	N/A	N/A	8.56	15.22	15.22	
	8/16/2006	23.78	N/A	N/A	N/A	9.70	14.08	14.08	
	9/19/2006	23.78	N/A	N/A	N/A	10.30	13.48	13.48	
	10/13/2006	23.78	N/A	N/A	N/A	10.05	13.73	13.73	
	11/20/2006	23.78	N/A	N/A	N/A	4.64	19.14	19.14	
	12/8/2006	23.78	N/A	N/A	N/A	5.00	18.78	18.78	
	1/19/2007	23.78	N/A	N/A	N/A	4.47	19.31	19.31	
	2/19/2007	23.78	N/A	N/A	N/A	7.16	16.62	16.62	
	3/15/2007	23.78	N/A	N/A	N/A	5.91	17.87	17.87	
	4/16/2007	23.78	N/A	N/A	N/A	6.75	17.03	17.03	
	5/14/2007	23.78	N/A	N/A	N/A	8.22	15.56	15.56	
	6/29/2007	23.78	N/A	N/A	N/A	9.54	14.24	14.24	
	7/20/2007	23.78	N/A	N/A	N/A	10.02	13.76	13.76	
	8/21/2007	23.78	N/A	N/A	N/A	10.72	13.06	13.06	
	9/10/2007	23.78	N/A	N/A	N/A	10.71	13.07	13.07	
	10/22/2007	23.78	N/A	N/A	N/A	8.88	14.90	14.90	
	11/28/2007	23.78	NM	NM	NM	NM	NM	NM	
	12/13/2007	23.78	N/A	N/A	N/A	7.22	16.56	16.56	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/21/2008	23.78	N/A	N/A	N/A	7.22	16.56	16.56	
	2/24/2008	23.78	N/A	N/A	N/A	7.91	15.87	15.87	
	3/24/2008	23.78	N/A	N/A	N/A	7.69	16.09	16.09	
	8/25/2008	23.78	N/A	N/A	N/A	9.18	14.60	14.60	
	2/18/2009	23.78	N/A	N/A	N/A	8.17	15.61	15.61	
	8/25/2009	23.78	N/A	N/A	N/A	10.85	12.93	12.93	
	3/22/2010	23.78	N/A	N/A	N/A	7.17	16.61	16.61	
	8/23/2010	23.78	N/A	N/A	N/A	9.89	13.89	13.89	
RW-5	11/20/2002	23.70	8.65	15.05	0.02	8.67	15.03	15.05	
	11/21/2002	23.70	8.30	15.40	0.10	8.40	15.30	15.38	
	11/22/2002	23.70	8.46	15.24	0.06	8.52	15.18	15.23	
	11/24/2002	23.70	8.63	15.07	0.28	8.91	14.79	15.00	
	1/2/2003	23.70	6.87	16.83	0.04	6.91	16.79	16.82	
	1/3/2003	23.70	6.77	16.93	0.03	6.80	16.90	16.92	
	1/6/2003	23.70	6.46	17.24	0.04	6.50	17.20	17.23	
	1/7/2003	23.70	6.36	17.34	0.06	6.42	17.28	17.33	
	1/8/2003	23.70	6.13	17.57	0.03	6.16	17.54	17.56	
	1/9/2003	23.70	6.25	17.45	0.03	6.28	17.42	17.44	
RW-5	1/10/2003	23.70	6.43	17.27	0.04	6.47	17.23	17.26	
(cont.)	1/13/2003	23.70	6.48	17.22	0.03	6.51	17.19	17.21	
	1/14/2003	23.70	6.44	17.26	0.05	6.49	17.21	17.25	
	1/15/2003	23.70	6.37	17.33	0.04	6.41	17.29	17.32	
	1/16/2003	23.70	6.40	17.30	0.02	6.42	17.28	17.30	
	1/17/2003	23.70	6.37	17.33	0.04	6.41	17.29	17.32	
	1/20/2003	23.70	6.57	17.13	0.05	6.62	17.08	17.12	
	1/22/2003	23.70	6.60	17.10	0.08	6.68	17.02	17.08	
	1/23/2003	23.70	6.83	16.87	0.07	6.90	16.80	16.85	
	1/24/2003	23.70	6.69	17.01	0.03	6.72	16.98	17.00	
	1/27/2003	23.70	5.97	17.73	0.06	6.03	17.67	17.72	
	1/28/2003	23.70	5.95	17.75	0.09	6.04	17.66	17.73	
	1/29/2003	23.70	5.82	17.88	0.12	5.94	17.76	17.85	
	1/30/2003	23.70	5.90	17.80	0.10	6.00	17.70	17.78	
	2/3/2003	23.70	6.34	17.36	0.07	6.41	17.29	17.34	
	2/6/2003	24.44	7.12	17.32	0.06	7.18	17.26	17.31	
	2/11/2003	24.44	7.63	16.81	0.07	7.70	16.74	16.79	
	2/18/2003	24.44	8.11	16.33	0.14	8.25	16.19	16.30	
	2/21/2003	24.44	7.99	16.45	0.03	8.02	16.42	16.44	
	2/26/2003	24.44	7.74	16.70	0.01	7.75	16.69	16.70	
	3/4/2003	24.44	N/A	N/A	N/A	7.59	16.85	16.85	
	3/12/2003	24.44	8.04	16.40	0.01	8.05	16.39	16.40	
	3/14/2003	24.44	7.84	16.60	0.01	7.85	16.59	16.60	
	3/26/2003	24.44	N/A	N/A	N/A	7.19	17.25	17.25	
	3/28/2003	24.44	N/A	N/A	N/A	7.71	16.73	16.73	
	4/2/2003	24.44	N/A	N/A	N/A	7.85	16.59	16.59	
	4/4/2003	24.44	N/A	N/A	N/A	8.16	16.28	16.28	
	4/8/2003	24.44	7.71	16.73	0.00	7.72	16.73	16.73	
	4/11/2003	24.44	N/A	N/A	N/A	7.78	16.66	16.66	
	4/15/2003	24.44	7.44	17.00	0.01	7.45	16.99	17.00	
	4/17/2003	24.44	N/A	N/A	N/A	7.91	16.53	16.53	
	4/22/2003	24.44	N/A	N/A	N/A	7.75	16.69	16.69	
	4/25/2003	24.44	N/A	N/A	N/A	7.84	16.60	16.60	
	5/2/2003	24.44	N/A	N/A	N/A	8.78	15.66	15.66	
	5/6/2003	24.44	9.05	15.39	0.01	9.06	15.38	15.39	
	5/9/2003	24.44	9.06	15.38	0.05	9.11	15.33	15.37	
	5/23/2003	24.44	9.08	15.36	0.01	9.09	15.35	15.36	
	5/28/2003	24.44	9.27	15.17	0.01	9.28	15.16	15.17	
	6/13/2003	24.44	9.85	14.59	0.06	9.91	14.53	14.58	
	6/18/2003	24.44	9.81	14.63	0.08	9.89	14.55	14.61	
	6/27/2003	24.44	9.26	15.18	0.22	9.48	14.96	15.13	
	7/7/2003	24.44	10.51	13.93	0.19	10.70	13.74	13.88	
	7/16/2003	24.44	10.29	14.15	0.16	10.45	13.99	14.11	
	7/31/2003	24.44	N/A	N/A	N/A	10.68	13.76	13.76	
	8/5/2003	24.44	N/A	N/A	N/A	10.68	13.76	13.76	
	8/11/2003	24.44	N/A	N/A	N/A	11.68	12.76	12.76	
	8/22/2003	24.44	11.57	12.87	0.08	11.65	12.79	12.85	
	8/26/2003	24.44	N/A	N/A	N/A	10.68	13.76	13.76	
	9/2/2003	24.44	N/A	N/A	N/A	10.67	13.77	13.77	
	9/9/2003	24.44	N/A	N/A	N/A	10.68	13.76	13.76	
	9/19/2003	24.44	N/A	N/A	N/A	10.68	13.76	13.76	
	10/14/2003	24.44	N/A	N/A	N/A	10.65	13.79	13.79	
	11/20/2003	24.44	N/A	N/A	N/A	8.20	16.24	16.24	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	12/3/2003	24.44	N/A	N/A	N/A	7.15	17.29	17.29	
	1/19/2004	24.44	N/A	N/A	N/A	6.71	17.73	17.73	
	2/24/2004	24.44	N/A	N/A	N/A	7.68	16.76	16.76	
	3/15/2004	24.44	N/A	N/A	N/A	8.58	15.86	15.86	
	4/19/2004	24.44	N/A	N/A	N/A	9.47	14.97	14.97	
	5/17/2004	24.44	N/A	N/A	N/A	10.28	14.16	14.16	
	6/22/2004	24.44	N/A	N/A	N/A	9.76	14.68	14.68	
	8/18/2004	24.44	10.69	13.75	0.01	10.70	13.74	13.75	
	9/21/2004	24.44	N/A	N/A	N/A	9.35	15.09	15.09	
	10/19/2004	24.44	N/A	N/A	N/A	8.55	15.89	15.89	
	11/23/2004	24.44	N/A	N/A	N/A	8.94	15.50	15.50	Strong product odor
	12/21/2004	24.44	N/A	N/A	N/A	7.48	16.96	16.96	
	1/13/2005	24.44	N/A	N/A	N/A	8.38	16.06	16.06	
	4/28/2005	24.44	N/A	N/A	N/A	7.78	16.66	16.66	
	6/1/2005	24.44	N/A	N/A	N/A	8.08	16.36	16.36	
	6/29/2005	24.44	N/A	N/A	N/A	9.28	15.16	15.16	
	7/20/2005	24.44	NM	NM	NM	NM	NM	NM	Unable to remove well cap
	8/22/2005	24.44	N/A	N/A	N/A	10.45	13.99	13.99	
RWx-5	9/12/2005	24.97	N/A	N/A	N/A	13.43	11.54	11.54	
	10/12/2005	24.97	N/A	N/A	N/A	13.32	11.65	11.65	
	11/21/2005	24.97	10.88	14.09	0.03	10.91	14.06	14.08	
	12/27/2005	24.97	8.39	16.58	0.21	8.60	16.37	16.53	
	1/30/2006	24.97	7.85	17.12	0.01	7.86	17.11	17.12	
	2/16/2006	24.97	7.77	17.20	0.21	7.98	16.99	17.15	
	3/13/2006	24.97	7.74	17.23	0.07	7.81	17.16	17.21	
	4/18/2006	24.97	8.95	16.02	0.23	9.18	15.79	15.96	
	5/12/2006	24.97	9.33	15.64	0.13	9.46	15.51	15.61	
	6/9/2006	24.97	8.87	16.10	0.03	8.90	16.07	16.09	
	7/13/2006	24.97	10.05	14.92	0.25	10.30	14.67	14.86	
	8/16/2006	24.97	11.10	13.87	0.27	11.37	13.60	13.80	
	9/19/2006	24.97	N/A	N/A	N/A	11.67	13.30	13.30	
	10/13/2006	24.97	11.45	13.52	0.15	11.60	13.37	13.48	
	11/20/2006	24.97	N/A	N/A	N/A	6.86	18.11	18.11	
	12/8/2006	24.97	N/A	N/A	N/A	7.25	17.72	17.72	
	1/19/2007	24.97	N/A	N/A	N/A	6.60	18.37	18.37	
	2/19/2007	24.97	N/A	N/A	N/A	8.90	16.07	16.07	
	3/15/2007	24.97	N/A	N/A	N/A	7.77	17.20	17.20	
	4/16/2007	24.97	N/A	N/A	N/A	8.35	16.62	16.62	
	5/14/2007	24.97	N/A	N/A	N/A	9.77	15.20	15.20	
	6/29/2007	24.97	N/A	N/A	N/A	10.92	14.05	14.05	
	7/20/2007	24.97	N/A	N/A	N/A	11.37	13.60	13.60	
	8/21/2007	24.97	N/A	N/A	N/A	12.05	12.92	12.92	
	9/10/2007	24.97	12.10	N/A	N/A	12.11	12.86	12.86	Trace product at bottom of well
	10/22/2007	24.97	N/A	N/A	N/A	10.52	14.45	14.45	
	11/28/2007	24.97	N/A	N/A	N/A	9.95	15.02	15.02	
	12/13/2007	24.97	N/A	N/A	N/A	8.71	16.26	16.26	
	1/21/2008	24.97	N/A	N/A	N/A	8.75	16.22	16.22	
	2/24/2008	24.97	N/A	N/A	N/A	12.21	12.76	12.76	
	3/24/2008	24.97	N/A	N/A	N/A	9.36	15.61	15.61	
	8/25/2008	24.97	N/A	N/A	N/A	11.17	13.80	13.80	
	2/18/2009	24.97	N/A	N/A	N/A	9.92	15.05	15.05	
	8/25/2009	24.97	N/A	N/A	N/A	12.58	12.39	12.39	
	3/22/2010	24.97	N/A	N/A	N/A	9.02	15.95	15.95	
	8/23/2010	24.97	N/A	N/A	N/A	11.57	13.40	13.40	
RW-6	11/20/2002	23.43	8.05	15.38	2.05	10.10	13.33	14.87	
	11/21/2002	23.43	8.40	15.03	0.15	8.55	14.88	14.99	
	11/22/2002	23.43	8.45	14.98	0.24	8.69	14.74	14.92	
	11/24/2002	23.43	8.65	14.78	0.33	8.98	14.45	14.70	
	1/2/2003	23.43	6.70	16.73	0.87	7.57	15.86	16.51	
	1/7/2003	23.43	6.50	16.93	0.26	6.76	16.67	16.87	
	1/8/2003	23.43	6.09	17.34	0.51	6.60	16.83	17.21	
	1/9/2003	23.43	6.28	17.15	0.38	6.66	16.77	17.06	
	1/10/2003	23.43	6.42	17.01	0.23	6.65	16.78	16.95	
	1/13/2003	23.43	8.16	15.27	0.07	8.23	15.20	15.25	
	1/14/2003	23.43	6.73	16.70	0.20	6.93	16.50	16.65	
	1/15/2003	23.43	6.30	17.13	0.60	6.90	16.53	16.98	
	1/16/2003	23.43	6.28	17.15	0.65	6.93	16.50	16.99	
	1/17/2003	23.43	6.29	17.14	0.00	6.29	17.14	17.14	
	1/20/2003	23.43	6.31	17.12	0.63	6.94	16.49	16.96	
	1/22/2003	23.43	6.41	17.02	0.75	7.16	16.27	16.83	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/23/2003	23.43	6.60	16.83	0.80	7.40	16.03	16.63	
	1/24/2003	23.43	6.45	16.98	0.76	7.21	16.22	16.79	
	1/27/2003	23.43	5.82	17.61	0.62	6.44	16.99	17.46	
	1/28/2003	23.43	5.90	17.53	0.39	6.29	17.14	17.43	
	1/29/2003	23.43	5.81	17.62	0.35	6.16	17.27	17.53	
	1/30/2003	23.43	5.92	17.51	0.28	6.20	17.23	17.44	
	2/3/2003	23.43	6.25	17.18	0.19	6.44	16.99	17.13	
	2/6/2003	24.18	6.96	17.22	0.18	7.14	17.04	17.18	
	2/11/2003	24.18	7.44	16.74	0.31	7.75	16.43	16.66	
	2/18/2003	24.18	7.90	16.28	0.51	8.41	15.77	16.15	
	2/21/2003	24.18	7.86	16.32	0.47	8.33	15.85	16.20	
	2/26/2003	24.18	7.76	16.42	0.01	7.77	16.41	16.42	
	3/4/2003	24.18	N/A	N/A	N/A	7.46	16.72	16.72	
	3/12/2003	24.18	8.01	16.17	0.01	8.02	16.16	16.17	
	3/14/2003	24.18	N/A	N/A	N/A	7.81	16.37	16.37	
	3/26/2003	24.18	N/A	N/A	N/A	7.02	17.16	17.16	
	3/28/2003	24.18	N/A	N/A	N/A	7.62	16.56	16.56	
	4/2/2003	24.18	N/A	N/A	N/A	7.74	16.44	16.44	
	4/4/2003	24.18	N/A	N/A	N/A	8.07	16.11	16.11	
	4/8/2003	24.18	N/A	N/A	N/A	7.69	16.49	16.49	
	4/11/2003	24.18	7.61	16.57	0.01	7.62	16.56	16.57	
	4/15/2003	24.18	N/A	N/A	N/A	7.29	16.89	16.89	
	4/17/2003	24.18	7.78	16.40	0.01	7.79	16.39	16.40	
RW-6	4/22/2003	24.18	N/A	N/A	N/A	7.81	16.37	16.37	
(cont.)	4/25/2003	24.18	N/A	N/A	N/A	7.75	16.43	16.43	
	5/2/2003	24.18	N/A	N/A	N/A	8.66	15.52	15.52	
	5/6/2003	24.18	8.84	15.34	0.28	9.12	15.06	15.27	
	5/9/2003	24.18	8.82	15.36	0.43	9.25	14.93	15.25	
	5/23/2003	24.18	8.85	15.33	0.86	9.71	14.47	15.12	
	5/28/2003	24.18	8.93	15.25	1.08	10.01	14.17	14.98	
	6/13/2003	24.18	9.28	14.90	0.81	10.09	14.09	14.70	
	6/18/2003	24.18	9.22	14.96	1.53	10.75	13.43	14.58	
	6/27/2003	24.18	9.60	14.58	1.22	10.82	13.36	14.28	
	7/7/2003	24.18	9.90	14.28	0.91	10.81	13.37	14.05	
	7/16/2003	24.18	9.68	14.50	1.08	10.76	13.42	14.23	
	7/31/2003	24.18	10.34	13.84	0.42	10.76	13.42	13.74	
	8/5/2003	24.18	10.30	13.88	0.45	10.75	13.43	13.77	
	8/11/2003	24.18	11.35	12.83	0.39	11.74	12.44	12.73	
	8/22/2003	24.18	11.10	13.08	0.64	11.74	12.44	12.92	
	8/26/2003	24.18	10.71	13.47	0.05	10.76	13.42	13.46	
	9/2/2003	24.18	10.61	13.57	0.14	10.75	13.43	13.54	
	9/9/2003	24.18	N/A	N/A	N/A	10.76	13.42	13.42	
	9/19/2003	24.18	N/A	N/A	N/A	10.76	13.42	13.42	
	10/14/2003	24.18	N/A	N/A	N/A	10.75	13.43	13.43	
	11/20/2003	24.18	N/A	N/A	N/A	8.50	15.68	15.68	
	12/3/2003	24.18	N/A	N/A	N/A	7.08	17.10	17.10	
	1/19/2004	24.18	N/A	N/A	N/A	6.62	17.56	17.56	
	2/24/2004	24.18	N/A	N/A	N/A	7.58	16.60	16.60	
	3/15/2004	24.18	N/A	N/A	N/A	8.57	15.61	15.61	
	4/19/2004	24.18	N/A	N/A	N/A	9.36	14.82	14.82	
	5/17/2004	24.18	N/A	N/A	N/A	10.15	14.03	14.03	
	6/22/2004	24.18	N/A	N/A	N/A	9.91	14.27	14.27	
	8/18/2004	24.18	10.72	13.46	0.01	10.73	13.45	13.46	
	9/21/2004	24.18	N/A	N/A	N/A	9.73	14.45	14.45	
	10/19/2004	24.18	N/A	N/A	N/A	8.83	15.35	15.35	
	11/23/2004	24.18	N/A	N/A	N/A	8.86	15.32	15.32	Strong product odor
	12/21/2004	24.18	N/A	N/A	N/A	7.33	16.85	16.85	
	1/13/2005	24.18	N/A	N/A	N/A	8.22	15.96	15.96	
	4/28/2005	24.18	N/A	N/A	N/A	7.65	16.53	16.53	
	6/1/2005	24.18	N/A	N/A	N/A	7.95	16.23	16.23	
	6/29/2005	24.18	N/A	N/A	N/A	9.21	14.97	14.97	
	7/20/2005	24.18	N/A	N/A	N/A	9.81	14.37	14.37	
	8/22/2005	24.18	N/A	N/A	N/A	10.20	13.98	13.98	
	9/12/2005	24.18	N/A	N/A	N/A	10.77	13.41	13.41	
	10/12/2005	24.18	N/A	N/A	N/A	10.77	13.41	13.41	
	11/21/2005	24.18	N/A	N/A	N/A	9.96	14.22	14.22	
	12/27/2005	24.18	N/A	N/A	N/A	7.45	16.73	16.73	
	1/30/2006	24.18	N/A	N/A	N/A	4.72	19.46	19.46	
	2/16/2006	24.18	N/A	N/A	N/A	6.86	17.32	17.32	
	3/13/2006	24.18	N/A	N/A	N/A	7.82	16.36	16.36	
	4/18/2006	24.18	N/A	N/A	N/A	8.04	16.14	16.14	
	5/12/2006	24.18	N/A	N/A	N/A	8.52	15.66	15.66	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	6/9/2006	24.18	N/A	N/A	N/A	8.10	16.08	16.08	
	7/13/2006	24.18	N/A	N/A	N/A	9.26	14.92	14.92	
	8/16/2006	24.18	N/A	N/A	N/A	10.25	13.93	13.93	
	9/19/2006	24.18	N/A	N/A	N/A	10.77	13.41	13.41	
	10/13/2006	24.18	N/A	N/A	N/A	10.56	13.62	13.62	
	11/20/2006	24.18	N/A	N/A	N/A	6.05	18.13	18.13	
	12/8/2006	24.18	N/A	N/A	N/A	6.39	17.79	17.79	
	1/19/2007	24.18	N/A	N/A	N/A	5.68	18.50	18.50	
	2/19/2007	24.18	N/A	N/A	N/A	7.95	16.23	16.23	
	3/15/2007	24.18	N/A	N/A	N/A	6.96	17.22	17.22	
	4/16/2007	24.18	N/A	N/A	N/A	7.61	16.57	16.57	
	5/14/2007	24.18	N/A	N/A	N/A	8.90	15.28	15.28	
	6/29/2007	24.18	N/A	N/A	N/A	10.10	14.08	14.08	
	7/20/2007	24.18	N/A	N/A	N/A	10.53	13.65	13.65	
	8/21/2007	24.18	N/A	N/A	N/A	10.75	13.43	13.43	
	9/10/2007	24.18	N/A	N/A	N/A	10.76	13.42	13.42	
	10/22/2007	24.18	N/A	N/A	N/A	9.22	14.96	14.96	
	11/28/2007	24.18	N/A	N/A	N/A	8.94	15.24	15.24	
	12/13/2007	24.18	N/A	N/A	N/A	7.47	16.71	16.71	
	1/21/2008	24.18	N/A	N/A	N/A	7.79	16.39	16.39	
	2/24/2008	24.18	N/A	N/A	N/A	10.61	13.57	13.57	
	3/24/2008	24.18	N/A	N/A	N/A	8.45	15.73	15.73	
	8/25/2008	24.18	N/A	N/A	N/A	9.80	14.38	14.38	
	2/18/2009	24.18	N/A	N/A	N/A	8.85	15.33	15.33	
	8/25/2009	24.18	N/A	N/A	N/A	10.80	13.38	13.38	
	3/22/2010	24.18	N/A	N/A	N/A	8.19	15.99	15.99	
	8/23/2010	24.18	N/A	N/A	N/A	10.20	13.98	13.98	Purged Dry
RW-7	11/20/2002	23.01	7.65	15.36	2.46	10.11	12.90	14.75	
	11/21/2002	23.01	7.60	15.41	2.51	10.11	12.90	14.78	
	11/22/2002	23.01	8.03	14.98	1.75	9.78	13.23	14.54	
	11/24/2002	23.01	8.23	14.78	1.26	9.49	13.52	14.47	
	1/2/2003	23.01	6.44	16.57	0.40	6.84	16.17	16.47	
	1/3/2003	23.01	6.28	16.73	0.40	6.68	16.33	16.63	
	1/6/2003	23.01	5.93	17.08	0.12	6.05	16.96	17.05	
	1/7/2003	23.01	5.84	17.17	0.20	6.04	16.97	17.12	
	1/8/2003	23.01	5.66	17.35	0.20	5.86	17.15	17.30	
	1/9/2003	23.01	5.72	17.29	0.33	6.05	16.96	17.21	
	1/10/2003	23.01	5.90	17.11	0.25	6.15	16.86	17.05	
	1/13/2003	23.01	5.98	17.03	0.37	6.35	16.66	16.94	
	1/14/2003	23.01	5.97	17.04	0.27	6.24	16.77	16.97	
	1/15/2003	23.01	5.95	17.06	0.30	6.25	16.76	16.99	
	1/16/2003	23.01	5.84	17.17	0.41	6.25	16.76	17.07	
	1/17/2003	23.01	5.85	17.16	0.35	6.20	16.81	17.07	
	1/20/2003	23.01	6.02	16.99	0.53	6.55	16.46	16.86	
	1/22/2003	23.01	6.11	16.90	0.80	6.91	16.10	16.70	
	1/23/2003	23.01	6.25	16.76	1.05	7.30	15.71	16.50	
	1/24/2003	23.01	6.16	16.85	1.03	7.19	15.82	16.59	
	1/27/2003	23.01	5.60	17.41	0.58	6.18	16.83	17.27	
	1/28/2003	23.01	5.65	17.36	0.63	6.28	16.73	17.20	
	1/29/2003	23.01	5.55	17.46	0.65	6.20	16.81	17.30	
	1/30/2003	23.01	5.65	17.36	0.67	6.32	16.69	17.19	
	2/3/2003	23.01	5.91	17.10	0.76	6.67	16.34	16.91	
	2/6/2003	23.78	6.55	17.23	0.79	7.34	16.44	17.03	
	2/11/2003	23.78	6.99	16.79	1.08	8.07	15.71	16.52	
	2/21/2003	23.78	7.42	16.36	0.99	8.41	15.37	16.11	
	2/26/2003	23.78	7.24	16.54	0.04	7.28	16.50	16.53	
	3/4/2003	23.78	N/A	N/A	N/A	6.96	16.82	16.82	
	3/12/2003	23.01	Trace	N/A	N/A	7.71	15.30	15.30	
	3/14/2003	23.01	N/A	N/A	N/A	7.51	15.50	15.50	
	3/26/2003	23.01	N/A	N/A	N/A	6.68	16.33	16.33	
	3/28/2003	23.01	N/A	N/A	N/A	7.25	15.76	15.76	
	4/2/2003	23.01	N/A	N/A	N/A	7.42	15.59	15.59	
	4/4/2003	23.01	N/A	N/A	N/A	7.64	15.37	15.37	
	4/8/2003	23.01	N/A	N/A	N/A	7.22	15.79	15.79	
	4/11/2003	23.01	N/A	N/A	N/A	7.16	15.85	15.85	
	4/15/2003	23.01	N/A	N/A	N/A	6.81	16.20	16.20	
	4/17/2003	23.01	N/A	N/A	N/A	7.38	15.63	15.63	
	4/22/2003	23.01	N/A	N/A	N/A	7.34	15.67	15.67	
	4/25/2003	23.01	N/A	N/A	N/A	7.21	15.80	15.80	
	5/2/2003	23.01	8.30	14.71	0.03	8.33	14.68	14.70	
	5/6/2003	23.01	8.52	14.49	0.08	8.60	14.41	14.47	
	5/9/2003	23.01	8.54	14.47	0.03	8.57	14.44	14.46	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/23/2003	23.01	8.55	14.46	1.03	9.58	13.43	14.20	
	5/28/2003	23.01	8.57	14.44	1.55	10.12	12.89	14.05	
	6/13/2003	23.01	8.92	14.09	1.64	10.56	12.45	13.68	
	6/18/2003	23.01	8.88	14.13	1.87	10.75	12.26	13.66	
	6/27/2003	23.01	9.26	13.75	1.55	10.81	12.20	13.36	
	7/7/2003	23.01	9.54	13.47	1.21	10.75	12.26	13.17	
	7/16/2003	23.01	9.42	13.59	1.30	10.72	12.29	13.27	
	7/31/2003	23.01	9.98	13.03	0.76	10.74	12.27	12.84	
	8/5/2003	23.01	10.88	12.13	0.74	11.62	11.39	11.95	
	8/11/2003	23.01	11.00	12.01	0.69	11.69	11.32	11.84	
	8/22/2003	23.01	10.70	12.31	1.01	11.71	11.30	12.06	
	8/26/2003	23.01	11.28	11.73	0.37	11.65	11.36	11.64	
	9/2/2003	23.01	10.36	12.65	0.36	10.72	12.29	12.56	
	9/9/2003	23.01	10.75	12.26	0.01	10.76	12.25	12.26	
	9/19/2003	23.01	N/A	N/A	N/A	10.76	12.25	12.25	
	10/14/2003	23.01	N/A	N/A	N/A	10.77	12.24	12.24	
	11/20/2003	23.01	N/A	N/A	N/A	8.24	14.77	14.77	
	12/3/2003	23.01	N/A	N/A	N/A	6.79	16.22	16.22	
	1/19/2004	23.01	N/A	N/A	N/A	6.31	16.70	16.70	
	2/24/2004	23.01	N/A	N/A	N/A	7.11	15.90	15.90	
	3/15/2004	23.01	N/A	N/A	N/A	8.20	14.81	14.81	
	4/19/2004	23.01	N/A	N/A	N/A	8.85	14.16	14.16	
	5/17/2004	23.01	N/A	N/A	N/A	9.79	13.22	13.22	
	6/22/2004	23.01	N/A	N/A	N/A	9.57	13.44	13.44	Trace product
	8/18/2004	23.01	10.71	12.30	0.01	10.72	12.29	12.30	Trace product
	9/21/2004	23.01	N/A	N/A	N/A	10.45	12.56	12.56	
	10/19/2004	23.01	N/A	N/A	N/A	8.73	14.28	14.28	
	11/23/2004	23.01	N/A	N/A	N/A	9.60	13.41	13.41	
	12/21/2004	23.01	N/A	N/A	N/A	7.06	15.95	15.95	
	1/13/2005	23.01	N/A	N/A	N/A	7.93	15.08	15.08	
RW-7	4/28/2005	23.01	N/A	N/A	N/A	7.37	15.64	15.64	
(cont.)	6/1/2005	23.01	N/A	N/A	N/A	7.67	15.34	15.34	
	6/29/2005	23.01	N/A	N/A	N/A	9.05	13.96	13.96	
	7/20/2005	23.01	N/A	N/A	N/A	9.61	13.40	13.40	
	8/22/2005	23.01	N/A	N/A	N/A	9.88	13.13	13.13	
RWx-7	9/12/2005	24.71	N/A	N/A	N/A	11.99	12.72	12.72	
	10/12/2005	24.71	12.54	12.17	0.23	12.77	11.94	12.11	
	11/21/2005	24.71	9.83	14.88	0.13	9.96	14.75	14.85	
	12/27/2005	24.71	8.15	16.56	0.02	8.17	16.54	16.56	
	1/30/2006	24.71	5.31	19.40	0.01	5.32	19.39	19.40	
	2/16/2006	24.71	7.41	17.30	0.02	7.43	17.28	17.30	
	3/13/2006	24.71	N/A	N/A	N/A	8.46	16.25	16.25	
	4/18/2006	24.71	N/A	N/A	N/A	8.71	16.00	16.00	
	5/12/2006	24.71	N/A	N/A	N/A	9.18	15.53	15.53	
	6/9/2006	24.71	N/A	N/A	N/A	8.76	15.95	15.95	
	7/13/2006	24.71	N/A	N/A	N/A	10.10	14.61	14.61	
	8/16/2006	24.71	11.03	13.68	0.08	11.11	13.60	13.66	
	9/19/2006	24.71	N/A	N/A	N/A	11.60	13.11	13.11	
	10/13/2006	24.71	N/A	N/A	N/A	11.31	13.40	13.40	
	11/20/2006	24.71	N/A	N/A	N/A	6.61	18.10	18.10	
	12/8/2006	24.71	N/A	N/A	N/A	6.91	17.80	17.80	
	1/19/2007	24.71	N/A	N/A	N/A	6.22	18.49	18.49	
	2/19/2007	24.71	N/A	N/A	N/A	8.55	16.16	16.16	
	3/15/2007	24.71	N/A	N/A	N/A	7.52	17.19	17.19	
	4/16/2007	24.71	N/A	N/A	N/A	8.22	16.49	16.49	
	5/14/2007	24.71	N/A	N/A	N/A	9.52	15.19	15.19	
	6/29/2007	24.71	N/A	N/A	N/A	10.74	13.97	13.97	
	7/20/2007	24.71	N/A	N/A	N/A	11.16	13.55	13.55	
	8/21/2007	24.71	N/A	N/A	N/A	11.82	12.89	12.89	
	9/10/2007	24.71	N/A	N/A	N/A	11.90	12.81	12.81	
	10/22/2007	24.71	N/A	N/A	N/A	10.01	14.70	14.70	
	11/28/2007	24.71	N/A	N/A	N/A	9.54	15.17	15.17	
	12/13/2007	24.71	N/A	N/A	N/A	8.32	16.39	16.39	
	1/21/2008	24.71	N/A	N/A	N/A	8.34	16.37	16.37	
	2/24/2008	24.71	N/A	N/A	N/A	8.76	15.95	15.95	
	3/24/2008	24.71	N/A	N/A	N/A	9.06	15.65	15.65	
	8/25/2008	24.71	N/A	N/A	N/A	11.00	13.71	13.71	
	2/18/2009	24.71	N/A	N/A	N/A	9.39	15.32	15.32	
	8/25/2009	24.71	N/A	N/A	N/A	12.22	12.49	12.49	
	3/22/2010	24.71	N/A	N/A	N/A	8.80	15.91	15.91	
	8/23/2010	24.71	N/A	N/A	N/A	11.25	13.46	13.46	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
HW-1East	11/20/2003	20.35	N/A	N/A	N/A	4.61	15.74	15.74	
	12/3/2003	20.35	N/A	N/A	N/A	4.00	16.35	16.35	
	1/19/2004	20.35	3.56	16.79	0.005	3.57	16.79	16.79	
	2/24/2004	20.35	N/A	N/A	N/A	5.46	14.89	14.89	
	3/15/2004	20.35	N/A	N/A	N/A	5.84	14.51	14.51	
	4/19/2004	20.35	N/A	N/A	N/A	6.42	13.93	13.93	Slight product smell
	5/17/2004	20.35	N/A	N/A	N/A	N/A	N/A	N/A	
	6/22/2004	20.35	N/A	N/A	N/A	N/A	N/A	N/A	
	8/18/2004	20.35	N/A	N/A	N/A	Dry	Dry	Dry	
	9/21/2004	20.35	N/A	N/A	N/A	6.92	13.43	13.43	
	10/19/2004	20.35	N/A	N/A	N/A	6.02	14.33	14.33	
	11/23/2004	20.35	N/A	N/A	N/A	6.46	13.89	13.89	
	12/21/2004	20.35	N/A	N/A	N/A	4.45	15.90	15.90	
	1/13/2005	20.35	N/A	N/A	N/A	5.25	15.10	15.10	
	4/28/2005	20.35	N/A	N/A	N/A	4.82	15.53	15.53	
	6/1/2005	20.35	N/A	N/A	N/A	5.09	15.26	15.26	
	6/29/2005	20.35	N/A	N/A	N/A	6.83	13.52	13.52	
	7/20/2005	20.35	N/A	N/A	N/A	6.88	13.47	13.47	
	8/22/2005	20.35	N/A	N/A	N/A	7.03	13.32	13.32	
	12/21/2004	20.35	N/A	N/A	N/A	7.03	13.32	13.32	
HWx-1East	9/12/2005	20.44	N/A	N/A	N/A	10.27	10.17	10.17	
	10/12/2005	20.44	N/A	N/A	N/A	9.57	10.87	10.87	
	11/21/2005	20.44	N/A	N/A	N/A	5.71	14.73	14.73	
	12/27/2005	20.44	N/A	N/A	N/A	4.51	15.93	15.93	
	1/30/2006	20.44	N/A	N/A	N/A	2.23	18.21	18.21	
	2/16/2006	20.44	N/A	N/A	N/A	4.10	16.34	16.34	
	3/13/2006	20.44	N/A	N/A	N/A	4.94	15.50	15.50	
	4/18/2006	20.44	N/A	N/A	N/A	4.95	15.49	15.49	
	5/12/2006	20.44	N/A	N/A	N/A	5.23	15.21	15.21	
	6/9/2006	20.44	N/A	N/A	N/A	4.96	15.48	15.48	
	7/13/2006	20.44	N/A	N/A	N/A	5.45	14.99	14.99	
	8/16/2006	20.44	N/A	N/A	N/A	6.75	13.69	13.69	
HWx-1East	9/19/2006	20.44	N/A	N/A	N/A	9.20	11.24	11.24	
(cont.)	10/13/2006	20.44	8.65	11.79	2.85	11.50	8.94	11.08	
	11/20/2006	20.44	N/A	N/A	N/A	3.25	17.19	17.19	
	12/8/2006	20.44	N/A	N/A	N/A	3.40	17.04	17.04	
	1/19/2007	20.44	N/A	N/A	N/A	3.07	17.37	17.37	
	2/19/2007	20.44	N/A	N/A	N/A	4.74	15.70	15.70	
	3/15/2007	20.44	N/A	N/A	N/A	3.91	16.53	16.53	
	4/16/2007	20.44	N/A	N/A	N/A	4.42	16.02	16.02	
	5/14/2007	20.44	N/A	N/A	N/A	5.45	14.99	14.99	
	6/29/2007	20.44	N/A	N/A	N/A	6.58	13.86	13.86	
	7/20/2007	20.44	N/A	N/A	N/A	8.38	12.06	12.06	
	8/21/2007	20.44	N/A	N/A	N/A	8.79	11.65	11.65	
	9/10/2007	20.44	N/A	N/A	N/A	8.95	11.49	11.49	
	10/22/2007	20.44	N/A	N/A	N/A	6.45	13.99	13.99	
	11/28/2007	20.44	N/A	N/A	N/A	5.72	14.72	14.72	
	12/13/2007	20.44	N/A	N/A	N/A	4.68	15.76	15.76	
	1/21/2008	20.44	N/A	N/A	N/A	4.88	15.56	15.56	
	2/24/2008	20.44	N/A	N/A	N/A	5.17	15.27	15.27	
	3/24/2008	20.44	N/A	N/A	N/A	5.54	14.90	14.90	
	8/25/2008	20.44	N/A	N/A	N/A	8.95	11.49	11.49	
	2/18/2009	20.44	N/A	N/A	N/A	5.15	15.29	15.29	
	8/25/2009	20.44	N/A	N/A	N/A	10.05	10.39	10.39	
	3/22/2010	20.44	N/A	N/A	N/A	10.45	9.99	9.99	
	8/23/2010	20.44	N/A	N/A	N/A	10.20	10.24	10.24	
HW-1West	11/20/2003	18.86	N/A	N/A	N/A	4.32	14.54	14.54	
	12/3/2003	18.86	N/A	N/A	N/A	3.56	15.30	15.30	
	1/19/2004	18.86	N/A	N/A	N/A	3.28	15.58	15.58	
	2/24/2004	18.86	N/A	N/A	N/A	4.96	13.90	13.90	
	3/15/2004	18.86	N/A	N/A	N/A	6.35	12.51	12.51	
	4/19/2004	18.86	N/A	N/A	N/A	5.90	12.96	12.96	
	5/17/2004	18.86	N/A	N/A	N/A	N/A	N/A	N/A	
	6/22/2004	18.86	N/A	N/A	N/A	N/A	N/A	N/A	
	8/18/2004	18.86	7.31	11.55	0.01	7.32	11.54	11.55	
	9/21/2004	18.86	N/A	N/A	N/A	6.43	12.43	12.43	
	10/19/2004	18.86	N/A	N/A	N/A	5.56	13.30	13.30	
	11/23/2004	18.86	N/A	N/A	N/A	5.82	13.04	13.04	
	12/21/2004	18.86	N/A	N/A	N/A	3.95	14.91	14.91	

TABLE 5

GROUNDWATER ELEVATION DATA
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/13/2005	18.86	N/A	N/A	N/A	4.66	14.20	14.20	
	4/28/2005	18.86	N/A	N/A	N/A	4.30	14.56	14.56	
	6/1/2005	18.86	N/A	N/A	N/A	5.60	13.26	13.26	
	6/29/2005	18.86	N/A	N/A	N/A	6.34	12.52	12.52	
	7/20/2005	18.86	N/A	N/A	N/A	6.40	12.46	12.46	
	8/22/2005	18.86	N/A	N/A	N/A	6.55	12.31	12.31	
HWx-1West	9/12/2005	19.96	N/A	N/A	N/A	10.16	9.80	9.80	
	10/12/2005	19.96	9.22	10.74	0.01	9.23	10.73	10.74	
	11/21/2005	19.96	5.42	14.54	0.01	5.43	14.53	14.54	
	12/27/2005	19.96	N/A	N/A	N/A	4.01	15.95	15.95	
	1/30/2006	19.96	N/A	N/A	N/A	1.72	18.24	18.24	
	2/16/2006	19.96	3.79	16.17	0.01	3.80	16.16	16.17	
	3/13/2006	19.96	N/A	N/A	N/A	4.52	15.44	15.44	
	4/18/2006	19.96	N/A	N/A	N/A	4.48	15.48	15.48	
	5/12/2006	19.96	N/A	N/A	N/A	4.80	15.16	15.16	
	6/9/2006	19.96	N/A	N/A	N/A	4.52	15.44	15.44	
	7/13/2006	19.96	N/A	N/A	N/A	9.89	10.07	10.07	
	8/16/2006	19.96	N/A	N/A	N/A	6.20	13.76	13.76	
	9/19/2006	19.96	N/A	N/A	N/A	6.87	13.09	13.09	
	10/13/2006	19.96	N/A	N/A	N/A	6.57	13.39	13.39	
	11/20/2006	19.96	N/A	N/A	N/A	2.76	17.20	17.20	
	12/8/2006	19.96	N/A	N/A	N/A	2.91	17.05	17.05	
	1/19/2007	19.96	N/A	N/A	N/A	2.60	17.36	17.36	
	2/19/2007	19.96	N/A	N/A	N/A	4.26	15.70	15.70	
	3/15/2007	19.96	N/A	N/A	N/A	3.42	16.54	16.54	
	4/16/2007	19.96	N/A	N/A	N/A	3.95	16.01	16.01	
	5/14/2007	19.96	N/A	N/A	N/A	4.95	15.01	15.01	
	6/29/2007	19.96	N/A	N/A	N/A	9.06	10.90	10.90	
	7/20/2007	19.96	N/A	N/A	N/A	6.43	13.53	13.53	
	8/21/2007	19.96	N/A	N/A	N/A	8.05	11.91	11.91	
	9/10/2007	19.96	N/A	N/A	N/A	8.11	11.85	11.85	
	10/22/2007	19.96	N/A	N/A	N/A	5.98	13.98	13.98	
	11/28/2007	19.96	N/A	N/A	N/A	5.23	14.73	14.73	
	12/13/2007	19.96	N/A	N/A	N/A	4.18	15.78	15.78	
	1/21/2008	19.96	N/A	N/A	N/A	4.38	15.58	15.58	
	2/24/2008	19.96	N/A	N/A	N/A	4.72	15.24	15.24	
	3/24/2008	19.96	N/A	N/A	N/A	5.06	14.90	14.90	
HWx-1West	8/25/2008	19.96	N/A	N/A	N/A	6.90	13.06	13.06	
(cont.)	2/18/2009	19.96	N/A	N/A	N/A	5.02	14.94	14.94	
	8/25/2009	19.96	N/A	N/A	N/A	7.21	12.75	12.75	
	3/22/2010	19.96	N/A	N/A	N/A	9.60	10.36	10.36	
	8/23/2010	19.96	N/A	N/A	N/A	9.24	10.72	10.72	

Notes:

All measurement are recorded in feet.

N/A Not Applicable. No free product detected.

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
HA-15	B3A0300-05	1/14/2003	3.34	0.672	<0.5	2.51	344	NA	NA	--	--
	B3B0527-04	2/24/2003	**12.9**	5.57	9.80	69.6	**1,250**	0.481	<0.5	--	--
	B3C0615-08	3/25/2003	**7.47**	1.55	1.12	3.99	**910**	0.486	<0.5	--	--
	B3D0437-09	4/18/2003	**7.21**	1.88	0.716	6.47	658	<0.25	<0.5	--	--
	B4C0493-13	3/15/2004	**5.85**	0.765	<0.5	1.34	336	1.22	<0.5	--	--
	B4L0613-13	12/21/2004	**12.2**	0.824	3.01	2.74	**1,350**	<0.25	<0.5	--	--
Dup of HA-15 (HA-25)	B4L0613-16	12/21/2004	**13.4**	0.952	4	3.11	**1,570**	<0.25	<0.5	--	--
	126955-12	3/22/2005	<1	<1	<1	<3	<100	<0.237	<0.474	--	--
	128615-12	6/24/2005	<1	<1	<1	<3	<100	<0.525(d)	<0.956	<1	--
	4720943	2/28/2006	**13**	<0.7	<0.8	<0.8	58	<280	<96	<0.5	--
	4774563	5/16/2006	**16**	2.5	1.5	1.6	58	360	<97	**50.0**	--
	DRY	8/17/2006	--	--	--	--	--	--	--	--	--
	4923045	11/21/2006	**320**	20	27	9	360	**1,400**	**670**	<0.5	--
	DRY	2/20/2007	--	--	--	--	--	--	--	--	--
	DRY	5/15/2007	--	--	--	--	--	--	--	--	--
	DRY	9/12/2007	--	--	--	--	--	--	--	--	--
	DRY	11/26/2007	--	--	--	--	--	--	--	--	--
	5288739	2/26/2008	**18**	0.9	3	2	340	**1,700**	**590**	<0.5	--
	CPWA0907-001	2/18/2009	**19**	1.5	4.7	14	120	<150	**<770**	<1	<400
	DRY	8/25/2009	--	--	--	--	--	--	--	--	--
	253350001	3/24/2010	**127**	7.0	34.2	68.3	**811**	248	<392	<1	<250
	DRY	8/23/2010	--	--	--	--	--	--	--	--	--
HA-16	B4L0613-12	12/21/2004	**112**	533	272	**1,660**	**17,900**	4.31	2.32	--	--
	126955-16	3/22/2005	**100**	518	253	**1,521**	**17,500**	2.89(d)	<0.488	--	--
	128615-13	6/24/2005	**436**	760	374	**2,359**	**20,400**	**2,200(a)**	<0.479	<10	--
	4574965	7/28/2005	**180**	94	80	440	**6,900**	**3,400**	**<940**	<1	--
	4608331	9/20/2005	**620**	**1,000**	270	**1,500**	**14,000**	--	--	--	--
	4662484	11/30/2005	**7**	8	2	13	150	240	<94	--	--
HA-16 (Dup HA-16(2))	4662485	11/30/2005	**19**	24	19	96	**2,100**	450	<94	--	--
	4720944	3/1/2006	**170**	1	3	11	95	120	<95	<0.5	--
HA-16 (Dup HA-16(2))	4720954	3/1/2006	**420**	2	13	19	430	500	<95	<0.5	--
	4774564	5/16/2006	**120**	0.6	0.4	1.7	<48	94	95	<5	--
HA-16(Dup HA-16(2))	4774574	5/16/2006	**150**	1.9	2.8	12.0	360	120	<95	<5	--
	DRY	8/17/2006	--	--	--	--	--	--	--	--	--
	4923043	11/21/2006	**2,500**	**4,200**	450	**1,400**	**25,000**	650	110	<3	--
	4987243	2/20/2007	**3,300**	**2,000**	560	**1,600**	**18,000**	**970**	130	<3	--
	5057455	5/15/2007	**260**	53	47	120	**970**	190	<96	<0.5	--
	5154767	9/12/2007	**510**	480	120	440	**2,600**	**900**	250	<0.5	--
	5220667	11/27/2007	**250**	98	87	220	**2,100**	**1,200**	<190	<0.5	--
	5288740	2/26/2008	**44**	3	6	20	240	<75	<94	<0.5	--
	5454954	8/26/2008	**2,600**	**7,400**	550	**2,800**	**36,000**	**2,600**	<95	<3	<250
	CPWA0907-002	2/19/2009	**830**	**1,200**	250	**1,100**	**8,540**	**--**	--	<1	<400
	Insufficient water	8/25/2009	--	--	--	--	--	--	--	--	--
	253350002	3/24/2010	**367**	55.6	229	922	**5,180**	119	<385	1.0	<250
	254718001	8/26/2010	**1,720**	**1,730**	686	**2,400**	**14,000**	347	**<1,330**	<1.0	<250
HA-17	B3A0300-02	1/14/2003	**10.2**	<1.25	1.55	2.61	548	NA	NA	--	--
	B3E0729-10	5/29/2003	**50.0**	129	80.1	322	**2,090**	<0.25	<0.5	--	--
	B3K0600-02	11/20/2003	**8.9**	<0.5	<0.5	<1	585	0.620	<0.5	--	--
	B4C0493-14	3/15/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4L0613-14	12/21/2004	**6.35**	<0.5	<0.5	<1	335	<0.25	<0.5	--	--
	126955-17	3/22/2005	**11.6**	<1	9.96	<3	<100	<0.237	<0.473	--	--
	128615-17	6/24/2005	1.57	<1	<1	<3	<100	0.599	<0.475	<1	--
	4574966	7/28/2005	2.3	<0.2	0.3	<0.6	<48	--	--	<0.3	--
	4662486	11/30/2005	1.0	<1	<2	<2	55	450	<94	--	--
	4720945	3/1/2006	<0.5	<0.7	<0.8	<0.8	<48	340	<96	<0.5	--
	4774565	5/16/2006	0.4	<0.2	<0.2	<0.6	<48	280	<95	<5	--
	DRY	8/17/2006	--	--	--	--	--	--	--	--	--
	4923044	11/21/2006	1	<0.7	<0.8	<0.8	<48	220	120	<0.5	--
	4987242	2/20/2007	<0.5	<0.7	<0.8	<0.8	<48	**1,700**	<470	<0.5	--
	5057456	5/15/2007	1	1	<0.8	<0.8	<50	--	--	<0.5	--
	DRY	9/12/2007	--	--	--	--	--	--	--	--	--
	5220668	11/27/2007	<0.5	<0.7	<0.8	<0.8	<50	**770(p)**	<140	<0.5	--
	5288741	2/26/2008	<0.5	<0.7	<0.8	<0.8	<50	**570**	<95	<0.5	--
	CPWA0907-003	2/18/2009	<1	<1	<1	<1	<50	88	<410	<1	<400
	Insufficient water	8/25/2009	--	--	--	--	--	--	--	--	--
	253330001	3/23/2010	<1	<1	<1	<3	54.5	<77.7	<388	<1	<250
	DRY	8/23/2010	--	--	--	--	--	--	--	--	--
HA-18	B3A0300-01	1/14/2003	**40.3**	75.9	**810**	**2,220**	**11,400**	NA	NA	--	--
	B3E0729-11	5/29/2003	**95.0**	157	**2,440**	**7,840**	**31,000**	7.51	<0.5	--	--
	B3K0600-01	11/20/2003	**284**	178	**1,950**	**6,400**	**28,000**	6.87	<0.5	--	--
	B4L0613-15	12/21/2004	**21.9**	26.8	188	440	**4,600**	0.857	<0.5	--	--

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[tw] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	126955-15	3/22/2005	**27.1**	10.2	333	578	**7,690**	1.33(d)	<0.473	--	--
	128615-18	6/24/2005	**32.3**	12.4	439	907	**9,810**	6.83 (d)	0.594 (d)	<5	--
	4574967	7/28/2005	**39**	29	230	620	**8,200**	--	--	<1	--
	4720946	3/1/2006	**72**	0.8	69	6	780	340	<95	<0.5	--
	4774566	5/16/2006	**40**	3.8	93	140	**2,100**	**520**	<94	**<25**	--
	4845176	8/17/2006	**51**	9	170	250	**3,800**	**2,700**	160	<0.5	--
	4923042	11/21/2006	**52**	23	130	240	**3,400**	**2,700**	**650**	<0.5	--
	4987241	2/20/2007	**49**	18	230	460	**5,000**	**740**	180	<0.5	--
	DRY	5/15/2007	--	--	--	--	--	--	--	--	--
	DRY	9/12/2007	--	--	--	--	--	--	--	--	--
	5220669	11/27/2007	**14**	4	3	7	480	**4,700(q)**	<370	<0.5	--
	5288742	2/26/2008	**17**	4	34	21	720	**4,100**	**740**	<0.5	--
	CPWA0907-004	2/19/2009	**37**	29	36	87	615	240	<400	<1	<400
	DRY	8/25/2009	--	--	--	--	--	--	--	--	--
	253330002	3/23/2010	**98.9**	18.4	91.0	132	**1,390**	135	<385	<1.0	<250
	DRY	8/23/2010	--	--	--	--	--	--	--	--	--
HA-19	5454955	8/25/2008	<0.5	<0.7	<0.8	<0.8	<50	<75	<94	<0.5	<50
	DRY	8/25/2009	--	--	--	--	--	--	--	--	--
	DRY	3/23/2010	--	--	--	--	--	--	--	--	--
	DRY	8/23/2010	--	--	--	--	--	--	--	--	--
HA-20	4574964	7/28/2005	**28,000**	**47,000**	**2,900**	**16,000**	**230,000**	**6,900**	**<940**	**<150**	--
	46622487	11/30/2006	**19,000**	**28,000**	**1,500**	**8,500**	**110,000**	**4,900**	<190	--	--
	5454956	8/25/2008	**5,800**	**5,800**	**1,200**	**5,500**	**18,000**	**4,300**	**<940**	<1	<100
	CPWA0907-005	2/19/2009	**67**	33	13	42	292	93	<410	<1	<400
	251962001	8/25/2009	**10,900 (8)**	**2,020 (8)**	**941**	**3,220 (8)**	**18,100**	**1,300**	<390	<1	<250
Dup of HA-20 (DUP-1)	251962011	8/25/2009	**12,200**	**2,750**	**1,100**	**3,790**	**22,200**	**1,900**	180J	<1	<250
	253350003	3/24/2010	**4,100**	**2,170**	109	435	**7,070**	**2,450**	<381	<1	<250
	254718002	8/26/2010	**14,600**	**23,100**	**932**	**4,810**	**69,700**	**712**	<388	<1.0	<250
Dup of HA-20 (DUP-1)	254718006	8/26/2010	**13,800**	**14,600**	**1,400**	**6,010**	**56,800**	**767**	<426	<1.0	<250
LAI-1	B3A0300-07	1/15/2003	**728**	935	22.8	120	**4,120**	NA	NA	--	--
	B3B0527-05	2/26/2003	**2,150**	**3,680**	116	979	**15,100**	1.02	<0.5	--	--
	B3C0577-01	3/24/2003	**7,970**	**15,000**	739	**4,250**	**47,500**	1.49	<0.5	--	--
	4720931	3/1/2006	**4,500**	**41,000**	**2,800**	**16,000**	**190,000**	**860**	<190	<13	--
	4774551	5/17/2006	**10,000**	**56,000**	**3,300**	**21,000**	**270,000**	**1,400**	<470	**<200**	--
	4845172	k	**11,000**	**23,000**	**3,000**	**14,000**	**130,000**	**2,800**	240	**<50**	--
	4923036	11/20/2006	**1,900**	25	400	**1,300**	**11,000**	**880**	<95	<1	--
	4987234	2/19/2007	**13,000**	**58,000**	**3,200**	**19,000**	**260,000**	**2,900**	<470	**<25**	--
	5057465	5/14/2007	**9,000**	**60,000**	**2,200**	**16,000**	**290,000**	**3,200**	<480	**<**	--
	5154755	9/11/2007	**1,300**	680	440	**2,500**	**21,000**	**510**	<94	<1	--
	5220664	11/26/2007	**1,100**	10	130	410	**2,300**	310	<99	<0.5	--
	5288727	2/26/2008	**160**	190	**1,100**	**4,300**	**23,000**	**2,400**	<95	<1	--
	5454965	8/26/2008	**12**	4	300	560	**4,400**	450	<95	<0.5	<50
Dup of LAI-1 (LAID1)	5454974	8/26/2008	**12**	5	200	360	**4,300**	**520**	<95	<0.5	<50
	CPWA0907-006	2/19/2009	**470**	**19,000**	**1,500**	**9,800**	**93,900**	**600**	<410	<1	<400
	251962002	8/25/2009	**358**	**1,330**	277	**1,700**	**73,300**	**2,000**	140 J	<1.0 (9)	<250
	253330003	3/23/2010	**2,610**	**19,300**	**4,190**	**23,200**	**114,000**	**800**	<381	<1.0	<250
	254678001	8/24/2010	**2,040**	**3,150**	187	**17,700**	**57,700**	**812**	<388	<1.0	<250
LAI-2	B3A0300-08	1/15/2003	2.78	2.20	1.10	9.33	72.6	NA	NA	--	--
Dup of LAI-2 (LAI-12)	B3A0300-10	1/15/2003	3.39	3.36	1.68	15.1	103	NA	NA	--	--
	B3E0729-12	5/29/2003	**2,940**	**6,100**	235	**1,680**	**18,100**	<0.25	<0.5	--	--
Dup of LAI-2 (LAI-20)	B3E0729-09	5/29/2003	**2,840**	**6,320**	235	**1,680**	**18,800**	0.299	<0.5	--	--
	B3H0266-06	8/11/2003	**1,880**	**2,150**	135	907	**8,950**	0.516	<0.562	--	--
Dup of LAI-2 (LAI-21)	B3H0266-01	8/11/2003	**1,750**	**1,340**	104	678	**6,620**	0.550	<0.5	--	--
	B3K0600-09	11/20/2003	**580**	1.98	35.3	235	**1,330**	0.304	<0.5	--	--
	B4C0493-01	3/16/2004	**23,600**	**27,700**	**2,370**	**11,300**	**120,000**	1.95	<0.5	--	--
	B4F0732-01	6/22/2004	**4,390**	53.3	**889**	**1,190**	**17,600**	0.283	<0.5	--	--
Dup of LAI-2 (LAI-22)	B4F0732-10	6/22/2004	**4,960**	51.4	**1,020**	**1,340**	**20,400**	<0.25	<0.5	--	--
	B4I0676-10	9/22/2004	**1,070**	4.87	672	234	**6,150**	0.809	<0.5	--	--
Dup of LAI-2 (LAI-22)	B4I0676-06	9/22/2004	**1,070**	4.37	673	187	**6,020**	0.754	<0.5	--	--
	B4L0613-08	12/21/2004	**2,080**	<25	**875**	552	**9,920**	<0.25	<0.5	--	--
	126955-01	3/21/2005	**7,720**	**2,970**	**1,380**	**2,208**	**22,900**	1.04	<0.498	--	--
	128615-09	6/23/2005	**21,700**	**40,300**	**2,260**	**10,180**	**123,000**	**4,150**	<0.473	**<200**	--
	4574952	7/29/2005	**18,000**	**28,000**	**3,100**	**15,000**	**170,000**	**1,400**	<190	**30**	--
LAIx-2	4608317	9/21/2005	**5,500**	**3,300**	**1,100**	**5,600**	**32,000**	**1,400**	<94	--	--
	4662463	12/1/2005	**1,700**	230	330	**1,300**	**8,700**	**730**	<94	--	--
Dup of LAIx-2 (LAIx-2(2))	4662464	12/1/2006	**1,900**	100	370	**1,400**	**8,700**	**830**	<95	--	--
	4720932	3/1/2006	**13,000**	**24,000**	**1,500**	**8,500**	**120,000**	**1,200**	<190	<10	--
Dup of LAIx-2 (LAIx-2(2))	4720952	3/1/2006	**12,000**	**15,000**	**1,600**	**8,100**	**97,000**	**1,400**	<190	<10	--
	4774552	5/17/2006	**21,000**	**32,000**	**2,800**	**14,000**	**160,000**	**2,200**	<470	**<200**	--

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
Dup of LAIx-2 (LAIx-2(2))	4774570	5/17/2006	**21,000**	**31,000**	**2,900**	**14,000**	**160,000**	**2,400**	<470	**<200**	--
	4845171	8/16/2006	**14,000**	**19,000**	**1,600**	**11,000**	**87,000**	**4,200**	**<1900**	<5	--
	4923035	11/20/2006	**2,200**	**1,500**	590	**2,300**	**20,000**	**810**	<94	<1	--
	4987235	2/19/2007	**18,000**	**32,000**	**2,700**	**11,000**	**150,000**	**2,600**	<190	**<25**	--
	5057466	5/14/2007	**19,000**	**33,000**	**2,200**	**11,000**	**180,000**	**4,600**	**<970**	**<25**	--
	5154757	9/11/2007	**2,400**	470	680	**2,600**	**17,000**	**1,800**	150	<1	--
LAIx-2[x]	5220665	11/26/2007	**800**	46	470	**1,200**	**8,500**	380	<94	<0.5	--
	5288728	2/26/2008	**9**	1	26	70	780	<75	<94	<0.5	--
	5454966	8/26/2008	**350**	330	330	970	**6,600**	**1,400**	<95	<2	<200
	CPWA0907-007	2/19/2009	**2,300**	**5,600**	**980**	**2,800**	**29,500**	320	<410	**<100**	<400
	251962003	8/25/2009	**3,710**	37.8	**990**	**1,330**	**9,530**	**950**	110J	<1	<250
	253330004	3/23/2010	**1,570**	698	661	**1,290**	**7,400**	166	<381	<1.0	<250
	254678002	8/24/2010	**7,600**	**12,100**	155	**7,910**	**51,100**	453	<385	<1.0	<250
LAI-3	B3A0300-09	1/15/2003	0.500	3.19	1.36	8.45	66.6	NA	NA	--	--
	B3B0527-06	2/26/2003	**70.1**	159	6.42	32.6	558	0.250	0.500	--	--
	B3C0615-01	3/25/2003	**61.6**	176	8.43	39.5	573	0.250	0.500	--	--
	B3D0437-05	4/17/2003	**7.56**	24.5	4.00	29.4	154	0.250	0.500	--	--
	B3E0729-13	5/29/2003	**151**	40.7	0.951	4.6	301	0.250	0.500	--	--
	B3H0266-07	8/11/2003	**329**	18.4	2.470	7.27	985	0.250	0.500	--	--
	B3K0600-10	11/20/2003	**9.2**	0.500	0.500	1.00	50	0.250	0.500	--	--
	B4C0493-02	3/16/2004	**2,030**	94.9	113	225	4,670	0.272	0.500	--	--
	B4F0732-02	6/22/2004	**1,580**	5.00	50.7	69.4	2,880	0.250	0.500	--	--
	B4I0676-11	9/22/2004	**60.7**	5.00	82.1	2.05	424	0.433	0.556	--	--
	B4L0613-09	12/21/2004	0.542	0.500	2.3	1.00	61.7	0.250	0.500	--	--
	126955-02	3/21/2005	1	1	1	3	100	0.236	0.472	--	--
	128615-08	6/23/2005	**2,360**	119	184	200	**2,200**	0.748 (a)	0.474	**20**	--
	4574953	7/29/2005	**5,300**	**6,300**	690	**2,500**	**34,000**	**690**	160	7.5	--
LAIx-3	4608318	9/21/2005	**3,800**	**4,200**	450	**3,100**	**23,000**	**1,400**	94	--	--
	4662465	11/30/2005	**8,200**	**9,200**	400	**5,300**	**43,000**	**1,500**	<96	--	--
Dup of LAIx-3(LAIx-3(2))	4662466	12/1/2005	**9,000**	**8,700**	350	**5,200**	**45,000**	**1,800**	<94	--	--
	4720933	3/1/2006	**18,000**	**26,000**	**1,800**	**10,000**	**130,000**	**3,500**	**<970**	<10	--
Dup of LAIx-3(LAIx-3(2))	4720953	3/1/2006	**16,000**	**13,000**	**1,700**	**9,500**	**100,000**	**3,200**	**<950**	<10	--
	4774553	5/17/2006	**19,000**	**24,000**	**2,300**	**12,000**	**130,000**	**3,500**	**<950**		--
Dup of LAIx-3(LAIx-3(2))	4774571	5/17/2006	**16,000**	**18,000**	**2,100**	**10,000**	**110,000**	**3,300**	<470	**<30**	--
	4845170	8/16/2006	**2,200**	**2,900**	470	**2,600**	**20,000**	**3,900**	<480	<0.5	--
	4923034	11/20/2006	**2,400**	550	490	**1,500**	**13,000**	**910**	<95	<1	--
	4987236	2/19/2007	**21,000**	**21,000**	**2,500**	**9,700**	**120,000**	**2,700**	<94	**<25**	--
	5057467	5/14/2007	**25,000**	**26,000**	**2,100**	**9,700**	**150,000**	**4,300**	**<960**	**<25**	--
	5154758	9/11/2007	**1,700**	690	450	**1,600**	**14,000**	**1,800**	160	<0.5	--
LAIx-3[x]	5220666	11/26/2007	**1,600**	22	560	**1,100**	**10,000**	**850**	<94	<1	--
	5288729	2/26/2008	**18**	<0.7	46	52	**1,500**	110	<95	<0.5	--
	5454967	8/26/2008	**310**	450	160	290	**3,800**	**1,000**	130	<3	<250
	CPWA0907-008	2/19/2009	**4,100**	620	**990**	**1,600**	**12,400**	420	<410	**<100**	<400
	251962004	8/25/2009	**3,660**	10.3	**719**	310	**4,450**	**790**	95J	<1	<250
	253330005	3/23/2010	**8,030**	**8,190**	**1,540**	**5,040**	**30,000**	342	<381	<1.0	<250
	254678003	8/24/2010	**8,640**	**4,130**	**1,400**	**4,840**	**24,800**	420	<430	<1.0	<250
LAIx-4	5454957	8/26/2008	**2,200**	180	270	**1,400**	**9,900**	--	--	<1	<100
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
	Gauge only	8/23/2010	--	--	--	--	--	--	--	--	--
LAIx-5	4662467	11/29/2005	**42,000**	**49,000**	**2,300**	**12,000**	**180,000**	**13,000**	**570**	--	--
	5454958	8/26/2008	**31,000**	**45,000**	**3,600**	**19,000**	**220,000**	**3,900**	<480	<50	<5000
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
	Gauge only	8/23/2010	--	--	--	--	--	--	--	--	--
LAIx-6	4662468	11/29/2005	**22,000**	**22,000**	**850**	**4,300**	**70,000**	**9,700**	**600**	--	--
	5454959	8/26/2008	**31,000**	**45,000**	**3,200**	**16,000**	**190,000**	**6,300**	**<950**	<25	<2500
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
	Gauge only	8/23/2010	--	--	--	--	--	--	--	--	--
LAI-7	4574968	7/28/2005	**160,000**	**32,000**	**2,500**	**14,000**	**160,000**	**17,000**	**<4700**	**<30**	--
LAIx-7	4608319	9/21/2005	**43,000**	**55,000**	**4,300**	**21,000**	**220,000**	**7,100**	**<950**	--	--
	5454960	8/27/2008	**12,000**	**27,000**	**2,200**	**11,000**	**79,000**	**4,200**	<480	<13	<1300
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
	Gauge only	8/23/2010	--	--	--	--	--	--	--	--	--
LAIx-8	4608320	9/21/2005	**29,000**	**33,000**	**3,300**	**15,000**	**140,000**	**6,400**	**<940**	--	--
	4662469	11/29/2005	**33,000**	**35,000**	**2,900**	**14,000**	**130,000**	**5,100**	<190	--	--
	5454976	8/26/2008	**28,000**	**40,000**	**3,300**	**16,000**	**180,000**	**7,300**	**<2000**	<10	<1000
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
	Gauge only	8/23/2010	--	--	--	--	--	--	--	--	--

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
LAIx-9	4662470	11/29/2005	**37,000**	**45,000**	**2,600**	**21,000**	**110,000**	**8,300**	**<950**	--	
	5454977	8/27/2008	**17,000**	**32,000**	**2,600**	**15,000**	**140,000**	**3,800**	<490	<10	<1000
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
	Gauge only	8/23/2010	--	--	--	--	--	--	--	--	--
LAI-10	B3B0527-07	2/26/2003	<0.5	0.991	<0.5	1.37	<50	<0.25	<0.5	--	--
Dup of LAI-10 (LAI-17)	B3B0527-12	2/26/2003	<0.5	0.757	<0.5	1.18	<50	<0.25	<0.5	--	--
	B3C0577-02	3/24/2003	1.35	2.67	<0.5	1.36	<50	<0.25	<0.5	--	--
	B3D0437-02	4/17/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3E0729-08	5/28/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3H0266-08	8/11/2003	<0.5	1.75	0.757	4.54	<50	<0.25	<0.5	--	--
	B3K0600-06	11/20/2003	<0.5	<0.5	<0.5	<1	<50	1.95	<0.5	--	--
	B4C0493-03	3/16/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4F0732-03	6/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4I0676-09	9/22/2004	<0.5	0.666	<0.5	<1	<50	0.366	<0.5	--	--
	B4L0613-01	12/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-03	3/21/2005	<1	<1	<1	<3	<100	<0.238	<0.475	--	--
	128615-01	6/23/2005	3.52	<1	<1	<1	<100	<0.237	<0.474	<1	--
	4574954	7/29/2005	**23**	0.3	<0.2	<0.6	<48	<76	<95	<0.3	--
	4608321	9/20/2005	**32**	2.0	0.5	2.8	<48	<75	94	--	--
	4662471	12/1/2005	<0.5	<0.7	<0.8	<0.8	<48	200	<95	--	--
Dup of LAI-10 (LAI-10(2))	4662472	11/28/2005	<0.5	1.0	<0.8	<0.8	<48	**520**	220	--	--
	4720934	2/28/2006	<0.5	4	<0.8	<0.8	<48	<77	<96	<0.5	--
Dup of LAI-10 (LAI-10(2))	4720950	3/1/2006	<0.5	10	<0.8	<0.8	<48	88	<95	<0.5	--
	4774554	5/17/2006	<0.2	3.4	<0.2	<0.6	<48	<75	<94	<0.3	--
Dup of LAI-10 (LAI-10(2))	4774572	5/17/2006	0.6	4.5	<0.2	<1	<48	<75	<120	<0.3	--
	4845174	8/16/2006	<0.5	<0.7	<0.8	<0.8	<48	<76	<96	<0.5	--
	4923038	11/20/2006	<0.5	<0.7	<0.8	<0.8	<48	<77	<96	<0.5	--
	4987229	2/19/2007	<0.5	<0.7	<0.8	<0.8	<48	<75	<94	<0.5	--
	5057463	5/14/2007	<0.5	<0.7	<0.8	<0.8	<50	<78	<97	<0.5	--
	5154754	9/11/2007	<0.5	<0.7	<0.8	<0.8	<50	98	<94	<0.5	--
	5220661	11/26/2007	**<5**	<7	<8	<8	<250	<76	<95	<5	--
	5288730	2/26/2008	**12**	1	4	12	140	<75	<94	<0.5	--
	5454968	8/26/2008	<0.5	<0.7	<0.8	<0.8	<50	<76	<96	<0.5	<50
	CPWA0907-009	2/18/2009	<1	<1	<1	<1	<50	<82	<410	<1	<400
	251962005	8/25/2009	<1	<1	<1	<3	<50	<77	<380	<1	<250
	253330006	3/23/2010	<1	<1	<1	<3	<50	<76.2	<381	<1	<250
	254678004	8/24/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<76.9	<385	<1.0	<250
LAI-11	B3B0527-08	2/26/2003	<0.5	<0.5	<0.5	<1	<50	0.401	<0.5	--	--
	B3C0577-03	3/24/2003	<0.5	<0.5	<0.5	<1	<50	0.429	<0.5	--	--
	B3D0437-03	4/17/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3E0729-02	5/28/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3K0600-07	11/20/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4C0493-04	3/16/2004	<0.5	0.634	<0.5	<1	<50	<0.25	<0.5	--	--
	B4F0732-04	6/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4I0676-08	9/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4L0613-02	12/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-04	3/21/2005	<1	1	<1	<3	<100	<0.236	<0.473	--	--
	128615-02	6/23/2005	**222**	1.11	2.82	19.20	<100	<0.237	<0.474	<1	--
	4574955	7/29/2005	**55**	0.5	4.2	3.2	<48	<76	<95	<0.3	--
	4608322	9/20/2005	**32**	2.0	0.5	2.8	<48	95	<94	--	--
	4662473	12/1/2005	**15**	<0.7	0.9	3.0	<48	110	<94	--	--
	4720935	2/27/2006	<0.5	<0.7	<0.8	<0.8	<48	81	<96	<0.5	--
	4774555	5/17/2006	<0.2	<0.2	<0.2	<0.6	<48	<75	<94	<0.3	--
	4845175	8/16/2006	<0.5	<0.7	<0.8	<0.8	<48	<77	<96	<0.5	--
	4923039	11/20/2006	<0.5	<0.7	<0.8	<0.8	<48	**760**	190	<0.5	--
	4987230	2/19/2007	<0.5	<0.7	<0.8	<0.8	<48	110	<95	<0.5	--
	5057462	5/14/2007	<0.5	<0.7	<0.8	<0.8	<50	160	<96	<0.5	--
	5154752	9/11/2007	**55**	<0.7	<0.8	<0.5	<50	190	<95	<0.5	--
	5220660	11/26/2007	<0.5	<0.7	<0.8	<0.8	<50	170	<95	<0.5	--
	5288731	2/26/2008	**14**	<0.7	<0.8	<0.8	<50	<75	<94	<0.5	--
	5454969	8/26/2008	<0.5	<0.7	<0.8	<0.8	<50	<76	<95	<0.5	<50
	CPWA0907-011	2/18/2009	<1	<1	<1	<1	<50	<82	<410	<1	<400
	251962006	8/25/2009	<1	<1	<1	<3	<50	38J	<380	<1	<250
	253330007	3/23/2010	<1	<1	<1	<3	<50	<76.2	<381	<1	<250
	254678005	8/24/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<76.9	<385	<1.0	<250
LAI-12	B3E0729-03	5/28/2003	<0.5	<0.5	<0.5	1.81	<50	<0.25	<0.5	--	--
	B3H0266-02	8/11/2003	<0.5	<0.5	<0.5	2.21	<50	0.354	<0.5	--	--
	B3K0600-08	11/20/2003	<0.5	<0.5	<0.5	<1	60.7	<0.25	<0.5	--	--
	B4C0493-05	3/16/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4F0732-05	6/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4I0676-07	9/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4L0613-03	12/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-05	3/21/2005	<1	<1	<1	<3	<100	<0.242	<0.485	--	--
	128615-03	6/23/2005	<1	<1	<1	<3	<100	0.606 (b)	<0.476	<1	--
	4574957	7/29/2005	<0.2	<0.2	<0.2	<0.6	<48	430	<95	<0.3	--
	4608323	9/20/2005	1.6	3.9	<0.5	2.7	<48	**1,300**	<320	--	--

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[tw] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	4662474	12/1/2005	<0.5	<0.7	<0.8	<0.8	<48	300	100	--	--
	4720936	2/27/2006	<0.5	<0.7	<0.8	<0.8	<48	78	<97	<0.5	--
	4774556	5/17/2006	<0.2	<0.2	<0.2	<0.6	<48	410	<94	<0.3	--
	4845180	8/17/2006	<0.5	1	<0.8	<0.8	<48	**1,200**	130	<0.5	--
	4923040	11/20/2006	<0.5	<0.7	<0.8	<0.8	<48	**600**	120	<0.5	--
	4987231	2/19/2007	<0.5	<0.7	<0.8	<0.8	<48	**530**	<94	<0.5	--
	5057461	5/14/2007	<0.5	<0.7	<0.8	<0.8	<50	**810**	<96	<0.5	--
	5154753	9/11/2007	**16**	9	<2	9	99	**1,100**	140	<0.5	--
	5220659	11/26/2007	0.7	<0.7	<0.8	3	<50	**620**	<95	<0.5	--
	5288732	2/26/2008	<0.5	<0.7	<0.8	<0.8	<50	84	<94	<0.5	--
	5454970	8/26/2008	<0.5	<0.7	<0.8	<0.8	<50	260	<95	<0.5	<50
	CPWA0907-012	2/18/2009	<1	<1	<1	<1	<50	<82	<410	<1	<400
	251962007	8/25/2009	<1	<1	<1	<3	<50	53J	<380	<1	<250
	253330008	3/23/2010	<1	<1	<1	<3	<50	<76.2	<381	<1	<250
	254678006	8/24/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<77.7	<388	<1.0	<250
LAI-13	B3E0729-06	5/28/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3H0266-05	8/11/2003	<0.5	0.647	<0.5	<1	<50	<0.25	<0.5	--	--
	B3K0600-03	11/20/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4C0493-06	3/15/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4F0732-06	6/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4I0676-02	9/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4L0613-04	12/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-06	3/21/2005	<1	<1	<1	<3	<100	<0.237	<0.473	--	--
	128615-04	6/23/2005	<1	<1	<1	<3	<100	<0.236	<0.472	<1	--
	4574957	7/29/2005	<0.2	<0.2	<0.2	<0.6	<48	<77	<120	<0.3	--
	4608324	9/20/2005	<0.5	<0.5	<0.5	<1.5	<48	<75	<93	--	--
	4662475	12/1/2005	<0.5	<0.7	<0.8	<0.8	<48	<75	<94	--	--
	4720937	2/27/2006	<0.5	<0.7	<0.8	<0.8	<48	<78	<97	<0.5	--
	4774557	5/16/2006	<0.2	<0.2	<0.2	<0.6	<48	<76	<95	<0.3	--
	4845168	8/16/2006	<0.5	3	<0.8	<6	<84	<75	<94	<0.5	--
	4923051	11/21/2006	<0.5	<0.7	<0.8	<0.8	<48	<76	<95	<0.5	--
	4987238	2/20/2007	<0.5	<0.7	<0.8	<0.8	<48	--	--	<0.5	--
	5057460	5/15/2007	<0.5	<0.7	<0.8	<0.8	<50	<78	<97	<0.5	--
	5154762	9/11/2007	<0.5	<0.7	<0.8	<0.8	<50	240	<95	<0.5	--
	5220656	11/26/2007	<0.5	<0.7	<0.8	<0.8	<50	180	<95	<0.5	--
	5288733	2/26/2008	<0.5	<0.7	<0.8	<0.8	<50	<75	<94	<0.5	--
	5454971	8/25/2008	<0.5	<0.7	<0.8	<0.8	<50	<76	<95	<0.5	<50
	CPWA0907-013	2/18/2009	<1	<1	<1	<1	<50	<82	<410	<1	<400
	251962008	8/25/2009	<1	<1	<1	<3	<50	59J	<510	<1	<250
	253330009	3/22/2010	<1	<1	<1	<3	<50	<76.2	<381	<1	<250
	254678007	8/24/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<78.4	<392	<1.0	<250
LAI-14	B3B0527-09	2/25/2003	<0.5	<0.5	<0.5	<1	50.0	0.269	<0.5	--	--
	B3C0615-02	3/25/2003	<0.5	<0.5	<0.5	<1	66.3	<0.25	<0.5	--	--
	B3D0437-11	4/18/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3E0729-05	5/28/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3H0266-04	8/11/2003	<0.5	0.631	<0.5	<1	<50	0.278	<0.5	--	--
	B3K0600-04	11/20/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4C0493-07	3/15/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4F0732-07	6/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4I0676-03	9/21/2004	<0.5	<0.5	<0.5	<1	<50	0.281	<0.5	--	--
	B4L0613-05	12/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-07	3/21/2005	<1	1.45	<1	<3	<100	<0.237	<0.473	--	--
	128615-05	6/23/2005	<1	<1	<1	<3	<100	0.26	<0.475	<1	--
	4574958	7/29/2005	0.2	<0.2	<0.2	<0.6	57	140	190	<0.3	--
	4608325	9/21/2005	<0.5	<0.5	<0.5	<1.5	<48	--	--	--	--
	4662476	12/1/2005	<0.5	<0.7	<0.8	<0.8	<48	<75	<94	--	--
	4720938	2/27/2006	<0.5	<0.7	<0.8	<0.8	55	<77	<96	<0.5	--
	4774558	5/16/2006	<0.2	<0.2	<0.2	<0.6	<48	<77	<97	<0.3	--
	4845167	8/16/2006	<0.5	1	<0.8	2	72	<77	<97	<0.5	--
	4923050	11/21/2006	<0.5	<0.7	<0.8	<0.8	<48	<76	<95	<0.5	--
	4987239	2/20/2007	<0.5	<0.7	<0.8	<0.8	<48	<75	<94	<0.5	--
	5057459	5/15/2007	<0.5	<0.7	<0.8	<0.8	<50	<76	<95	<0.5	--
	5154761	9/11/2007	<0.5	<0.7	<0.8	<0.8	<50	<76	<94	<0.5	--
	5220657	11/26/2007	<0.5	<0.7	<0.8	<0.8	<50	<77	<96	<0.5	--
	5288734	2/26/2008	<0.5	<0.7	<0.8	<0.8	<50	<75	<93	<0.5	--
	5454972	8/25/2008	<0.5	<0.7	<0.8	<0.8	<50	<75	<94	<0.5	<50
	CPWA0907-014	2/18/2009	<1	<1	<1	<1	<50	<83	<410	<1	<400
	251962009	8/25/2009	<1	<1	<1	<3	<50	<150	**<750**	<1	<250
	253330010	3/22/2010	<1	<1	<1	<3	<50	<75.5	<377	<1	<250
	254678008	8/24/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<76.9	<385	<1.0	<250
LAI-15	B3E0729-04	5/28/2003	<0.5	<0.5	<0.5	<1	104	<0.25	<0.5	--	--
	B3H0266-03	8/11/2003	<0.5	0.641	<0.5	1.95	158	0.334	<0.5	--	--
	B3K0600-05	11/20/2003	<0.5	<0.5	<0.5	<1	53.9	<0.25	<0.5	--	--
	B4C0493-08	3/15/2004	<0.5	<0.5	<0.5	<1	154	<0.25	<0.5	--	--
	B4F0732-08	6/22/2004	<0.5	<0.5	<0.5	<1	135	<0.25	<0.5	--	--
	B4I0676-04	9/21/2004	<0.5	<0.5	<0.5	<1	92.4	<0.25	<0.5	--	--
	B4L0613-06	12/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-08	3/21/2005	<1	<1	<1	<3	<100	<0.237	<0.473	--	--
	128615-06	6/23/2005	<1	<1	<1	<3	<100	<0.237	<0.473	<1	--

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	4574959	7/29/2005	<0.2	0.3	<0.2	<0.6	76	**<800**	**<1000**		--
	4608326	9/21/2005	<0.5	<0.5	<0.5	<1.5	100	<75	<94	--	--
	4662477	12/1/2005	<0.5	<0.7	<0.8	<0.8	67	<75	<94	--	--
Dup of LAI-15 (LAI-15(2))	4662478	11/28/2005	<0.5	<0.7	<0.8	<0.8	92	110	<94	--	--
	4720939	2/27/2006	<0.5	<0.7	<0.8	<0.8	77	<77	<97	<0.5	--
Dup of LAI-15 (LAI-15(2))	4720951	3/1/2006	<0.5	0.8	0.8	<0.8	90	<76	<95	<0.5	--
	4774558	5/16/2006	<0.2	<0.2	<0.2	<0.6	98	<76	<95	<0.3	--
Dup of LAI-15 (LAI-15(2))	4774573	5/17/2006	0.4	1	<0.2	<0.6	97	<76	<95	<0.3	--
	4845166	8/16/2006	<0.5	1	<0.8	1	85	<75	<93	<0.5	--
	2923049	11/21/2006	<0.5	<0.7	<0.8	<0.8	50	<76	<95	<0.5	--
	4987240	2/20/2007	<0.5	<0.7	<0.8	<0.8	75	<75	<94	<0.5	--
	5057458	5/15/2007	<0.5	<0.7	<0.8	<0.8	83	<76	<95	<0.5	--
	5154760	9/11/2007	<0.5	<0.7	<0.8	<0.8	<50	<76	<95	<0.5	--
	5220658	11/26/2007	<0.5	<0.7	<0.8	<0.8	<50	<76	<95	<0.5	--
	5288735	2/26/2008	<0.5	<0.7	<0.8	<0.8	<50	<76	<95	<0.5	--
	5454973	8/25/2008	<0.5	<0.7	<0.8	<0.8	56	<76	<95	<0.5	<50
	CPWA0907-015	2/18/2009	<1	<1	<1	<1	<50	<83	<410	<1	<400
	251962010	8/25/2009	<1	<1	<1	<3	32.2J	<76	<380	<1	<250
	253330011	3/22/2010	<1	<1	<1	<3	<50	<75.5	<377	<1	<250
	254678009	8/24/2010	<1.0	<1.0	<1.0	<3.0	60.9	<77.3	<386	<1.0	<250
LAI-16	B3B0527-10	2/25/2003	<0.5	0.679	<0.5	1.09	<50	<0.25	<0.5	--	--
	B3C0615-03	3/25/2003	<0.5	<0.5	<0.5	<1	<50	0.288	<0.5	--	--
Dup of LAI-16 (LAI-26)	B3C0615-04	3/25/2003	<0.5	<0.5	<0.5	<1	<50	0.330	<0.5	--	--
	B3D0437-04	4/17/2003	3.51	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B3E0729-07	5/28/2003	**523**	14.9	<1	2.25	705	<0.25	<0.5	--	--
	B3K0600-12	11/21/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
Dup of LAI-16 (LAI-25)	B3K0600-13	11/21/2003	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4C0493-09	3/16/2004	2.70	0.796	<0.5	<1	<50	<0.25	<0.5	--	--
Dup of LAI-16 (LAI-17)	B4C0493-10	3/16/2004	4.76	0.630	<0.5	<1	<50	<0.25	<0.5	--	--
	B4F0732-09	6/22/2004	**8.52**	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4L0613-07	12/21/2004	<0.5	0.667	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-09	3/21/2005	<1	6.08	<1	<3	<100	<0.236	<0.471	--	--
	128615-07	6/23/2005	<1	<1	<1	<3	<100	<0.384 (d)	<0.473	<1	--
	DRY	9/21/2005								--	--
	4662479	12/1/2005	<0.5	<0.7	<0.8	<0.8	<48	140	98	--	--
	4720940	3/1/2006	**21**	<0.7	<0.8	<0.8	<48	160	<95	<0.5	--
	4774560	5/17/2006	1.8	0.3	<0.2	<0.6	<48	78	<94	<0.3	--
	DRY	8/16/2006	--	--	--	--	--	--	--	--	--
	4923041	11/20/2006	<0.5	0.8	<0.8	1.0	<48	91	<95	<0.5	--
	4987232	2/19/2007	**17**	<0.7	<0.8	<0.8	<48	120	<94	<0.5	--
	5057875	5/14/2007	0.7	<0.7	<0.8	<0.8	<50	--	--	<0.5	--
	DRY	9/11/2007	--	--	--	--	--	--	--	--	--
	DRY	11/26/2007	--	--	--	--	--	--	--	--	--
	5288736	2/26/2008	**64**	6	11	20	310	300	<94	<0.5	--
	CPWA0907-016	2/19/2009	<1	<1	1.0	1.0	<50	<82	<410	<1	<400
	DRY	8/25/2009	--	--	--	--	--	--	--	--	--
	253330012	3/23/2010	<1	<1	<1	<3	<50	<75.5	<377	<1	<250
	DRY	8/26/2010	--	--	--	--	--	--	--	--	--
RW-1	4662480	11/30/2005	1	6	<0.8	4	55	<75	<94	--	--
	5454978	8/25/2008	<0.5	<0.7	<0.8	<0.8	<50	<78	<97	<0.5	<50
	CPWA0907-017	2/18/2009	<1	<1	<1	<1	<50	<80	<400	<1	<400
	Insufficient water	8/25/2009	--	--	--	--	--	--	--	--	--
	253330013	3/23/2010	<1	<1	<1	<3	<50	<78.4	<392	<1	<250
	Purged Dry	8/23/2010	--	--	--	--	--	--	--	--	--
RWx-2	4608327	9/20/2005	**16,000**	**30,000**	**2,200**	**12,000**	**130,000**	**3,000**	<470	--	--
	5454979	8/26/2008	**1,600**	**16,000**	**1,600**	**9,700**	**100,000**	**610**	<96	<1	<100
Dup of RWx-2 (RWxD2)	5454985	8/27/2008	**180**	**5,500**	**1,100**	**9,800**	**62,000**	**5,600**	**<970**	<3	<250
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
	Gauge only	8/23/2010	--	--	--	--	--	--	--	--	--
RW-3	4574961	7/28/2005	**1,400**	**8,700**	**1,300**	**8,800**	**79,000**	**57,000**	**4,700**	15	--
	4662481	11/30/2005	**20**	200	30	220	**4,100**	**2,700**	130	--	--
	4720947	2/28/2006	**6**	46	4	23	270	<78	<97	<0.5	--
	4774567	5/16/2006	**34**	190	26	200	**2,600**	**1,700**	<94	<5	--
	4845179	8/17/2006	**480**	**1,700**	130	930	**12,000**	**2,400**	150	<0.5	--
	4923046	11/21/2006	**26**	220	50	310	**3,200**	**1,700**	<95	<0.5	--
	4987244	2/20/2007	**12**	96	12	77	**1,100**	300	<94	<0.5	--
	5057457	5/15/2007	**240**	**1,200**	140	900	**4,000**	**3,000**	<480	<1	--
	5154764	9/12/2007	**940**	**9,900E**	**1,500**	**8,700**	**88,000**	--	--	<0.5	--
	5220672	11/27/2007	**12**	100	14	97	**1,100**	310	<94	<0.5	--
	5288745	2/26/2008	**25**	370	140	760	**6,500**	**47,000**	**<1900**	<0.5	--
	5454980	8/25/2008	**12**	45	15	95	**830**	440	<97	<0.5	<50
	CPWA0907-018	2/19/2009	<1	9.9	3.2	20	266	110	<410	<1	<400
	Insufficient water	8/25/2009	--	--	--	--	--	--	--	--	--
	253330014	3/23/2010	1.8	69.5	23.2	138	**1,200**	**1,150**	<385	<1	<250
	Purged Dry	8/23/2010	--	--	--	--	--	--	--	--	--
RW-4	5454981	8/26/2008	**7**	88	77	590	**4,100**	**2,200**	<98	<0.5	<50

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	CPWA0907-020	2/19/2009	<1	2.4	<1	3.5	<50	<80	<400	<1	<400
	Insufficient water	8/25/2009	--	--	--	--	--	--	--	--	--
	253350004	3/24/2010	<1	5.7	1.4	11.2	84.0	<77.7	<388	<1	<250
	254718003	8/26/2010	**123**	**1,250**	230	**1,430**	**5,340**	172	<400	<1.0	<250
RWx-5	5454982	8/26/2008	**3,800**	**9,500**	**810**	**4,300**	**43,000**	**1,700**	<99	<5	<500
	CPWA0907-021	2/19/2009	**37**	120	10	530	**2,690**	350	<400	<1	<400
	251962012	8/25/2009	**30,200**	**43,500**	**3,260**	**17,200**	**190,000**	**1,600**	84J	<1	<250
Dup of RWx-5 (Dup-2)	251962014	8/25/2009	**28,300**	**40,700**	**22,820**	**14,600**	**191,000**	**1,300**	120J	<1	<250
	253350005	3/24/2010	**26.3**	44.9	3.8	192	**827**	<76.2	<381	<1	<250
	254718004	8/26/2010	**2,700**	**3,140**	375	**1,660**	**16,200**	193	<396	<1.0	<250
Dup of RWx-5 (Dup-2)	254718007	8/26/2010	**4,190**	**7,990**	**1,130**	**4,140**	**29,800**	582	<412	<1.0	<250
RW-6	5454983	8/27/2008	<0.5	<0.7	<0.8	2.0	84	<79	<99	<0.5	<50
	CPWA0907-022	2/18/2009	<1	<1	<1	<1	50.0	<80	<400	<1	<400
	Insufficient water	8/25/2009	--	--	--	--	--	--	--	--	--
	253350006	3/24/2010	<1	<1	<1	<3	<50	<75.8	<379	<1	<250
	Purged Dry	8/23/2010	--	--	--	--	--	--	--	--	--
RWx-7	5454984	8/27/2008	**180**	**4,800**	**1,200**	**8,900**	**65,000**	**5,400**	**<980**	<3	<250
	CPWA0907-023	2/19/2009	1.0	22	35	**1,100**	**13,700**	**1,900**	<410	<1	<400
	251962013	8/25/2009	**2,990**	**2,670**	279	**3,210**	**39,100**	**1,600**	110J	<1	<250
	253350007	3/24/2010	<1	<1	<1	11.5	**939**	124	<381	<1	<250
	254718005	8/26/2010	**352**	**1,270**	462	**3,280**	**19,600**	**742**	<421	<1.0	<250
HWx-1E	4608328	9/21/2005	**460**	21	220	90	**3,800**	**610**	<94	--	--
	4662488	11/30/2005	**2,300**	250	220	590	**4,900**	**720**	<95	--	--
	4720948	3/1/2006	**9,000**	**12,000**	**1,400**	**7,600**	**80,000**	**2,200**	<480	<5	--
	4774568	5/17/2006	**10,000**	**9,800**	**1,700**	**7,600**	**69,000**	**1,100**	**860**	**<200**	--
	4845169	8/16/2006	**5,300**	**1,300**	840	**3,700**	**23,000**	**2,800**	**<940**	<1	--
	4923033	11/20/2006	**70**	14	29	75	750	91	<94	<0.5	--
	4987237	2/19/2007	**6,300**	**5,100**	**1,200**	**3,700**	**42,000**	**1,400**	<94	<5	--
	5057468	5/14/2007	**8,800**	**12,000**	**1,600**	**7,400**	**80,000**	**1,300**	<96	<10	--
	5154759	9/11/2007	**750**	34	200	620	**4,800**	**1,100**	<94	<0.5	--
	5220663	11/26/2007	**240**	7	3	29	310	170	<97	<0.5	--
	5288743	2/26/2008	**65**	7	13	23	300	320	<95	<0.5	--
	5454963	8/26/2008	**250**	220	13	69	**1,200**	390	<96	<0.5	<50
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--
HWx-1W	4662489	11/29/2005	**420**	<1	62	120	**1,200**	**590**	<95	--	--
	4720949	2/28/2006	**2,700**	**6,400**	**780**	**3,200**	**54,000**	**1,500**	<190	<3	--
	4774569	5/17/2006	**6,800**	**12,000**	**1,500**	**7,400**	**73,000**	**1,100**	<190	**<100**	--
	4845173	8/16/2006	**2,000**	280	440	**1,300**	**8,500**	**970**	120	<0.5	--
	4923037	11/20/2006	**12**	1	8	30	220	89	<96	<0.5	--
	4987233	2/19/2007	**1,500**	**1,300**	470	**1,500**	**11,000**	**1,100**	140	<1	--
	5057464	5/14/2007	**6,200**	**4,900**	**1,000**	**4,100**	**38,000**	**980**	<95	<5	--
	5154756	9/11/2007	**2,000**	4	210	180	**1,800**	**1,700**	**<950**	<0.5	--
	5220662	11/26/2007	**1,700**	16	20	76	680	440	<96	<1	--
	5288744	2/26/2008	<0.5	<0.7	<0.8	<0.8	<50	<76	<95	<0.5	--
	5454964	8/26/2008	1	<0.7	1	2	84	120	<95	<0.5	<50
	Gauge only	8/25/2009	--	--	--	--	--	--	--	--	--
	Gauge only	3/22/2010	--	--	--	--	--	--	--	--	--

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
Retention Pond	B4F0168-05	6/3/2004	**7,860**	**6,920**	792	**3,260**	**36,200**	--	--	--	--
	4756643	4/19/2006	**2,100**	**4,400**	180	**3,300**	**38,000**	**2,800**	**<1000**	NA	--
	4987248	2/19/2007	**1,600**	**2,500**	100	**1,500**	**16,000**	**1,400**	140	2	--
MTCA Method A Cleanup Levels:			**5**	**1,000**	**700**	**1,000**	**1,000/800[t]**	**500**	**500**	**20**	

Notes:

µg/L micrograms per liter

(a) Results in the diesel organics range are due to overlap from a gasoline range product.

(b) Chromatogram suggest this might be aged or degraded diesel.

(d) Contaminant does not appear to be typical product.

(e) The observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes earlier and later in the DRO range

(f) The reporting limits were raised because sample dilution was necessary to bring target compounds into the calibration range of the system

(g) Due to insufficient sample size, the lab was unable to report their usual reporting limits. The values reported represent the lowest reporting limits obtainable. The observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes earlier and later in the DRO range.

(h) #2 fuel. Accurate surrogate recoveries could not be determinec due to the dilution required for analysis of the sample.

(i) The observed sample pattern is not typical of #2 fuel/diesel. The reported result is due to an individual peak(s) eluting in the DRO range.

NA Not analyzed.

U Not detected above reporting limit.

J Indicates that the analyte was positively identified; the associated numercial value is the approximate concentration of the analyte in the sample.

(j) The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogra

x Extension on well nomenclature signifies well extended by SECOR 07/05

(k) Due to insufficient sample size, we were unable to report our usual reporting limits. The values reported represent the lowest reporting limits attainable.

(l) The concentration reported for toluene is estimated since it exceeded the calibration range of the intrument. Because only one sample vial was submitted for this analysis, a further dilted analysis could not be performed.

(m) Insufficient water to fill all sample bottles.

(n) The reporting limits for the GC/MS volatile compounds were raised due to sample foaming.

(o) Due to excessive foaming of the sample, normal reporting limits were not attained.

(p) Due to insufficient sample size, we were unable to report our usual reporting limits. The values reported represent the lowest reporting limits attainable.

(q) Due to insufficient sample size, we were unable to report our usual reporting limits. The values reported represent the lowest reporting limits attainable. The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

(s) Due to insufficient sample size, we were unable to report our usual reporting limits. The values reported represent the lowest reporting limits attainable.

(t) MTCA Method A levels for TPH-g are 1,000 ug/l when ho benzene is present and 800 ug/l when benzene is present.

(u) Well LAIx-2 labeled LAI-2 in the analytical report and Chain-Of-Custody.

(v) Well LAIx-3 labeled LAI-2 in the analytical report and Chain-Of-Custody.

(w) Ethanol sampled 3Q08 and 1Q09

(x) The GRO value is estimated because the value is over the calibration range of the system. The sample was not reanalyzed because the hold time has expired.

(y) The GC/MS volatile results were obtained from a vial with headspace. The initial analyses of this sample were unable to be reported due to carryover issues and QC spiking

(z) The reporting limits for the GC/MS volatile compounds were raised due to the level of non-target compounds.

(1) The analytical data is from Acton Mickelson Environmental, Inc. sampling on 8/26/2008 and 8/27/2008.

(2) A-01 Contamination elutes between C18 and C40 and does not match any standards in TestAmerica's reference library.

(3) A-01a Contamination elutes between C8 and C18 and does not match any standards in TestAmerica's reference library.

(4) A-01b Contamination elutes between C8 and C28 and does not match any standards in TestAmerica's reference library.

(5) A-01c Contamination elutes between C8 and C40 and does not match any standards in TestAmerica's reference library.

(6) M8 The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).

(7) RL1 Reporting limit raised due to sample matrix effects.

(8) H1 = Analysis conducted outside the EPA method holding time.

(9) 2n = The internal standard response is outside the QC criteria. Results may be biased low.

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
B-1	1/27/1993	18.62	--	--	--	5.55	13.07	--	
	3/12/1993	18.62	--	--	--	6.64	11.98	--	
	4/14/1993	18.62	--	--	--	5.65	12.97	--	
	6/30/1993	18.62	--	--	--	6.81	11.81	--	
	12/15/1993	18.62	--	--	--	7.82	10.80	--	
	11/4/1994	18.62	--	--	--	8.80	9.82	--	
	2/22/1995	18.62	--	--	--	4.54	14.08	--	
	5/15/1995	18.62	--	--	--	6.25	12.37	--	
	6/16/1995	18.62	--	--	--	7.00	11.62	--	
	10/20/1995	18.62	--	--	--	7.75	10.87	--	
	4/4/1996	18.62	--	--	--	5.13	13.49	--	
	4/16/1996	18.62	--	--	--	4.93	13.69	--	
	5/10/1996	18.62	--	--	--	4.73	13.89	--	
	5/15/1996	18.62	--	--	--	4.73	13.89	--	
	5/22/1996	18.62	--	--	--	5.03	13.59	--	
	6/5/1996	18.62	--	--	--	5.88	12.74	--	
	6/24/1996	18.62	--	--	--	6.80	11.82	--	
	7/15/1996	18.62	--	--	--	7.48	11.14	--	
	1/3/1997	18.62	--	--	--	3.55	15.07	--	
	3/12/1997	18.62	--	--	--	4.62	14.00	--	
	4/2/1997	18.62	--	--	--	4.93	13.69	--	
	5/1/1997	18.62	--	--	--	5.52	13.10	--	
	8/19/1997	18.62	--	--	--	7.51	11.11	--	
	9/17/1997	18.62	--	--	--	6.80	11.82	--	
	5/1/1998	18.62	--	--	--	6.42	12.20	--	
	5/23/2000	18.62	--	--	--	6.53	12.09	--	
	5/24/2001	18.62	--	--	--	6.65	11.97	--	
	6/5/2002	18.62	--	--	--	6.52	12.10	--	
	5/29/2003	18.62	--	--	--	6.81	11.81	--	
	6/15/2004	18.62	--	--	--	7.43	11.19	--	
	6/20/2005	18.62	--	--	--	6.43	12.19	--	
	6/5/2006	18.62	--	--	--	6.13	12.49	--	
	10/23/2006	18.62	--	--	--	7.86	10.76	--	
	3/14/2007	21.61	--	--	--	5.00	16.61	--	
	9/10/2007	21.61	--	--	--	8.00	13.61	--	
B-1	12/13/2007	21.61	N/A	N/A	N/A	5.97	15.64	15.64	
	1/21/2008	21.61	N/A	N/A	N/A	5.09	16.52	16.52	
	2/24/2008	21.61	N/A	N/A	N/A	5.63	15.98	15.98	
	3/24/2008	21.61	N/A	N/A	N/A	6.20	15.41	15.41	
	6/2/2008	21.61	--	--	--	7.17	14.44	--	
	8/25/2008	21.61	N/A	N/A	N/A	7.95	13.66	13.66	
	2/18/2009	21.61	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.61	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.61	N/A	N/A	N/A	5.09	16.52	16.52	Strong Odor
	8/23/2010	21.61	--	--	--	7.50	14.11	14.11	
B-2	1/27/1993	18.60	--	--	1.08	6.20	13.19	--	Used LPH density 0.73
	3/12/1993	18.60	--	--	0.24	8.15	10.63	--	Used LPH density 0.73
	4/14/1993	18.60	--	--	1.25	8.82	10.69	--	Used LPH density 0.73
	6/30/1993	18.60	--	--	0.75	8.47	10.68	--	Used LPH density 0.73
	12/15/1993	18.60	--	--	0.21	8.62	10.13	--	Used LPH density 0.73
	2/8/1994	18.60	--	--	0.50	6.63	12.34	--	Used LPH density 0.73
	7/8/1994	18.60	--	--	--	8.95	9.65	--	
	8/12/1994	18.60	--	--	--	9.34	9.26	--	
	9/21/1994	18.60	--	--	0.10	9.70	8.97	--	Used LPH density 0.73
	11/4/1994	18.60	--	--	0.12	9.68	9.01	--	Used LPH density 0.73
	12/23/1994	18.60	--	--	--	5.18	13.42	--	
	2/3/1995	18.60	--	--	NM	NM	NM	--	
	2/22/1995	18.60	--	--	0.03	6.03	12.59	--	Used LPH density 0.73
	5/15/1995	18.60	--	--	0.04	6.46	12.17	--	Used LPH density 0.73
	6/16/1995	18.60	--	--	--	6.92	11.68	--	
	10/20/1995	18.60	--	--		8.10	10.50	--	
	4/4/1996	18.60	--	--	0.83	5.40	13.81	--	Used LPH density 0.73
	4/16/1996	18.60	--	--	--	4.80	13.80	--	
	5/10/1996	18.60	--	--	0.43	4.88	14.03	--	Used LPH density 0.73
	5/15/1996	18.60	--	--	0.42	4.85	14.06	--	Used LPH density 0.73
	5/22/1996	18.60	--	--	0.05	7.14	11.50	--	Used LPH density 0.73
	6/5/1996	18.60	--	--	--	5.62	12.98	--	
	6/24/1996	18.60	--	--	--	8.17	10.43	--	
	7/15/1996	18.60	--	--	--	8.65	9.95	--	
	8/23/1996	18.60	--	--	--	9.08	9.52	--	
	9/18/1996	18.60	--	--	--	9.33	9.27	--	
	1/3/1997	18.60	--	--	--	3.91	14.69	--	
	3/12/1997	18.60	--	--	--	7.05	11.55	--	
	4/2/1997	18.60	--	--	--	7.15	11.45	--	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/1/1997	18.60	--	--	--	7.49	11.11	--	
B-2	7/8/1997	18.60	--	--	0.02	6.03	12.58	--	Used LPH density 0.73
(cont.)	8/19/1997	18.60	--	--	--	8.43	10.17	--	
	8/26/1997	18.60	--	--	--	8.52	10.08	--	
	9/18/1997	18.60	--	--	--	7.70	10.90	--	
	4/29/1998	18.60	--	--	--	6.47	12.13	--	
	7/30/1999	18.60	--	--	--	7.00	11.60	--	
	5/23/2000	18.60	--	--	--	6.67	11.93	--	
	5/24/2001	18.60	--	--	0.14	8.24	10.46	--	Used LPH density 0.73
	6/5/2002	18.60	--	--	0.31	6.56	12.27	--	Used LPH density 0.73
	5/29/2003	18.60	--	--	--	7.75	10.85	--	
	6/15/2004	18.60	--	--	--	8.76	9.84	--	
	6/20/2005	18.60	--	--	0.29	6.34	12.47	--	Used LPH density 0.73
	6/5/2006	18.60	--	--	0.02	8.87	9.74	--	Used LPH density 0.73
	10/23/2006	18.60	--	--	--	8.15	10.45	--	
	3/14/2007	21.82	--	--	--	5.23	16.59	--	
	9/10/2007	21.82	--	--	--	9.31	12.51	--	
B-2	11/28/2007	21.82	3.85	17.97	1.50	5.35	16.47	17.60	
	12/13/2007	21.82	4.16	17.66	3.37	7.53	14.29	16.82	
	1/21/2008	21.82	N/A	N/A	N/A	7.08	14.74	14.74	
	2/24/2008	21.82	N/A	N/A	N/A	6.48	15.34	15.34	
	3/24/2008	21.82	N/A	N/A	N/A	7.19	14.63	14.63	
	6/2/2008	21.82	--	--	--	8.47	13.35	--	
	8/25/2008	21.82	N/A	N/A	N/A	8.85	12.97	12.97	
	2/18/2009	21.82	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.82	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.82	N/A	N/A	N/A	5.29	16.53	16.53	
	8/23/2010	21.82	--	--	--	7.37	14.45	14.45	
B-3	1/27/1993	18.73	--	--	4.64	10.18	11.94	--	Used LPH density 0.73
	3/12/1993	18.73	--	--	3.49	11.64	9.64	--	Used LPH density 0.73
	4/14/1993	18.73	--	--	2.64	10.75	9.91	--	Used LPH density 0.73
	6/30/1993	18.73	--	--	2.36	11.21	9.24	--	Used LPH density 0.73
	12/15/1993	18.73	--	--	0.68	11.05	8.18	--	Used LPH density 0.73
	2/8/1994	18.73	--	--	4.07	11.48	10.22	--	Used LPH density 0.73
	7/8/1994	18.73	--	--	2.37	11.58	8.88	--	Used LPH density 0.73
	8/12/1994	18.73	--	--	1.70	11.55	8.42	--	Used LPH density 0.73
	9/21/1994	18.73	--	--	0.82	11.60	NM	--	Used LPH density 0.73
	11/4/1994	18.73	--	--	1.20	11.60	NM	--	Used LPH density 0.73
	12/23/1994	18.73	--	--	6.00	11.95	11.16	--	Used LPH density 0.73
	2/3/1995	18.73	--	--	0.05	5.00	13.77	--	Used LPH density 0.73
	2/22/1995	18.73	--	--	8.63	13.68	11.35	--	Used LPH density 0.73
	3/24/1995	18.73	--	--	6.30	11.60	11.73	--	Used LPH density 0.73
	4/27/1995	18.73	--	--	3.70	9.90	11.53	--	Used LPH density 0.73
	5/15/1995	18.73	--	--	5.06	11.46	10.96	--	Used LPH density 0.73
	6/16/1995	18.73	--	--	4.53	11.48	10.56	--	Used LPH density 0.73
	8/25/1995	18.73	--	--	3.44	11.47	9.77	--	Used LPH density 0.73
	10/20/1995	18.73	--	--	0.55	9.91	9.22	--	Used LPH density 0.73
	4/4/1996	18.73	--	--	6.34	11.12	12.24	--	Used LPH density 0.73
	4/16/1996	18.73	--	--	5.28	10.04	12.54	--	Used LPH density 0.73
	5/10/1996	18.73	--	--	3.09	7.49	13.50	--	Used LPH density 0.73
	5/15/1996	18.73	--	--	2.52	6.93	13.64	--	Used LPH density 0.73
	5/22/1996	18.73	--	--	0.44	7.69	11.36	--	Used LPH density 0.73
	6/5/1996	18.73	--	--	1.54	9.31	10.54	--	Used LPH density 0.73
	6/24/1996	18.73	--	--	3.35	11.78	9.40	--	Used LPH density 0.73
	7/15/1996	18.73	--	--	2.77	11.59	9.16	--	Used LPH density 0.73
	8/23/1996	18.73	--	--	2.11	11.66	8.61	--	Used LPH density 0.73
	9/18/1996	18.73	--	--	1.96	11.63	8.53	--	Used LPH density 0.73
	1/3/1997	18.73	--	--	0.45	5.00	14.06	--	Used LPH density 0.73
	3/12/1997	18.73	--	--	0.61	8.15	11.03	--	Used LPH density 0.73
	4/2/1997	18.73	--	--	--	7.62	11.11	--	
	5/1/1997	18.73	--	--	1.20	7.93	11.68	--	Used LPH density 0.73
	7/8/1997	18.73	--	--	5.02	11.00	11.39	--	Used LPH density 0.73
	8/19/1997	18.73	--	--	2.52	11.12	9.45	--	Used LPH density 0.73
	8/26/1997	18.73	--	--	2.77	11.57	9.18	--	Used LPH density 0.73
	9/18/1997	18.73	--	--	0.37	10.28	8.72	--	Used LPH density 0.73
	4/30/1998	18.73	--	--	5.56	11.59	11.20	--	Used LPH density 0.73
	7/28/1999	18.73	--	--	4.77	11.63	10.58	--	Used LPH density 0.73
	5/23/2000	18.73	--	--	3.73	10.63	10.82	--	Used LPH density 0.73
	5/24/2001	18.73	--	--	2.00	10.81	9.38	--	Used LPH density 0.73
	6/5/2002	18.73	--	--	5.48	11.45	11.28	--	Used LPH density 0.73
	5/27/2003	18.73	--	--	3.55	11.42	9.90	--	Used LPH density 0.73
	6/15/2004	18.73	--	--	2.35	11.50	8.95	--	Used LPH density 0.73
	6/20/2005	18.73	--	--	3.52	9.30	12.00	--	Used LPH density 0.73
	6/5/2006	18.73	--	--	0.02	5.82	12.92	--	Used LPH density 0.73

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	10/23/2006	18.73	--	--	0.91	9.05	10.34	--	Used LPH density 0.73
	3/14/2007	21.77	--	--	0.08	5.56	16.27	--	Used LPH density 0.73
	9/10/2007	21.77	--	--	0.08	10.21	11.62	--	Used LPH density 0.73
B-3A	11/28/2007	21.77	N/A	N/A	N/A	8.60	13.17	13.17	
	12/13/2007	21.77	N/A	N/A	N/A	7.96	13.81	13.81	
	1/21/2008	21.77	N/A	N/A	N/A	7.09	14.68	14.68	
	2/24/2008	21.77	N/A	N/A	N/A	6.69	15.08	15.08	
	3/24/2008	21.77	N/A	N/A	N/A	7.38	14.39	14.39	
	6/2/2008	21.85	--	--	--	8.62	13.23	--	
	8/25/2008	21.85	N/A	N/A	N/A	8.93	12.92	12.92	
	2/18/2009	21.85	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.85	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.85	N/A	N/A	N/A	5.31	16.54	16.54	
	8/23/2010	21.85	7.31	14.54	0.23	7.54	14.31	14.48	
B-4	1/27/1993	18.09	--	--	0.59	5.16	13.36	--	Used LPH density 0.73
	3/12/1993	18.09	--	--	0.03	7.48	10.63	--	Used LPH density 0.73
	4/14/1993	18.09	--	--	0.07	7.23	10.91	--	Used LPH density 0.73
	6/30/1993	18.09	--	--	--	7.20	10.89	--	
	12/15/1993	18.09	--	--	0.30	8.01	10.30	--	Used LPH density 0.73
	2/8/1994	18.09	--	--	0.78	6.29	12.37	--	Used LPH density 0.73
	7/8/1994	18.09	--	--	--	8.42	9.67	--	
	8/12/1994	18.09	--	--	--	8.79	9.30	--	
	9/21/1994	18.09	--	--	--	9.07	9.02	--	
	11/4/1994	18.09	--	--	--	8.94	9.15	--	
	12/23/1994	18.09	--	--	0.34	4.69	13.65	--	Used LPH density 0.73
	2/3/1995	18.09	--	--	0.90	5.00	13.75	--	Used LPH density 0.73
	2/22/1995	18.09	--	--	0.64	5.77	12.79	--	Used LPH density 0.73
	3/24/1995	18.09	--	--	0.90	6.09	12.66	--	Used LPH density 0.73
	4/27/1995	18.09	--	--	0.50	6.00	12.46	--	Used LPH density 0.73
	5/15/1995	18.09	--	--	0.44	6.24	12.17	--	Used LPH density 0.73
	6/16/1995	18.09	--	--	0.03	6.42	11.69	--	Used LPH density 0.73
	8/25/1995	18.09	--	--	--	7.14	10.95	--	
	10/20/1995	18.09	--	--	--	7.12	10.97	--	
	4/4/1996	18.09	--	--	--	5.03	13.06	--	
	4/16/1996	18.09	--	--	0.49	4.75	13.70	--	Used LPH density 0.73
	5/10/1996	18.09	--	--	0.92	4.71	14.05	--	Used LPH density 0.73
	5/15/1996	18.09	--	--	0.87	4.61	14.12	--	Used LPH density 0.73
	5/22/1996	18.09	--	--	0.68	7.10	11.49	--	Used LPH density 0.73
	6/5/1996	18.09	--	--	0.10	7.17	10.99	--	Used LPH density 0.73
	6/24/1996	18.09	--	--	--	7.67	10.42	--	
	7/15/1996	18.09	--	--	--	8.13	9.96	--	
	8/23/1996	18.09	--	--	--	8.59	9.50	--	
	9/18/1996	18.09	--	--	--	8.78	9.31	--	
	1/3/1997	18.09	--	--	1.61	4.46	14.81	--	Used LPH density 0.73
	3/12/1997	18.09	--	--	0.10	6.45	11.71	--	Used LPH density 0.73
	4/2/1997	18.09	--	--	0.01	6.54	11.56	--	Used LPH density 0.73
	5/1/1997	18.09	--	--	--	6.87	11.22	--	
	8/19/1997	18.09	--	--	--	7.87	10.22	--	
	8/26/1997	18.09	--	--	--	8.08	10.01	--	
	9/18/1997	18.09	--	--	--	7.40	10.69	--	
	4/30/1998	18.09	--	--	0.02	5.93	12.17	--	Used LPH density 0.73
	7/29/1999	18.09	--	--	--	6.42	11.67	--	
	5/23/2000	18.09	--	--	--	6.10	11.99	--	
	5/23/2001	18.09	--	--	--	7.46	10.63	--	
	6/5/2002	18.09	--	--	0.48	6.18	12.26	--	Used LPH density 0.73
	5/29/2003	18.09	--	--	sheen	7.10	10.99	--	
	6/15/2004	18.09	--	--	0.05	8.20	9.89	--	Used LPH density 0.73
	6/20/2005	18.09	--	--	0.48	5.95	12.49	--	Used LPH density 0.73
	6/5/2006	18.09	--	--	0.55	5.67	12.82	--	Used LPH density 0.73
	10/23/2006	18.09	--	--	0.04	7.60	10.52	--	Used LPH density 0.73
	3/14/2007	21.28	--	--	0.21	4.66	16.78	--	Used LPH density 0.73
	9/10/2007	21.28	--	--	--	8.78	12.50	--	
	11/28/2007	21.28	N/A	N/A	N/A	7.62	13.66	13.66	
	12/13/2007	21.28	N/A	N/A	N/A	6.82	14.46	14.46	
	1/21/2008	21.28	Unable to open well			--	--	--	
	2/24/2008	21.28	N/A	N/A	N/A	5.88	15.40	15.40	
	3/24/2008	21.28	N/A	N/A	N/A	6.52	14.76	14.76	
	6/2/2008	21.28	--	--	--	7.96	13.32	--	
	8/25/2008	21.28	N/A	N/A	N/A	8.35	12.93	12.93	
	2/18/2009	21.28	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.28	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.28	4.64	16.64	0.46	5.10	16.18	16.55	
	8/23/2010	21.28	6.79	14.49	0.46	7.25	14.03	14.38	

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
B-5	1/27/1993	17.97	--	--	--	4.48	13.49	--	
	3/12/1993	17.97	--	--	--	7.98	9.99	--	
	4/14/1993	17.97	--	--	--	7.64	10.33	--	
	6/30/1993	17.97	--	--	--	7.03	10.94	--	
	12/15/1993	17.97	--	--	--	7.35	10.62	--	
	2/8/1994	17.97	--	--	0.03	5.40	12.59	--	Used LPH density 0.73
	7/8/1994	17.97	--	--	0.05	8.58	9.43	--	Used LPH density 0.73
	8/12/1994	17.97	--	--	0.01	8.78	9.20	--	Used LPH density 0.73
	9/21/1994	17.97	--	--	0.06	9.02	8.99	--	Used LPH density 0.73
	11/4/1994	17.97	--	--	0.07	8.96	9.06	--	Used LPH density 0.73
	12/23/1994	17.97	--	--	0.01	4.23	13.75	--	Used LPH density 0.73
	2/3/1995	17.97	--	--	0.04	4.30	13.70	--	Used LPH density 0.73
	2/22/1995	17.97	--	--	0.34	5.74	12.48	--	Used LPH density 0.73
	3/24/1995	17.97	--	--	0.78	5.93	12.61	--	Used LPH density 0.73
	4/27/1995	17.97	--	--	0.90	6.00	12.63	--	Used LPH density 0.73
B-5	5/15/1995	17.97	--	--	0.90	6.30	12.33	--	Used LPH density 0.73
(cont.)	6/16/1995	17.97	--	--	0.84	6.73	11.85	--	Used LPH density 0.73
	8/25/1995	17.97	--	--	0.07	6.87	11.15	--	Used LPH density 0.73
	10/20/1995	17.97	--	--	--	7.39	10.58	--	
	4/4/1996	17.97	--	--	--	4.24	13.73	--	
	4/16/1996	17.97	--	--	--	3.85	14.12	--	
	5/10/1996	17.97	--	--	--	3.63	14.34	--	
	5/15/1996	17.97	--	--	--	3.60	14.37	--	
	5/22/1996	17.97	--	--	--	7.46	10.51	--	
	6/5/1996	17.97	--	--	0.01	7.77	10.21	--	Used LPH density 0.73
	6/24/1996	17.97	--	--	--	7.57	10.40	--	
	7/15/1996	17.97	--	--	--	8.35	9.62	--	
	8/23/1996	17.97	--	--	--	8.62	9.35	--	
	9/18/1996	17.97	--	--	--	8.75	9.22	--	
	1/3/1997	17.97	--	--	--	2.95	15.02	--	
	3/12/1997	17.97	--	--	--	7.38	10.59	--	
	4/2/1997	17.97	--	--	--	7.43	10.54	--	
	5/1/1997	17.97	--	--	--	7.68	10.29	--	
	8/19/1997	17.97	--	--	--	7.56	10.41	--	
	8/26/1997	17.97	--	--	--	7.88	10.09	--	
	9/17/1997	17.97	--	--	--	7.53	10.44	--	
	4/29/1998	17.97	--	--	--	5.61	12.36	--	
	7/29/1999	17.97	--	--	--	6.09	11.88	--	
	5/23/2000	17.97	--	--	--	5.95	12.02	--	
	5/23/2001	17.97	--	--	--	7.95	10.02	--	
	6/5/2002	17.97	--	--	--	5.27	12.70	--	
	5/29/2003	17.97	--	--	sheen	6.82	11.15	--	
	6/15/2004	17.97	--	--	--	7.37	10.60	--	
	6/22/2005	17.97	--	--	--	5.29	12.68	--	
	6/5/2006	17.97	--	--	--	4.91	13.06	--	
	10/23/2006	17.97	--	--	--	7.24	10.73	--	
	3/14/2007	20.95	--	--	--	4.16	16.79	--	
	9/10/2007	20.95	--	--	--	8.77	12.18	--	
	11/28/2007	20.95	3.45	17.50	0.38	3.83	17.12	17.41	
	12/13/2007	20.94	N/A	N/A	N/A	7.56	13.38	13.38	
	1/21/2008	20.94	N/A	N/A	N/A	6.77	14.17	14.17	
	2/24/2008	20.94	N/A	N/A	N/A	5.56	15.38	15.38	
	3/24/2008	20.94	N/A	N/A	N/A	6.24	14.70	14.70	
	6/2/2008	20.95	--	--	--	8.21	12.74	--	
	8/25/2008	20.95	N/A	N/A	N/A	7.86	13.09	13.09	
	2/18/2009	20.95	NM	NM	NM	NM	NM	NM	
	8/25/2009	20.95	NM	NM	NM	NM	NM	NM	
	3/22/2010	20.95	N/A	N/A	N/A	4.25	16.70	16.70	
	8/23/2010	20.95	6.38	14.57	0.30	6.68	14.27	14.50	
B-6	1/27/1993	17.94	--	--	--	6.15	11.79	--	
	3/12/1993	17.94	--	--	--	7.86	10.08	--	
	4/14/1993	17.94	--	--	--	7.89	10.05	--	
	6/30/1993	17.94	--	--	--	7.26	10.68	--	
	12/15/1993	17.94	--	--	--	7.69	10.25	--	
	2/8/1994	17.94	--	--	--	5.61	12.33	--	
	7/8/1994	17.94	--	--	--	8.52	9.42	--	
	8/12/1994	17.94	--	--	0.76	9.38	9.11	--	Used LPH density 0.73
	9/21/1994	17.94	--	--	1.37	10.08	8.86	--	Used LPH density 0.73
	11/4/1994	17.94	--	--	1.76	10.48	8.74	--	Used LPH density 0.73
	12/23/1994	17.94	--	--	--	4.77	13.17	--	
	2/3/1995	17.94	--	--	0.05	4.79	13.19	--	Used LPH density 0.73
	2/22/1995	17.94	--	--	0.01	5.07	12.88	--	Used LPH density 0.73
	3/24/1995	17.94	--	--	0.77	6.97	11.53	--	Used LPH density 0.73

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	4/27/1995	17.94	--	--	0.10	3.65	14.36	--	Used LPH density 0.73
	5/15/1995	17.94	--	--	0.46	6.10	12.18	--	Used LPH density 0.73
	6/16/1995	17.94	--	--	0.69	6.71	11.73	--	Used LPH density 0.73
	8/25/1995	17.94	--	--	0.37	7.20	11.01	--	Used LPH density 0.73
	10/20/1995	17.94	--	--	0.18	7.54	10.53	--	Used LPH density 0.73
	4/4/1996	17.94	--	--	1.46	5.79	13.22	--	Used LPH density 0.73
	4/16/1996	17.94	--	--	2.24	5.92	13.66	--	Used LPH density 0.73
	5/10/1996	17.94	--	--	2.20	5.64	13.91	--	Used LPH density 0.73
	5/15/1996	17.94	--	--	2.33	5.72	13.92	--	Used LPH density 0.73
	5/17/1996	17.94	--	--	NM	NM	NM	--	
	5/22/1996	17.94	--	--	--	7.34	10.60	--	
	6/5/1996	17.94	--	--	0.41	8.00	10.24	--	Used LPH density 0.73
	6/24/1996	17.94	--	--	0.25	8.20	9.92	--	Used LPH density 0.73
	7/15/1996	17.94	--	--	0.59	8.77	9.60	--	Used LPH density 0.73
	8/23/1996	17.94	--	--	0.92	9.34	9.27	--	Used LPH density 0.73
	9/18/1996	17.94	--	--	0.91	9.51	9.09	--	Used LPH density 0.73
	1/3/1997	17.94	--	--	--	3.71	14.23	--	
	3/12/1997	17.94	--	--	--	7.01	10.93	--	
	4/2/1997	17.94	--	--	--	7.56	10.38	--	
	5/1/1997	17.94	--	--	--	7.65	10.29	--	
B-6	8/19/1997	17.94	--	--	--	7.81	10.13	--	
(cont.)	9/17/1997	17.94	--	--	--	7.00	10.94	--	
	4/29/1998	17.94	--	--	--	5.89	12.05	--	
	7/29/1999	17.94	--	--	--	6.15	11.79	--	
	5/24/2001	17.94	--	--	--	8.05	9.89	--	
	6/5/2002	17.94	--	--	0.10	5.65	12.29	--	Used LPH density 0.73
	5/29/2003	17.94	--	--	--	7.08	10.86	--	
	6/15/2004	17.94	--	--	--	8.42	9.52	--	
	6/22/2005	17.94	--	--	--	5.44	12.50	--	
	6/5/2006	17.94	--	--	--	5.10	12.84	--	
	10/23/2006	17.94	--	--	--	7.34	10.60	--	
	3/14/2007	21.00	--	--	--	4.46	16.54	--	
	9/10/2007	21.00	--	--	--	8.76	12.24	--	
	11/28/2007	21.00	N/A	N/A	N/A	9.50	11.50	11.50	
	12/13/2007	21.00	N/A	N/A	N/A	1.79	19.21	19.21	
	1/21/2008	21.00	N/A	N/A	N/A	11.60	9.40	9.40	
	2/24/2008	21.00	N/A	N/A	N/A	5.78	15.22	15.22	
	3/24/2008	21.00	N/A	N/A	N/A	6.47	14.53	14.53	
	6/2/2008	21.00	--	--	--	7.99	13.01	--	
	8/25/2008	21.00	N/A	N/A	N/A	8.11	12.89	12.89	
	2/18/2009	21.00	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.00	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.00	N/A	N/A	N/A	4.31	16.69	16.69	
	8/23/2010	21.00	--	--	--	6.40	14.60	14.60	
D-1	1/27/1993	18.03	--	--	--	5.53	12.50	--	
	3/12/1993	18.03	--	--	--	6.65	11.38	--	
	4/14/1993	18.03	--	--	--	5.84	12.19	--	
	12/15/1993	18.03	--	--	--	6.59	11.44	--	
	11/4/1994	18.03	--	--	--	7.55	10.48	--	
	2/22/1995	18.03	--	--	--	5.90	12.13	--	
	6/16/1995	18.03	--	--	--	6.86	11.17	--	
	10/20/1995	18.03	--	--	--	6.60	11.43	--	
	4/4/1996	18.03	--	--	--	6.44	11.59	--	
	4/16/1996	18.03	--	--	--	6.36	11.67	--	
	5/1/1997	18.03	--	--	--	6.06	11.97	--	
D-4	11/4/1994	17.82	--	--	--	6.44	11.38	--	
	2/22/1995	17.82	--	--	--	3.95	13.87	--	
	6/16/1995	17.82	--	--	--	6.37	11.45	--	
	10/20/1995	17.82	--	--	--	6.10	11.72	--	
	4/4/1996	17.82	--	--	--	5.17	12.65	--	
	4/16/1996	17.82	--	--	--	5.40	12.42	--	
	4/30/1998	17.82	--	--	--	5.68	12.14	--	
	6/5/2002	17.82	--	--	--	DRY		--	
	5/27/2003	17.82	--	--	--	DRY		--	
	6/15/2004	17.82	--	--	--	DRY		--	
	6/21/2005	17.82	--	--	--	5.90	11.92	--	
	6/5/2006	17.82	--	--	--	4.77	13.05	--	
	10/23/2006	17.82	--	--	--	5.82	DRY	--	
	3/14/2007	21.09	--	--	--	5.30	15.79	--	
	9/10/2007	21.09	--	--	--	5.57	15.52	--	
	11/28/2007	21.09	N/A	N/A	N/A	4.10	16.99	16.99	
	12/13/2007	21.09	N/A	N/A	N/A	5.00	16.09	16.09	
	1/21/2008	21.09	N/A	N/A	N/A	6.00	15.09	15.09	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	2/24/2008	21.09	N/A	N/A	N/A	4.15	16.94	16.94	
	3/24/2008	21.09	N/A	N/A	N/A	3.47	17.62	17.62	
	6/2/2008	21.09	--	--	--	DRY		--	
	8/25/2008	21.09	N/A	N/A	N/A	2.89	18.20	18.20	
	2/18/2009	21.09	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.09	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.09	N/A	N/A	N/A	5.41	15.68	15.68	
	8/23/2010	21.09	--	--	--	5.75	15.34	15.34	Purged Dry
D-5	1/27/1993	18.12	--	--	--	5.51	12.61	--	
	4/14/1993	18.12	--	--	--	5.58	12.54	--	
	12/15/1993	18.12	--	--	--	6.55	11.57	--	
	11/4/1994	18.12	--	--	--	6.56	11.56	--	
	2/22/1995	18.12	--	--	--	4.10	14.02	--	
	6/16/1995	18.12	--	--	--	6.77	11.35	--	
	10/20/1995	18.12	--	--	--	6.55	11.57	--	
	4/4/1996	18.12	--	--	--	4.51	13.61	--	
	4/16/1996	18.12	--	--	--	4.94	13.18	--	
	5/1/1997	18.12	--	--	--	6.50	11.62	--	
	4/30/1998	18.12	--	--	--	6.61	11.51	--	
	5/27/2003	18.12	--	--	--	DRY		--	
	6/15/2004	18.12	--	--	--	DRY		--	
	6/21/2005	18.12	--	--	--	DRY		--	
	6/5/2006	18.12	--	--	--	6.51	11.61	--	
	10/23/2006	18.12	--	--	--	DRY		--	
	3/14/2007	21.33	--	--	--	DRY		--	
	9/10/2007	21.33	--	--	--	DRY		--	
	11/28/2007	21.33	N/A	N/A	N/A	6.74	14.59	14.59	
	12/13/2007	21.33	N/A	N/A	N/A	2.30	19.03	19.03	
	1/21/2008	21.33	Unable to gauge; under sheet of ice			--	--	--	
	2/24/2008	21.33	N/A	N/A	N/A	6.23	15.10	15.10	Mud observed at 6.91 feet
	3/24/2008	21.33	Well was dry			--	--	--	
	6/2/2008	21.33	--	--	--	DRY		--	
	8/25/2008	21.33	N/A	N/A	N/A	6.91	14.42	14.42	
	2/18/2009	21.33	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.33	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.33	N/A	N/A	N/A	DRY		--	
	8/23/2010	21.33	--	--	--	6.82	14.51	14.51	Purged Dry
D-6	1/27/1993	17.74	--	--	1.00	5.54	12.93	--	Used LPH density 0.73
	3/12/1993	17.74	--	--	--	6.79	10.95	--	
	4/14/1993	17.74	--	--	--	5.68	12.06	--	
	6/30/1993	17.74	--	--	--	6.58	11.16	--	
	12/15/1993	17.74	--	--	--	7.14	10.60	--	
	2/8/1994	17.74	--	--	--	5.27	12.47	--	
	7/8/1994	17.74	--	--	--	7.43	10.31	--	
	12/23/1994	17.74	--	--	--	5.14	12.60	--	
	2/3/1995	17.74	--	--	--	4.34	13.40	--	
	2/22/1995	17.74	--	--	--	4.79	12.95	--	
	3/24/1995	17.74	--	--	--	4.55	13.19	--	
	4/27/1995	17.74	--	--	--	6.64	11.10	--	
	5/15/1995	17.74	--	--	--	5.19	12.55	--	
	6/16/1995	17.74	--	--	--	5.67	12.07	--	
	8/25/1995	17.74	--	--	--	6.42	11.32	--	
	10/20/1995	17.74	--	--	--	4.81	12.93	--	
	4/4/1996	17.74	--	--	--	1.58	16.16	--	
	4/16/1996	17.74	--	--	--	1.21	16.53	--	
	5/10/1996	17.74	--	--	--	3.50	14.24	--	
	5/15/1996	17.74	--	--	--	3.28	14.46	--	
	5/22/1996	17.74	--	--	--	5.59	12.15	--	
	6/5/1996	17.74	--	--	--	6.09	11.65	--	
	6/24/1996	17.74	--	--	--	6.55	11.19	--	
	7/15/1996	17.74	--	--	--	7.10	10.64	--	
	8/23/1996	17.74	--	--	--	7.73	10.01	--	
	9/18/1996	17.74	--	--	--	7.09	10.65	--	
	1/3/1997	17.74	--	--	--	2.77	14.97	--	
	3/12/1997	17.74	--	--	--	1.61	16.13	--	
	4/2/1997	17.74	--	--	--	5.97	11.77	--	
	5/1/1997	17.74	--	--	--	5.89	11.85	--	
	8/19/1997	17.74	--	--	--	7.28	10.46	--	
	9/17/1997	17.74	--	--	--	7.38	10.36	--	
	4/30/1998	17.74	--	--	--	5.49	12.25	--	
	5/23/2000	17.74	--	--	--	5.82	11.92	--	
	5/23/2001	17.74	--	--	--	6.92	10.82	--	
	6/5/2002	17.74	--	--	--	4.67	13.07	--	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/27/2003	17.74	--	--	--	6.72	11.02	--	
	6/15/2004	17.74	--	--	--	8.52	9.22	--	
	6/22/2005	17.74	--	--	--	4.67	13.07	--	
	6/5/2006	17.74	--	--	--	2.62	15.12	--	
	10/23/2006	17.74	--	--	--	6.95	10.79	--	
	3/14/2007	20.61	--	--	--	4.62	15.99	--	
	9/10/2007	20.61	--	--	--	7.92	12.69	--	
	11/28/2007	20.61	N/A	N/A	N/A	7.80	12.81	12.81	
	12/13/2007	20.61	N/A	N/A	N/A	6.26	14.35	14.35	
	1/21/2008	20.61	N/A	N/A	N/A	6.03	14.58	14.58	
	2/24/2008	20.61	N/A	N/A	N/A	5.93	14.68	14.68	
	3/24/2008	20.61	N/A	N/A	N/A	5.76	14.85	14.85	
	6/2/2008	20.61	--	--	--	6.75	13.86	--	
	8/25/2008	20.61	N/A	N/A	N/A	7.51	13.10	13.10	
	2/18/2009	20.61	NM	NM	NM	NM	NM	NM	
	8/25/2009	20.61	NM	NM	NM	NM	NM	NM	
	3/22/2010	20.61	N/A	N/A	N/A	3.85	16.76	16.76	
	8/23/2010	20.61	--	--	--	5.99	14.62	14.62	
D-7	1/27/1993	17.69	--	--	--	5.07	12.62	--	
	3/12/1993	17.69	--	--	--	6.38	11.31	--	
	4/14/1993	17.69	--	--	--	6.38	11.31	--	
	12/15/1993	17.69	--	--	--	7.37	10.32	--	
	7/8/1994	17.69	--	--	--	7.14	10.55	--	
	8/12/1994	17.69	--	--	--	7.14	10.55	--	
	11/4/1994	17.69	--	--	--	7.94	9.75	--	
	12/23/1994	17.69	--	--	--	7.14	10.55	--	
	2/3/1995	17.69	--	--	--	4.59	13.10	--	
	2/22/1995	17.69	--	--	--	5.31	12.38	--	
	3/24/1995	17.69	--	--	--	5.35	12.34	--	
	4/27/1995	17.69	--	--	--	5.18	12.51	--	
	5/15/1995	17.69	--	--	--	5.50	12.19	--	
	6/16/1995	17.69	--	--	--	5.95	11.74	--	
	8/25/1995	17.69	--	--	--	6.59	11.10	--	
	10/20/1995	17.69	--	--	--	6.00	11.69	--	
	3/24/1996	17.69	--	--	--	5.35	12.34	--	
	4/4/1996	17.69	--	--	--	4.30	13.39	--	
	4/16/1996	17.69	--	--	--	4.01	13.68	--	
	4/2/1997	17.69	--	--	--	6.04	11.65	--	
	5/1/1997	17.69	--	--	--	6.30	11.39	--	
	4/30/1998	17.69	--	--	--	5.85	11.84	--	
	5/23/2000	17.69	--	--	--	6.11	11.58	--	
	5/23/2001	17.69	--	--	--	6.85	10.84	--	
D-7	6/4/2002	17.69	--	--	--	5.51	12.18	--	
(cont.)	5/27/2003	17.69	--	--	--	6.36	11.33	--	
	6/15/2004	17.69	--	--	--	7.24	10.45	--	
	6/22/2005	17.69	--	--	--	5.11	12.58	--	
	6/5/2006	17.69	--	--	--	4.74	12.95	--	
	10/23/2006	17.69	--	--	--	7.04	10.65	--	
	3/14/2007	20.49	--	--	--	3.83	16.66	--	
	9/10/2007	20.49	--	--	--	7.67	12.82	--	
	11/28/2007	20.49	N/A	N/A	N/A	6.92	13.57	13.57	
	12/13/2007	20.49	N/A	N/A	N/A	2.36	18.13	18.13	
	1/21/2008	20.49	N/A	N/A	N/A	9.97	10.52	10.52	
	2/24/2008	20.49	N/A	N/A	N/A	6.03	14.46	14.46	
	3/24/2008	20.49	Unable to gauge; well compromised			--	--	--	
	6/2/2008	20.49	--	--	--	6.25	14.24	--	
	8/25/2008	20.49	N/A	N/A	N/A	7.42	13.07	13.07	
	2/18/2009	20.49	NM	NM	NM	NM	NM	NM	
	8/25/2009	20.49	NM	NM	NM	NM	NM	NM	
	3/22/2010	20.49	N/A	N/A	N/A	4.41	16.08	16.08	
	8/23/2010	20.49	--	--	--	5.96	14.53	14.53	
HA-1	1/27/1993	19.50	--	--	--	5.94	13.56	--	
	3/12/1993	19.50	--	--	--	8.54	10.96	--	
	4/14/1993	19.50	--	--	--	6.47	13.03	--	
	12/15/1993	19.50	--	--	--	5.54	13.96	--	
	11/4/1994	19.50	--	--	--	10.30	9.20	--	
	2/22/1995	19.50	--	--	--	5.11	14.39	--	
	6/16/1995	19.50	--	--	--	8.33	11.17	--	
	10/20/1995	19.50	--	--	--	5.48	14.02	--	
	4/4/1996	19.50	--	--	--	5.81	13.69	--	
	4/16/1996	19.50	--	--	--	5.78	13.72	--	
	5/1/1997	19.50	--	--	--	5.59	13.91	--	
	9/17/1997	19.50	--	--	--	5.50	14.00	--	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	4/29/1998	19.50	--	--	--	5.83	13.67	--	
	5/24/2000	19.50	--	--	--	6.20	13.30	--	
	5/23/2001	19.50	--	--	--	6.30	13.20	--	
	6/4/2002	19.50	--	--	--	6.40	13.10	--	
	5/28/2003	19.50	--	--	--	6.45	13.05	--	
	6/15/2004	19.50	--	--	--	5.80	13.70	--	
	6/22/2005	19.50	--	--	--	5.77	13.73	--	
	6/5/2006	19.50	--	--	--	5.00	14.50	--	
	10/23/2006	19.50	--	--	--	5.97	13.53	--	
	3/14/2007	20.76	--	--	--	3.42	17.34	--	
	9/10/2007	20.76	--	--	--	4.46	16.30	--	
	11/28/2007	20.76	N/A	N/A	N/A	7.32	13.44	13.44	
	12/13/2007	20.76	N/A	N/A	N/A	3.83	16.93	16.93	
	1/21/2008	20.76	N/A	N/A	N/A	3.87	16.89	16.89	
	2/24/2008	20.76	N/A	N/A	N/A	4.46	16.30	16.30	
	3/24/2008	20.76	N/A	N/A	N/A	3.06	17.70	17.70	
	6/2/2008	20.76	--	--	--	4.83	15.93	--	
	8/25/2008	20.76	N/A	N/A	N/A	3.33	17.43	17.43	
	2/18/2009	20.76	NM	NM	NM	NM	NM	NM	
	8/25/2009	20.76	NM	NM	NM	NM	NM	NM	
	3/22/2010	20.76	N/A	N/A	N/A	3.94	16.82	16.82	
	8/23/2010	20.76	--	--	--	6.68	14.08	14.08	
HA-2	1/27/1993	18.17	--	--	--	5.80	12.37	--	
	4/14/1993	18.17	--	--	--	7.12	11.05	--	
	12/15/1993	18.17	--	--	--	7.84	10.33	--	
	11/4/1994	18.17	--	--	--	8.45	9.72	--	
	2/22/1995	18.17	--	--	--	6.39	11.78	--	
	6/16/1995	18.17	--	--	--	7.03	11.14	--	
	10/20/1995	18.17	--	--	--	7.29	10.88	--	
	4/4/1996	18.17	--	--	--	5.43	12.74	--	
	4/16/1996	18.17	--	--	--	5.17	13.00	--	
	4/2/1997	18.17	--	--	--	6.80	11.37	--	
	5/1/1997	18.17	--	--	--	6.98	11.19	--	
	9/18/1997	18.17	--	--	--	7.34	10.83	--	
	4/30/1998	18.17	--	--	--	6.74	11.43	--	
	7/30/1999	18.17	--	--	--	7.03	11.14	--	
	5/23/2000	18.17	--	--	--	6.94	11.23	--	
	5/23/2001	18.17	--	--	--	7.50	10.67	--	
	6/4/2002	18.17	--	--	--	6.45	11.72	--	
	5/27/2003	18.17	--	--	sheen	7.40	10.77	--	
	6/16/2004	18.17	--	--	--	7.84	10.33	--	
	6/21/2005	18.17	--	--	--	6.41	11.76	--	
	6/5/2006	18.17	--	--	--	6.22	11.95	--	
	10/23/2006	18.17	--	--	--	7.84	10.33	--	
	3/14/2007	21.09	--	--	--	5.69	15.40	--	
	9/10/2007	21.09	--	--	--	7.89	13.20	--	
	11/28/2007	21.09	N/A	N/A	N/A	7.53	13.56	13.56	
	12/13/2007	21.09	6.95	14.14	0.36	7.31	13.78	14.05	
	1/21/2008	21.09	N/A	N/A	N/A	6.35	14.74	14.74	
	2/24/2008	21.09	N/A	N/A	N/A	6.31	14.78	14.78	
	3/24/2008	21.09	N/A	N/A	N/A	6.65	14.44	14.44	
	6/2/2008	21.09	--	--	--	7.12	13.97	--	
	8/25/2008	21.09	N/A	N/A	N/A	7.77	13.32	13.32	
	2/18/2009	21.09	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.09	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.09	N/A	N/A	N/A	5.93	15.16	15.16	
	8/23/2010	21.09	--	--	--	6.61	14.48	14.48	
HA-3	1/27/1993	21.03	--	--	--	8.65	12.38	--	
	3/12/1993	21.03	--	--	--	9.01	12.02	--	
	4/14/1993	21.03	--	--	--	8.61	12.42	--	
	12/15/1993	21.03	--	--	--	9.22	11.81	--	
	11/4/1994	21.03	--	--	--	10.26	10.77	--	
	2/22/1995	21.03	--	--	--	8.35	12.68	--	
	6/16/1995	21.03	--	--	--	9.31	11.72	--	
	10/20/1995	21.03	--	--	--	9.46	11.57	--	
	4/4/1996	21.03	--	--	--	7.95	13.08	--	
	4/16/1996	21.03	--	--	--	8.10	12.93	--	
	4/2/1997	21.03	--	--	--	6.70	14.33	--	
	5/1/1997	21.03	--	--	--	8.44	12.59	--	
	9/18/1997	21.03	--	--	--	9.34	11.69	--	
	4/30/1998	21.03	--	--	--	9.20	11.83	--	
	5/23/2000	21.03	--	--	--	9.25	11.78	--	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	5/23/2001	21.03	--	--	--	9.18	11.85	--	
	6/4/2002	21.03	--	--	--	9.07	11.96	--	
	5/27/2003	21.03	--	--	--	9.30	11.73	--	
	6/22/2005	21.03	--	--	--	8.94	12.09	--	
	6/5/2006	21.03	--	--	--	8.91	12.12	--	
	10/23/2006	21.03	--	--	--	9.66	11.37	--	
	3/14/2007	21.09	--	--	--	5.42	15.67	--	
	9/10/2007	21.09	--	--	--	6.70	14.39	--	
	11/28/2007	21.09	N/A	N/A	N/A	6.91	14.18	14.18	
	12/13/2007	21.09	5.90	15.19	0.90	6.80	14.29	14.97	
	1/21/2008	21.09	N/A	N/A	N/A	5.96	15.13	15.13	
	2/24/2008	21.09	N/A	N/A	N/A	5.77	15.32	15.32	
	3/24/2008	21.09	N/A	N/A	N/A	6.07	15.02	15.02	
	6/2/2008	21.09	--	--	--	6.36	14.73	--	
	8/25/2008	21.09	N/A	N/A	N/A	6.30	14.79	14.79	
	2/18/2009	21.09	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.09	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.09	N/A	N/A	N/A	5.44	15.65	16.65	
	8/23/2010	21.09	--	--	--	6.34	14.75	14.75	
HA-4	1/27/1993	20.24	--	--	--	7.68	12.56	--	
	3/12/1993	20.24	--	--	--	8.56	11.68	--	
	4/14/1993	20.24	--	--	--	8.02	12.22	--	
	12/15/1993	20.24	--	--	--	8.41	11.83	--	
	11/4/1994	20.24	--	--	--	10.14	10.10	--	
	2/22/1995	20.24	--	--	--	7.09	13.15	--	
	6/16/1995	20.24	--	--	--	8.78	11.46	--	
	10/20/1995	20.24	--	--	--	8.54	11.70	--	
	4/4/1996	20.24	--	--	--	7.68	12.56	--	
	4/16/1996	20.24	--	--	--	7.11	13.13	--	
	4/2/1997	20.24	--	--	--	8.00	12.24	--	
	5/1/1997	20.24	--	--	--	5.49	14.75	--	
	9/18/1997	20.24	--	--	--	7.70	12.54	--	
	4/30/1998	20.24	--	--	--	8.67	11.57	--	
	5/23/2000	20.24	--	--	--	7.35	12.89	--	
	5/23/2001	20.24	--	--	--	8.95	11.29	--	
	6/4/2002	20.24	--	--	--	6.45	13.79	--	
	5/27/2003	20.24	--	--	--	8.64	11.60	--	
	6/16/2004	20.24	--	--	--	8.67	11.57	--	
	6/22/2005	20.24	--	--	--	8.58	11.66	--	
	6/5/2006	20.24	--	--	--	8.04	12.20	--	
	10/23/2006	20.24	--	--	--	9.00	11.24	--	
	3/14/2007	21.05	--	--	--	5.06	15.99	--	
	9/10/2007	21.05	--	--	--	6.77	14.28	--	
	11/28/2007	21.05	N/A	N/A	N/A	5.42	15.63	15.63	
	12/13/2007	21.05	N/A	N/A	N/A	6.20	14.85	14.85	
	1/21/2008	21.05	N/A	N/A	N/A	5.08	15.97	15.97	
	2/24/2008	21.05	N/A	N/A	N/A	5.78	15.27	15.27	
	3/24/2008	21.05	N/A	N/A	N/A	5.15	15.90	15.90	
	6/2/2008	21.05	--	--	--	6.37	14.68	--	
	8/25/2008	21.05	N/A	N/A	N/A	4.15	16.90	16.90	
	2/18/2009	21.05	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.05	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.05	N/A	N/A	N/A	5.69	15.36	15.36	
	8/23/2010	21.05	--	--	--	6.75	14.30	14.30	
HA-5	1/27/1993	18.07	--	--	--	4.50	13.57	--	
	3/12/1993	18.07	--	--	--	6.22	11.85	--	
	4/14/1993	18.07	--	--	--	5.13	12.94	--	
	12/15/1993	18.07	--	--	--	6.39	11.68	--	
	11/4/1994	18.07	--	--	--	7.86	10.21	--	
	2/22/1995	18.07	--	--	--	3.67	14.40	--	
	6/16/1995	18.07	--	--	--	6.70	11.37	--	
	10/20/1995	18.07	--	--	--	6.41	11.66	--	
	4/4/1996	18.07	--	--	--	4.88	13.19	--	
	4/16/1996	18.07	--	--	--	4.91	13.16	--	
	5/1/1997	18.07	--	--	--	5.04	13.03	--	
	9/18/1997	18.07	--	--	--	5.90	12.17	--	
	5/1/1998	18.07	--	--	--	5.98	12.09	--	
	7/29/1999	18.07	--	--	--	6.53	11.54	--	
	5/23/2000	18.07	--	--	--	6.22	11.85	--	
	5/22/2001	18.07	--	--	--	6.09	11.98	--	
HA-5	6/5/2002	18.07	--	--	--	6.08	11.99	--	
	11/24/2002	21.13	N/A	N/A	N/A	6.80	14.33	14.33	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	1/17/2003	21.13	4.37	16.76	0.00	4.37	16.76	16.76	
	1/20/2003	21.13	N/A	N/A	N/A	4.58	16.55	16.55	
	1/31/2003	21.13	N/A	N/A	N/A	4.49	16.64	16.64	
	2/7/2003	21.13	N/A	N/A	N/A	4.46	16.67	16.67	
	2/12/2003	21.13	N/A	N/A	N/A	4.93	16.20	16.20	
	2/18/2003	21.13	N/A	N/A	N/A	5.30	15.83	15.83	
	2/21/2003	21.13	N/A	N/A	N/A	5.14	15.99	15.99	
	2/24/2003	21.13	N/A	N/A	N/A	5.23	15.90	15.90	
	3/4/2003	21.13	N/A	N/A	N/A	5.55	15.58	15.58	
	3/12/2003	21.13	N/A	N/A	N/A	5.24	15.89	15.89	
	3/14/2003	21.13	5.25	15.88	0.01	5.26	15.87	15.88	
	3/26/2003	21.13	N/A	N/A	N/A	4.41	16.72	16.72	
	3/28/2003	21.13	N/A	N/A	N/A	4.98	16.15	16.15	
	4/2/2003	21.13	N/A	N/A	N/A	5.00	16.13	16.13	
	4/4/2003	21.13	N/A	N/A	N/A	5.44	15.69	15.69	
	4/8/2003	21.13	N/A	N/A	N/A	5.49	15.64	15.64	
	4/11/2003	21.13	N/A	N/A	N/A	5.53	15.60	15.60	
	4/15/2003	21.13	N/A	N/A	N/A	5.06	16.07	16.07	
	4/17/2003	21.13	N/A	N/A	N/A	5.70	15.43	15.43	
	4/22/2003	21.13	N/A	N/A	N/A	5.54	15.59	15.59	
	4/25/2003	21.13	N/A	N/A	N/A	5.92	15.21	15.21	
	5/2/2003	21.13	N/A	N/A	N/A	5.98	15.15	15.15	
	5/6/2003	21.13	N/A	N/A	N/A	6.02	15.11	15.11	
	5/9/2003	21.13	N/A	N/A	N/A	6.34	14.79	14.79	
	5/23/2003	21.13	N/A	N/A	N/A	6.95	14.18	14.18	
	5/28/2003	21.13	N/A	N/A	N/A	6.85	14.28	14.28	
	6/13/2003	21.13	N/A	N/A	N/A	7.22	13.91	13.91	
	6/18/2003	21.13	N/A	N/A	N/A	7.16	13.97	13.97	
	6/27/2003	21.13	N/A	N/A	N/A	7.14	13.99	13.99	
	7/7/2003	21.13	N/A	N/A	N/A	7.47	13.66	13.66	
	7/16/2003	21.13	N/A	N/A	N/A	7.57	13.56	13.56	
	7/31/2003	21.13	7.82	13.31	0.01	7.83	13.30	13.31	
	8/5/2003	21.13	N/A	N/A	N/A	7.90	13.23	13.23	
	8/11/2003	21.13	N/A	N/A	N/A	9.01	12.12	12.12	
	8/22/2003	21.13	9.24	11.89	0.01	9.25	11.88	11.89	
	8/26/2003	21.13	N/A	N/A	N/A	8.19	12.94	12.94	
	9/2/2003	21.13	N/A	N/A	N/A	8.48	12.65	12.65	
	9/9/2003	21.13	N/A	N/A	N/A	8.93	12.20	12.20	
	9/19/2003	21.13	8.80	12.33	0.01	8.81	12.32	12.33	
	10/14/2003	21.13	N/A	N/A	N/A	N/A	N/A	N/A	Bailer in well
	11/20/2003	21.13	N/A	N/A	N/A	N/A	N/A	N/A	Submerged well cap
	12/3/2003	21.13	N/A	N/A	N/A	4.44	16.69	16.69	Bailer in well
	1/19/2004	21.13	N/A	N/A	N/A	3.99	17.14	17.14	
	2/24/2004	21.13	N/A	N/A	N/A	5.26	15.87	15.87	
	3/15/2004	21.13	N/A	N/A	N/A	6.11	15.02	15.02	
	4/19/2004	21.13	N/A	N/A	N/A	6.62	14.51	14.51	
	5/17/2004	21.13	N/A	N/A	N/A	7.15	13.98	13.98	
	6/16/2004	18.07	--	--	--	7.01	11.06	--	
	6/22/2004	21.13	N/A	N/A	N/A	6.98	14.15	14.15	
	8/18/2004	21.13	8.10	13.03	0.01	8.11	13.02	13.03	
	9/21/2004	21.13	N/A	N/A	N/A	6.97	14.16	14.16	
	10/19/2004	21.13	N/A	N/A	N/A	6.28	14.85	14.85	
	11/23/2004	21.13	N/A	N/A	N/A	6.52	14.61	14.61	
	12/21/2004	21.13	N/A	N/A	N/A	4.56	16.57	16.57	
	1/13/2005	21.13	N/A	N/A	N/A	5.84	15.29	15.29	Trace product
	4/28/2005	21.13	N/A	N/A	N/A	4.88	16.25	16.25	
	6/1/2005	21.13	N/A	N/A	N/A	5.17	15.96	15.96	
	6/20/2005	18.07	--	--	--	5.82	12.25	--	
	6/29/2005	21.13	N/A	N/A	N/A	6.59	14.54	14.54	
	7/20/2005	21.13	N/A	N/A	N/A	7.00	14.13	14.13	
	8/22/2005	21.13	N/A	N/A	N/A	7.20	13.93	13.93	
	9/12/2005	21.13	N/A	N/A	N/A	7.82	13.31	13.31	
	10/12/2005	21.13	N/A	N/A	N/A	8.35	12.78	12.78	
	11/21/2005	21.13	6.02	15.11	0.01	6.03	15.10	15.11	
	12/27/2005	21.13	NM	NM	NM	NM	NM	NM	Top of casing under water
	1/30/2006	21.13	N/A	N/A	N/A	6.10	15.03	15.03	
	2/16/2006	21.13	N/A	N/A	N/A	3.97	17.16	17.16	
	3/13/2006	21.13	N/A	N/A	N/A	4.94	16.19	16.19	
	4/18/2006	21.13	N/A	N/A	N/A	5.28	15.85	15.85	
	5/12/2006	21.13	N/A	N/A	N/A	5.70	15.43	15.43	
	6/5/2006	18.07	--	--	--	5.42	12.65	--	
	6/9/2006	21.13	N/A	N/A	N/A	5.31	15.82	15.82	
	7/13/2006	21.13	N/A	N/A	N/A	6.39	14.74	14.74	
	8/16/2006	21.13	N/A	N/A	N/A	7.35	13.78	13.78	
	9/19/2006	21.13	N/A	N/A	N/A	7.80	13.33	13.33	
	10/13/2006	21.13	N/A	N/A	N/A	7.52	13.61	13.61	
	10/23/2006	18.07	--	--	--	7.54	10.53	--	
	11/20/2006	21.13	N/A	N/A	N/A	3.70	17.43	17.43	
HA-5	12/8/2006	21.13	N/A	N/A	N/A	4.69	16.44	16.44	
(cont.)	1/19/2007	21.13	N/A	N/A	N/A	3.22	17.91	17.91	
	2/19/2007	21.13	N/A	N/A	N/A	5.25	15.88	15.88	
	3/14/2007	21.13	--	--	--	4.38	16.75	--	
	3/15/2007	21.13	N/A	N/A	N/A	4.31	16.82	16.82	
	4/16/2007	21.13	N/A	N/A	N/A	4.76	16.37	16.37	
	5/14/2007	21.13	N/A	N/A	N/A	6.05	15.08	15.08	
	6/29/2007	21.13	N/A	N/A	N/A	7.17	13.96	13.96	
	7/20/2007	21.13	N/A	N/A	N/A	7.57	13.56	13.56	
	8/21/2007	21.13	N/A	N/A	N/A	8.15	12.98	12.98	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	9/10/2007	21.13	N/A	N/A	N/A	8.24	12.89	12.89	
	10/22/2007	21.13	N/A	N/A	N/A	6.92	14.21	14.21	
	11/28/2007	21.13	N/A	N/A	N/A	6.33	14.80	14.80	
	12/13/2007	21.13	N/A	N/A	N/A	5.08	16.05	16.05	
	1/21/2008	21.13	N/A	N/A	N/A	4.96	16.17	16.17	
	2/24/2008	21.13	N/A	N/A	N/A	5.73	15.40	15.40	
	3/24/2008	21.13	N/A	N/A	N/A	8.99	12.14	12.14	
	6/2/2008	21.13	--	--	--	7.04	14.09	--	
	8/25/2008	21.13	N/A	N/A	N/A	7.65	13.48	13.48	
	2/18/2009	21.13	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.13	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.13	N/A	N/A	N/A	5.56	15.57	15.57	Slight Odor
	8/23/2010	21.13	--	--	--	7.47	13.66	13.66	
HA-6	1/27/1993	18.16	--	--	--	4.58	13.58	--	
	3/12/1993	18.16	--	--	--	6.46	11.70	--	
	4/14/1993	18.16	--	--	--	5.55	12.61	--	
	12/15/1993	18.16	--	--	--	7.15	11.01	--	
	11/4/1994	18.16	--	--	--	8.42	9.74	--	
	2/22/1995	18.16	--	--	--	4.98	13.18	--	
	5/15/1995	18.16	--	--	--	5.86	12.30	--	
	6/16/1995	18.16	--	--	--	6.62	11.54	--	
	10/20/1995	18.16	--	--	--	6.86	11.30	--	
	4/4/1996	18.16	--	--	--	4.68	13.48	--	
	4/16/1996	18.16	--	--	--	4.60	13.56	--	
	5/10/1996	18.16	--	--	--	4.20	13.96	--	
	5/15/1996	18.16	--	--	--	4.02	14.14	--	
	5/22/1996	18.16	--	--	--	4.97	13.19	--	
	6/5/1996	18.16	--	--	--	5.79	12.37	--	
	6/24/1996	18.16	--	--	--	6.78	11.38	--	
	7/15/1996	18.16	--	--	--	7.51	10.65	--	
	8/23/1996	18.16	--	--	--	8.09	10.07	--	
	9/18/1996	18.16	--	--	--	8.37	9.79	--	
	1/3/1997	18.16	--	--	--	2.84	15.32	--	
	3/12/1997	18.16	--	--	--	4.54	13.62	--	
	4/2/1997	18.16	--	--	--	4.85	13.31	--	
	5/1/1997	18.16	--	--	--	5.35	12.81	--	
	8/19/1997	18.16	--	--	--	7.40	10.76	--	
	8/26/1997	18.16	--	--	--	7.60	10.56	--	
	9/17/1997	18.16	--	--	--	6.44	11.72	--	
	5/1/1998	18.16	--	--	--	5.95	12.21	--	
	7/30/1999	18.16	--	--	--	6.54	11.62	--	
	5/22/2000	18.16	--	--	--	6.21	11.95	--	
	5/22/2001	18.16	--	--	--	6.36	11.80	--	
	6/5/2002	18.16	--	--	--	6.00	12.16	--	
	11/24/2002	21.43	N/A	N/A	N/A	7.12	14.31	14.31	
	5/28/2003	18.16	--	--	sheen	6.93	11.23	--	
	6/16/2004	18.16	--	--	--	7.45	10.71	--	
	1/13/2005	21.43	N/A	N/A	N/A	5.56	15.87	15.87	
	4/28/2005	21.43	N/A	N/A	N/A	4.81	16.62	16.62	
	6/1/2005	21.43	N/A	N/A	N/A	5.05	16.38	16.38	
	6/20/2005	18.16	--	--	--	5.76	12.40	--	
	6/29/2005	21.43	N/A	N/A	N/A	6.52	14.91	14.91	
	7/20/2005	21.43	N/A	N/A	N/A	7.21	14.22	14.22	Strong Odor
	8/22/2005	21.43	N/A	N/A	N/A	7.40	14.03	10.76	
	9/12/2005	21.43	N/A	N/A	N/A	7.82	13.61	13.61	
	10/12/2005	21.43	N/A	N/A	N/A	8.62	12.81	12.81	
	11/21/2005	21.43	N/A	N/A	N/A	6.57	14.86	14.86	
	12/27/2005	21.43	N/A	N/A	N/A	5.69	15.74	15.74	
	1/30/2006	21.43	N/A	N/A	N/A	2.46	18.97	18.97	
	2/16/2006	21.43	N/A	N/A	N/A	3.62	17.81	17.81	
	3/13/2006	21.43	N/A	N/A	N/A	4.62	16.81	16.81	
	4/18/2006	21.43	N/A	N/A	N/A	5.01	16.42	16.42	
	5/12/2006	21.43	N/A	N/A	N/A	5.43	16.00	16.00	
	6/5/2006	18.16	--	--	--	5.39	12.77	--	
	6/9/2006	21.43	N/A	N/A	N/A	5.20	16.23	16.23	
	7/13/2006	21.43	N/A	N/A	N/A	6.60	14.83	14.83	
	8/16/2006	21.43	N/A	N/A	N/A	7.35	14.08	14.08	
	9/19/2006	21.43	N/A	N/A	N/A	7.91	13.52	13.52	
	10/13/2006	21.43	N/A	N/A	N/A	7.72	13.71	13.71	
	10/23/2006	18.16	--	--	--	7.72	10.44	--	
	11/20/2006	21.43	N/A	N/A	N/A	4.22	17.21	17.21	
	12/8/2006	21.43	N/A	N/A	N/A	3.59	17.84	17.84	
	1/19/2007	21.43	N/A	N/A	N/A	3.13	18.30	18.30	
	2/19/2007	21.43	N/A	N/A	N/A	5.36	16.07	16.07	
	3/14/2007	21.43	--	--	--	4.37	17.06	--	
	3/15/2007	21.43	N/A	N/A	N/A	4.25	17.18	17.18	
	4/16/2007	21.43	N/A	N/A	N/A	4.50	16.93	16.93	
	5/14/2007	21.43	N/A	N/A	N/A	6.20	15.23	15.23	
	6/29/2007	21.43	N/A	N/A	N/A	7.25	14.18	14.18	
	7/20/2007	21.43	N/A	N/A	N/A	7.71	13.72	13.72	
	8/21/2007	21.43	N/A	N/A	N/A	8.35	13.08	13.08	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	9/10/2007	21.43	N/A	N/A	N/A	8.46	12.97	12.97	
	10/22/2007	21.43	N/A	N/A	N/A	7.55	13.88	13.88	
	11/28/2007	21.43	N/A	N/A	N/A	6.62	14.81	14.81	
	12/13/2007	21.43	N/A	N/A	N/A	5.49	12.68	12.68	
	1/21/2008	21.43	N/A	N/A	N/A	5.21	18.48	18.48	
	2/24/2008	21.43	N/A	N/A	N/A	5.73	14.05	14.05	
	3/24/2008	21.43	N/A	N/A	N/A	6.05	14.00	14.00	
	6/2/2008	21.43	--	--	--	7.24	14.19	--	
	8/25/2008	21.43	N/A	N/A	N/A	8.00	13.75	13.75	
	2/18/2009	21.43	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.43	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.43	N/A	N/A	N/A	4.96	16.47	16.47	Slight Odor
	8/23/2010	21.43	--	--	--	7.32	14.11	14.11	
HA-7	1/27/1993	18.44	--	--	2.22	6.33	13.73	--	Used LPH density 0.73
	3/12/1993	18.44	--	--	0.61	7.30	11.59	--	Used LPH density 0.73
	4/14/1993	18.44	--	--	1.23	7.00	12.34	--	Used LPH density 0.73
	6/30/1993	18.44	--	--	0.84	7.36	11.69	--	Used LPH density 0.73
	12/15/99	18.44	--	--	0.55	7.80	11.04	--	Used LPH density 0.73
	2/8/1994	18.44	--	--	0.50	6.14	12.67	--	Used LPH density 0.73
	8/12/1994	18.44	--	--	0.53	9.09	9.74	--	Used LPH density 0.73
	9/21/1994	18.44	--	--	0.47	9.39	9.39	--	Used LPH density 0.73
	11/4/1994	18.44	--	--	0.51	9.15	9.66	--	Used LPH density 0.73
	12/23/1994	18.44	--	--	0.19	4.07	14.51	--	Used LPH density 0.73
	2/3/1995	18.44	--	--	0.40	3.94	14.79	--	Used LPH density 0.73
	2/22/1995	18.44	--	--	0.48	4.75	14.04	--	Used LPH density 0.73
	3/24/1995	18.44	--	--	0.45	5.30	13.47	--	Used LPH density 0.73
	4/27/1995	18.44	--	--	0.50	5.85	12.96	--	Used LPH density 0.73
	5/15/1995	18.44	--	--	0.55	6.44	12.40	--	Used LPH density 0.73
	6/16/1995	18.44	--	--	0.58	7.16	11.70	--	Used LPH density 0.73
	8/25/1995	18.44	--	--	0.42	7.72	11.03	--	Used LPH density 0.73
HA-7	10/20/1995	18.44	--	--	0.40	7.45	11.28	--	Used LPH density 0.73
(cont.)	4/4/1996	18.44	--	--	0.63	5.38	13.52	--	Used LPH density 0.73
	4/16/1996	18.44	--	--	0.62	5.17	13.72	--	Used LPH density 0.73
	5/10/1996	18.44	--	--	0.64	4.89	14.02	--	Used LPH density 0.73
	5/15/1996	18.44	--	--	0.63	4.62	14.28	--	Used LPH density 0.73
	5/22/1996	18.44	--	--	0.86	6.35	12.72	--	Used LPH density 0.73
	6/5/1996	18.44	--	--	0.72	6.92	12.05	--	Used LPH density 0.73
	6/24/1996	18.44	--	--	0.67	7.72	11.21	--	Used LPH density 0.73
	7/15/1996	18.44	--	--	0.57	8.32	10.54	--	Used LPH density 0.73
	8/23/1996	18.44	--	--	0.55	8.90	9.94	--	Used LPH density 0.73
	9/18/1996	18.44	--	--	0.57	9.19	9.67	--	Used LPH density 0.73
	1/3/1997	18.44	--	--	0.66	3.67	15.25	--	Used LPH density 0.73
	3/12/1997	18.44	--	--	0.83	5.86	13.19	--	Used LPH density 0.73
	4/2/1997	18.44	--	--	0.78	6.17	12.84	--	Used LPH density 0.73
	5/1/1997	18.44	--	--	0.83	6.58	12.47	--	Used LPH density 0.73
	7/8/1997	18.44	--	--	0.06	5.67	12.81	--	Used LPH density 0.73
	8/19/1997	18.44	--	--	--	7.62	10.82	--	
	8/26/1997	18.44	--	--	0.05	7.93	10.55	--	Used LPH density 0.73
	9/18/1997	18.44	--	--	0.06	8.70	9.78	--	Used LPH density 0.73
	4/30/1998	18.44	--	--	0.08	6.07	12.43	--	Used LPH density 0.73
	7/29/1999	18.44	--	--	--	6.82	11.62	--	
	5/22/2000	18.44	--	--	--	6.18	12.26	--	
	5/22/2001	18.44	--	--	--	6.74	11.70	--	
	6/5/2002	18.44	--	--	--	6.11	12.33	--	
HA-7	11/24/2002	21.60	N/A	N/A	N/A	7.25	14.35	14.35	
	5/28/2003	18.44	--	--	sheen	7.08	11.36	--	
	6/15/2004	18.44	--	--	--	7.83	10.61	--	
	1/13/2005	21.60	N/A	N/A	N/A	5.70	15.90	15.90	
	4/28/2005	21.60	NM	NM	NM	NM	NM	NM	
	6/1/2005	21.60	NM	NM	NM	NM	NM	NM	
	6/20/2005	18.44	--	--	--	5.71	12.73	--	
	6/29/2005	21.60	NM	NM	NM	NM	NM	NM	
	7/20/2005	21.60	NM	NM	NM	NM	NM	NM	
	8/22/2005	21.60	NM	NM	NM	NM	NM	NM	
	9/12/2005	21.60	NM	NM	NM	NM	NM	NM	
	10/12/2005	21.60	NM	NM	NM	NM	NM	NM	
	11/21/2005	21.60	NM	NM	NM	NM	NM	NM	
	12/27/2005	21.60	NM	NM	NM	NM	NM	NM	
	1/30/2006	21.60	NM	NM	NM	NM	NM	NM	
	2/16/2006	21.60	NM	NM	NM	NM	NM	NM	
HA-7	3/13/2006	21.60	NM	NM	NM	NM	NM	NM	
(cont.)	4/18/2006	21.60	NM	NM	NM	NM	NM	NM	
	5/12/2006	21.60	NM	NM	NM	NM	NM	NM	
	6/5/2006	18.44	--	--	--	5.28	13.16	--	
	6/9/2006	21.60	NM	NM	NM	NM	NM	NM	
	7/13/2006	21.60	NM	NM	NM	NM	NM	NM	
	8/16/2006	21.60	NM	NM	NM	NM	NM	NM	
	9/19/2006	21.60	NM	NM	NM	NM	NM	NM	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	10/13/2006	21.60	NM	NM	NM	NM	NM	NM	
	10/23/2006	18.44	--	--	--	7.86	10.58	--	
	11/20/2006	21.60	NM	NM	NM	NM	NM	NM	
	12/8/2006	21.60	NM	NM	NM	NM	NM	NM	
	1/19/2007	21.60	NM	NM	NM	NM	NM	NM	
	1/19/2007	21.60	NM	NM	NM	NM	NM	NM	
	1/19/2007	21.60	NM	NM	NM	NM	NM	NM	
	3/14/2007	21.60	--	--	--	4.47	17.13	--	
	4/16/2007	21.60	NM	NM	NM	NM	NM	NM	
	5/14/2007	21.60	NM	NM	NM	NM	NM	NM	
	6/29/2007	21.60	NA	NA	NA	7.35	14.25	14.25	
	7/20/2007	21.60	NM	NM	NM	NM	NM	NM	
	8/21/2007	21.60	NM	NM	NM	NM	NM	NM	
	9/10/2007	21.60	NM	NM	NM	8.78	12.82	NM	
	10/22/2007	21.60	NM	NM	NM	NM	NM	NM	
	11/28/2007	21.60	N/A	N/A	N/A	7.02	14.58	14.58	
	12/13/2007	21.60	NM	NM	NM	NM	NM	NM	
	1/21/2008	21.60	N/A	N/A	N/A	5.27	16.33	16.33	
	2/24/2008	21.60	N/A	N/A	N/A	5.97	15.63	15.63	
	3/24/2008	21.60	N/A	N/A	N/A	6.34	15.26	15.26	
	6/2/2008	21.60	--	--	--	7.62	13.98	--	
	8/25/2008	21.60	N/A	N/A	N/A	8.27	13.33	13.33	
	2/18/2009	21.60	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.60	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.60	N/A	N/A	N/A	5.19	16.41	16.41	
	8/23/2010	21.60	--	--	--	7.38	14.22	14.22	
HA-8	1/27/1993	18.88	--	--	--	4.60	14.28	--	
	3/12/1993	18.88	--	--	--	6.79	12.09	--	
	4/14/1993	18.88	--	--	--	5.20	13.68	--	
	12/15/1993	18.88	--	--	--	7.18	11.70	--	
	11/4/1994	18.88	--	--	--	8.85	10.03	--	
	2/22/1995	18.88	--	--	--	4.03	14.85	--	
	6/16/1995	18.88	--	--	--	7.13	11.75	--	
	10/20/1995	18.88	--	--	--	7.09	11.79	--	
	4/4/1996	18.88	--	--	--	5.32	13.56	--	
	4/16/1996	18.88	--	--	--	5.18	13.70	--	
	5/1/1997	18.88	--	--	--	5.01	13.87	--	
	8/26/1997	18.88	--	--	--	7.99	10.89	--	
	9/18/1997	18.88	--	--	--	6.90	11.98	--	
	5/1/1998	18.88	--	--	--	6.25	12.63	--	
	7/29/1999	18.88	--	--	--	7.93	10.95	--	
	5/22/2000	18.88	--	--	--	6.10	12.78	--	
	5/22/2001	18.88	--	--	--	6.65	12.23	--	
	6/5/2002	18.88	--	--	--	6.54	12.34	--	
	11/24/2002	21.97	N/A	N/A	N/A	7.40	14.57	14.57	
	1/31/2003	21.97	N/A	N/A	N/A	4.04	17.93	17.93	
	2/7/2003	21.97	N/A	N/A	N/A	4.16	17.81	17.81	
	2/12/2003	21.97	N/A	N/A	N/A	4.71	17.26	17.26	
	2/18/2003	21.97	N/A	N/A	N/A	4.99	16.98	16.98	
	2/21/2003	21.97	N/A	N/A	N/A	5.16	16.81	16.81	
	2/24/2003	21.97	N/A	N/A	N/A	5.21	16.76	16.76	
	3/4/2003	21.97	N/A	N/A	N/A	5.89	16.08	16.08	
	3/12/2003	21.97	N/A	N/A	N/A	5.36	16.61	16.61	
	3/14/2003	21.97	5.21	16.76	0.01	5.22	16.75	16.76	
	3/26/2003	21.97	N/A	N/A	N/A	4.74	17.23	17.23	
	3/28/2003	21.97	N/A	N/A	N/A	5.21	16.76	16.76	
	4/2/2003	21.97	N/A	N/A	N/A	5.25	16.72	16.72	
	4/4/2003	21.97	N/A	N/A	N/A	5.57	16.40	16.40	
	4/8/2003	21.97	N/A	N/A	N/A	5.57	16.40	16.40	
	4/11/2003	21.97	N/A	N/A	N/A	5.77	16.20	16.20	
	4/15/2003	21.97	N/A	N/A	N/A	5.41	16.56	16.56	
	4/17/2003	21.97	N/A	N/A	N/A	5.91	16.06	16.06	
	4/22/2003	21.97	N/A	N/A	N/A	6.07	15.90	15.90	
	4/25/2003	21.97	N/A	N/A	N/A	6.37	15.60	15.60	
	5/2/2003	21.97	N/A	N/A	N/A	6.44	15.53	15.53	
	5/6/2003	21.97	N/A	N/A	N/A	6.62	15.35	15.35	
	5/9/2003	21.97	N/A	N/A	N/A	6.92	15.05	15.05	
	5/23/2003	21.97	N/A	N/A	N/A	7.38	14.59	14.59	
	5/28/2003	21.97	N/A	N/A	N/A	7.34	14.63	14.63	
	6/13/2003	21.97	N/A	N/A	N/A	7.66	14.31	14.31	
	6/18/2003	21.97	N/A	N/A	N/A	7.60	14.37	14.37	
	6/27/2003	21.97	N/A	N/A	N/A	7.65	14.32	14.32	
	7/7/2003	21.97	N/A	N/A	N/A	8.51	13.46	13.46	
	7/16/2003	21.97	N/A	N/A	N/A	8.24	13.73	13.73	
	7/31/2003	21.97	N/A	N/A	N/A	8.61	13.36	13.36	
	8/5/2003	21.97	N/A	N/A	N/A	9.62	12.35	12.35	
	8/11/2003	21.97	N/A	N/A	N/A	9.70	12.27	12.27	
	8/22/2003	21.97	10.02	11.95	0.01	10.03	11.94	11.95	
	8/26/2003	21.97	N/A	N/A	N/A	8.99	12.98	12.98	
	9/2/2003	21.97	N/A	N/A	N/A	9.02	12.95	12.95	
	9/9/2003	21.97	9.51	12.46	0.01	9.52	12.45	12.46	
	9/19/2003	21.97	10.40	11.57	0.10	10.50	11.47	11.55	
	10/14/2003	21.97	N/A	N/A	N/A	N/A	N/A	N/A	Bailer in well

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	11/20/2003	21.97	7.22	14.75	0.32	7.54	14.43	14.67	
	12/3/2003	21.97	4.65	17.32	0.57	5.22	16.75	17.18	
	1/19/2004	21.97	4.23	17.74	0.55	4.78	17.19	17.60	
	2/24/2004	21.97	5.08	16.89	0.53	5.61	16.36	16.76	
	3/15/2004	21.97	6.15	15.82	0.51	6.66	15.31	15.69	
	4/19/2004	21.97	6.98	14.99	0.50	7.48	14.49	14.87	
	5/17/2004	21.97	7.74	14.23	0.49	8.23	13.74	14.11	
	6/15/2004	18.88	--	--	0.51	8.21	11.04	--	Used LPH density 0.73
HA-8	6/22/2004	21.97	7.57	14.40	0.51	8.08	13.89	14.27	
(cont.)	8/18/2004	21.97	8.71	13.26	0.49	9.20	12.77	13.14	
	9/21/2004	21.97	7.67	14.30	0.17	7.84	14.13	14.26	Strong product odor
	10/19/2004	21.97	6.89	15.08	0.16	7.05	14.92	15.04	
	11/23/2004	21.97	6.89	15.08	0.11	7.00	14.97	15.05	
	12/21/2004	21.97	5.08	16.89	0.15	5.23	16.74	16.85	Strong odor
	1/13/2005	21.97	N/A	N/A	N/A	6.02	15.95	15.95	Trace product
	4/28/2005	21.97	N/A	N/A	N/A	8.63	13.34	13.34	
	6/1/2005	21.97	5.55	13.33	0.11	5.66	16.31	16.39	Strong odor
	6/20/2005	18.88	--	--	0.11	6.27	12.69	--	Used LPH density 0.73
	6/29/2005	21.97	7.08	11.80	0.12	7.20	14.77	11.68	Strong odor
	7/20/2005	21.97	7.55	14.42	0.15	7.70	14.27	14.38	Strong odor
	8/22/2005	21.97	7.85	14.12	0.05	7.90	14.07	14.11	Strong odor
	9/12/2005	21.97	NM	NM	NM	Dry	Dry	Dry	
	10/12/2005	21.97	9.14	12.83	3.61	9.22	12.75	15.46	
	11/21/2005	21.97	7.49	14.48	0.02	7.51	14.46	14.48	
	12/27/2005	21.97	5.04	16.93	0.06	5.10	16.87	16.92	
	1/30/2006	21.97	2.30	19.67	0.06	2.36	19.61	19.66	
	2/16/2006	21.97	4.11	17.86	0.06	4.17	17.80	17.85	
	3/13/2006	21.97	4.98	16.99	0.06	5.04	16.93	16.98	
	4/18/2006	21.97	N/A	N/A	N/A	5.12	16.85	16.85	
	5/12/2006	21.97	N/A	N/A	N/A	5.89	16.08	16.08	
	6/5/2006	18.88	--	--	0.06	5.38	13.54	--	Used LPH density 0.73
	6/9/2006	21.97	N/A	N/A	N/A	5.40	16.57	16.57	
	7/13/2006	21.97	N/A	N/A	N/A	6.80	15.17	15.17	
	8/16/2006	21.97	N/A	N/A	N/A	7.80	14.17	14.17	
	9/19/2006	21.97	N/A	N/A	N/A	8.54	13.43	13.43	
	10/13/2006	21.97	N/A	N/A	N/A	8.20	13.77	13.77	
	10/23/2006	18.88	--	--	0.02	8.26	10.63	--	Used LPH density 0.73
	11/20/2006	21.97	3.85	18.12	0.03	3.88	18.09	18.11	
	12/8/2006	21.97	3.65	18.32	0.02	3.67	18.30	18.32	
	1/19/2007	21.97	3.22	18.75	0.04	3.24	18.73	18.76	
	2/19/2007	21.97	5.28	16.69	0.03	5.31	16.66	16.68	
	3/15/2007	21.97	4.18	17.79	0.02	4.20	17.77	17.79	
	4/16/2007	21.97	4.88	17.09	0.03	4.91	17.06	17.08	
	5/14/2007	21.97	6.60	15.37	0.05	6.65	15.32	15.36	
	6/29/2007	21.97	N/A	N/A	N/A	7.72	14.25	14.25	
	7/20/2007	21.97	N/A	N/A	N/A	8.13	13.84	13.84	
	8/21/2007	21.97	N/A	N/A	N/A	8.88	13.09	13.09	
	9/10/2007	21.97	N/A	N/A	N/A	8.98	12.99	12.99	
	10/22/2007	21.97	N/A	N/A	N/A	7.83	14.14	14.14	
	11/28/2007	21.97	N/A	N/A	N/A	6.72	15.25	15.25	
	12/13/2007	21.97	N/A	N/A	N/A	5.80	16.17	16.17	
	1/21/2008	21.97	N/A	N/A	N/A	5.76	16.21	16.21	
	2/24/2008	21.97	N/A	N/A	N/A	6.29	15.68	15.68	
	3/24/2008	21.97	N/A	N/A	N/A	6.41	15.56	15.56	
	6/2/2008	21.97	--	--	--	7.64	14.33	--	
	8/25/2008	21.97	N/A	N/A	N/A	8.34	13.63	13.63	
	2/18/2009	21.97	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.97	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.97	N/A	N/A	N/A	5.80	16.17	16.17	
	8/23/2010	21.97	--	--	--	8.13	13.84	13.84	
HA-9	1/27/1993	19.40	--	--	--	7.00	12.40	--	
	3/12/1993	19.40	--	--	--	7.95	11.45	--	
	4/14/1993	19.40	--	--	--	7.74	11.66	--	
	12/15/1993	19.40	--	--	--	7.82	11.58	--	
	11/4/1994	19.40	--	--	--	9.75	9.65	--	
	2/22/1995	19.40	--	--	--	7.61	11.79	--	
	6/16/1995	19.40	--	--	--	8.17	11.23	--	
HA-9	10/20/1995	19.40	--	--	--	8.08	11.32	--	
(cont.)	4/4/1996	19.40	--	--	--	7.30	12.10	--	
	4/16/1996	19.40	--	--	--	7.28	12.12	--	
	4/2/1997	19.40	--	--	--	7.76	11.64	--	
	5/1/1997	19.40	--	--	--	7.78	11.62	--	
	9/18/1997	19.40	--	--	--	7.95	11.45	--	
	4/29/1998	19.40	--	--	--	7.99	11.41	--	
	7/28/1999	19.40	--	--	--	8.23	11.17	--	
	5/24/2000	19.40	--	--	--	9.25	10.15	--	
	5/23/2001	19.40	--	--	--	7.92	11.48	--	
	6/4/2002	19.40	--	--	--	8.01	11.39	--	
	11/24/2002	21.32	N/A	N/A	N/A	8.20	13.12	13.12	
	5/28/2003	19.40	--	--	sheen	8.05	11.35	--	
	6/17/2004	19.40	--	--	--	8.18	11.22	--	
	6/20/2005	19.40	--	--	--	7.98	11.42	--	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	6/5/2006	19.40	--	--	--	7.62	11.78	--	
	10/23/2006	19.40	--	--	--	8.32	11.08	--	
	3/14/2007	21.32	--	--	--	6.08	15.24	--	
	6/29/2007	21.32	N/A	N/A	N/A	7.04	14.28	14.28	
	7/20/2007	21.32	NM	NM	NM	NM	NM	NM	
	8/21/2007	21.32	NM	NM	NM	NM	NM	NM	
	9/10/2007	21.32	--	--	--	7.13	14.19	--	
	10/22/2007	21.32	NM	NM	NM	NM	NM	NM	
	11/28/2007	21.32	NM	NM	NM	NM	NM	NM	
	12/13/2007	21.32	N/A	N/A	N/A	6.66	14.66	14.66	
	1/21/2008	21.32	N/A	N/A	N/A	6.35	14.97	14.97	
	2/24/2008	21.32	N/A	N/A	N/A	6.67	14.65	14.65	
	3/24/2008	21.32	N/A	N/A	N/A	6.62	14.70	14.70	
	6/2/2008	21.32	--	--	--	6.90	14.42	--	
	8/25/2008	21.32	N/A	N/A	N/A	7.08	14.24	14.24	
	2/18/2009	21.32	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.32	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.32	N/A	N/A	N/A	6.14	15.18	15.18	
	8/23/2010	21.32	--	--	--	7.17	14.15	14.15	
HA-10	1/27/1993	19.40	--	--	--	6.88	12.45	--	
	3/12/1993	19.40	--	--	--	8.94	10.39	--	
	4/14/1993	19.40	--	--	--	8.73	10.60	--	
	12/15/1993	19.40	--	--	--	8.05	11.28	--	
	2/22/1995	19.40	--	--	--	8.14	11.19	--	
	6/16/1995	19.40	--	--	--	9.18	10.15	--	
	10/20/1995	19.40	--	--	--	7.83	11.50	--	
	4/4/1996	19.40	--	--	--	7.67	11.66	--	
	4/16/1996	19.40	--	--	--	7.29	12.04	--	
	7/15/1996	19.40	--	--	--	9.40	9.93	--	
	4/2/1997	19.40	--	--	--	8.74	10.59	--	
	5/1/1997	19.40	--	--	--	8.26	11.07	--	
	5/23/2001	19.40	--	--	--	8.86	10.47	--	
	6/6/2002	19.40	--	--	--	9.80	9.53	--	
	11/24/2002	21.15	N/A	N/A	N/A	8.49	12.66	12.66	
	5/27/2003	19.40	--	--	--	9.31	10.02	--	
	6/17/2004	19.40	--	--	--	9.17	10.16	--	
	6/21/2005	19.40	--	--	--	8.58	10.75	--	
	6/5/2006	19.40	--	--	--	7.84	11.49	--	
	10/23/2006	19.40	--	--	--	9.09	10.24	--	
	3/14/2007	21.15	--	--	--	6.21	14.94	--	
	6/29/2007	21.15	N/A	N/A	N/A	7.79	13.36	13.36	
	7/20/2007	21.15	NM	NM	NM	NM	NM	NM	
	8/21/2007	21.15	NM	NM	NM	NM	NM	NM	
	9/10/2007	21.15	NM	NM	NM	8.20	12.95	NM	
	10/22/2007	21.15	NM	NM	NM	NM	NM	NM	
	11/28/2007	21.15	N/A	N/A	N/A	7.50	13.65	13.65	
	12/13/2007	21.15	N/A	N/A	N/A	7.35	13.80	13.80	
	1/21/2008	21.15	N/A	N/A	N/A	6.79	14.36	14.36	
	2/24/2008	21.15	N/A	N/A	N/A	6.70	14.45	14.45	
	3/24/2008	21.15	N/A	N/A	N/A	7.21	13.94	13.94	
	6/2/2008	21.15	N/A	N/A	N/A	7.85	13.30	13.30	
	8/25/2008	21.15	N/A	N/A	N/A	6.51	14.64	14.64	
	2/18/2009	21.15	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.15	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.15	N/A	N/A	N/A	6.32	14.83	14.83	
	8/23/2010	21.15	N/A	N/A	N/A	7.55	13.60	13.60	
HA-11	1/27/1993	18.51	--	--	--	5.80	12.71	--	
	3/12/1993	18.51	--	--	--	7.97	10.54	--	
	4/14/1993	18.51	--	--	--	7.33	11.18	--	
	12/15/1993	18.51	--	--	--	7.18	11.33	--	
	11/4/1994	18.51	--	--	--	9.77	8.74	--	
	2/22/1995	18.51	--	--	--	7.49	11.02	--	
	6/16/1995	18.51	--	--	--	8.25	10.26	--	
	10/20/1995	18.51	--	--	--	7.62	10.89	--	
	4/4/1996	18.51	--	--	--	6.95	11.56	--	
	4/16/1996	18.51	--	--	--	6.60	11.91	--	
	4/2/1997	18.51	--	--	--	7.95	10.56	--	
	5/1/1997	18.51	--	--	--	7.96	10.55	--	
	4/29/1998	18.51	--	--	--	7.89	10.62	--	
	7/28/1999	18.51	--	--	--	8.08	10.43	--	
	5/24/2000	18.51	--	--	--	7.75	10.76	--	
	5/23/2001	18.51	--	--	--	8.40	10.11	--	
	6/4/2002	18.51	--	--	--	7.77	10.74	--	
	11/24/2002	20.69	N/A	N/A	N/A	8.33	12.36	12.36	
	5/27/2003	18.51	--	--	--	8.33	10.18	--	
	6/21/2005	18.51	--	--	--	7.85	10.66	--	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
HA-11	6/5/2006	18.51	--	--	--	7.57	10.49	--	
(cont.)	10/23/2006	18.51	--	--	--	8.60	9.91	--	
	3/14/2007	20.69	--	--	--	6.21	14.48	--	
	6/29/2007	20.69	N/A	N/A	N/A	7.64	13.05	13.05	
	7/20/2007	20.69	NM	NM	NM	NM	NM	NM	
	8/21/2007	20.69	NM	NM	NM	NM	NM	NM	
	9/10/2007	20.69	NM	NM	NM	8.18	12.51	NM	
	10/22/2007	20.69	NM	NM	NM	NM	NM	NM	
	11/28/2007	20.69	N/A	N/A	N/A	7.41	13.28	13.28	
	12/13/2007	20.69	N/A	N/A	N/A	3.94	16.75	16.75	
	1/21/2008	20.69	N/A	N/A	N/A	6.69	14.00	14.00	
	2/24/2008	20.69	N/A	N/A	N/A	6.83	13.86	13.86	
	3/24/2008	20.69	N/A	N/A	N/A	7.06	13.63	13.63	
	6/2/2008	20.69	--	--	--	7.58	13.11	--	
	8/25/2008	20.69	N/A	N/A	N/A	8.09	12.60	12.60	
	2/18/2009	20.69	NM	NM	NM	NM	NM	NM	
	8/25/2009	20.69	NM	NM	NM	NM	NM	NM	
	3/22/2010	20.69	--	--	--	6.55	14.14	14.14	
	8/23/2010	20.69	--	--	--	7.22	13.47	13.47	
HA-12	1/27/1993	19.91	--	--	--	4.01	15.90	--	
	3/12/1993	19.91	--	--	--	7.36	12.55	--	
	4/14/1993	19.91	--	--	--	5.92	13.99	--	
	12/15/1993	19.91	--	--	--	7.02	12.89	--	
	11/4/1994	19.91	--	--	--	9.06	10.85	--	
	2/22/1995	19.91	--	--	--	3.80	16.11	--	
	6/16/1995	19.91	--	--	--	7.40	12.51	--	
	10/20/1995	19.91	--	--	--	7.40	12.51	--	
	4/4/1996	19.91	--	--	--	5.65	14.26	--	
	4/16/1996	19.91	--	--	--	5.26	14.65	--	
	5/1/1997	19.91	--	--	--	6.13	13.78	--	
	8/26/1997	19.91	--	--	--	8.58	11.33	--	
	9/18/1997	19.91	--	--	--	8.70	11.21	--	
	5/1/1998	19.91	--	--	--	6.65	13.26	--	
	7/29/1999	19.91	--	--	--	7.46	12.45	--	
	5/22/2000	19.91	--	--	--	7.63	12.28	--	
	5/22/2001	19.91	--	--	--	7.29	12.62	--	
	6/5/2002	19.91	--	--	--	7.06	12.85	--	
	11/24/2002	22.47	N/A	N/A	N/A	7.43	15.04	15.04	
	5/28/2003	19.91	--	--	--	7.84	12.07	--	
	6/16/2004	19.91	--	--	--	8.43	11.48	--	
	6/21/2005	19.91	--	--	--	6.67	13.24	--	
	6/5/2006	19.91	--	--	--	5.91	14.00	--	
	10/23/2006	19.91	--	--	--	8.71	11.20	--	
	3/14/2007	22.47	--	--	--	5.11	17.36	--	
	6/29/2007	22.47	N/A	N/A	N/A	8.07	14.40	14.40	
	7/20/2007	22.47	NM	NM	NM	NM	NM	NM	
	8/21/2007	22.47	NM	NM	NM	NM	NM	NM	
	9/10/2007	22.47	NM	NM	NM	9.38	13.09	NM	
	10/22/2007	22.47	NM	NM	NM	NM	NM	NM	
	11/28/2007	22.47	N/A	N/A	N/A	7.50	14.97	14.97	
	12/13/2007	22.47	NM	NM	NM	NM	NM	NM	
	1/21/2008	22.47	N/A	N/A	N/A	4.09	18.38	18.38	
	2/24/2008	22.47	N/A	N/A	N/A	6.81	15.66	15.66	
	3/24/2008	22.47	N/A	N/A	N/A	6.87	15.60	15.60	
	6/2/2008	22.47	--	--	--	8.14	14.33	--	
	8/25/2008	22.47	N/A	N/A	N/A	8.67	13.80	13.80	
	2/18/2009	22.47	NM	NM	NM	NM	NM	NM	
	8/25/2009	22.47	NM	NM	NM	8.67	13.80	NM	
	3/22/2010	22.47	--	--	--	6.00	16.47	16.47	
	8/23/2010	22.47	--	--	--	Dry	Dry	Dry	
HA-13	1/27/1993	19.56	--	--	--	5.32	14.24	--	
	3/12/1993	19.56	--	--	--	8.23	11.33	--	
	4/14/1993	19.56	--	--	--	7.08	12.48	--	
	12/15/1993	19.56	--	--	--	6.34	13.22	--	
	11/4/1994	19.56	--	--	--	8.93	10.63	--	
	2/22/1995	19.56	--	--	--	4.54	15.02	--	
	6/16/1995	19.56	--	--	--	8.83	10.73	--	
	10/20/1995	19.56	--	--	--	8.23	11.33	--	
	4/4/1996	19.56	--	--	--	7.06	12.50	--	
	4/16/1996	19.56	--	--	--	7.31	12.25	--	
	5/1/1997	19.56	--	--	--	7.01	12.55	--	
	9/18/1997	19.56	--	--	--	6.93	12.63	--	
	4/30/1998	19.56	--	--	--	8.26	11.30	--	
	7/28/1999	19.56	--	--	--	8.62	10.94	--	
	5/22/2000	19.56	--	--	--	8.45	11.11	--	
	5/22/2001	19.56	--	--	--	8.20	11.36	--	
	6/4/2002	19.56	--	--	--	8.41	11.15	--	

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	11/24/2002	22.73	N/A	N/A	N/A	8.60	14.13	14.13	
	1/17/2003	22.73	N/A	N/A	N/A	6.30	16.43	16.43	
	1/31/2003	22.73	N/A	N/A	N/A	4.49	18.24	18.24	
	2/7/2003	22.73	N/A	N/A	N/A	6.27	16.46	16.46	
	2/12/2003	22.73	N/A	N/A	N/A	6.78	15.95	15.95	
	2/18/2003	22.73	N/A	N/A	N/A	7.13	15.60	15.60	
	2/21/2003	22.73	N/A	N/A	N/A	6.99	15.74	15.74	
	2/24/2003	22.73	N/A	N/A	N/A	6.98	15.75	15.75	
	3/4/2003	22.73	N/A	N/A	N/A	7.49	15.24	15.24	
	3/12/2003	22.73	N/A	N/A	N/A	6.48	16.25	16.25	
	3/14/2003	22.73	N/A	N/A	N/A	5.16	17.57	17.57	
	3/26/2003	22.73	N/A	N/A	N/A	5.65	17.08	17.08	
	3/28/2003	22.73	N/A	N/A	N/A	6.34	16.39	16.39	
	4/2/2003	22.73	N/A	N/A	N/A	6.74	15.99	15.99	
	4/4/2003	22.73	N/A	N/A	N/A	7.08	15.65	15.65	
	4/8/2003	22.73	N/A	N/A	N/A	7.17	15.56	15.56	
	4/11/2003	22.73	N/A	N/A	N/A	7.31	15.42	15.42	
	4/15/2003	22.73	N/A	N/A	N/A	6.93	15.80	15.80	
	4/17/2003	22.73	N/A	N/A	N/A	7.32	15.41	15.41	
	4/22/2003	22.73	N/A	N/A	N/A	7.52	15.21	15.21	
	4/25/2003	22.73	N/A	N/A	N/A	7.81	14.92	14.92	
	5/2/2003	22.73	N/A	N/A	N/A	8.04	14.69	14.69	
	5/6/2003	22.73	N/A	N/A	N/A	8.13	14.60	14.60	
	5/9/2003	22.73	N/A	N/A	N/A	8.36	14.37	14.37	
	5/23/2003	22.73	N/A	N/A	N/A	8.93	13.80	13.80	
	5/27/2003	19.56	--	--	--	8.89	10.67	--	
	5/28/2003	22.73	N/A	N/A	N/A	8.98	13.75	13.75	
	6/13/2003	22.73	N/A	N/A	N/A	6.08	16.65	16.65	
	6/18/2003	22.73	N/A	N/A	N/A	9.12	13.61	13.61	
	6/27/2003	22.73	N/A	N/A	N/A	9.07	13.66	13.66	
	7/7/2003	22.73	N/A	N/A	N/A	9.55	13.18	13.18	
HA-13	7/16/2003	22.73	N/A	N/A	N/A	9.42	13.31	13.31	
(cont.)	7/31/2003	22.73	N/A	N/A	N/A	9.59	13.14	13.14	
	8/5/2003	22.73	N/A	N/A	N/A	9.63	13.10	13.10	
	8/11/2003	22.73	N/A	N/A	N/A	10.75	11.98	11.98	
	8/22/2003	22.73	N/A	N/A	N/A	11.26	11.47	11.47	
	8/26/2003	22.73	N/A	N/A	N/A	9.87	12.86	12.86	
	9/2/2003	22.73	N/A	N/A	N/A	10.31	12.42	12.42	
	9/9/2003	22.73	N/A	N/A	N/A	10.46	12.27	12.27	
	9/19/2003	22.73	N/A	N/A	N/A	10.46	12.27	12.27	
	10/14/2003	22.73	N/A	N/A	N/A	N/A	N/A	N/A	Bailer in well
	11/20/2003	22.73	N/A	N/A	N/A	5.70	17.03	17.03	
	12/3/2003	22.73	N/A	N/A	N/A	5.91	16.82	16.82	
	1/19/2004	22.73	N/A	N/A	N/A	5.91	16.82	16.82	
	2/24/2004	22.73	N/A	N/A	N/A	6.92	15.81	15.81	
	3/15/2004	22.73	N/A	N/A	N/A	7.81	14.92	14.92	
	4/19/2004	22.73	N/A	N/A	N/A	8.56	14.17	14.17	
	5/17/2004	22.73	N/A	N/A	N/A	9.07	13.66	13.66	
	6/16/2004	19.56	--	--	--	7.99	11.57	--	
	6/22/2004	22.73	N/A	N/A	N/A	8.98	13.75	13.75	
	8/18/2004	22.73	N/A	N/A	N/A	9.79	12.94	12.94	
	9/21/2004	22.73	N/A	N/A	N/A	8.64	14.09	14.09	
	10/19/2004	22.73	N/A	N/A	N/A	8.16	14.57	14.57	
	11/23/2004	22.73	N/A	N/A	N/A	8.62	14.11	14.11	
	12/21/2004	22.73	N/A	N/A	N/A	6.84	15.89	15.89	
	1/13/2005	22.73	N/A	N/A	N/A	7.80	14.93	14.93	
	4/28/2005	22.73	N/A	N/A	N/A	7.07	15.66	15.66	
	6/1/2005	22.73	N/A	N/A	N/A	7.83	14.90	14.90	
	6/21/2005	19.56	--	--	--	8.34	11.22	--	
	6/29/2005	22.73	N/A	N/A	N/A	8.77	13.96	13.96	
	7/20/2005	22.73	N/A	N/A	N/A	9.05	13.68	13.68	
	8/22/2005	22.73	N/A	N/A	N/A	9.28	13.45	13.45	
	9/12/2005	22.73	N/A	N/A	N/A	9.61	13.12	13.12	
	10/12/2005	22.73	N/A	N/A	N/A	9.96	12.77	12.77	
	11/21/2005	22.73	N/A	N/A	N/A	7.78	14.95	14.95	
	12/27/2005	22.73	N/A	N/A	N/A	5.36	17.37	17.37	
	1/30/2006	22.73	N/A	N/A	N/A	3.60	19.13	19.13	
	2/16/2006	22.73	N/A	N/A	N/A	6.05	16.68	16.68	
	3/13/2006	22.73	N/A	N/A	N/A	7.26	15.47	15.47	
	4/18/2006	22.73	N/A	N/A	N/A	7.70	15.03	15.03	
	5/12/2006	22.73	N/A	N/A	N/A	8.21	14.52	14.52	
	6/5/2006	19.56	--	--	--	7.74	11.82	--	
	6/9/2006	22.73	N/A	N/A	N/A	7.80	14.93	14.93	
	7/13/2006	22.73	N/A	N/A	N/A	8.82	13.91	13.91	
	8/16/2006	22.73	N/A	N/A	N/A	9.84	12.89	12.89	
	9/19/2006	22.73	N/A	N/A	N/A	9.70	13.03	13.03	
	10/13/2006	22.73	N/A	N/A	N/A	9.46	13.27	13.27	
	10/23/2006	19.56	--	--	--	9.45	10.11	--	
	11/20/2006	22.73	N/A	N/A	N/A	4.85	17.88	17.88	
	12/8/2006	22.73	N/A	N/A	N/A	5.67	17.06	17.06	
	1/19/2007	22.73	N/A	N/A	N/A	5.08	17.65	17.65	
	2/19/2007	22.73	N/A	N/A	N/A	7.39	15.34	15.34	
	3/14/2007	22.73	--	--	--	6.28	16.45	--	
	3/15/2007	22.73	N/A	N/A	N/A	6.36	16.37	16.37	
	4/16/2007	22.73	N/A	N/A	N/A	7.18	15.55	15.55	
	5/14/2007	22.73	N/A	N/A	N/A	8.40	14.33	14.33	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	6/29/2007	22.73	N/A	N/A	N/A	9.26	13.47	13.47	
	7/20/2007	22.73	N/A	N/A	N/A	9.51	13.22	13.22	
	8/21/2007	22.73	N/A	N/A	N/A	9.89	12.84	12.84	
	9/10/2007	22.73	N/A	N/A	N/A	9.91	12.82	12.82	
	10/22/2007	22.73	N/A	N/A	N/A	8.11	14.62	14.62	
	11/28/2007	22.73	N/A	N/A	N/A	8.22	14.51	14.51	
	12/13/2007	22.73	6.32	16.41	0.01	6.33	16.40	16.41	sheen
	1/21/2008	22.73	N/A	N/A	N/A	6.83	15.90	15.90	
	2/24/2008	22.73	N/A	N/A	N/A	7.55	15.18	15.18	
	3/24/2008	22.73	N/A	N/A	N/A	7.89	14.84	14.84	
	6/2/2008	22.73	--	--	--	9.03	13.70	--	
	8/25/2008	22.73	N/A	N/A	N/A	9.29	13.44	13.44	
	2/18/2009	22.73	NM	NM	NM	NM	NM	NM	
	8/25/2009	22.73	NM	NM	NM	NM	NM	NM	
	3/22/2010	22.73	--	--	--	7.52	15.21	15.21	
	8/23/2010	22.73	--	--	--	9.35	13.38	13.38	
HA-14	1/27/1993	20.02	--	--	--	6.10	13.92	--	
	3/12/1993	20.02	--	--	--	8.80	11.22	--	
	4/14/1993	20.02	--	--	--	7.04	12.98	--	
	12/15/1993	20.02	--	--	--	8.56	11.46	--	
	11/4/1994	20.02	--	--	--	8.35	11.67	--	
	2/22/1995	20.02	--	--	--	5.10	14.92	--	
	6/16/1995	20.02	--	--	--	9.51	10.51	--	
	10/20/1995	20.02	--	--	--	8.77	11.25	--	
	4/4/1996	20.02	--	--	--	7.52	12.50	--	
	4/16/1996	20.02	--	--	--	6.01	14.01	--	
	5/1/1997	20.02	--	--	--	6.92	13.10	--	
	9/18/1997	20.02	--	--	--	8.17	11.85	--	
	4/30/1998	20.02	--	--	--	9.05	10.97	--	
	7/29/1999	20.02	--	--	--	9.49	10.53	--	
	5/22/2000	20.02	--	--	--	9.22	10.80	--	
	5/22/2001	20.02	--	--	--	9.03	10.99	--	
	6/4/2002	20.02	--	--	--	8.41	11.61	--	
	11/24/2002	23.47	N/A	N/A	N/A	9.67	13.80	13.80	
	5/27/2003	20.02	--	--	--	9.48	10.54	--	
	6/16/2004	20.02	--	--	--	9.69	10.33	--	
	9/21/2004	23.47	N/A	N/A	N/A	9.24	14.23	14.23	
	6/1/2005	23.47	N/A	N/A	N/A	8.68	14.79	14.79	
	6/21/2005	20.02	--	--	--	9.15	10.87	--	
	6/29/2005	23.47	N/A	N/A	N/A	9.32	14.15	14.15	
	7/20/2005	23.47	N/A	N/A	N/A	9.63	13.84	10.39	
	8/22/2005	23.47	N/A	N/A	N/A	10.50	12.97	13.21	
	9/12/2005	23.47	NM	NM	NM	NM	NM	NM	
	10/12/2005	23.47	NM	NM	NM	NM	NM	NM	
	11/21/2005	23.47	NM	NM	NM	NM	NM	NM	
	12/27/2005	23.47	NM	NM	NM	NM	NM	NM	
	1/30/2006	23.47	NM	NM	NM	NM	NM	NM	
	2/16/2006	23.47	NM	NM	NM	NM	NM	NM	
	3/13/2006	23.47	NM	NM	NM	NM	NM	NM	
	4/18/2006	23.47	NM	NM	NM	NM	NM	NM	
	5/12/2006	23.47	NM	NM	NM	NM	NM	NM	
	6/5/2006	20.02	--	--	--	7.96	12.06	--	
	6/9/2006	23.47	NM	NM	NM	NM	NM	NM	
	7/13/2006	23.47	NM	NM	NM	NM	NM	NM	
	8/16/2006	23.47	NM	NM	NM	NM	NM	NM	
	9/19/2006	23.47	NM	NM	NM	NM	NM	NM	
	10/13/2006	23.47	N/A	N/A	N/A	10.26	13.21	13.21	
	10/23/2006	20.02	--	--	--	10.18	9.84	--	
	11/20/2006	23.47	N/A	N/A	N/A	9.27	14.20	14.20	
	12/8/2006	23.47	N/A	N/A	N/A	5.12	18.35	18.35	
	1/19/2007	23.47	N/A	N/A	N/A	5.01	18.46	18.46	
	2/19/2007	23.47	N/A	N/A	N/A	8.00	15.47	15.47	
	3/14/2007	23.47	--	--	--	7.13	16.34	--	
	3/15/2007	23.47	N/A	N/A	N/A	6.85	16.62	16.62	
	4/16/2007	23.47	N/A	N/A	N/A	7.87	15.60	15.60	
	5/14/2007	23.47	N/A	N/A	N/A	9.10	14.37	14.37	
	6/29/2007	23.47	N/A	N/A	N/A	8.70	14.77	14.77	
	7/20/2007	23.47	N/A	N/A	N/A	10.08	13.39	13.39	
	8/21/2007	23.47	N/A	N/A	N/A	10.12	13.35	13.35	
	9/10/2007	23.47	N/A	N/A	N/A	10.41	13.06	13.06	
	10/22/2007	23.47	N/A	N/A	N/A	8.76	14.71	14.71	
	11/28/2007	23.47	N/A	N/A	N/A	6.79	16.68	16.68	
	12/13/2007	23.47	7.72	15.75	0.07	7.79	15.68	15.73	
	1/21/2008	23.47	N/A	N/A	N/A	6.54	16.93	16.93	
	2/24/2008	23.47	N/A	N/A	N/A	8.21	15.26	15.26	
	3/24/2008	23.47	N/A	N/A	N/A	8.61	14.86	14.86	
	6/2/2008	23.47	--	--	--	9.68	13.79	--	
	8/25/2008	23.47	N/A	N/A	N/A	8.67	14.80	14.80	
	2/18/2009	23.47	NM	NM	NM	NM	NM	NM	
	8/25/2009	23.47	NM	NM	NM	10.41	13.06	NM	
	3/22/2010	23.47	--	--	--	8.15	15.32	15.32	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	8/23/2010	23.47	--	--	--	9.94	13.53	13.53	
R-1	1/27/1993	16.94	--	--	0.05	5.22	11.76	--	Used LPH density 0.73
	3/12/1993	16.94	--	--	0.10	11.80	5.21	--	Used LPH density 0.73
	6/30/1993	16.94	--	--	0.01	6.88	10.07	--	Used LPH density 0.73
	12/23/1994	16.94	--	--	--	3.43	13.51	--	
	2/3/1995	16.94	--	--	0.10	4.10	12.91	--	Used LPH density 0.73
	2/22/1995	16.94	--	--	0.13	5.28	11.75	--	Used LPH density 0.73
	3/24/1995	16.94	--	--	0.40	5.55	11.68	--	Used LPH density 0.73
	4/27/1995	16.94	--	--	0.32	5.62	11.55	--	Used LPH density 0.73
	5/15/1995	16.94	--	--	0.47	4.91	12.37	--	Used LPH density 0.73
	6/16/1995	16.94	--	--	0.44	5.29	11.97	--	Used LPH density 0.73
	8/25/1995	16.94	--	--	0.20	5.85	11.24	--	Used LPH density 0.73
	9/26/1995	16.94	--	--	0.19	7.67	9.41	--	Used LPH density 0.73
	10/20/1995	16.94	--	--	0.02	6.17	10.78	--	Used LPH density 0.73
	4/4/1996	16.94	--	--	0.15	3.82	13.23	--	Used LPH density 0.73
	4/16/1996	16.94	--	--	0.14	3.14	13.90	--	Used LPH density 0.73
	5/10/1996	16.94	--	--	0.11	2.72	14.30	--	Used LPH density 0.73
	5/15/1996	16.94	--	--	0.06	2.67	14.31	--	Used LPH density 0.73
	5/22/1996	16.94	--	--	--	7.83	9.11	--	
	6/5/1996	16.94	--	--	--	8.62	8.32	--	
	6/24/1996	16.94	--	--	--	8.50	8.44	--	
	7/15/1996	16.94	--	--	--	8.63	8.31	--	
	8/23/1996	16.94	--	--	--	8.53	8.41	--	
	9/18/1996	16.94	--	--	--	8.34	8.60	--	
	1/3/1997	16.94	--	--	--	3.11	13.83	--	
	3/12/1997	16.94	--	--	--	8.91	8.03	--	
	4/2/1997	16.94	--	--	0.05	11.04	5.94	--	Used LPH density 0.73
	7/8/1997	16.94	--	--	--	5.71	11.23	--	
	8/26/1997	16.94	--	--	--	11.02	5.92	--	
	9/17/1997	16.94	--	--	--	10.84	6.10	--	
	4/30/1998	16.94	--	--	0.02	4.60	12.35	--	Used LPH density 0.73
	5/24/2001	16.94	--	--	--	10.75	6.19	--	
	3/22/2010	16.94	--	--	--	4.75	12.19	12.19	
	8/23/2010	16.94	5.35	11.59	0.02	5.37	11.57	11.59	
R-2	1/27/1993	17.52	--	--	--	6.15	11.37	--	
	3/12/1993	17.52	--	--	--	7.20	10.32	--	
	2/22/1995	17.52	--	--	--	7.66	9.86	--	
	5/15/1995	17.52	--	--	--	7.87	9.65	--	
	6/16/1995	17.52	--	--	0.01	7.51	10.02	--	Used LPH density 0.73
	9/26/1995	17.52	--	--	0.01	7.81	9.72	--	Used LPH density 0.73
	10/20/1995	17.52	--	--	0.06	7.63	9.93	--	Used LPH density 0.73
	4/4/1996	17.52	--	--	--	5.55	11.97	--	
	4/16/1996	17.52	--	--	--	5.29	12.23	--	
	5/10/1996	17.52	--	--	--	5.21	12.31	--	
R-2	5/15/1996	17.52	--	--	--	5.10	12.42	--	
(cont.)	5/22/1996	17.52	--	--	0.02	7.59	9.94	--	Used LPH density 0.73
	6/5/1996	17.52	--	--	0.18	7.80	9.85	--	Used LPH density 0.73
	6/24/1996	17.52	--	--	0.03	7.72	9.82	--	Used LPH density 0.73
	7/15/1996	17.52	--	--	0.04	7.60	9.95	--	Used LPH density 0.73
	8/23/1996	17.52	--	--	0.02	7.77	9.76	--	Used LPH density 0.73
	9/18/1996	17.52	--	--	0.04	7.87	9.68	--	Used LPH density 0.73
	1/3/1997	17.52	--	--	--	4.25	13.27	--	
	3/12/1997	17.52	--	--	0.02	8.02	9.51	--	Used LPH density 0.73
	4/2/1997	17.52	--	--	0.11	7.72	9.88	--	Used LPH density 0.73
	7/8/1997	17.52	--	--	--	6.47	11.05	--	
	8/19/1997	17.52	--	--	0.02	7.76	9.77	--	Used LPH density 0.73
	9/17/1997	17.52	--	--	--	7.67	9.85	--	
	4/30/1998	17.52	--	--	0.03	6.43	11.11	--	Used LPH density 0.73
	5/24/2001	17.52	--	--	0.35	8.25	9.53	--	Used LPH density 0.73
	3/22/2010	17.52	--	--	--	5.68	11.84	11.84	
	8/23/2010	17.52	--	--	--	6.85	10.67	10.67	
W-1	1/27/1993	18.86	--	--	0.19	5.71	13.29	--	Used LPH density 0.73
	3/12/1993	18.86	--	--	0.06	8.24	10.66	--	Used LPH density 0.73
	4/14/1993	18.86	--	--	--	8.22	10.64	--	
	6/30/1993	18.86	--	--	0.08	8.25	10.67	--	Used LPH density 0.73
	12/15/1993	18.86	--	--	--	8.60	10.26	--	
	2/8/1994	18.86	--	--	0.13	6.51	12.44	--	Used LPH density 0.73
	7/8/1994	18.86	--	--	--	8.64	10.22	--	
	8/12/1994	18.86	--	--	--	8.63	10.23	--	
	12/23/1994	18.86	--	--	--	5.48	13.38	--	
	2/3/1995	18.86	--	--	--	5.24	13.62	--	
	2/22/1995	18.86	--	--	0.03	7.13	11.75	--	Used LPH density 0.73

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	3/24/1995	18.86	--	--	0.14	7.04	11.92	--	Used LPH density 0.73
	4/27/1995	18.86	--	--	--	6.75	12.11	--	
	5/15/1995	18.86	--	--	0.39	6.88	12.26	--	Used LPH density 0.73
	6/16/1995	18.86	--	--	0.45	7.34	11.85	--	Used LPH density 0.73
	8/25/1995	18.86	--	--	0.18	7.89	11.10	--	Used LPH density 0.73
	10/20/1995	18.86	--	--	0.12	8.60	10.35	--	Used LPH density 0.73
	4/4/1996	18.86	--	--	0.07	5.81	13.10	--	Used LPH density 0.73
	4/16/1996	18.86	--	--	0.12	5.07	13.88	--	Used LPH density 0.73
	5/10/1996	18.86	--	--	0.09	4.75	14.18	--	Used LPH density 0.73
	5/15/1996	18.86	--	--	0.11	4.74	14.20	--	Used LPH density 0.73
	5/22/1996	18.86	--	--	0.07	8.08	10.83	--	Used LPH density 0.73
	6/5/1996	18.86	--	--	0.02	8.12	10.75	--	Used LPH density 0.73
	6/24/1996	18.86	--	--	0.01	8.28	10.59	--	Used LPH density 0.73
	7/15/1996	18.86	--	--	0.08	8.52	10.40	--	Used LPH density 0.73
	8/23/1996	18.86	--	--	--	8.63	10.23	--	
	9/18/1996	18.86	--	--	--	8.63	10.23	--	
	1/3/1997	18.86	--	--	--	4.97	13.89	--	
	3/12/1997	18.86	--	--	--	8.08	10.78	--	
	4/2/1997	18.86	--	--	0.03	8.14	10.74	--	Used LPH density 0.73
	5/1/1997	18.86	--	--	--	8.18	10.68	--	
	8/19/1997	18.86	--	--	--	8.57	10.29	--	
	9/17/1997	18.86	--	--	--	8.20	10.66	--	
	4/30/1998	18.86	--	--	0.08	6.70	12.22	--	Used LPH density 0.73
	7/28/1999	18.86	--	--	0.12	7.18	11.77	--	Used LPH density 0.73
	5/23/2000	18.86	--	--	--	6.91	11.95	--	
	5/24/2001	18.86	--	--	0.01	8.45	10.42	--	Used LPH density 0.73
	6/5/2002	18.86	--	--	--	6.42	12.44	--	
	5/29/2003	18.86	--	--	sheen	7.91	10.95	--	
	6/16/2004	18.86	--	--	0.02	7.65	11.22	--	Used LPH density 0.73
	6/20/2005	18.86	--	--	--	6.31	12.55	--	
	6/5/2006	18.86	--	--	--	5.99	12.87	--	
	10/23/2006	18.86	--	--	--	8.22	10.64	--	
	3/14/2007	21.89	--	--	--	5.41	16.48	--	
	9/10/2007	21.89	--	--	--	8.63	13.26	--	
W-1	11/28/2007	21.89	N/A	N/A	N/A	8.62	13.27	13.27	
	12/13/2007	21.89	N/A	N/A	N/A	6.92	14.97	14.97	
	1/21/2008	21.89	N/A	N/A	N/A	8.00	13.89	13.89	
	2/24/2008	21.89	N/A	N/A	N/A	6.65	15.24	15.24	
	3/24/2008	21.89	N/A	N/A	N/A	7.37	14.52	14.52	
	6/2/2008	21.89	--	--	--	8.49	13.40	--	
	8/25/2008	21.89	N/A	N/A	N/A	8.61	13.28	13.28	
	2/18/2009	21.89	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.89	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.89	N/A	N/A	N/A	5.35	16.54	16.54	
	8/23/2010	21.89	--	--	--	7.40	14.49	14.49	
W-2	1/27/1993	18.28	--	--	0.16	5.11	13.29	--	Used LPH density 0.73
	3/12/1993	18.28	--	--	0.02	7.94	10.35	--	Used LPH density 0.73
	4/14/1993	18.28	--	--	0.02	7.96	10.33	--	Used LPH density 0.73
	6/30/1993	18.28	--	--	0.09	7.65	10.70	--	Used LPH density 0.73
	12/15/1993	18.28	--	--	--	8.04	10.24	--	
W-2	2/8/1994	18.28	--	--	0.13	5.93	12.44	--	Used LPH density 0.73
(cont.)	7/8/1994	18.28	--	--	--	8.69	9.59	--	
	8/12/1994	18.28	--	--	--	8.98	9.30	--	
	9/21/1994	18.28	--	--	0.18	9.38	9.03	--	Used LPH density 0.73
	11/4/1994	18.28	--	--	0.37	9.51	9.04	--	Used LPH density 0.73
	12/23/1994	18.28	--	--	--	4.92	13.36	--	
	2/3/1995	18.28	--	--	--	5.16	13.12	--	
	2/22/1995	18.28	--	--	0.06	6.57	11.75	--	Used LPH density 0.73
	3/24/1995	18.28	--	--	0.14	6.48	11.90	--	Used LPH density 0.73
	4/27/1995	18.28	--	--	--	5.65	12.63	--	
	5/15/1995	18.28	--	--	0.57	6.48	12.22	--	Used LPH density 0.73
	6/16/1995	18.28	--	--	0.60	6.93	11.79	--	Used LPH density 0.73
	8/25/1995	18.28	--	--	0.22	7.36	11.08	--	Used LPH density 0.73
	10/20/1995	18.28	--	--	--	7.67	10.61	--	
	4/4/1996	18.28	--	--	0.02	5.19	13.10	--	Used LPH density 0.73
	4/16/1996	18.28	--	--	--	4.40	13.88	--	
	5/10/1996	18.28	--	--	--	4.10	14.18	--	
	5/15/1996	18.28	--	--	--	4.08	14.20	--	
	5/22/1996	18.28	--	--	--	7.59	10.69	--	
	6/5/1996	18.28	--	--	--	7.69	10.59	--	
	6/24/1996	18.28	--	--	--	8.08	10.20	--	
	7/15/1996	18.28	--	--	--	8.45	9.83	--	
	8/23/1996	18.28	--	--	--	8.80	9.48	--	
	9/18/1996	18.28	--	--	--	8.98	9.30	--	
	1/3/1997	18.28	--	--	--	4.48	13.80	--	

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
	3/12/1997	18.28	--	--	--	7.57	10.71	--	
	4/2/1997	18.28	--	--	--	7.60	10.68	--	
	5/1/1997	18.28	--	--	--	7.72	10.56	--	
	8/19/1997	18.28	--	--	--	8.10	10.18	--	
	9/18/1997	18.28	--	--	0.07	7.40	10.93	--	Used LPH density 0.73
	4/30/1998	18.28	--	--	0.07	6.11	12.22	--	Used LPH density 0.73
	7/29/1999	18.28	--	--	--	6.50	11.78	--	
	5/23/2000	18.28	--	--	--	6.33	11.95	--	
	5/24/2001	18.28	--	--	--	8.10	10.18	--	
	6/5/2002	18.28	--	--	0.02	5.87	12.41	--	Used LPH density 0.73
	5/28/2003	18.28	--	--	sheen	7.32	10.96	--	
	6/15/2004	18.28	--	--	--	8.55	9.73	--	
	6/22/2005	18.28	--	--	--	5.71	12.57	--	
	6/5/2006	18.28	--	--	--	5.38	12.90	--	
	10/23/2006	18.28	--	--	--	7.63	10.65	--	
	3/14/2007	21.30	--	--	--	4.82	16.48	--	
	9/10/2007	21.30	--	--	--	8.97	12.33	--	
	11/28/2007	21.30	N/A	N/A	N/A	8.15	13.15	13.15	
	12/13/2007	21.30	N/A	N/A	N/A	7.65	13.65	13.65	
	1/21/2008	21.30	N/A	N/A	N/A	7.58	13.72	13.72	
	2/24/2008	21.30	N/A	N/A	N/A	6.04	15.26	15.26	
	3/24/2008	21.30	N/A	N/A	N/A	6.78	14.52	14.52	
	6/2/2008	21.30	--	--	--	8.25	13.05	--	
	8/25/2008	21.30	N/A	N/A	N/A	8.51	12.79	12.79	
	2/18/2009	21.30	NM	NM	NM	NM	NM	NM	
	8/25/2009	21.30	NM	NM	NM	NM	NM	NM	
	3/22/2010	21.30	N/A	N/A	N/A	4.78	16.52	16.52	
	8/23/2010	21.30	--	--	--	6.79	14.51	14.51	
W-3	1/27/1993	17.10	--	--	--	5.42	11.68	--	
	3/12/1993	17.10	--	--	--	6.11	10.99	--	
	4/14/1993	17.10	--	--	--	5.88	11.22	--	
	12/15/1993	17.10	--	--	--	5.59	11.51	--	
	11/4/1994	17.10	--	--	--	7.72	9.38	--	
	2/22/1995	17.10	--	--	--	5.82	11.28	--	
	6/16/1995	17.10	--	--	--	6.37	10.73	--	
	10/20/1995	17.10	--	--	--	6.17	10.93	--	
	4/4/1996	17.10	--	--	--	5.19	11.91	--	
	4/16/1996	17.10	--	--	--	4.86	12.24	--	
	5/10/1996	17.10	--	--	--	4.83	12.27	--	
	5/15/1996	17.10	--	--	--	4.71	12.39	--	
	5/22/1996	17.10	--	--	--	5.78	11.32	--	
	6/5/1996	17.10	--	--	--	6.07	11.03	--	
	6/24/1996	17.10	--	--	--	6.30	10.80	--	
	7/15/1996	17.10	--	--	--	6.65	10.45	--	
	9/18/1996	17.10	--	--	--	6.37	10.73	--	
	1/3/1997	17.10	--	--	--	3.72	13.38	--	
	4/2/1997	17.10	--	--	0.04	5.83	11.30	--	Used LPH density 0.73
	5/1/1997	17.10	--	--	--	5.80	11.30	--	
	4/29/1998	17.10	--	--	--	5.81	11.29	--	
	7/30/1999	17.10	--	--	--	6.11	10.99	--	
	5/23/2000	17.10	--	--	--	5.55	11.55	--	
	5/22/2001	17.10	--	--	--	6.10	11.00	--	
	6/4/2002	17.10	--	--	--	5.78	11.32	--	
W-3	5/28/2003	17.10	--	--	--	6.26	10.84	--	
(cont.)	6/16/2004	17.10	--	--	0.02	6.23	10.88	--	Used LPH density 0.73
	6/21/2005	17.10	--	--	--	5.75	11.35	--	
	6/5/2006	17.10	--	--	--	5.43	11.67	--	
	10/23/2006	17.10	--	--	--	6.22	10.88	--	
	3/14/2007	19.95	--	--	--	4.74	15.21	--	
	9/10/2007	19.95	--	--	--	6.55	13.40	--	
	11/28/2007	19.95	N/A	N/A	N/A	8.84	11.11	11.11	
	12/13/2007	19.95	N/A	N/A	N/A	5.79	14.16	14.16	
	1/21/2008	19.95	N/A	N/A	N/A	5.44	14.51	14.51	
	2/24/2008	19.95	N/A	N/A	N/A	5.77	14.18	14.18	
	3/24/2008	19.95	N/A	N/A	N/A	5.75	14.20	14.20	
	6/2/2008	19.95	--	--	--	6.20	13.75	--	
	8/25/2008	19.95	N/A	N/A	N/A	5.79	14.16	14.16	
	2/18/2009	19.95	NM	NM	NM	NM	NM	NM	
	8/25/2009	19.95	NM	NM	NM	NM	NM	NM	
	3/22/2010	19.95	N/A	N/A	N/A	4.61	15.34	15.34	
	8/23/2010	19.95	--	--	--	5.84	14.11	14.11	Purged Dry

TABLE 7

GROUNDWATER ELEVATION DATA
BP RENTON TERMINAL
RENTON, WASHINGTON

Well	Date	Top of Casing Elevation	Depth to Free Product	Elevation of Free Product	Product Thickness	Depth to Groundwater	Groundwater Elevation	Potentiometric Elevation	Comments
W-4	1/27/1993	18.03	--	--	--	4.43	13.60	--	
	3/12/1993	18.03	--	--	--	7.43	10.60	--	
	4/14/1993	18.03	--	--	--	7.32	10.71	--	
	12/15/1993	18.03	--	--	--	6.59	11.44	--	
	11/4/1994	18.03	--	--	--	8.20	9.83	--	
	2/22/1995	18.03	--	--	--	7.17	10.86	--	
	6/16/1995	18.03	--	--	--	7.55	10.48	--	
	10/20/1995	18.03	--	--	--	7.67	10.36	--	
	4/4/1996	18.03	--	--	--	6.12	11.91	--	
	4/16/1996	18.03	--	--	--	5.74	12.29	--	
	5/10/1996	18.03	--	--	--	5.99	12.04	--	
	5/15/1996	18.03	--	--	--	5.67	12.36	--	
	5/22/1996	18.03	--	--	--	7.20	10.83	--	
	6/5/1996	18.03	--	--	--	7.41	10.62	--	
	6/24/1996	18.03	--	--	--	7.49	10.54	--	
	7/15/1996	18.03	--	--	--	7.73	10.30	--	
	1/3/1997	18.03	--	--	--	4.80	13.23	--	
	4/2/1997	18.03	--	--	--	7.37	10.66	--	
	5/1/1997	18.03	--	--	--	7.34	10.69	--	
	4/29/1998	18.03	--	--	--	6.84	11.19	--	
	7/30/1999	18.03	--	--	--	7.30	10.73	--	
	5/23/2001	18.03	--	--	0.03	7.71	10.34	--	Used LPH density 0.73
	6/4/2002	18.03	--	--	--	6.84	11.19	--	
	5/28/2003	18.03	--	--	sheen	7.68	10.35	--	
	6/15/2004	18.03	--	--	0.02	7.65	10.39	--	Used LPH density 0.73
	6/21/2005	18.03	--	--	--	6.78	11.25	--	
	6/5/2006	18.03	--	--	--	6.23	11.80	--	
	10/23/2006	18.03	--	--	--	7.67	10.36	--	
	3/14/2007	20.91	--	--	--	5.70	15.21	--	
	9/10/2007	20.91	--	--	--	8.20	12.71	--	
	11/28/2007	20.91	N/A	N/A	N/A	7.68	13.23	13.23	
	12/13/2007	20.91	N/A	N/A	N/A	7.40	13.51	13.51	
	1/21/2008	20.91	N/A	N/A	N/A	6.30	14.61	14.61	
	2/24/2008	20.91	N/A	N/A	N/A	6.81	14.10	14.10	
	3/24/2008	20.91	N/A	N/A	N/A	6.78	14.13	14.13	
	6/2/2008	20.91	--	--	--	7.69	13.22	--	
	8/25/2008	20.91	N/A	N/A	N/A	8.00	12.91	12.91	
	2/18/2009	20.91	NM	NM	NM	NM	NM	NM	
	8/25/2009	20.91	NM	NM	NM	NM	NM	NM	
	3/22/2010	20.91	N/A	N/A	N/A	5.89	15.02	15.02	
	8/23/2010	20.91	--	--	--	7.11	13.80	13.80	Purged Dry

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
B-1		4/14/1993	**1,300**	17	**450**	**2,200**	**18,000**	--	--	--	--
		12/15/1993	**590**	76	15	370	**7,800**	--	--	--	--
		9/17/1997	**84.6**	2.63	6.43	21.8	475	**9,980**	**25,500**	--	--
		5/1/1998	**300**	10	24	94	560	**5,500**	**13,000**	--	--
		5/23/2000	**1,000**	14	170	160	**1,800**	**23,000**	**52,000**	--	--
		5/24/2001	**1,300**	25	410	220	**2,800**	**5,500**	**6,300**	--	--
		6/5/2002	**37**	0.66J	6.6	6.9	86J	**17,000**	**29,000**	--	--
		5/29/2003	**760**	26	180	65	**1,100J**	**4,700**	**8,300**	--	--
		6/15/2004	**890**	10	180	110	**1,600**	**8,700**	**18,000**	--	--
		6/20/2005	**540**	5.5	79	45	550J	**2,700J**	**5,300J**	--	--
		6/6/2006	**602**	5.87	137	43.9	**3,300j**	**1,570**	**553**	--	--
		10/24/2006	**363**	6.65	113	26.8	**3,770**	**884**	**800**	--	--
		3/14/2007	**118**	4.35	188	21.3	**2,420**	**1,720**	<185	--	--
		9/12/2007	**664**	9.88	155	43.6	**3,610**	--	--	--	--
		6/4/2008	**355**	3.54	54.7	37.3	**2,570**	**2,990**	**7,770**	--	--
B-1	NRH2893-04	8/27/2008	**741** ^	8.4 ^	75.1 ^	139 ^	**4,330** ^	-- ^	-- ^	<0.42 ^	74.4 ^
	253345011	3/24/2010	**297**	8.5	34.3	41.1	**1,580**	105	<381	<1.0	<250
		8/27/2010	Unable to Purge								
B-2		9/18/1997	**11,200**	**10,600**	**1,310**	**22,200**	**1,980,000**	**74,200**	**7,890**	--	--
		4/29/1998	**16,000**	**13,000**	600	**11,000**	**83,000**	**19,000**	**4,300**	--	--
		7/30/1999	**11,000**	**7,900**	**700**	**9,700**	**66,000**	**18,000**	<2.0	--	--
		5/23/2000	**16,000**	**6,200**	670	**9,300**	**59,000**	**32,000**	<5.0	--	--
		5/24/2001	**LPH Encountered**							--	--
		6/5/2002	**LPH Encountered**							--	--
	B2K0572-16	11/25/2002	**9,850**	**1,780**	**1,280**	**9,220**	**60,500**	13.2	<0.5		
		5/29/2003	**8,800**	**2,200**	**900**	**9,600**	**59,000**	**36,000**	**2,700J**	--	--
		6/15/2004	**8,700**	510	**1,300**	**8,700**	**57,000**	**68,000**	**<9,700**	--	--
		6/20/2005	**LPH Encountered**							--	--
		6/6/2006	**LPH Encountered**							--	--
		10/23/2006	**7,120**	179	289	**5,280**	**47,000**	**10,700**	<180	--	--
		3/14/2007	**7,740**	138	280	**6,150**	**40,700**	**11,900**	<370	--	--
		9/11/2007	**7,760**	71.1	635	**4,670**	**35,600**	**8,190**	<103	--	--
		6/4/2008	**5,980**	45.8	539	**3,240**	**30,300**	**5,450**	369J	--	--
	NRH2716-12	8/27/2008	**4,280** ^	47.8 ^	243 ^	**2,270** ^	**22,200** ^	**4,820** ^,y	<100 ^,y	4.1 ^	<74.4 ^
		8/27/2008	**4,030**	42.2	277	**2,360**	**22,100**	**3,340**	129J	--	--
	253345012	3/24/2010	**5,190**	33.8	203	**2,810**	**32,000**	**2,430**	<385	6.3	<250
	254760012	8/27/2010	**5,250 E**	47.4	284	**2,110**	**12,300**	**3,240**	<396	10.2	<250
B-3		5/24/2001	**LPH Encountered**							--	--
		6/5/2002	**LPH Encountered**							--	--
B-3	B2K0572-15	11/25/2002	NA	NA	NA	NA	NA	NA	NA	--	--
		5/27/2003	**LPH Encountered**							--	--
		6/15/2004	**LPH Encountered**							--	--
		6/20/2005	**LPH Encountered**							--	--
		6/6/2006	**LPH Encountered**							--	--
		10/23/2006	**LPH Encountered**							--	--
		3/14/2007	**LPH Encountered**							--	--
		9/11/2007	**LPH Encountered**							--	--
B-3A		6/4/2008	**40,800**	**38,800**	**2,840**	**16,400**	**200,000**	**8,410**	275J	--	--
B-3A	NRH2716-13	8/27/2008	**47,500** ^	**34,000** ^	**2,470** ^	**15,800** ^	**171,000** ^	**11,200** ^,y	**790** ^	**93.6** ^	<74.4 ^
	253329005	3/24/2010	**42,000**	**48,000**	**3,400**	**20,300**	**153,000**	**9,850**	<381	**94.2**	<250
		8/25/2010	**LPH Encountered**							--	--
B-4		9/18/1997	**2,590**	**8,520**	**4,340**	**26,600**	**1,170,000**	**99,600**	**<20,500**	--	--
		7/29/1999	**1,800**	**1,600**	**2,300**	**13,000**	**70,000**	**90,000**	**<20,000**	--	--
		5/23/2000	**1,500**	**3,500**	**2,600**	**13,000**	**76,000**	**51,000**	**<20,000**	--	--
		5/23/2001	**600**	**2,300**	**2,500**	**10,000**	**52,000**	**49,000**	**<20,000**	--	--
		6/5/2002	**LPH Encountered**							--	--
	B2K0572-09	11/25/2002	**519**	295	**2,180**	**10,500**	**41,700**	5.46	<0.5	--	--
		5/29/2003	**280**	570	**1,400**	**5,900**	**38,000**	**34,000**	**5,200J**	--	--
		6/15/2004	**LPH Encountered**							--	--
		6/20/2005	**LPH Encountered**							--	--
		6/6/2006	**LPH Encountered**							--	--
		10/23/2006	**LPH Encountered**							--	--
		3/14/2007	**LPH Encountered**							--	--

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
		9/11/2007	**543**	67.9	**1,520**	**3,640**	**22,100**	**3,460**	48.5J	--	--
		6/3/2008	**336**	258	**1,260**	**4,590**	**30,200**	**3,560**	217	--	--
	NRH2716-15	8/27/2008	**604** [x]	192 [x]	**1,130** [x]	**4,630** [x]	**25,200** [x]	**3,450** [x,y]	199 [x]	<0.42 [x]	<74.4 [x]
		3/22/2010	**LPH Encountered**								
		8/25/2010	**LPH Encountered**							--	--
B-5		9/17/1997	**2,810**	**3,750**	631	**5,180**	**38,900**	**28,100**	**8,980**	--	--
		4/29/1998	**1,600**	**1,100**	460	**4,600**	**28,000**	**81,000**	**17,000**	--	--
		7/29/1999	**1,200**	240	330	**2,600**	**21,000**	**18,000**	**<2,000**	--	--
		5/23/2000	**690**	59	230	960	**11,000**	**15,000**	**4,000J**	--	--
		5/23/2001	**2,000**	120	320	**2,100**	**10,000**	**13,000**	**3,500J**	--	--
		6/5/2002	**940**	23	230	560	**4,300**	**16,000**	**4,800J**	--	--
	B2K0572-10	11/25/2002	**126**	4.31	37.4	67.4	**2,270**	1.06	<0.5	--	--
		5/29/2003	**440**	26	260	260	**3,300**	**4,300**	**1,600J**	--	--
		6/15/2004	**830**	23	110	310	**2,600**	**100,000**	**25,000**	--	--
		6/22/2005	**630**	6.7	70	140	**980J**	**36,000**	**17,000J**	--	--
		6/6/2006	**944**	14.4	214	507	**4,540j**	**2,860**	271u	--	--
		10/23/2006	**1,950**	23.8	372	904	**9,010**	**6,440**	**605**	--	--
		3/14/2007	**1,790**	21.4	494	909	**11,000**	**3,100**	339	--	--
		3/14/2007(Dup)	**1,920**	21.5	497	914	**10,500**	**3,500**	475	--	--
		9/11/07	**689**	9.89	72.2	191	**2,740**	**5,580**	**1,530**	--	--
		6/3/2008	**2,480**	24.8	311	656	**12,400**	**2,640**	**648**	--	--
		8/27/2008	**1,330**	14.2	103	180	**6,990**	**5,700**	**909J**	--	--
	253345013	3/24/2010	**1,740**	34.3	**1,720**	530	**8,510**	**2,260**	<381	1.8	<250
		8/25/2010	**LPH Encountered**							--	--
	NRH2716-17	8/27/2008	**1,330** [x]	14.2 [x]	103 [x]	180 [x]	**6,990** [x]	**5,700** [x,y]	**909** [x]	<0.42 [x]	<74.4 [x]
B-6		5/17/1996	**6.86**	6.6	2.19	13.1	--	--	**1,230**	--	--
		9/17/1997	**2,850**	**7,070**	**1,270**	**7,860**	**194,000**	**102,000**	**61,700**	--	--
		4/29/1998	**7,500**	**16,000**	**2,600**	**18,000**	**160,000**	**51,000**	**6,900**	--	--
		7/29/1999	**8,300**	**13,000**	**2,200**	**13,000**	**97,000**	**23,000**	**<10,000**	--	--
		5/24/2001	**6,900**	**4,300**	**980**	**7,200**	**69,000**	**44,000**	**25,000**	--	--
		6/5/2002	**LPH Encountered**							--	--
	B2K0619-05	11/26/2002	**5,230**	**5,410**	525	**5,460**	**43,000**	5.31	2.51	--	--
ıp of B-6 (B-	B2K0619-06	11/26/2002	**4,850**	**5,010**	464	**5,430**	**43,500**	7.04	3.63	--	--
		5/29/2003	**4,600**	**4,000**	450	**4,800**	**35,000**	**7,700**	**4,500J**	--	--
		6/15/2004	**5,900**	**8,500**	**760**	**6,400**	**48,000**	**210,000**	**100,000**	--	--
		6/22/2005	**3,800**	**3,600**	200	**2,200**	**22,000**	**100,000**	**45,000**	--	--
		6/6/2006	**2,540**	**4,560**	664	**4,590**	**33,500**	**5,420**	**528**	--	--
		10/23/2006	**2,660**	**5,280**	566	**4,650**	**37,400**	**7,050**	371J	--	--
		3/14/2007	**1,780**	**5,230**	603	**7,220**	**41,200**	**4,740**	**532**	--	--
		9/11/2007	**2,560**	**3,370**	494	**5,460**	**38,900**	**6,270**	**1,030**	--	--
		6/4/2008	**5,320**	**8,210**	483	**7,740**	**52,000**	**7,350**	**4,460**	--	--
	NRH2716-14	8/27/2008	**3,670** [x]	**6,140** [x]	604 [x]	**4,820** [x]	**37,600** [x]	**14,800** [x,y]	**17,400** [x,z]	0.77 [x]	<74.4 [x]
	253329006	3/23/2010	**8,200**	**10,200**	**1,300**	**10,600**	**60,000**	**1,380**	<381	4.1	<250
	254760013	8/27/2010	**4,800**	**7,280**	**1,140**	**8,490**	**49,400**	**2,710**	**528**	<1.0	<250
D-1		4/14/1993	**200**	0.62	13	1.2	190	--	--	--	--
		12/15/1993	**7.1**	<0.50	<0.50	1.3	83	--	--	--	--
		11/4/1994	2	<0.50	<0.50	<1.0	52	--	--	--	--
		Undocumented	Well has been abandoned								
	B2K0619-04	11/26/2002	<0.5	1.12	<0.5	2.16	185	0.434	1.01	--	--
D-2		11/4/1994	3.0	<0.50	<0.50	<1.0	<50	--	--	--	--
		Undocumented	Well has been abandoned								
D-4		11/4/1994	<0.50	2.1	0.78	4.7	450	--	--	--	--
		6/21/2005	Insufficient groundwater to sample								
		6/7/2006	<0.290	<0.280	<0.340	<0.820	101	**2,760**	**2,840**	--	--
		3/15/2007	0.430J	0.460J	0.430J	0.750J	92.3J	--	--	--	--
		9/11/2007	Insufficient groundwater to sample								
		6/2/2008	Insufficient groundwater to sample								
	NRH2716-05	8/26/2008	<0.27 [x]	1.6 [x]	0.58 [x]	1.45 [x]	76.2 [x]	268 [x,y]	441 [x,y]	<0.42 [x]	<74.4 [x]
		3/23/2010	Insufficient groundwater to sample								

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	Purged Dry	8/25/2010	--	--	--	--	--	--	--	--	--
D-5		12/15/1993	**14**	<0.50	1.7	2.1	260	--	--	--	--
		11/4/1994	**15**	3	<0.50	4	170	--	--	--	--
		9/11/2007	Insufficient groundwater to sample								
		6/2/2008	Insufficient groundwater to sample								
		8/25/2008	Insufficient groundwater to sample								
		3/23/2010	Insufficient groundwater to sample								
	Purged Dry	8/25/2010	--	--	--	--	--	--	--	--	--
D-6		4/30/1998	**11**	2	0.2	1.4	<50	**14,000**	**86,000**	--	--
		5/23/2000	**200**	5.6	1.0J	3.6	59J	**<2,000**	**<5,000**	--	--
		5/23/2001	**200**	9.1	4.2	5.2	10J	**1,400**	**3,800**	--	--
		6/5/2002	**120**	9.6	2.3	5.8	87J	**900**	**2,600**	--	--
	B2K0619-11	11/26/2002	**121**	10.7	1.20	5.59	385	<0.25	<0.5	--	--
		5/27/2003	**7.2**	1.1	0.3J	0.9J	<48	**7,600J**	**37,000**	--	--
		6/15/2004	**78.0**	4.3	1.7	3.6	59J	**1,300J**	**5,800**	--	--
		6/22/2005	**130**	14.0	2.5	8.4	160J	**3,700**	**4,000J**	--	--
		6/7/2006	**22.2**	0.960J	0.580J	<0.820	342	**1,580**	**1,050**	--	--
		10/23/2006	**111**	19.0	4.97	22.7	445	**1,490**	**4,160**	--	--
		3/14/2007	**150**	3.32	2.24	3.12	487	**792**	**604**	--	--
		9/11/2007	**160**	6.32	2.56	5.78	425	--	--	--	--
		6/3/2008	**100**	2.38	0.620J	1.64J	497	391	**520**	--	--
	NRH2893-02	8/27/2008	**145** [x,y]	4.09 [x]	1.65 [x]	3.62 [x]	559 [x]	**1,840** [x,z]	**4,810** [x,y]	0.6 [x]	<74.4 [x]
	253329003	3/23/2010	**268**	4.3	1.8	<3.0	<79.5	<76.2	<381	<1.0	<250
	254760010	8/27/2010	**144**	4.1	1.6	<3.0	71.4	<78.4	<392	<1.0	<250
D-7		4/14/1993	**1,300**	21	**420**	**2,200**	77	--	--	--	--
		11/4/1994	**88**	2.1	4.7	13	210	--	--	--	--
		9/17/1997	**150**	13.5	7.04	35.5	453	**7,990**	**22,400**	--	--
		4/30/1998	**63**	5.0	0.9	7	170	**3,300**	**6,200**	--	--
		5/23/2000	**480**	7.2	1.6	13	120J	**4,600J**	**19,000**	--	--
		5/23/2001	**410**	8.7	1.6	18	130J	**4,100J**	**17,000**	--	--
		6/4/2002	**180**	6.7	0.72J	8.1	70J	**9,300**	**31,000**	--	--
	B2K0619-07	11/26/2002	2.82	0.614	<0.5	1.12	<50	0.435	1.26	--	--
		6/15/2004	**190**	18.0	0.5J	3.8	88J	**15,000**	**51,000**	--	--
		6/22/2005	**83**	5.7	0.9J	9.0	140J	**11,000**	**36,000**	--	--
		6/7/2006	**70.4**	2.94	<0.340	<0.820	281	**3,760**	**9,490**	--	--
		10/24/2006	**6.98**	0.630J	<0.230	<0.440	56.2Ju	**913J**	**37,200**	--	--
		3/14/2007	**5.57**	0.580 J	<0.420	<0.450	76.3J	**762**	**2,830**	--	--
		9/12/2007	**10.6**	1.39	<0.420	<0.450	70.7J	**897**	**3,130**	--	--
		6/3/2008	**33.4**	0.470J	<0.240	2.33J	452	**1,760**	**3,220**	--	--
	NRH2893-03	8/27/2008	**96.6** [x]	4.96 [x]	1.04 [x]	7.08 [x]	762 [x]	-- [x]	-- [x]	<0.42 [x]	<74.4 [x]
	253329004	3/23/2010	**278**	5.4	1.1	10.3	176	<76.2	<381	<1.0	<250
	254760011	8/27/2010	**156**	1.1	<1.0	6.8	84.2	--	--	<1.0	<250
HA-1		4/14/1993	<0.50	<0.50	<0.50	<1.0	80	--	--	--	--
		12/15/1993	<0.50	<0.50	<0.50	<1.0	<50	--	--	--	--
		11/4/1994	<0.50	1.3	0.61	2.2	<50	--	--	--	--
		9/17/1997	<0.50	<0.50	<0.50	<1.0	<50	<250	<500	--	--
		4/29/1998	<0.20	0.4	<0.20	1.2	<50	110	**540**	--	--
		5/24/2000	0.29J	<0.20	0.71J	2.4J	100J	320	370J	--	--
		5/23/2001	<0.2	<0.2	<0.2	<0.60	<48	<80	<200	--	--
		6/4/2002	<0.20	0.35J	<0.20	<0.60	<48	<77	<97	--	--
	B2K0619-08	11/26/2002	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
		6/15/2004	<0.2	<0.2	<0.2	<0.6	<48	<80	<100	--	--
		6/22/2005	<0.2	<0.2	<0.2	<0.6	<48	<77	<97	--	--
		6/7/2006	<0.290	<0.280	<0.340	<0.820	<40	<35.8	92.7J	--	--
		6/7/2006 (Dup)	<0.290	<0.280	<0.340	<0.820	<40	<36.2	125	--	--
		10/24/2006	<0.310	<0.220	<0.230	<0.440	10.9Ju	**877**	**1,090**	--	--
		3/14/2007	0.400J	0.700J	<0.420	1.76J	47.8J	48.3J	<35.6	--	--
		9/12/2007	0.520J	<0.420	<0.420	1.17J	<43.0	<19.6	27.2J	--	--
		6/3/2008	<0.270	<0.280	<0.240	<0.860	<43.0	<19.0	25.9J	--	--

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	NRH2716-04	8/26/2008	0.58 [x]	<0.28 [x]	<0.24 [x]	1.14 [x]	<43 [x]	48.6 [x]	62.3 [x]	<0.42 [x]	75.2 [x]
	253329001	3/23/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<75.8	<379	<1.0	<250
	254760001	8/27/2010	**44.6**	41.8	16.1	150	**858**	--	--	<1.0	<250
HA-2		4/14/1993	**7,900**	**30,000**	**2,900**	**17,000**	**160,000**	--	--	--	--
		12/15/1993	**1,200**	860	**3,000**	**15,000**	**90,000**	--	--	--	--
		11/4/1994	**1,700**	**13,000**	**8,900**	**57,000**	**1,800,000**	--	--	--	--
		9/18/1997	**1,820**	648	204	**1,590**	**16,500**	**13,500**	<500	--	--
		4/30/1998	**9,400**	**11,000**	**1,100**	**7,900**	**65,000**	**12,000**	**3,000**	--	--
		7/30/1999	**10,000**	**8,700**	**1,200**	**10,000**	**67,000**	**76,000**	**<10,000**	--	--
		5/23/2000	**12,000**	**7,300**	**1,700**	**11,000**	**69,000**	**71,000**	**<25,000**	--	--
		5/23/2001	**8,100**	**2,100**	**910**	**5,200**	**36,000**	**28,000**	**<4,000**	--	--
		6/4/2002	**12,000**	**12,000**	**1,700**	**14,000**	**81,000**	**68,000**	**<9,800**	--	--
		5/27/2003	**9,200**	**5,800**	**1,800**	**14,000**	**99,000**	**33,000**	**3,000J**	--	--
		6/16/2004	**5,800**	980	690	**4,500**	**31,000**	**--**	**--**	--	--
		6/21/2005	**4,700**	**2,700**	440	**4,000**	**35,000**	**290,000**	**<20,000**	--	--
		6/6/2006	**7,710**	**5,560**	**874**	**10,200**	**60,200**	**9,720**	313Ju	--	--
		10/24/2006	**4,890**	**1,480**	**794**	**5,610**	**31,700**	**--**	--	--	--
		3/15/2007	**9,840**	**8,540**	**1,210**	**14,800**	**73,600**	**14,900**	**534J**	--	--
		9/12/2007	**11,000**	**2,400**	**2,400**	**8,340**	**52,000**	--	--	--	--
		6/4/2008	**8,440**	**5,060**	**2,080**	**11,400**	**81,600**	**6,290**	283J	--	--
	NRH2716-11	8/27/2008	**11,600** [x]	**4,810** [x]	**3,100** [x]	**9,480** [x]	**60,400** [x]	-- [x]	-- [x]	<0.42 [x]	<74.4 [x]
	253356002	3/25/2010	**10,200**	**2,900**	**3,460**	**16,100**	**55,500**	**4,650**	<385	<1.0	<250
	254696001	8/25/2010	**8,190**	921	**2,700**	**9,660**	**44,100**	**--**	--	<1.0	<250
HA-3		4/14/1993	**73**	12	6.2	**37**	770	--	--	--	--
		12/15/1993	**19**	0.58	1.5	3.8	140	--	--	--	--
		11/4/1994	**26**	6.0	2.0	8.7	380	--	--	--	--
		9/18/1997	<0.50	<0.50	<0.50	<1.0	<50	**2,350**	**1,280**	--	--
		4/30/1998	**84**	9.0	2.0	7.0	310	**1,200**	**1,400**	--	--
		5/23/2000	**87**	8.1	2.2	7.4	480	**590**	**1,100**	--	--
		5/23/2001	**37**	0.63J	0.42J	3.5	330	--	**--**	--	--
		6/4/2002	**120**	16.0	4.2	23.0	480	**5,900**	**710J**	--	--
		5/27/2003	**230**	4.6J	3.8J	8.9J	<24	--	--	--	--
		6/22/2005	**140**	0.7J	1.4	3.9	63J	--	--	--	--
		6/7/2006	**80.8**	6.59	0.620J	0.880J	531	**755**	470	--	--
		3/15/2007	**569**	7.16	6.50	12.4	**3,400**	**1,050**	**547**	--	--
		9/12/2007	Insufficient groundwater to sample								
		6/2/2008	Insufficient groundwater to sample								
		8/25/2008	Insufficient groundwater to sample								
		3/25/2010	Insufficient groundwater to sample								
	254696002	8/25/2010	**569 C0,E**	11.4	13.5	41.6	383	**--**	--	<1.0	<250
HA-4		4/14/1993	<0.50	1.7	4.5	12	230	--	--	--	--
		12/15/1993	<0.50	<0.50	<0.50	<1.0	<50	--	--	--	--
		11/4/1994	<0.50	<0.50	<0.50	<1.0	<50	--	--	--	--
		9/18/1997	**193**	280	68.6	503	**3,980**	**610**	**797**	--	--
		4/30/1998	<1.0	<1.0	<1.0	<3.0	<250	**530**	**1,600**	--	--
		5/23/2000	<0.2	<0.2	<0.2	<0.6	<48	420J	**1,500**	--	--
		5/23/2001	<0.2	7.60	<0.2	<0.6	<48	**550**	**1,900**	--	--
		6/4/2002	0.22J	0.33J	<0.2	1.1J	<48	230J	270J	--	--
		5/27/2003	<0.2	2.3	<0.2	<0.6	<48	410	**720**	--	--
		6/16/2004	<0.2	4.7	<0.2	<0.6	70J	470	**590J**	--	--
		6/22/2005	<0.2	0.6J	<0.2	1.0J	<48	**560**	**1,000**	--	--
		10/24/2006	**60.6**	21.0	2.92	19.2	275	325	**672**	--	--
		3/15/2007	<0.330	<0.420	<0.420	<0.450	66.5J	**519**	155	--	--
		9/12/2007	<0.330	<0.420	<0.420	0.770J	84.9J	--	--	--	--
		6/4/2008	0.920J	2.95	1.65	7.44	131	94.0J	204	--	--
	NRH2711-06	8/26/2008	<0.27 [x]	<0.28 [x]	<0.24 [x]	<0.86 [x]	<43 [x]	188 [x,z]	421 [x,z]	<0.42 [x]	<74.4 [x]
		3/25/2010	Insufficient groundwater to sample								
	254696003	8/25/2010	1.6	<1.0	<1.0	<3.0	<50.0	**--**	--	<1.0	<250
HA-5		4/14/1993	**22**	2.2	84	210	**3,500**	--	--	--	--

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
		12/15/1993	**17**	18	1.2	38	710	--	--	--	--
		11/4/1994	**14**	1.5	1.6	2.9	250	--	--	--	--
		9/18/1997	**18.50**	2.45	1.89	6.8	349	**1,790**	**969**	--	--
		5/1/1998	**15**	3	7	5	**950**	**640**	**840**	--	--
		7/29/1999	**17**	3	0.4J	9	480	240J	<200	--	--
		5/23/2000	**9.1**	2.6	2	5.5	410	380	**630**	--	--
		5/22/2001	2.5	1.7	0.23J	3.0	480	290	<200	--	--
		6/5/2002	**30.0**	5.3	140	16.0	**880**	260	110J	--	--
HA-5	B2K0471-01	11/19/2002	3.39	5.63	0.581	5.87	223	NA	NA	--	--
	B2K0572-08	11/25/2002	2.94	1.67	<0.5	4.22	236	<0.25	<0.5	--	--
HA-5 (HA-5)	B2K0572-17	11/25/2002	2.78	1.51	<0.5	3.81	243	<0.25	<0.5	--	--
	B3A0300-06	1/14/2003	**3,380**	**2,870**	43.6	151	**14,300**	NA	NA	--	--
	B3B0527-01	2/24/2003	**8,620**	**17,200**	685	**3,260**	**65,000**	0.476	<0.5	--	--
	B3C0615-05	3/25/2003	**6,550**	**14,700**	657	**2,900**	**54,700**	0.388	<0.5	--	--
	B3D0437-08	4/18/2003	**7,550**	**16,800**	**857**	**3,960**	**66,600**	<0.25	<0.5	--	--
		5/28/2003	**2,700**	**5,200**	350	**1,700**	**21,000**	310	150J	--	--
	B3H0266-09	8/11/2003	**659**	232	26.7	187	**2,810**	0.512	<0.5	--	--
	B4C0493-11	3/15/2004	**21.2**	1.38	41.5	6.55	708	2.38	<0.5	--	--
		6/16/2004	3.0	1.2	3.1	25	570	**1,400J**	**<1,000**	--	--
	B4F0732-11	6/22/2004	2.85	<0.5	0.559	<1	178	<0.25	<0.5	--	--
	B4I0676-01	9/21/2004	**9.76**	0.657	16.5	7.84	409	4.17	<0.5	--	--
	B4L0613-11	12/21/2004	0.567	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-10	3/22/2005	**17.6**	<1	<1	<3	<100	<0.236	<0.473	--	--
		6/20/2005	2.7	<0.2	<0.2	0.7J	86J	**790**	<94	--	--
	128615-10	6/24/2005	<1	<1	<1	<3	124	1.18 (d)	<0.456	<1	--
	4574962	7/28/2005	0.9	1.7	3.2	52	**870**	360	<95	<0.3	--
	4608329	9/20/2005	**6.9**	11	1.9	9.7	140	85	<94	--	--
	4662482	11/30/2005	<0.5	<0.7	<0.8	<0.8	<48	95	<94	--	--
	4720941	2/28/2006	2	<0.7	<0.8	<0.8	<48	100	<100	<0.5	--
	4774561	5/16/2006	1.9	<0.2	<0.2	<0.6	<48	<76	<95	<5	--
		6/7/2006	0.570J	<0.280	<0.340	<0.820	173	205	171	--	--
	4845177	8/17/2006	**5**	<0.7	<0.8	<0.8	100	190	<96	<0.5	--
		10/24/2006	**22.7**	3.42	1.72	2.92J	303	178	<35.8	--	--
	4923047	11/21/2006	**15**	<0.7	<0.8	4.0	150	590	<96	<0.5	--
	4987246	2/20/2007	**5**	<0.7	2	<0.8	180	--	--	<0.5	--
		3/15/2007	3.79	<0.420	0.770J	<0.450	133	454	<37.0	--	--
	5057454	5/15/2007	2	<0.7	<0.8	<0.8	110	260	<95	<0.5	--
		9/11/2007	**78.7**	5.24	9.22	16.2	507	**525**	76.2J	--	--
	5154765	9/12/2007	**280**	23	34	100	720	<160	<200	<0.5	--
	5220670	11/27/2007	**5**	<0.7	2	4	100	190	<95	<0.5	--
	5288737	2/26/2008	0.7	<0.7	<0.8	1	77	100	<93	<0.5	--
		6/4/2008	4.66	2.74	30.9	8.96	**999**	185	116	--	--
	NRH2711-04	8/26/2008	**24.7** ^	11.5 ^	5.64 ^	31.4 ^	**1,220** ^	360 ^^	136 ^^	<0.42 ^	<74.4 ^
	253345001	3/24/2010	**5.8**	1.4	<1.0	6.7	162	<76.2	<381	<1.0	<250
	254760002	8/27/2010	**31.2**	8.3	61.8	37.8	571	87.1	<392	<1.0	<250
HA-6		4/14/1993	**1,400**	**9,300**	**1,200**	**10,000**	**63,000**	--	--	--	--
		12/15/1993	**1,400**	**1,400**	**7,400**	**10,000**	**59,000**	--	--	--	--
		11/4/1994	**960**	**2,700**	**790**	**9,500**	**53,000**	--	--	--	--
		9/17/1997	**934**	973	**922**	**7,670**	**43,100**	**25,100**	<500	--	--
		5/1/1998	**1,100**	**1,200**	**1,300**	**8,700**	**43,000**	**24,000**	**<5,000**	--	--
		7/30/1999	**950**	360	**1,500**	**8,300**	**47,000**	**16,000**	**<2,000**	--	--
		5/22/2000	**870**	430	**1,500**	**6,800**	**37,000**	**10,000**	**<4,000**	--	--
		5/22/2001	**820**	370	**1,600**	**8,000**	**38,000**	**14,000**	**<2,000**	--	--
		6/5/2002	**650**	210	**1,700**	**7,100**	**36,000**	**5,800**	**990J**	--	--
HA-6	B2K0572-07	11/25/2002	**637**	181	**1,320**	**5,620**	**25,600**	1.43	<0.5	--	--
		5/28/2003	**590**	210	**1,200**	**5,900**	**32,000**	**4,100**	**5,400J**	--	--
		6/16/2004	**590**	330	**1,300**	**8,500**	**52,000**	**41,000**	**<2,500**	--	--
		6/20/2005	**330**	150	690	**2,800**	**18,000**	**11,000**	**<960**	--	--
		6/7/2006	**345**	189	**1,040**	**2,900**	**18,600**	**3,700j**	106J	--	--
		10/24/2006	**422**	172	**948**	**2,570**	**19,000**	**2,670j**	<71.4uj	--	--
		3/15/2007	**409**	209	**1,170**	**4,300**	**17,700**	**3,290**	<74.0	--	--
		9/11/2007	**471**	197	**1,360**	**2,200**	**19,800**	**2,600**	52.6	--	--
		6/3/2008	**365**	304	**1,550**	**4,330**	**24,900**	**2,120**	165	--	--
	NRH2711-05	8/26/2008	**349** ^	237 ^	**1,320** ^	**2,470** ^	**22,800** ^	**1,420** ^^	48.8 ^	<0.42 ^	<74.4 ^
	253345002	3/24/2010	**330**	184	**1,450**	**2,790**	**14,900**	**908**	<381	<1.0	<250
	254760003	8/27/2010	**293**	98.0	**1,420**	413	**9,630**	**789**	<392	<1.0	<250
HA-7		7/29/1999	**1,200**	69	**890**	**1,200**	**17,000**	**16,000**	**<10,000**	--	--

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
		5/22/2000	**460**	31	510	580	**7,000**	**9,200**	**<4,000**	--	--
		5/22/2001	**290**	25	350	470	**4,700**	**7,100**	**<2,000**	--	--
		6/5/2002	**1,500**	73	**760**	**1,000**	**8,800**	**4,100**	<470	--	--
	B2K0471-02	11/19/2002	**587**	31.3	259	324	**5,510**	NA	NA	--	--
	B2K0572-05	11/25/2002	**811**	41.1	402	580	**7,840**	2.67	<0.5	--	--
	B3A0300-03	1/14/2003	**421**	56.2	261	**2,350**	**13,700**	NA	NA	--	--
		5/28/2003	**1,000**	100	**920**	**1,300**	**11,000**	**9,000**	**<960**	--	--
		6/15/2004	**730**	48	600	**1,200**	**8,500**	**3,400**	<490	--	--
		6/20/2005	**170**	5	84	18	740	**1,500**	<200	--	--
		6/7/2006	0.480J	<0.280	<0.340	<0.820	<40	**14,700**	**1,610**	--	--
		10/24/2006	**46.9**	4.32	7.86	23.5	537	**1,040j**	408j	--	--
		3/15/2007	**385**	30.0	658	166	**3,880**	**3,270**	<181	--	--
		9/11/2007	**777**	31.8	**1,540**	504	**9,440**	**4,300**	<41.0	--	--
		6/3/2008	**653**	70.6	**1,620**	**1,430**	**13,700**	**4,270**	357	--	--
	NRH2711-02	8/26/2008	**635** [z]	31.7 [z]	**1,100** [z]	928 [z]	**6,940** [z]	**4,410** [z,x]	137 [z]	<0.42 [z]	<74.4 [z]
	253345003	3/24/2010	**529**	28.4	**771**	**1,050**	**4,990**	458	<392	<1.0	<250
	254760004	8/27/2010	**267**	24.8	505	544	**7,120**	455	<388	<1.0	<250
HA-8		4/14/1993	**140**	150	200	**1,100**	**8,100**	--	--	--	--
		12/15/1993	**100**	68	11	390	**3,200**	--	--	--	--
		11/4/1994	**25**	2.9	15	54	610	--	--	--	--
		9/18/1997	**29.2**	11.9	19.8	239	**2,840**	**6,760**	**2,360**	--	--
		5/1/1998	**110**	130	190	600	**4,300**	**14,000**	**19,000**	--	--
		7/29/1999	**37**	30	140	**1,000**	**6,000**	**2,200**	<200	--	--
		5/22/2000	**13**	9.7	28	170	**1,100**	**810**	**700**	--	--
		5/22/2001	**15**	3.8	26	95	**650**	**800**	350J	--	--
		6/5/2002	**6.8**	4.4	31	160	**1,200**	**3,000**	**1,100**	--	--
	B2K0471-03	11/19/2002	2.07	4.11	1.76	7.42	135	NA	NA	--	--
	B2K0572-04	11/24/2002	**5.78**	16.9	12.6	57.8	579	<0.25	<0.5	--	--
	B3A0300-04	1/14/2003	4.02	16.5	16.3	207	633	NA	NA	--	--
	B3B0527-02	2/24/2003	**14.6**	74.5	232	**1,570**	**5,720**	0.767	<0.5	--	--
	B3C0615-06	3/25/2003	**6.17**	22.0	73.0	445	**1,950**	0.544	<0.5	--	--
	B3D0437-10	4/18/2003	**12.1**	35.9	160	708	**3,040**	<0.25	<0.5	--	--
Dup of HA-8	B3D0437-06	4/18/2003	**11.9**	41.1	164	762	**3,650**	0.257	<0.5	--	--
		5/28/2003	**11,000**	**16,000**	**1,100**	**5,400**	**67,000**	**1,800**	**530**	--	--
		6/15/2004	**LPH Encountered**							--	--
		6/20/2005	**LPH Encountered**							--	--
		6/6/2006	**LPH Encountered**							--	--
		10/23/2006	**LPH Encountered**							--	--
		3/14/2007	**LPH Encountered**							--	--
		9/11/2007	**2,360**	**7,210**	408	**2,310**	**4,230**	**31,000**	**1,270J**	--	--
		6/3/2008	**3,730**	**14,800**	**956**	**4,650**	**43,800**	**2,250**	**719**	--	--
	NRH2711-03	8/26/2008	**3,770** [z]	**10,700** [z]	**763** [z]	**3,750** [z]	**34,600** [z]	**2,620** [z,x]	**778** [z,x]	<0.42 [z]	<74.4 [z]
	253345004	3/24/2010	<1.0	<1.0	<1.0	15.6	115	<77.7	<388	<1.0	<250
	254760005	8/27/2010	**2,200**	**11,900**	**964**	**4,240**	**54,600**	434	<388	<1.0	<250
HA-9		4/14/1993	**1,700**	**2,000**	**2,100**	**14,000**	**74,000**	--	--	--	--
		12/15/1993	**990**	**1,300**	130	**9,300**	**50,000**	--	--	--	--
		11/4/1994	**570**	91	**1,200**	**8,200**	**55,000**	--	--	--	--
		9/18/1997	**142**	22.8	**372**	**2,460**	**21,800**	**6,100**	**<1,000**	--	--
		4/29/1998	**410**	**60**	**1,200**	**4,500**	**32,000**	**44,000**	**<25,000**	--	--
		5/24/2000	**310**	21	320	380	**7,400**	**12,000**	**3,400**	--	--
		5/23/2001	**290**	15	290	490	**3,400**	**15,000**	**<2,000**	--	--
		6/4/2002	**530**	13	**810**	910	**12,000**	**5,300**	**1,000J**	--	--
	B2K0619-10	11/26/2002	**249**	3.55	349	187	**6,110**	NA	NA		
		5/28/2003	**310**	6.3	610	190	**9,500**	**3,800**	**<1,100**	--	--
		6/17/2004	**250**	2.1	280	6.8	**4,300**	--	--	--	--
		6/20/2005	**220**	2.4	260	5.8	**4,800**	**15,000**	**1,800J**	--	--
		6/6/2006	**177**	3.58	435	420	**3,750j**	**3,220**	337u	--	--
		10/24/2006	**248**	2.58	580	8.43	**7,050**	**3,080**	248	--	--
		3/15/2007	**245**	5.66	468	8.72	**6,360**	**3,100**	<82.2	--	--
		9/11/2007	**399**	10.1	345	50.0	**5,600**	**4,290**	**702**	--	--
		6/4/2008	**130**	4.37	141	10.8	**5,870**	**1,340**	165J	--	--
	NRH2716-10	8/27/2008	**388** [z]	7.34 [z]	277 [z]	13 [z]	**5,730** [z]	**3,160** [z,x]	**705** [z,x]	<0.42 [z]	<74.4 [z]
		3/25/2010	Insufficient groundwater to sample								

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	254696004	8/25/2010	**388**	17.1	260	199	**4,180**	**--**	--	<1.0	<250
HA-10		4/14/1993	**540**	**4,600**	**1,800**	**12,000**	**77,000**	--	--	--	--
		12/15/1993	**430**	410	**1,400**	**3,800**	**24,000**	--	--	--	--
		5/23/2001	Well not sampled, bailer obstructed from reaching well bottom								
		6/6/2002	**44**	66	530	**1,600**	**8,900**	--	--	--	--
		5/27/2003	Well not sampled, bailer obstructed from reaching well bottom								
		6/17/2004	Well not sampled, bailer obstructed from reaching well bottom								
		6/21/2005	**23**	7	170	320	**3,500**	--	--	--	--
		6/6/2006	**52.6**	5.50J	63.7	19.1J	**852**	**999**	97.5	--	--
		10/24/2006	**36.2**	<0.220	47.4	99.4	**2,280**	--	--	--	--
		3/15/2007	**49.8**	13.2	332	425	**4,590**	**1,610**	371	--	--
		9/12/2007	Insufficient groundwater to sample								
		6/4/2008	**16.1**	7.79	175	283	**4,710**	--	--	--	--
	NRH2716-09	8/27/2008	**5.61** [x]	5.32 [x]	34.4 [x]	39.2 [x]	**2,160** [x]	**2,400** [x,y]	**510** [x,z]	<0.42 [x]	<74.4 [x]
		3/24/2010	Insufficient groundwater to sample								
	254696005	8/25/2010	**7.1**	7.5	68.5	130	**2,170**	**--**	--	<1.0	<250
HA-11		4/14/1993	**910**	42	**820**	**3,700**	**29,000**	--	--	--	--
		12/15/1993	**360**	160	98	780	**5,300**	--	--	--	--
		11/4/1994	**610**	190	300	**1,900**	**13,000**	--	--	--	--
		4/29/1998	**230**	28	100	520	**4,600**	**4,200**	**1,800**	--	--
		5/24/2000	**710**	200	450	**2,300**	**13,000**	**3,300**	**1,400**	--	--
		5/23/2001	**570**	83	280	910	**6,100**	--	--	--	--
		6/4/2002	**660**	18	100	450	**3,000**	--	--	--	--
		5/27/2003	**1,400**	74	560	**2,300**	**16,000**	--	--	--	--
		6/21/2005	**500**	6.6	150	460	**4,100**	--	--	--	--
		6/7/2006	**662**	17.0	443	**1,420**	**8,760**	**3,320j**	147J	--	--
		10/24/2006	**1,510**	12.2	385	710	**7,410**	**3,560**	**1,370**	--	--
		3/15/2007	**504**	8.96	294	842	**5,180**	**3,700**	**508**	--	--
		9/12/2007	Insufficient groundwater to sample								
		6/4/2008	**602**	4.46	159	415	**4,290**	--	--	--	--
		8/25/2008	Insufficient groundwater to sample								
	253345005	3/24/2010	**384**	5.1	215	595	**3,080**	--	--	<1.0	<250
	254696006	8/25/2010	**988**	18.6	430	**1,230**	**5,350**	**--**	--	<1.0	<250
HA-12		4/14/1993	1.3	<0.50	<0.50	<1.0	<50	--	--	--	--
		12/15/1993	**6.0**	5.7	16	170	700	--	--	--	--
		11/4/1994	2.2	1.6	1.8	9.7	300	--	--	--	--
		9/18/1997	1.05	<0.50	<0.50	1.9	139	**6,350**	<500	--	--
		5/1/1998	0.3	0.5	0.3	1.5	<50	<80	**780**	--	--
		7/29/1999	3	0.8J	<0.2	1.3J	<48	180J	200	--	--
		5/22/2000	1.2	0.24J	<0.2	<0.6	<48	250	**520**	--	--
		5/22/2001	3.7	0.24J	<0.2	<0.6	<48	410	<200	--	--
		6/5/2002	0.31J	<0.2	<0.2	<0.6	<48	130J	<95	--	--
	B2K0572-06	11/25/2002	0.957	3.85	1.52	10.8	93.7	<0.25	<0.5	--	--
		5/28/2003	0.4J	<0.2	<0.2	<0.6	<48	280	**610**	--	--
		6/16/2004	4.5	0.3J	<0.2	0.8J	<48	490	250J	--	--
		6/21/2005	0.3J	<0.2	0.5J	<0.6	<48	180J	<100	--	--
		6/7/2006	<0.290	<0.280	<0.340	<0.820	<40	165	70.1J	--	--
		10/24/2006	4.85	1.60	0.860J	0.870J	58.2Ju	103	**564**	--	--
		3/15/2007	<0.330	<0.420	0.530J	0.630J	71.6J	90.3J	<37.0	--	--
		9/11/2007	<0.330	<0.420	<0.420	<0.450	72.6J	283	181	--	--
		6/4/2008	0.310J	<0.280	0.570J	1.05J	110	228	316	--	--
	NRH2716-06	8/27/2008	<0.27 [x]	1.23 [x]	0.38 [x]	<0.86 [x]	<43 [x]	**584** [x,y]	**722** [x,y]	<0.42 [x]	<74.4 [x]
	253345006	3/24/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<76.9	<385	<1.0	<250
		8/25/2010	Insufficient groundwater to sample								
HA-13		4/14/1993	<0.50	<0.50	<0.50	<1.0	<50	--	--	--	--
		12/15/1993	<0.50	<0.50	<0.50	<1.0	<50	--	--	--	--
		11/4/1994	<0.50	1.4	<0.50	3.0	<50	--	--	--	--
		9/18/1997	<0.50	<0.50	<0.50	<1.0	59	310	<500	--	--
		4/30/1998	<1.0	1.00	<1.0	<3.0	<250	<250	<500	--	--
		7/28/1999	--	--	--	--	--	--	--	--	--

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
		5/22/2000	<0.2	<0.2	<0.2	<0.6	<48	130J	450J	--	--
		5/22/2001	<0.2	<0.2	<0.2	<0.6	<48	86J	<200	--	--
		6/4/2002	<0.2	<0.2	<0.2	<0.6	<48	<84	<110	--	--
	B2K0572-12/B2K06	11/25/2002	0.569	1.80	0.667	5.74	<50	<0.25	<0.5	--	--
	B3B0527-03	2/24/2003	<0.5	<0.5	<0.5	1.08	<50	<0.25	<0.5	--	--
	B3C0615-07	3/25/2003	<0.5	0.580	<0.5	<1	98.4	<0.25	<0.5	--	--
	B3D0437-07	4/18/2003	<0.5	<0.5	0.500	<1	<50	<0.25	<0.5	--	--
		5/27/2003	**43**	290	120	840	**7,100**	84J	<96	--	--
	B3I0408-03	9/11/2003	3.38	28.9	7.87	60.6	498	NA	NA	--	--
	B3K0600-11	11/21/2003	<0.5	0.877	<0.5	1.15	<50	<0.25	<0.5	--	--
	B4C0493-12	3/15/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
		6/16/2004	<0.2	<0.2	<0.2	<0.6	<48	<77	<96	--	--
	B4F0732-12	6/22/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	B4I0676-05	9/21/2004	0.598	<0.5	<0.5	<1	<50	0.868	<0.5	--	--
	B4L0613-10	12/21/2004	<0.5	<0.5	<0.5	<1	<50	<0.25	<0.5	--	--
	126955-11	3/22/2005	<1	<1	<1	<3	<100	<0.237	<0.474	--	--
		6/21/2005	<0.2	<0.2	0.5J	0.27J	<48	230J	<200	--	--
	128615-11	6/24/2005	<1	<1	<1	<3	<100	0.311	<0.473	<1	--
	4574963	7/28/2005	<0.3	9.8	22	380	**5,800**	**1,100**	380	<0.3	--
	4608330	9/20/2005	3.6	11.0	1.4	8.8	130	--	--	--	--
	4662483	11/29/2005	<0.5	<0.7	<0.8	<0.8	<48	79	<95	--	--
	4720942	2/28/2006	<0.5	<0.7	<0.8	<0.8	<48	<78	<97	<0.5	--
	4774562	5/16/2006	<0.2	<0.2	<0.2	<0.6	<48	<81	<100	<0.3	--
		6/7/2006	<0.290	<0.280	<0.340	<0.820	<40	163	329	--	--
	4845178	8/17/2006	<0.5	<0.7	<0.7	<0.8	<48	<270	<330	<0.5	--
		10/24/2006	**7.34**	1.83	0.770J	0.750J	100	<37.8	<37.8	--	--
	4923048	11/21/2006	<0.5	<0.7	<0.8	<0.8	<48	<75	<94	<0.5	--
	4987245	2/20/2007	<0.5	<0.7	<0.8	<0.8	<48	<75	<94	<0.5	--
		3/15/2007	<0.330	<0.420	<0.420	0.500J	63.6J	59.7J	110	--	--
	5057453	5/15/2007	<0.5	<0.7	<0.8	<0.8	<50	<130	<170	<0.5	--
		9/11/2007	0.580J	<0.420	<0.420	0.700J	47.5J	--	--	--	--
	5154766	9/12/2007	<0.5	<0.7	<0.8	<0.8	<50	450	<200	<0.5	--
	5220671	11/27/2007	<0.5	<0.7	<0.8	<0.8	<50	<300	<370	<0.5	--
	5288738	2/26/2008	<0.5	<0.7	<0.8	<0.8	<50	<75	<94	<0.5	--
		6/4/2008	<0.270	<0.280	0.410J	<0.860	52.3J	41.1J	58.9J	--	--
	NRH2716-07	8/27/2008	<0.27 [1]	0.92 [1]	0.24 [1]	<0.86 [1]	57.7 [1,6]	34.1 [1]	53.9 [1]	<0.42 [1]	<74.4 [1]
	253345007	3/24/2010	<1.0	<1.0	<1.0	<3.0	<50.0	<75.8	<379	<1.0	<250
	254760006	8/27/2010	<1.0	2.0	<1.0	3.0	<50.0	--	--	<1.0	<250
HA-14		4/14/1993	**400**	22	290	**1,000**	**5,300**	--	--	--	--
		12/15/1993	<0.50	<0.50	<0.50	<1.0	<50	--	--	--	--
		11/4/1994	**5**	1.8	3.9	11	180	--	--	--	--
		9/18/1997	**6.45**	1.06	7.98	9.17	324	**972**	**752**	--	--
		4/30/1998	**210**	15	190	100	**1,800**	460	<500	--	--
		7/29/1999	**450**	38	**710**	120	**4,700**	**1,100**	<200	--	--
		5/22/2000	**470**	26	**760**	63	**3,700**	**1,100**	**520J**	--	--
		5/22/2001	**120**	5.5	200	10	**890**	430	230J	--	--
		6/4/2002	**380**	16.0	470	32	**2,200**	**1,400**	**1,000**	--	--
	B2K0572-13/B2K06	11/25/2002	**141**	15.7	169	48.1	**939**	<0.25	<0.5	--	--
	B3D0437-13	4/18/2003	**133**	8.87	228	23.7	**1,190**	<0.25	<0.5	--	--
		5/27/2003	**91**	2.7	140	11	**860**	300	220J	--	--
		6/16/2004	**56**	2.6	52	5	220J	**780**	280J	--	--
		6/21/2005	**260**	5.8	250	18	**1,200**	**660**	390J	--	--
		6/7/2006	<0.290	<0.280	0.560J	<0.820	<40	**--**	--	--	--
		10/24/2006	**12.3**	2.06	9.60	1.42J	288	**--**	--	--	--
		3/15/2007	4.09	<0.420	4.99	0.610J	121	187	50.1J	--	--
		9/11/2007	**92.8**	1.30	157	3.45	628	--	--	--	--
		6/4/2008	**30.1**	0.780J	67.5	1.71J	529	**1,150**	**1,820**	--	--
	NRH2716-08	8/27/2008	**31.5** [*]	2.25 [*]	72.1 [*]	2.63 [*]	350 [*]	**513** [*,6]	**863** [*,6]	<0.42 [*]	<74.4 [*]
	253345008	3/24/2010	**92**	1.4	369	6.6	**1,150**	**1,030**	**2,560**	<1.0	<250
	254760007	8/27/2010	**155**	6.0	321	3.5	**1,120**	--	--	<1.0	<250
HB-1		12/7/1993	<0.50	<0.50	0.14	0.12	61	--	--	--	--
HB-2		12/7/1993	0.092	<0.50	0.17	0.13	68	--	--	--	--
R-1		9/17/1997	**7,620**	**3,460**	**1,460**	**9,460**	**3,360,000**	**206,000**	**23,500**	--	--
		3/22/2010	Gauge Only								

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	Gauge Only	8/25/2010	**LPH Encountered**								
R-2		3/22/2010	Gauge Only								
	Gauge Only	8/25/2010	--	--	--	--	--	--	--	--	--
W-1		5/23/2000	**34,000**	**42,000**	**3,600**	**23,000**	**190,000**	**160,000**	**<100,000**	--	--
		5/24/2001	**LPH Encountered**							--	--
		6/5/2002	**17,000**	**27,000**	**2,700**	**19,000**	**130,000**	**79,000**	**<9,400**	--	--
	B2K0572-14	11/25/2002	**17,600**	**24,800**	**2,950**	**19,500**	**155,000**	16.7	0.500	--	--
		5/29/2003	**20,000**	**25,000**	**3,400**	**23,000**	**170,000**	**79,000**	**<4,800**	--	--
		6/16/2004	**LPH Encountered**							--	--
		6/20/2005	**12,000**	**13,000**	**1,600**	**12,000**	**93,000**	**120,000**	**<11,000**	--	--
		6/7/2006	**8,680**	**6,260**	**726**	**8,240**	**69,500**	**7,500**	337	--	--
		10/23/2006	**14,500**	**8,400**	**2,420**	**20,800**	**91,700**	**9,070**	<183	--	--
		3/14/2007	**8,920**	**2,800**	**1,010**	**17,600**	**70,300**	**16,100**	**<740**	--	--
		3/14/2007(Dup)	**9,340**	**3,010**	**1,130**	**19,200**	**63,200**	**11,000**	<370	--	--
		9/11/2007	Insufficient groundwater to sample								
		6/4/2008	**14,600**	697	**1,510**	**17,100**	**81,900**	**23,900**	**1,370**	--	--
		8/25/2008	Insufficient groundwater to sample								
	253345009	3/24/2010	**22,300**	**7,190**	**2,640**	**16,900**	**76,400**	**2,510**	<381	6.9	<250
	254760008	8/27/2010	**16,500**	**2,550**	**2,270**	**14,400**	**56,200**	**8,170**	<400	<1.0	<250
W-2		9/18/1997	**19,400**	**11,700**	**3,550**	**18,000**	**393,000**	**85,200**	**19,200**	--	--
		7/29/1999	**12,000**	**11,000**	**1,900**	**13,000**	**110,000**	**36,000**	**<10,000**	--	--
		5/23/2000	**15,000**	**19,000**	**1,500**	**10,000**	**85,000**	**50,000**	**<20,000**	--	--
		5/24/2001	**7,600**	**3,000**	420	**4,400**	**25,000**	**30,000**	**13,000**	--	--
		6/5/2002	**LPH**	**LPH**	**LPH**	**LPH**	**LPH**	**LPH**	**LPH**	--	--
	B2K0572-11	11/25/2002	**15,300**	**15,800**	**1,960**	**11,700**	**104,000**	14.7	1.91	--	--
		5/28/2003	**16,000**	**15,000**	**2,200**	**12,000**	**98,000**	**28,000**	**7,800J**	--	--
		6/15/2004	**21,000**	**5,700**	**2,800**	**8,700**	**85,000**	**460,000**	**<50,000**	--	--
		6/22/2005	**11,000**	**2,000**	**1,800**	**6,900**	**50,000**	**73,000**	**<4,000**	--	--
		6/6/2006	**6,640**	**1,660**	464	**4,760**	**34,400**	**5,880**	283Ju	--	--
		10/23/2006	**12,500**	**3,470**	**1,710**	**8,220**	**53,000**	**5,800**	<183	--	--
		10/23/2006 (Dup	**12,000**	**2,840**	**1,650**	**7,420**	**60,800**	**5,890**	<183	--	--
		3/14/2007	**9,060**	**1,840**	**2,010**	**10,500**	**51,800**	**12,400**	<370	--	--
		9/11/2007	**14,000**	572	**1,610**	**3,040**	**42,900**	**5,780**	<100	--	--
		6/3/2008	**15,100**	215	**2,250**	**3,510**	**51,900**	**46,300**	**3,330J**	--	--
	NRH2716-16	8/27/2008	**18,700** [x]	147 [x]	**1,970** [x]	**3,630** [x]	**49,000** [x]	**5,050** [x,y]	363 [x]	24 [x]	74.4 [x]
	253329002	3/23/2010	**14,100**	691	**3,090**	**10,400**	**48,300**	**2,150**	<381	6.1	<250
	254760009	8/27/2010	**12,500**	253	**2,730**	**7,580**	**30,700**	**4,570**	**502**	10.8	<250
W-3		4/14/1993	**2,000**	**4,800**	**2,700**	**15,000**	**91,000**	--	--	--	--
		12/15/1993	**670**	**1,300**	580	**8,300**	**45,000**	--	--	--	--
		11/4/1994	**520**	**190**	630	**5,100**	**39,000**	--	--	--	--
		9/17/1997	**2,820**	**8,730**	**1,570**	**11,500**	**105,000**	**15,000**	**<500**	--	--
		4/29/1998	**920**	850	**2,000**	**10,000**	**54,000**	**18,000**	**<5,000**	--	--
		7/30/1999	**2,900**	**1,900**	**1,800**	**6,900**	**48,000**	**48,000**	**<10,000**	--	--
		5/23/2000	**910**	180	**1,400**	**4,900**	**34,000**	**19,000**	**<10,000**	--	--
		5/22/2001	**890**	36	**1,100**	**2,200**	**19,000**	**28,000**	**<10,000**	--	--
		6/4/2002	**1,900**	45	640	**2,300**	**17,000**	**36,000**	**<4,800**	--	--
	B2K0619-09	11/26/2002	**455**	156	463	**1,570**	**14,100**	4.89	0.500	--	--
		5/28/2003	**500**	32	600	740	**16,000**	**55,000**	**<4,800**	--	--
		6/16/2004	**LPH Encountered**							--	--
		6/21/2005	**790**	15	470	490	**9,100**	**10,000**	**<980**	--	--
		6/6/2006	**1,880**	25.1	640	821	**13,400**	**3,090**	153u	--	--
		10/24/2006	**933**	21.3	293	638	**12,200**	**2,300**	<35.2	--	--
		10/24/2006 (Dup	**877**	18.3	301	535	**9,520**	**2,050**	<36.9	--	--
		3/14/2007	**687**	18.9	286	446	**9,370**	**2,200**	<185	--	--
		9/12/2007	**614**	13.1	397	437	**9,180**	**2,940**	40.0J	--	--
		6/4/2008	**727**	149	576	724	**13,000**	**2,210**	46.9J	--	--
		6/4/2008 (Dup)	**753**	230	519	686	**12,400**	**1,980**	42.2J	--	--
	NRH2716-03	8/26/2008	**763** [x]	176	564	**1,450** [x]	**14,600** [x]	**3,240** [x,y]	46.8 [x]	0.42 [x]	74.4 [x]
	253356001	3/25/2010	3.1	<1.0	5.0	<3.0	67.9	<76.9	<385	<1.0	<250

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
BP RENTON TERMINAL
RENTON, WASHINGTON

Location	Lab ID	Date Collected	BTEX (µg/L) Method 8260B				NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)		MTBE (µg/L)	Ethanol[w] (µg/L)
			Benzene	Toluene	Ethylbenzene	Xylenes (total)	Gasoline	Diesel	Lube Oil		
	253356003	3/25/10 (Dup 1)	**11.3**	<1.0	33.3	5.5	322	<76.9	<385	<1.0	<250
	253356005	3/25/10 (Dup 2)	**11.9**	<1.0	34.3	5.6	272	<78.4	<392	<1.0	<250
	Purged Dry	8/27/2010	--	--	--	--	--	--	--	--	--
W-4		4/14/1993	**2,600**	**7,800**	**2,800**	**20,000**	**130,000**	--	--	--	--
		12/15/1993	**3,200**	**2,700**	**11,000**	**18,000**	**180,000**	--	--	--	--
		9/17/1997	**1,750**	<100	**1,480**	**8,490**	**114,000**	**276,000**	<500	--	--
		4/29/1998	**2,400**	120	**1,600**	**8,000**	**84,000**	**250,000**	**<20,000**	--	--
		7/30/1999	**2,100**	100	**1,900**	**6,300**	**53,000**	**42,000**	**<10,000**	--	--
		5/23/2001	**LPH Encountered**							--	--
		6/4/2002	**2,300**	32	**1,800**	**3,500**	**35,000**	**59,000**	**6,800J**	--	--
	B2K0619-01	11/25/2002	**1,830**	38.2	**2,550**	**4,220**	**39,900**	19.2	0.648	--	--
		5/28/2003	**800**	22	**1,500**	**1,000**	**32,000**	**26,000**	**1,600J**	--	--
		6/15/2004	**LPH Encountered**							--	--
		6/21/2005	**1,200**	11	**1,400**	200	**23,000**	**110,000**	**<19,000**	--	--
		6/6/2006	**1,230**	18.4	**1,010**	67.4	**9,180**	**4,620**	411	--	--
		10/24/2006	**1,520**	8.34	**1,490**	18.9	**17,200**	**5,570**	<70.5	--	--
		3/14/2007	**422**	11.0	456	148	**10,100**	**4,820**	<185	--	--
		9/12/2007	Insufficient groundwater to sample								
		6/4/2008	**941**	34.3	**714**	58.0	**10,600**	**4,870**	110J	--	--
	NRH2716-02	8/26/2008	**1,370** [E]	20.1 [E]	**750** [E]	39.5 [E]	**11,700** [E]	**15,100** [E,1]	**1,810** [E,1]	1.21 [E]	74.4 [E]
	253345010	3/24/2010	**212**	16.3	139	182	**1,940**	256	<385	<1.0	<250
	Purged Dry	8/27/2010	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels:			**5**	**1,000**	**700**	**1,000**	**1,000/800**[t]	**500**	**500**	**20**	--

Notes:
(1) The analytical data is from Acton Mickelson Environmental, Inc. sampling on 8/26/2008 and 8/27/2008.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
C0 Result confirmed by second analysis.

TABLE 9

SOIL ANALYTICAL RESULTS
CONOCOPHILLIPS RENTON TERMINAL RM&R #3485
RENTON, WASHINGTON

			Benzene	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*Gasoline Range Organics*	*Diesel Range Organics*	*Motor Oil Range Organics*	*Lead*	*PID Reading*
Boring No.	*Depth*	*Date*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*PPMV*
B-1	0.5-1.0'	6/3/2004	**2,910**	3010	1,070	**9,300**	46.8	16.4	45.8	NS	250
B-2	1.0-1.5'	6/3/2004	**169**	483	<50.0	1,780	8.45	<10.0	<25.0	NS	549
B-2	2.0-2.5'	6/3/2004	**1,450**	376	2,290	7,810	27.3	<20.2	<50.5	NS	59.5
D-1	0-0.5'	6/3/2004	**752**	379	200	7,710	7.83	<10.0	<25.0	NS	250
B1-1.5	2	4/27/2005	<41.1	<41.1	<41.1	<123.3	<4.11	NS	NS	NS	22.4
B1-3.5	4'	4/27/2005	<43.2	<43.2	<43.2	<129.6	<4.32	NS	NS	NS	21.4
B1-5	5'	4/27/2005	<33.2	<33.2	<33.2	<99.6	<3.32	NS	NS	NS	25.6
B2-2.5	3'	4/27/2005	<36.4	<36.4	<36.4	<109.2	<3.64	NS	NS	NS	31.6
B2-4.5	5'	4/27/2005	<41.9	<41.9	<41.9	<125.7	<4.19	NS	NS	NS	32.5
B2-6	6'	4/27/2005	<39.3	<39.3	<39.3	<117.9	<3.93	NS	NS	NS	34.2
B3-2.5	3'	4/27/2005	<36.1	<36.1	<36.1	<108.3	<3.61	NS	NS	NS	25.9
B3-4.5	5'	4/27/2005	<43.0	<43.0	<43.0	<129.1	<4.30	NS	NS	NS	19.1
B4-2.5	3'	4/28/2005	<45.8	<45.8	<45.8	<137.5	<4.58	NS	NS	NS	21.1
B4-4.5	5'	4/28/2005	<41.8	<41.8	<41.8	<125.4	<4.18	NS	NS	NS	2.4
B4-6	6'	4/28/2005	<38.4	<38.4	<38.4	<115.2	<3.84	NS	NS	NS	NM
B5-1.5	2'	4/28/2005	<35.3	<35.3	<35.3	<105.8	<3.53	NS	NS	NS	22.7
B5-3.5	4'	4/28/2005	<44.9	<44.9	<44.9	<134.8	<4.49	NS	NS	NS	24.6
B7-2.5	3'	4/27/2005	<37.9	<37.9	<37.9	<113.7	<3.79	NS	NS	NS	33.0
B7-4.5	5'	4/27/2005	<38.7	<38.7	<38.7	<116.1	<3.87	NS	NS	NS	34.4
G-1	8'-9'	4/20/2009	1.5	1.0	<0.68	2.0	<0.067	<3.2	<3.1	0.44	4.9
G-2	2'-3'	4/20/2009	11.9	2.6	2.3	33.3	1.9	<8.4	<11.4	0.36	24.6
G-2	7'-8'	4/20/2009	**5,570**	**43,000**	**19,200**	**124,000**	**1,500**	401	<12.0	0.75	1,837
G-3	5'-6'	4/20/2009	**14,900**	**15,800**	**58,600**	**305,000**	**5,000**	1,920	35	1.6	1,760
G-4	4.5'-5.5'	4/20/2009	**21,200**	**123,000**	**50,900**	**314,000**	**2,840**	902	<11.3	1.8	1,818
G-4	7.5'-8.5'	4/20/2009	**10,800**	**61,000**	**27,300**	**173,000**	**2,060**	969	<11.7	2.6	2,130
G-5	4'-5'	4/20/2009	**443**	1,760	**8,160**	**60,300**	**1,440**	882	<11.6	1.4	1,953
G-6	1'-2'	4/20/2009	<0.55	<0.62	0.54	3.2	0.65	<3.1	44.1	0.42	1.0
G-6	6'-7'	4/20/2009	**1,190**	**8,210**	5,970	**37,000**	**509**	164	<11.4	<0.016	1,551
G-7	1'-2'	4/20/2009	**48.5**	58.5	22.8	118	4.9	9.5	122	0.43	103
G-7	8'-9'	4/20/2009	**744**	5,300	5,120	**33,900**	**1,170**	873	12.1	<0.018	1,605
G-8	9-10'	4/20/2009	**15,000**	1,640	**49,300**	**234,000**	**2,530**	446	<13.3	1.4	1,071
G-9	7'-8'	4/21/2009	2.2	<2.6	<2.6	7.7	**120**	<3.3	<13.2	0.78	17.4
G-14	3'-4'	4/21/2009	<3.0	<3.0	0.61	3.5	7.7	4.6	<11.9	0.48	50
MTCA Soil Cleanup Levels			**30**	**7,000**	**6,000**	**9,000**	**100**	**2,000**	**2,000**	**1,000**	**NA**

Notes:

(Industrial Use)
µg/kg micrograms per kilogram
mg/kg mg/kg = micrograms per kilogram
TPH-G Gasoline range organics by NWTPH-Gx
TPH-D Diesel range organics by Ecology Method NWTPH-Dx
TPH-O Motor oil range organics by Ecology Method NWTPH-Dx
B Benzene
T Toulene
E Ethylbenzene
X Total Xylenes
BTEX Aromatic compounds by EPA Method 8260; BTEX results 6/3/2004 by 8021B.
Lead by EPA Method 6020
NA Not applicable
< Less than the stated laboratory reporting limit
Bolded values exceed MTCA Method A Cleanup Levels.
PPMV Parts per million by volume
PID Photoionization detector
Results from 6/3/2004 are from Landau Investigtaiton of Stormwater Detention Pond dated July 15, 2004.
Results from 4/27 & 4/28/2005 are from SECOR Subsurface Assessment Report dated May 27, 2005.
NS Not Sampled.
NM Not Measured.

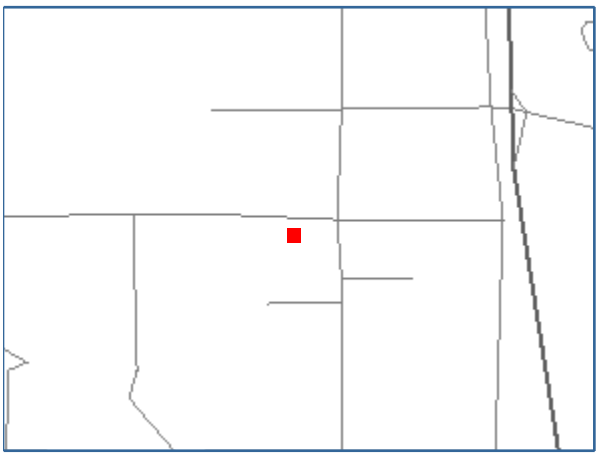
Appendix A – See Agreed Order August 27, 2010

APPENDIX B

WASHINGTON STATE DEPARTMENT OF ECOLOGY FACILITY/SITE REPORTS

Facility/Site: 7894776 WA DOT Springbrook Bank

Also known as: SPRINGBROOK WETLAND AND HABITAT MITIGATION BANK



Larger Map

Larger Map

Address

RENTON WA 98055

Decimal Coordinates

Latitude: 47.4576

Longitude: -122.22512

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
401CZM Mitigation Site	SEA	(360) 407-6068	200600100	7/18/2006	

Report generated on 07-02-2009

A 401Mit Site is in most cases associated with a 401Proj site. It is a compensatory mitigation site required as permit conditions for activities occurring at the 401Proj site. Mitigation sites are required for impacts to the state's water bodies and are to be protected in perpetuity. Examples of compensatory mitigation sites include; restoration, creation, enhancement, preservation, and mitigation bank sites.

Non Enforcement Final	SEA	(360) 407-6712	7/18/2006

A Non-Enforcement action (i.e. permit, notice of construction, etc.) was finalized, issued to the respective party, indicating the non-enforcement action was taken.

Industrial Codes (External Links Below)

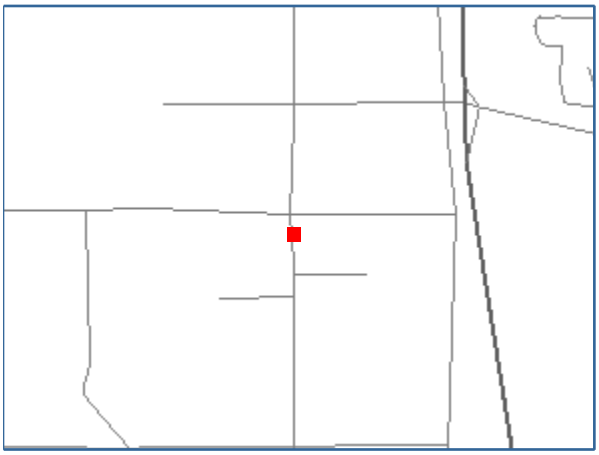
No NAICS information is available for this facility site.

No SIC information is available for this facility site.

Report generated on 07-02-2009

Facility/Site: 2400 Olympic Pipe Line Co Renton Station

Also known as: OLYMPIC PIPE LINE CO RENTON, Olympic Pipe Line Co Renton Station, OLYMPIC PIPELINE C & MAPLEWOOD, OLYMPIC PIPELINE CO RENTON STATION, SHELL OIL CO OLYMPIC PIPELINE



Larger Map

Larger Map

Address

2319 LIND AV SW

RENTON WA 98057

Decimal Coordinates

Latitude: 47.45753

Longitude: -122.22353

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
Enforcement Final	SPILLS	(360) 407-6712		8/26/2005	
An Enforcement action (i.e. Penalty, Order, Notice) was finalized, issued to the respective party, indicating the enforcement action was taken.					

Report generated on 07-02-2009

Hazardous Waste Planner	HAZWASTE	(360) 407-6731	WAD000641753	1/1/2004
Under Chapter 173-307 WAC, facilities that report under Section 313 of the Emergency Planning/Community Right-To-Know Act (EPCRA), or that generate more than 2,640 pounds of hazardous waste per year, must prepare Pollution Prevention Plans.				
Emergency/Haz Chem Rpt TIER2	HAZWASTE	(360) 407-6729	WAD000641753	1/1/1993
Businesses that store 10,000 pounds or more of a hazardous chemical or 500 pounds or less, depending on the chemical, of an extremely hazardous chemical on site at any one time must report annually. Reports are sent to the State Emergency Response Commission [represented by Ecology] Local Emergency Planning Committees, and local fire departments for emergency planning. [product, not waste]				
Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAD000641753	12/31/1992
Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.				
Oil Facility Contingency Plan	SPILLS	(360) 407-6375		7/1/1991
Oil handling facilities that are required to file oil spill contingency plans. An oil handling facility can be classified as a structure, equipment, pipeline, or device located on or near navigable waters of the state that transfers oil in bulk to or from a tank vessel or pipeline and is used for producing, storing, handling, transferring, processing, or transporting oil in bulk.				
Independent Cleanup	TOXICS	(360) 407-7224		1/1/1900
Any remedial action without department oversight or approval and not under an order or decree.				

Industrial Codes (External Links Below)

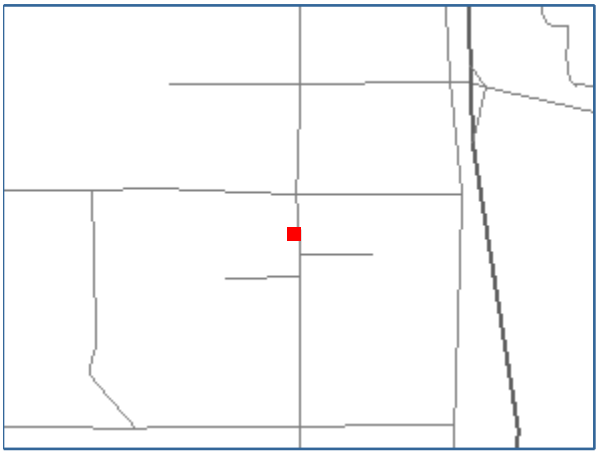
NAICS Code	NAICS Description
48691	Pipeline Transportation of Refined P

SIC Code	SIC Description
4613	REFINED PETROLEUM PIPELINES

Report generated on 07-02-2009

Facility/Site: 23963634 NORTH PACIFIC IND COATINGS

Also known as: KURDZIEL INDUSTRIAL COATINGS CO WA, MODERN MANUFACTURING INC, MODERN MFG INC RENTON



Larger Map

Larger Map

Address

2900 LIND AVE SW BLDG B

RENTON WA 98055

Decimal Coordinates

Latitude: 47.45708

Longitude: -122.22374

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
Hazardous Waste Planner	HAZWASTE	(360) 407-6731	WAD194613600	1/1/2005	

Report generated on 07-02-2009

Under Chapter 173-307 WAC, facilities that report under Section 313 of the Emergency Planning/Community Right-To-Know Act (EPCRA), or that generate more than 2,640 pounds of hazardous waste per year, must prepare Pollution Prevention Plans.					
General Permit Storm Water Ind	WATQUAL	(360) 407-6400	SO3004639	4/14/2004	
A General Storm Water Discharge Permit issued to an Industrial facility.					
General Permit Storm Water Ind	WATQUAL	(360) 407-6400	SO3004639	9/20/2002	
A General Storm Water Discharge Permit issued to an Industrial facility.					
Hazardous Waste Planner	HAZWASTE	(360) 407-6731	WAD194613600	1/1/1993	12/31/1993
Under Chapter 173-307 WAC, facilities that report under Section 313 of the Emergency Planning/Community Right-To-Know Act (EPCRA), or that generate more than 2,640 pounds of hazardous waste per year, must prepare Pollution Prevention Plans.					
Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAD194613600	3/1/1990	
Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.					

Industrial Codes (External Links Below)

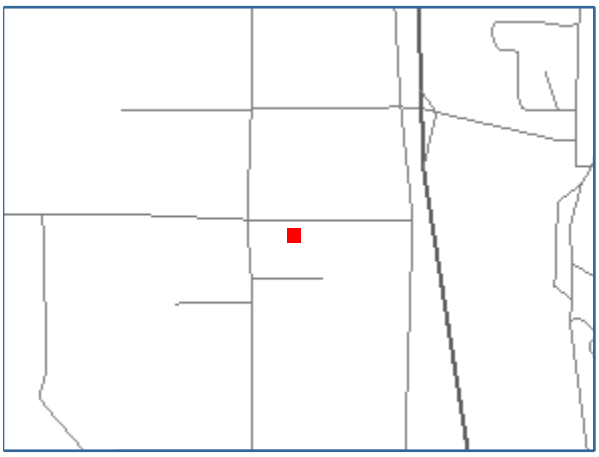
NAICS Code	NAICS Description
23832	PAINTING AND WALL COVERING CONTRACTO
238320	PAINTING AND WALL COVERING CONTRACTO

No SIC information is available for this facility site.

Report generated on 07-02-2009

Facility/Site: 34797662 Sheets & Graphic Sheets Unlimited

Also known as: SHEETS & GRAPHIC SHEETS UNLIMITED, SHEETS UHLIMITED



Larger Map

Larger Map

Address

301 SW 27TH ST

RENTON WA 98055-4081

Decimal Coordinates

Latitude: 47.4576

Longitude: -122.22207

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
General Permit Storm Water Ind	WATQUAL	(360) 407-6400	SO3002151	9/20/2002	
A General Storm Water Discharge Permit issued to an Industrial facility.					

Report generated on 07-02-2009

Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAR000001396	3/27/1995	12/31/2003
Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.					
Underground Storage Tank	TOXICS	(360) 407-7224		8/1/1985	5/3/2000
Any one or combination of tanks (including connecting underground pipes) that is used to contain regulated substances and has a tank volume of ten percent or more beneath the surface of the ground. This term does not include any of the exempt UST systems specified in WAC 173-360-110(2) or any piping connected thereto. See WAC 173-360					

Industrial Codes (External Links Below)

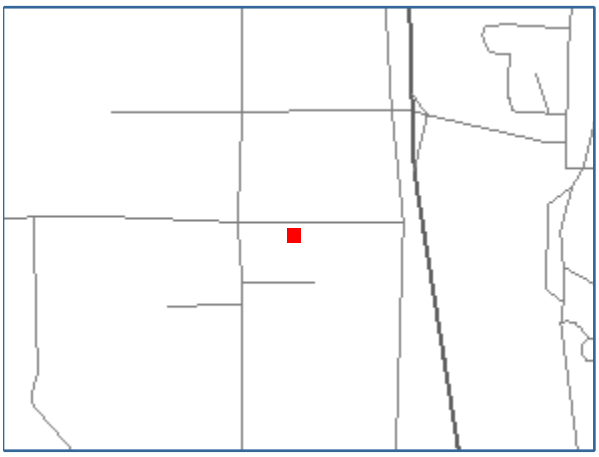
NAICS Code	NAICS Description
322211	Corrugated and Solid Fiber Box Manuf

SIC Code	SIC Description
2653	CORRUGATED AND SOLID FIBER BOXES
9999	NONCLASSIFIABLE ESTABLISHMENTS

Report generated on 07-02-2009

Facility/Site: 9625599 Sound Container Inc

Also known as:



Larger Map

Larger Map

Address

299 SW 27TH ST

RENTON WA 98055

Decimal Coordinates

Latitude: 47.45766

Longitude: -122.22176

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAH000014084	2/7/2001	8/31/2001

Report generated on 07-02-2009

Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.

Industrial Codes (External Links Below)

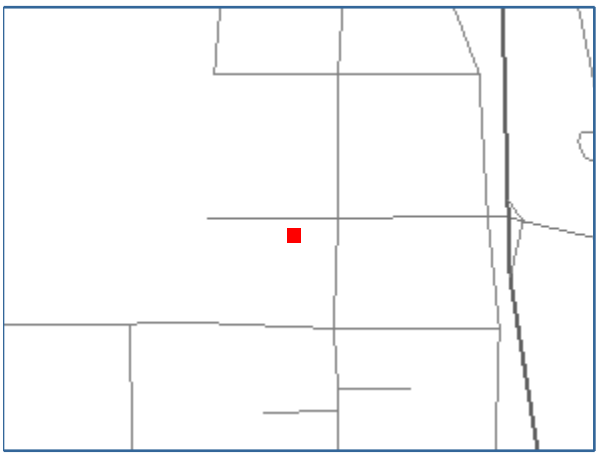
NAICS Code	NAICS Description
322211	Corrugated and Solid Fiber Box Manuf

No SIC information is available for this facility site.

Report generated on 07-02-2009

Facility/Site: 17157488 Renton City SW 23rd St Drainage Channel

Also known as:



Larger Map

Larger Map

Address

SW CORNER OF LIND AVE SW & SW 23RD ST
RENTON WA 98055

Decimal Coordinates

Latitude: 47.46005

Longitude: -122.225

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAH000009498	9/8/1999	9/9/1999

Report generated on 07-02-2009

Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.

Industrial Codes (External Links Below)

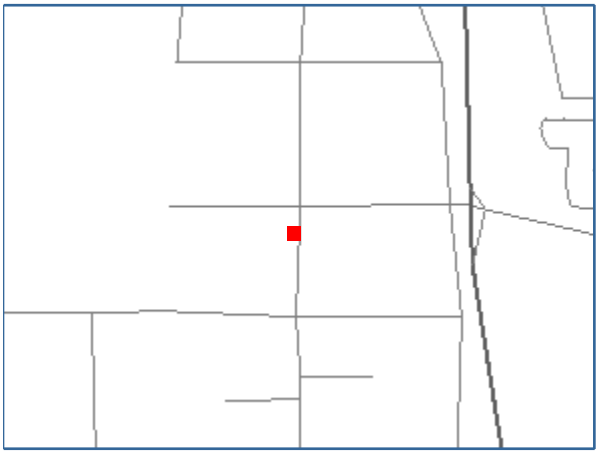
No NAICS information is available for this facility site.

No SIC information is available for this facility site.

Report generated on 07-02-2009

Facility/Site: 2070 ConocoPhillips Renton Terminal

Also known as: BP RENTON TERMINAL, ConocoPhillips Renton Terminal, TOSCO NORTHWEST CO RENTON TERMINAL, TOSCO NW CO, TOSCO RENTON TERMINAL



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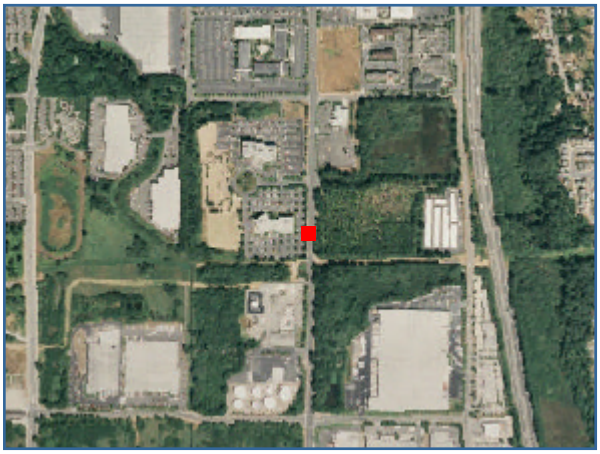


Larger Map

Address

2423 LIND AVE SW

RENTON WA 98055

Decimal Coordinates

Latitude: 47.45983

Longitude: -122.22373

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
State Cleanup Site	TOXICS	(360) 407-7224		4/14/2008	
Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAD000641530	12/31/2005	

Report generated on 07-02-2009

Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.					
Haz Waste Management Activity	HAZWASTE	(360) 407-6023	WAD000641530	12/31/2004	12/31/2005
Facilities that are required to have a RCRA Site ID# but who do not generate and/or manage hazardous waste (XQG generator status). This includes transporters, used oil recycler's, and dangerous waste fuel marketers and burners.					
Enforcement Final	SPILLS	(360) 407-6712		7/6/2004	
An Enforcement action (i.e. Penalty, Order, Notice) was finalized, issued to the respective party, indicating the enforcement action was taken.					
Voluntary Cleanup Sites	TOXICS	(360) 407-7224	NW1259	5/20/2004	4/14/2008
For a fee, Ecology staff will review an independent cleanup report(s) and provide a written decision about the adequacy of the cleanup actions taken and described in the report.					
Minor Industrial	WATQUAL	(360) 407-6400	WA0001945	7/1/2002	
An Individual Waste Water Discharge Permit issued to a Minor non-Municipal facility.					
Toxics Release Inventory	HAZWASTE	(360) 407-6727	WAD000641530	1/1/1998	
Facilities in specific industries that manufacture, process or use more than the threshold amount of one or more of 600 listed toxic chemicals. Most threshold amounts are 10,000 or 25,000 pounds per year. Some chemicals have much lower thresholds.					
Hazardous Waste Planner	HAZWASTE	(360) 407-6731	WAD000641530	1/1/1993	
Under Chapter 173-307 WAC, facilities that report under Section 313 of the Emergency Planning/Community Right-To-Know Act (EPCRA), or that generate more than 2,640 pounds of hazardous waste per year, must prepare Pollution Prevention Plans.					
Oil Facility Contingency Plan	SPILLS	(360) 407-6375		7/1/1991	
Oil handling facilities that are required to file oil spill contingency plans. An oil handling facility can be classified as a structure, equipment, pipeline, or device located on or near navigable waters of the state that transfers oil in bulk to or from a tank vessel or pipeline and is used for producing, storing, handling, transferring, processing, or transporting oil in bulk.					
State Cleanup Site	TOXICS	(360) 407-7224		3/1/1988	5/20/2004

Emergency/Haz Chem Rpt TIER2	HAZWASTE	(360) 407-6729	WAD000641530	1/1/1988	
Businesses that store 10,000 pounds or more of a hazardous chemical or 500 pounds or less, depending on the chemical, of an extremely hazardous chemical on site at any one time must report annually. Reports are sent to the State Emergency Response Commission [represented by Ecology] Local Emergency Planning Committees, and local fire departments for emergency planning. [product, not waste]					
Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAD000641530	8/18/1980	12/31/2004
Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.					

Industrial Codes (External Links Below)

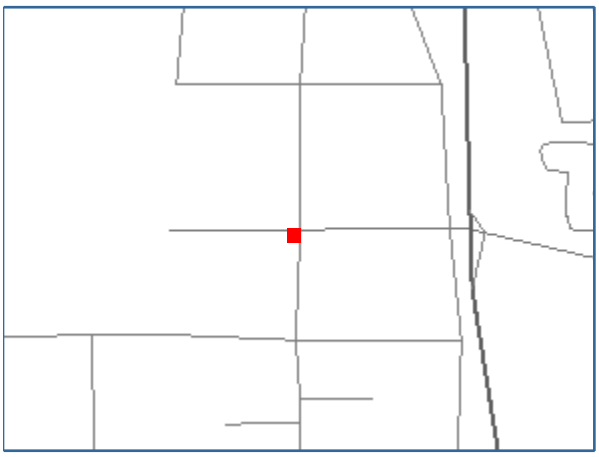
NAICS Code	NAICS Description
42272	Petroleum and Petroleum Products Who
42472	PETROLEUM AND PETROLEUM PRODUCTS MER

SIC Code	SIC Description
5171	PETROLEUM BULK STATIONS & TERMINALS

Report generated on 07-02-2009

Facility/Site: 24515628 Lind SW Renton

Also known as:



Larger Map

Larger Map

Address

SW 23RD & LIND SW

RENTON WA 98055

Decimal Coordinates

Latitude: 47.46031

Longitude: -122.22372

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 11

Congressional District: 9

WRIA: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
Hazardous Waste Generator	HAZWASTE	(360) 407-6023	WAD980982821	5/28/1986	12/31/1991

Report generated on 07-02-2009

Facilities that generate any quantity of a dangerous waste. They may be classified as SQG, MQG, or LQG depending on hazardous waste generated for a given month.

Industrial Codes (External Links Below)

No NAICS information is available for this facility site.

SIC Code	SIC Description
9999	NONCLASSIFIABLE ESTABLISHMENTS

Report generated on 07-02-2009

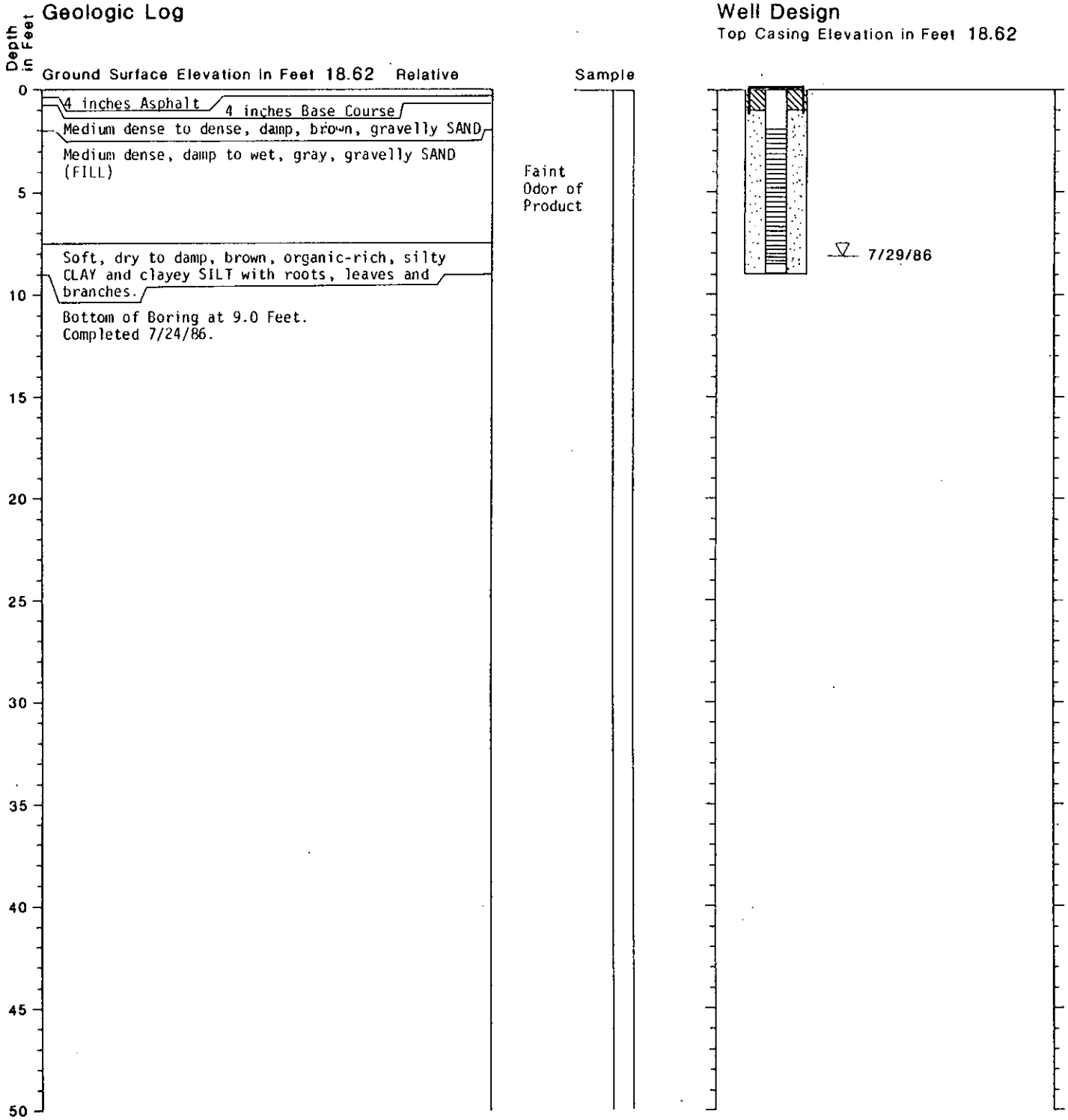
Appendix C – See separately uploaded sections.

Uploaded separately due to file size.

APPENDIX D

BORING LOGS

Boring Log and Construction Data for Well B-1



NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling

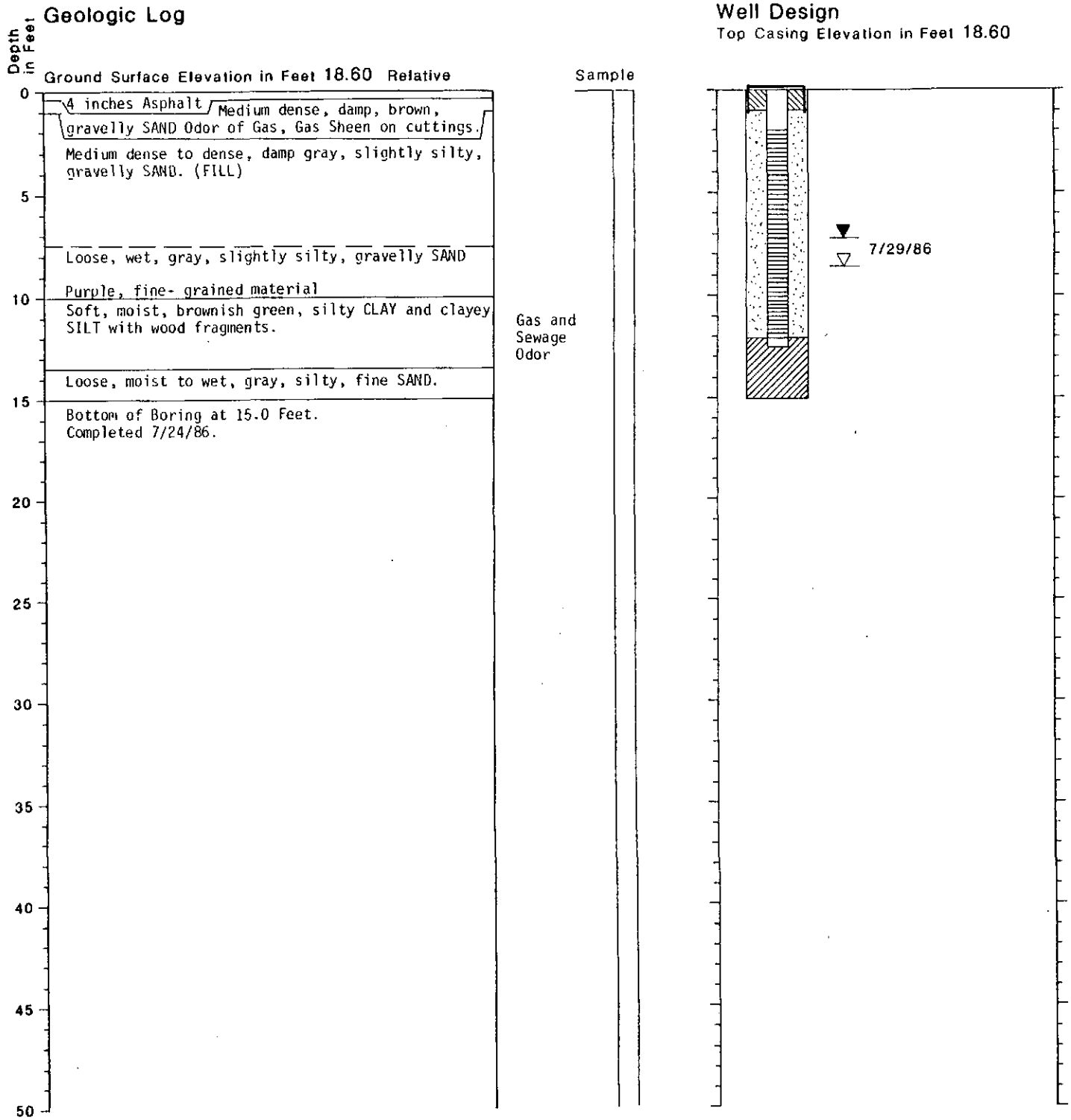
J-1784 July 1986

HART-CROWSER & associates, inc.

Figure 3

COPY TO BP

Boring Log and Construction Data for Well B-2



NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling

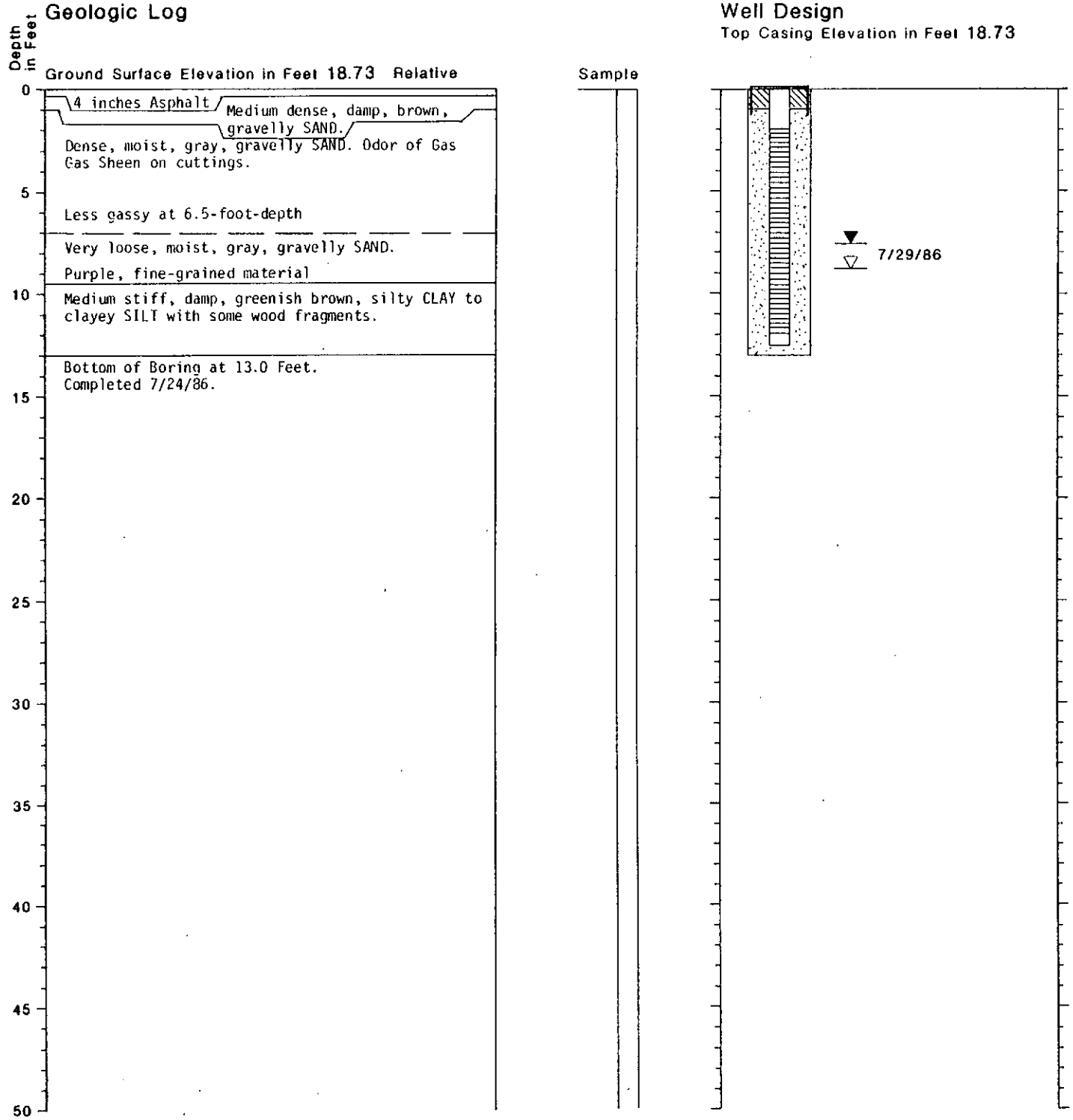
J-1784 July 1986

HART-CROWSER & associates, inc.

Figure 4

COPY TO BP

Boring Log and Construction Data for Well B-3



NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling

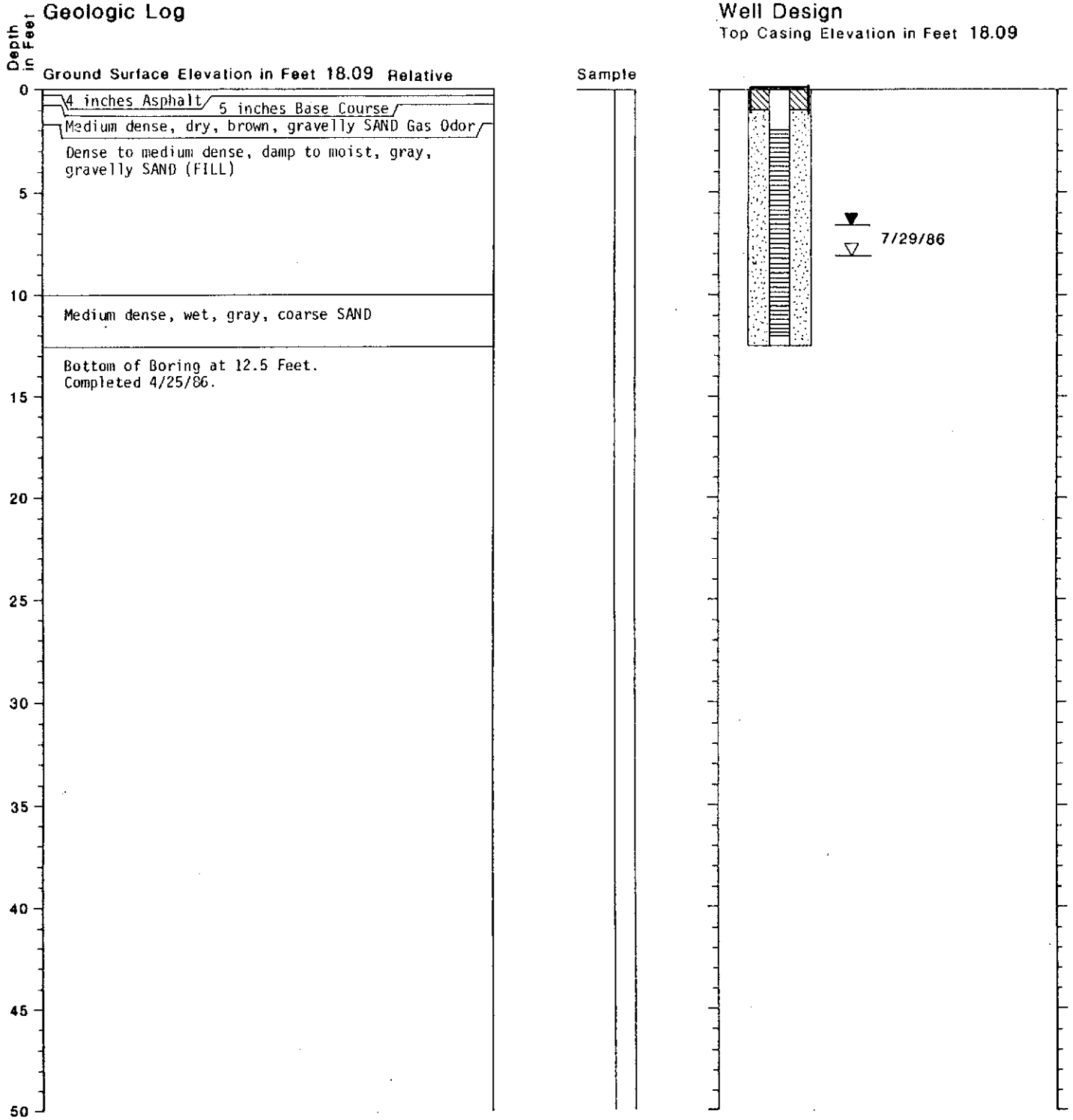
J-1784 July 1986

HART-CROWSER & associates, inc.

COPY TO BP

Figure 5

Boring Log and Construction Data for Well B-4



NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling

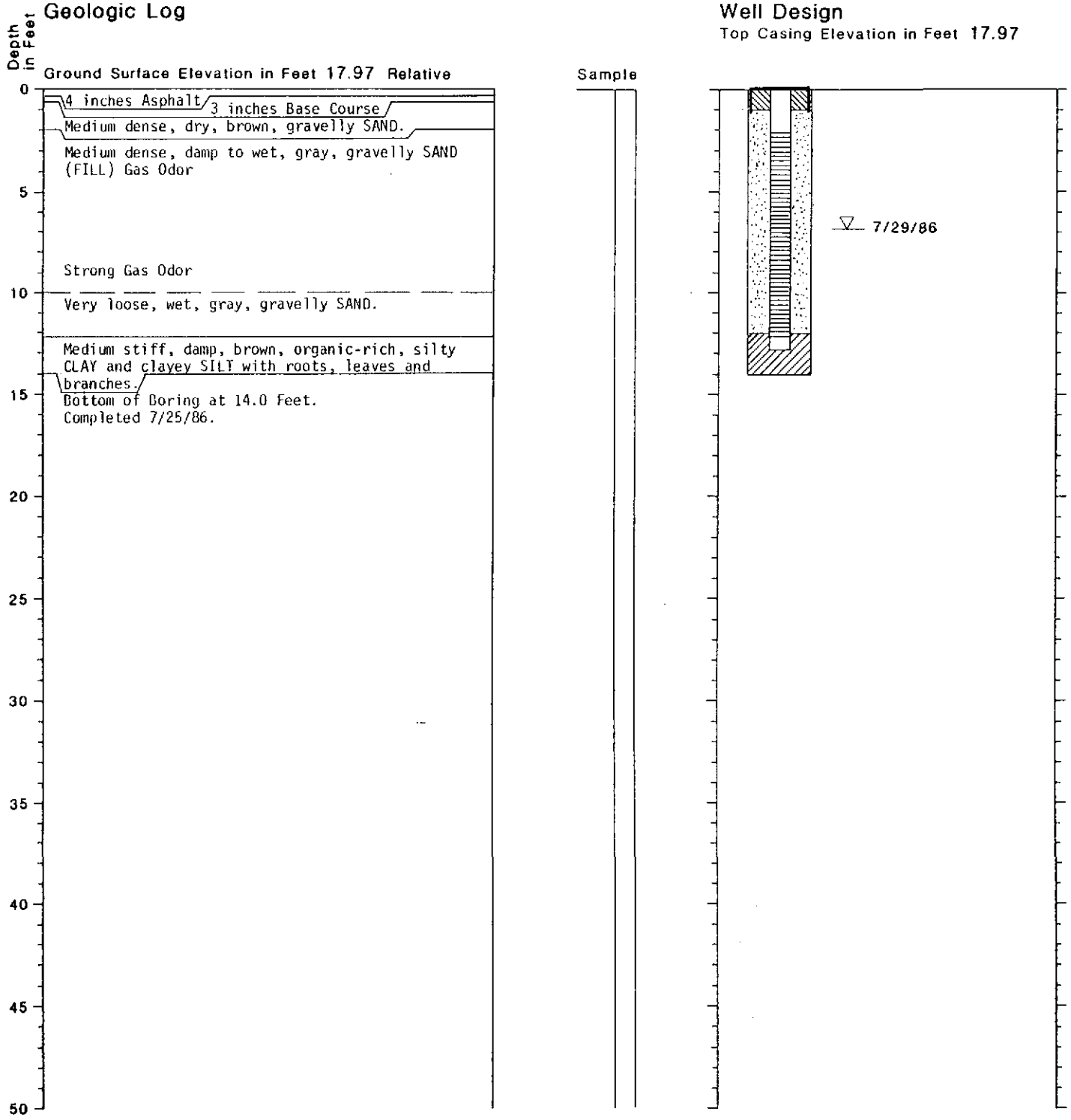
J-1784 July 1986

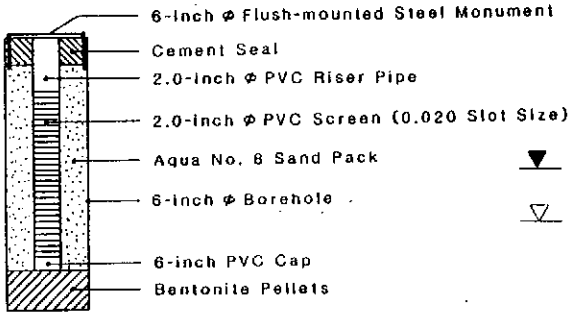
HART-CROWSER & associates, inc.

COPY TO BP

Figure 6

Boring Log and Construction Data for Well B-5





Free Product Level

Water Level

NOTES:

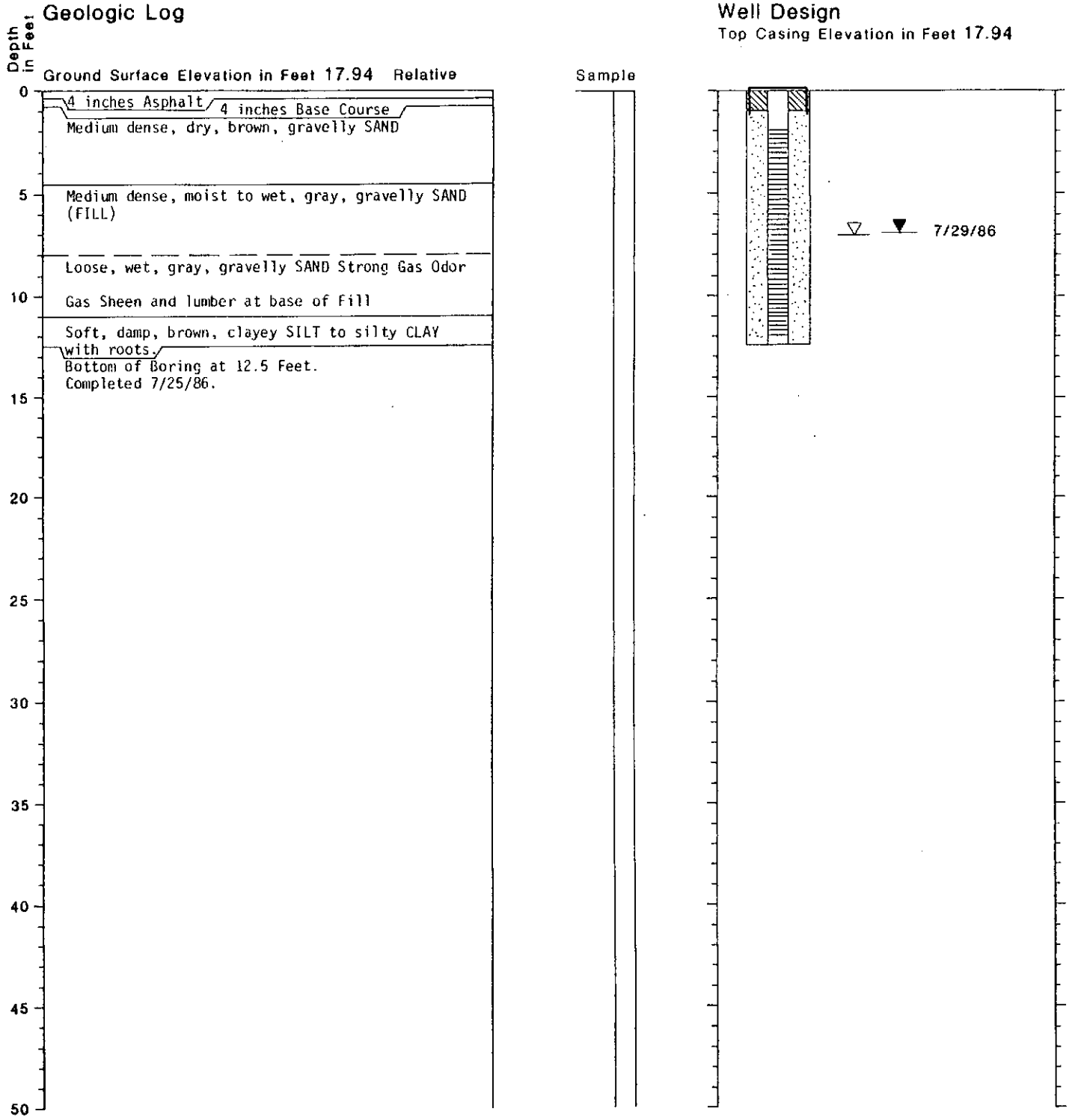
1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling

J-1784 July 1986

HART-CROWSER & associates, inc.

Figure 7

Boring Log and Construction Data for Well B-6



NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD: At Time of Drilling

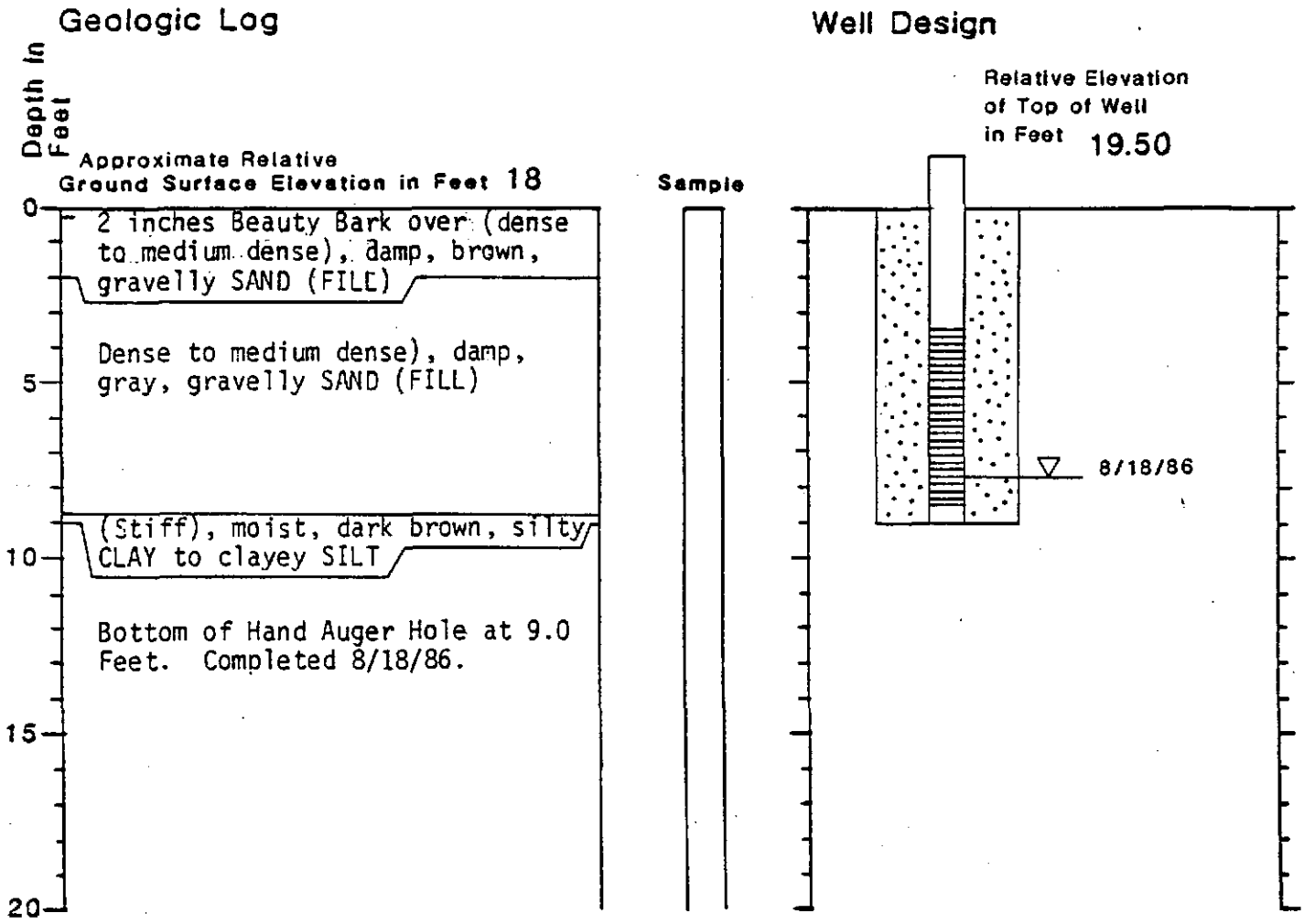
J-1784 July 1986

HART-CROWSER & associates, inc.

COPY TO BP

Figure 8

Boring Log and Construction Data for Observation Well HA-1



Water Level

On-site SAND Backfill

2-inch ⌀ PVC Riser Pipe

2-inch ⌀ PVC Screen (0.020-inch Slot Size)

NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

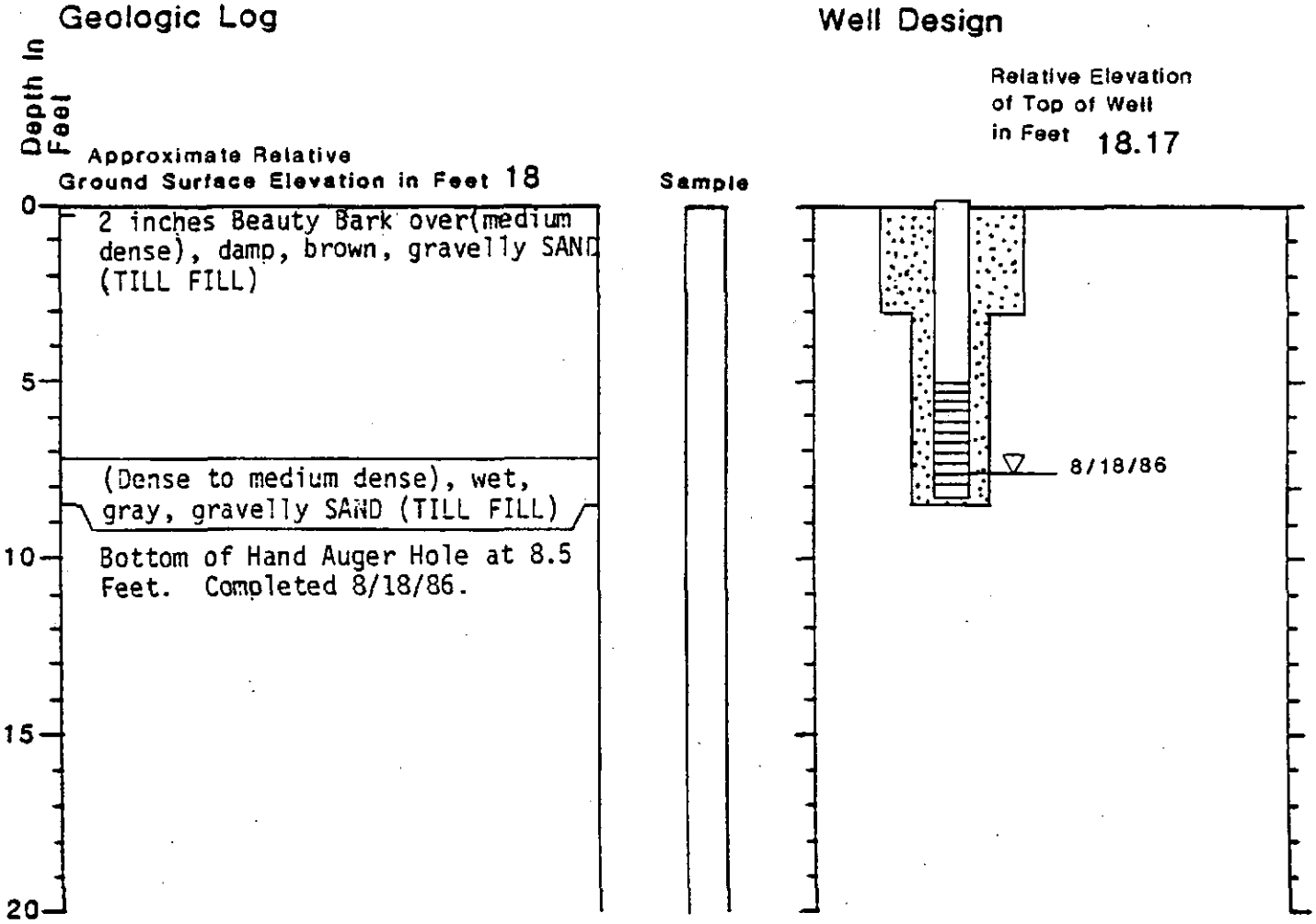
J-1784 September 1986

HART-CROWSER & associates inc.

Figure 3

COPY TO BP

Boring Log and Construction Data for Observation Well HA-2



Water Level

On-site SAND Backfill

2-inch ⌀ PVC Riser Pipe

2-inch ⌀ PVC Screen (0.020-inch Slot Size)

NOTES:

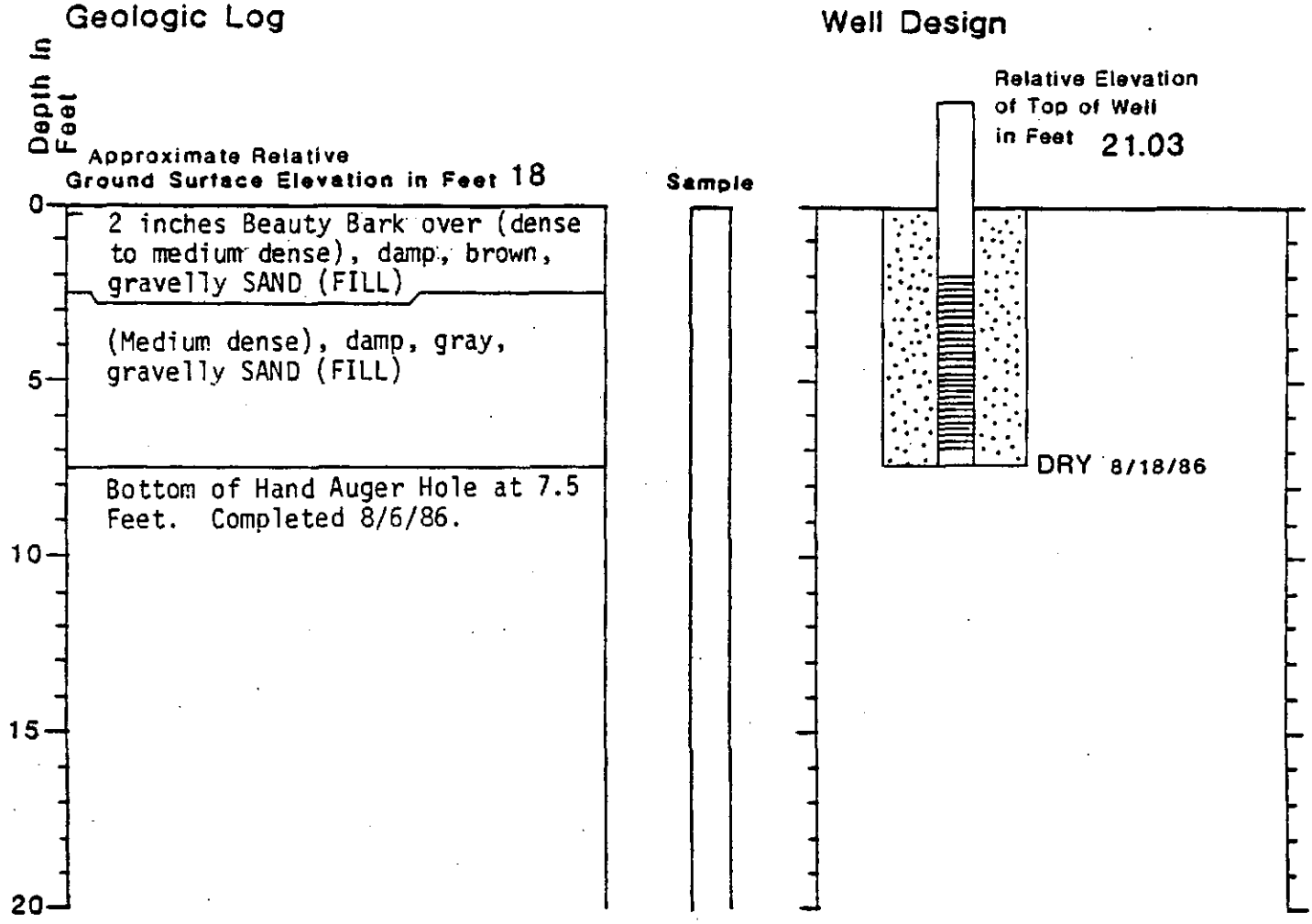
1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

J-1784 September 1986

PART-CROWSER & associates inc.

Figure 4

Boring Log and Construction Data for Observation Well HA-3



Water Level

On-site SAND Backfill

2-inch ⌀ PVC Riser Pipe

2-inch ⌀ PVC Screen (0.020-inch Slot Size)

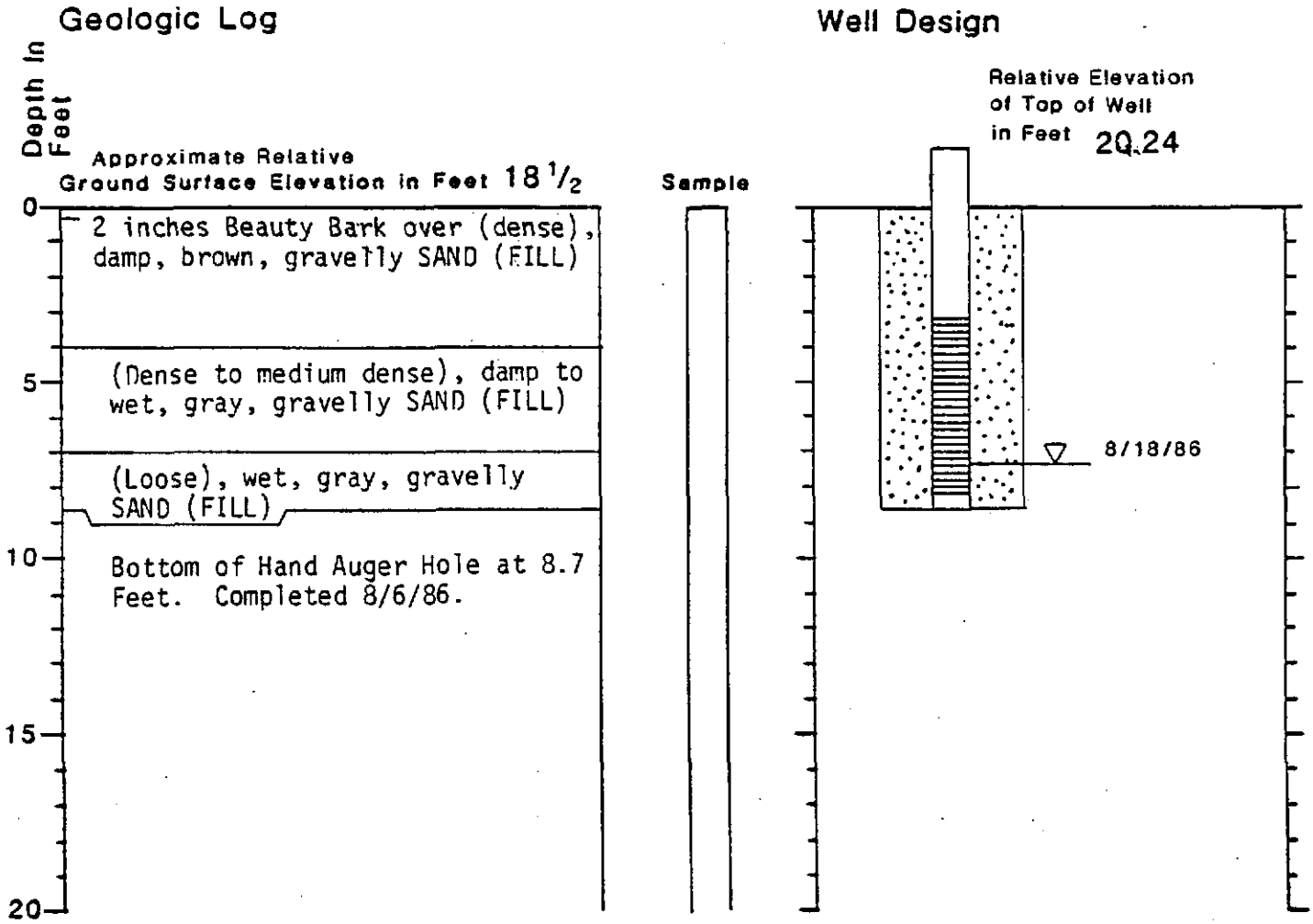
NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

COPY TO BP

J-1784 September 1986
HART-CROWSER & associates inc.
Figure 5

Boring Log and Construction Data for Observation Well HA-4



Water Level

On-site SAND Backfill

2-inch ø PVC Riser Pipe

2-inch ø PVC Screen (0.020-inch Slot Size)

NOTES:

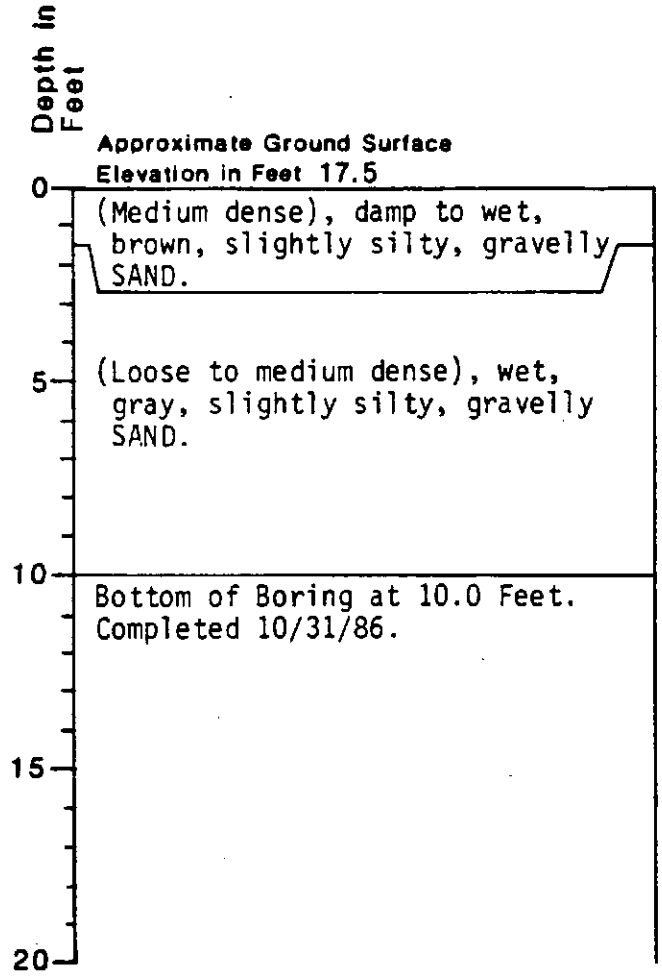
1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

COPY TO BP

J-1784 September 1986
HART-CROWSER & associates inc.
Figure 6

Boring Log and Construction Data for Observation Well HA-5

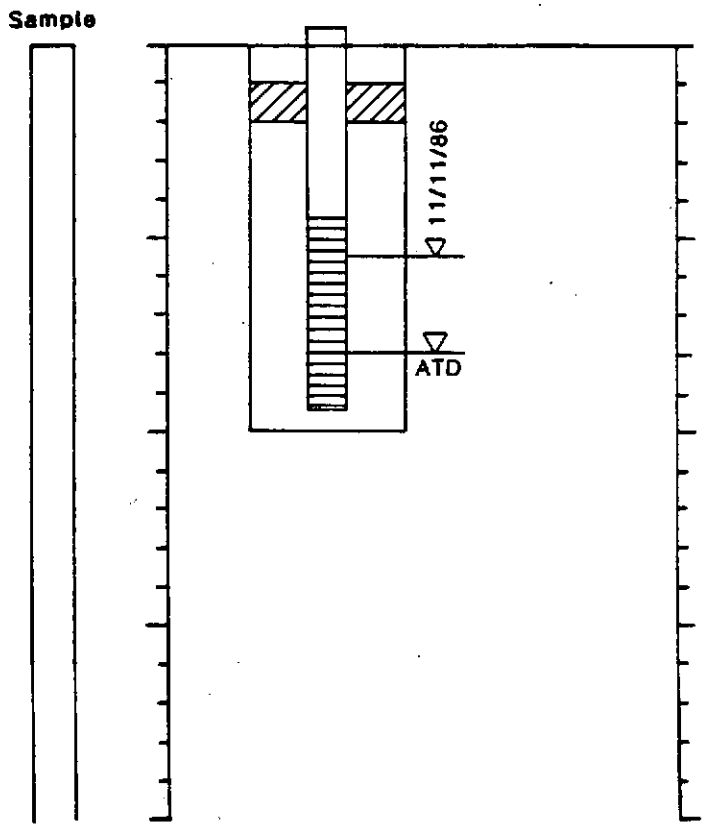
Geologic Log

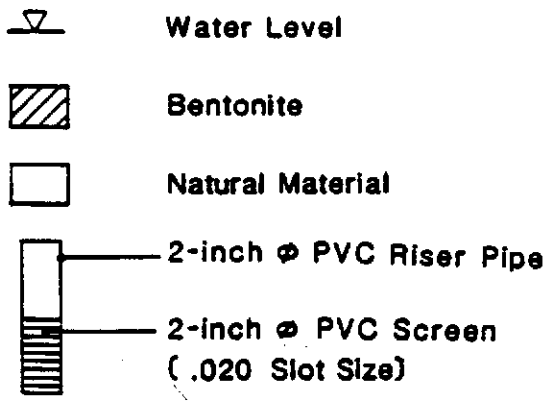


Well Design

Casing Stickup in Feet .5

Relative Elevation of Top of Well in Feet 18.07





NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

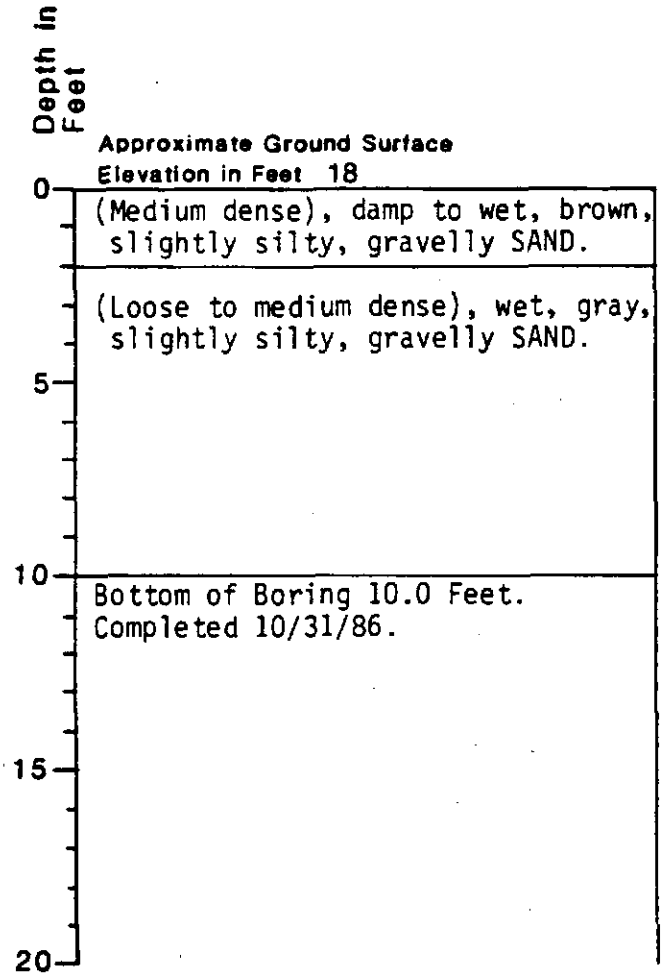
J-1784 November 1986

HART-CROWSER & associates inc.

Figure 5

Boring Log and Construction Data for Observation Well HA-6

Geologic Log

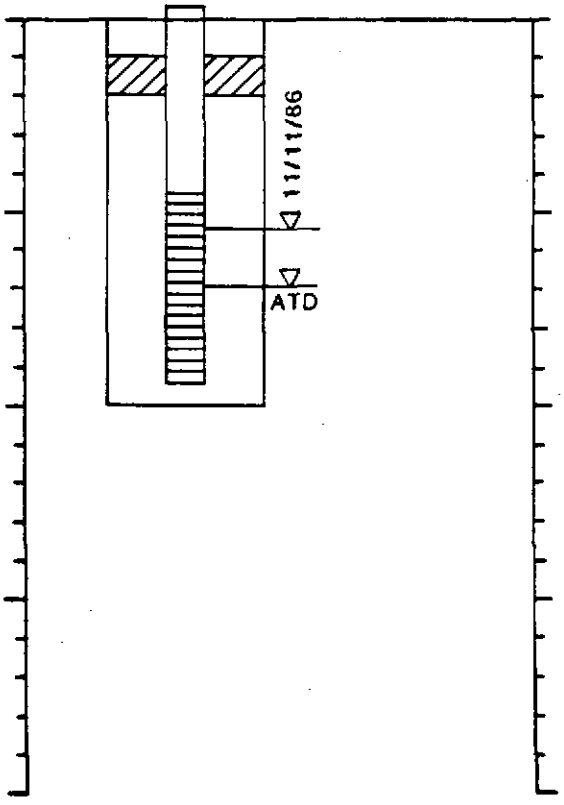


Sample

Well Design

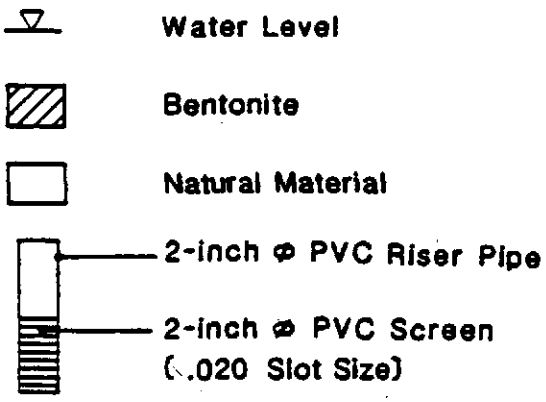
Casing Stickup in Feet < .5

Relative Elevation of Top of Well in Feet 18.16



NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling



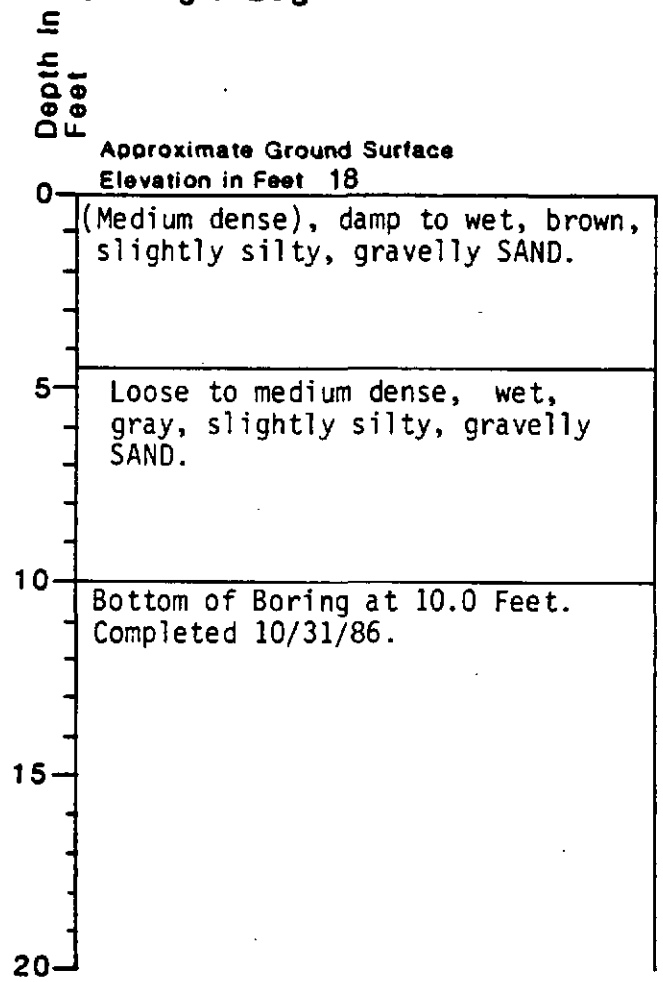
J-1784 November 1986

HART-CROWSER & associates inc.

Figure 6

Boring Log and Construction Data for Observation Well HA-7

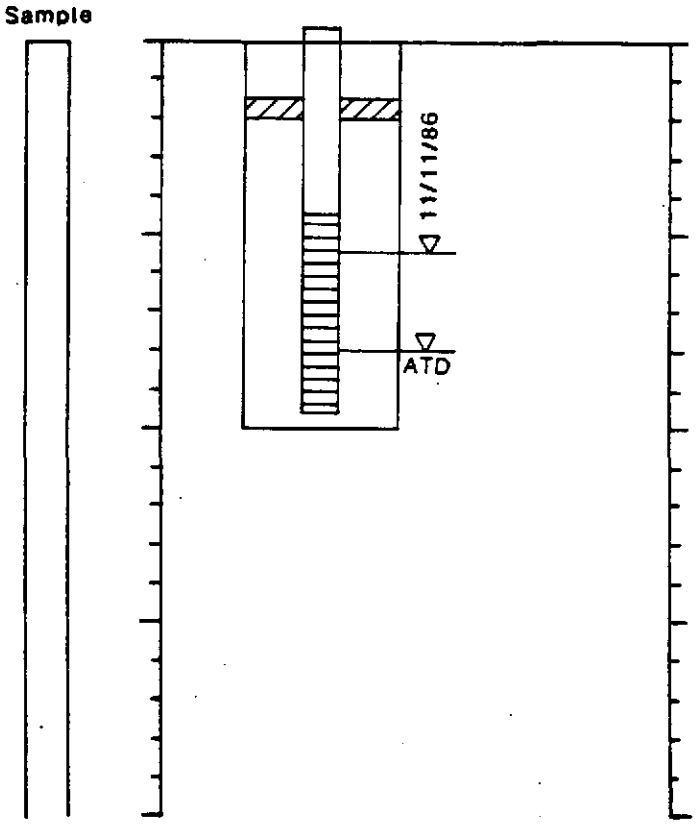
Geologic Log



Well Design

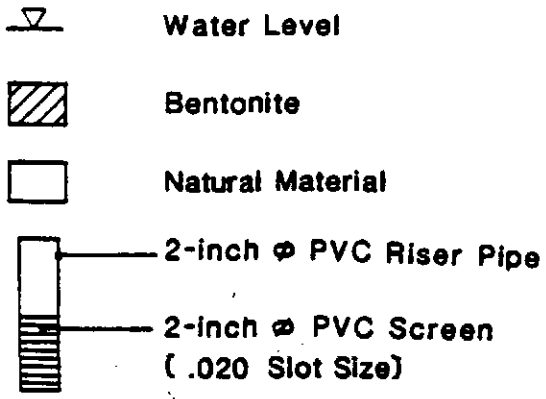
Casing Stickup in Feet .5

Relative Elevation of Top of Well in Feet 18.44



NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling



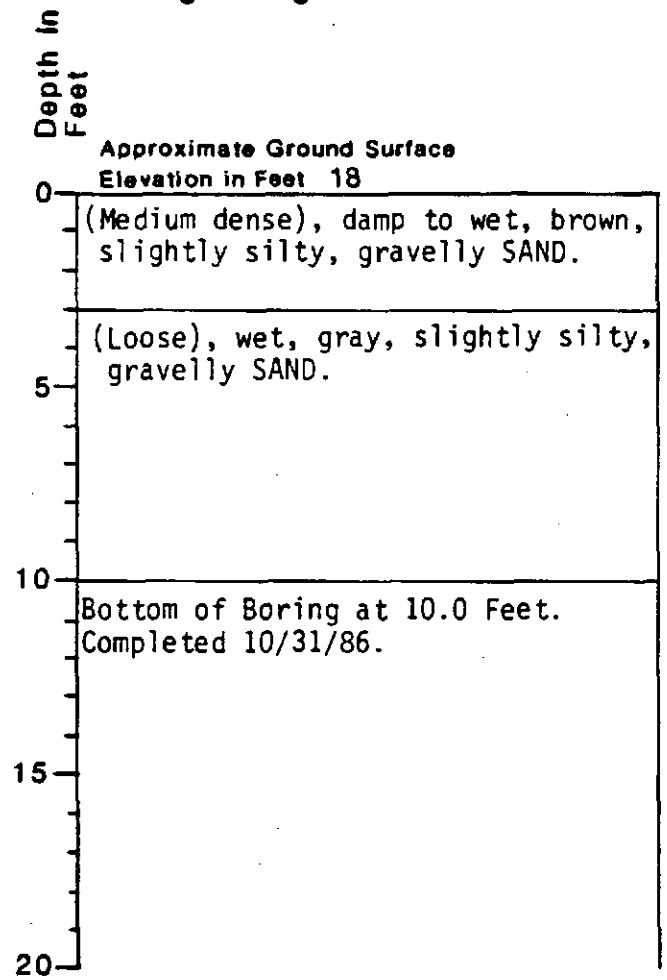
J-1784 November 1986

HART-CROWSER & associates inc.

Figure 7

Boring Log and Construction Data for Observation Well HA-8

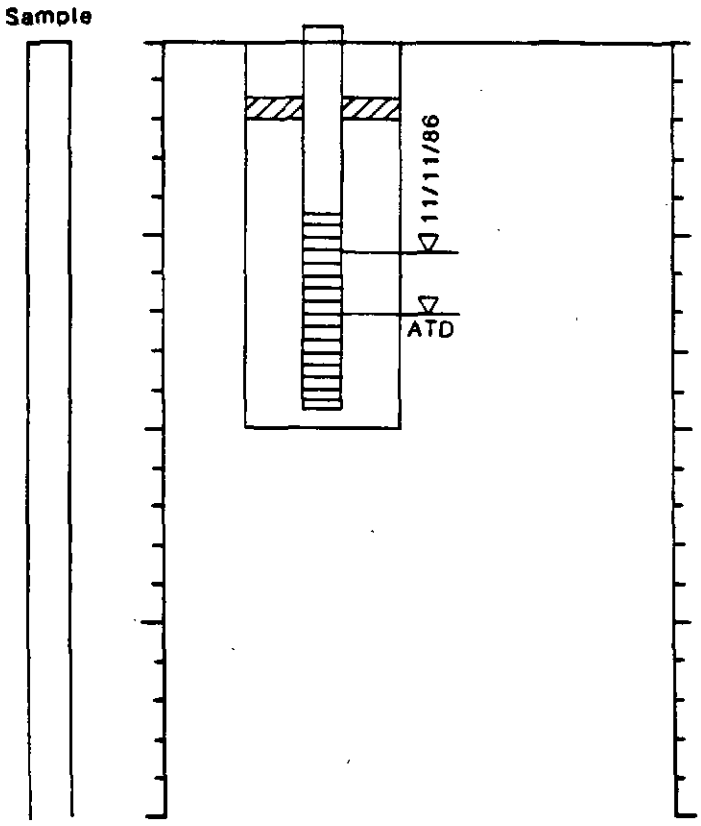
Geologic Log

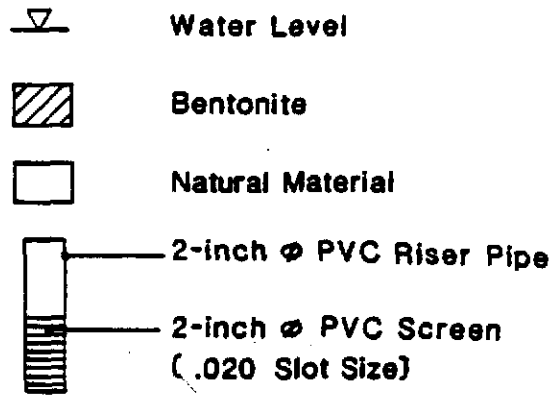


Well Design

Casing Stickup in Feet .7

Relative Elevation of Top of Well in Feet 18.88





NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

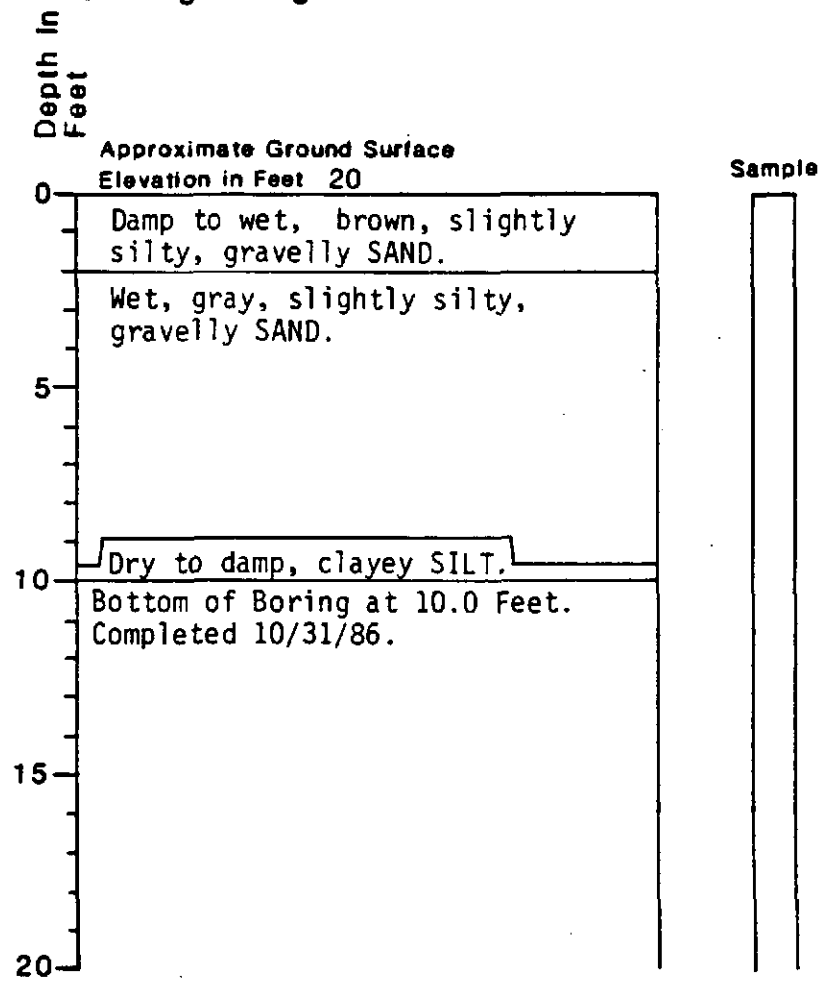
J-1784 November 1986

HART-CROWSER & associates inc.

Figure 8

Boring Log and Construction Data for Observation Well HA-9

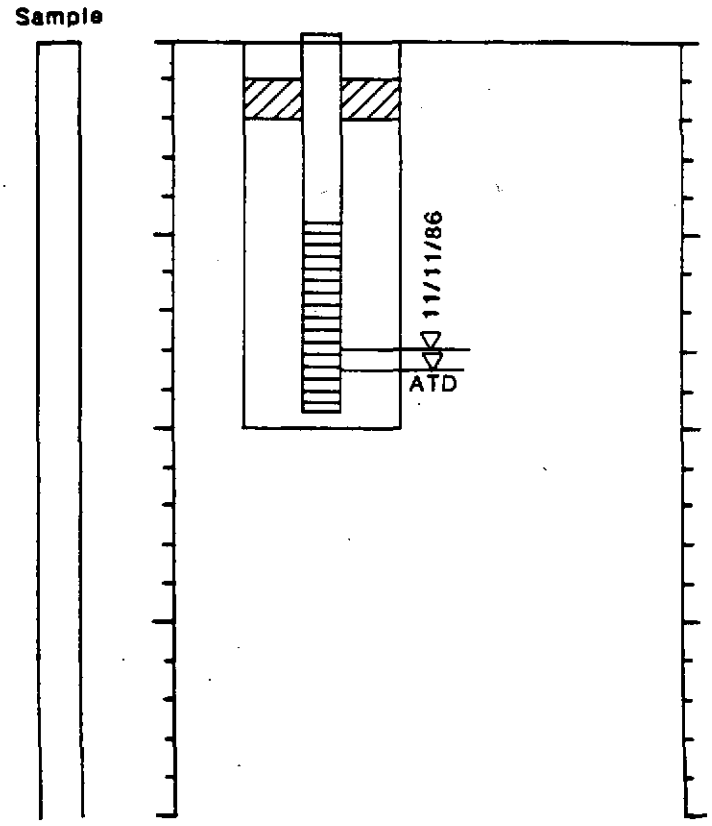
Geologic Log

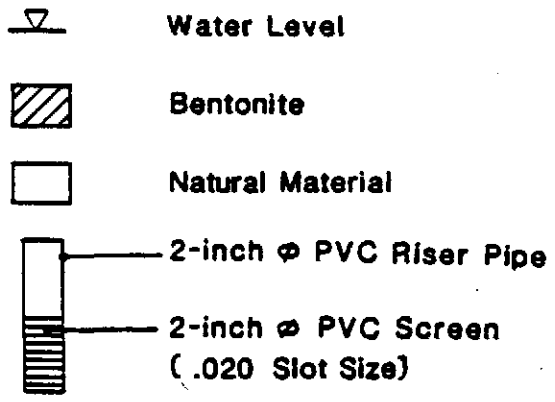


Well Design

Casing Stickup in Feet .3

Relative Elevation of Top of Well in Feet 19.40





NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

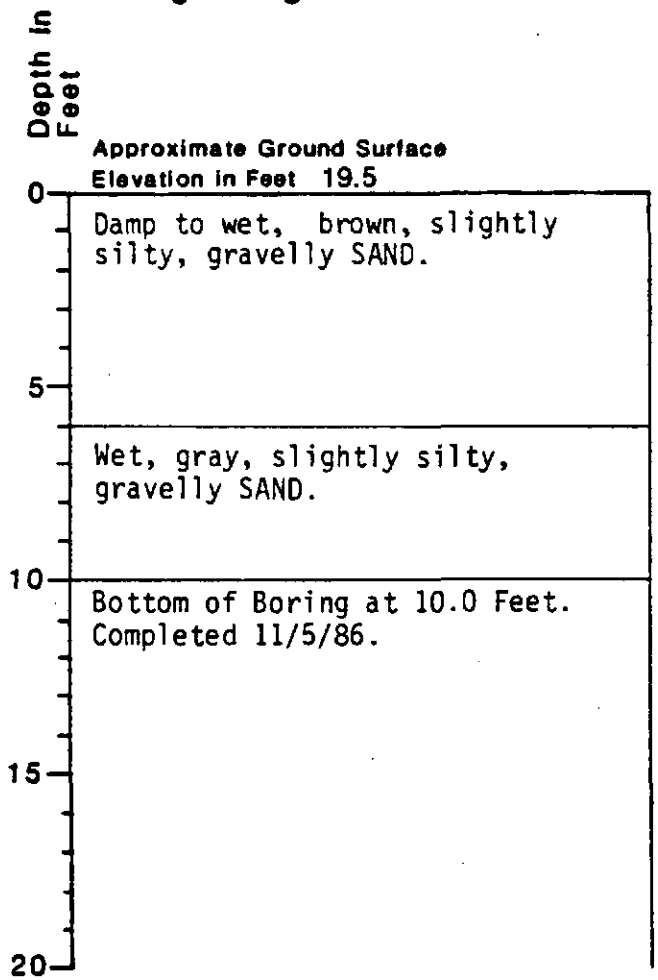
J-1784 November 1986

HART-CROWSER & associates inc.

Figure 9

Boring Log and Construction Data for Observation Well HA-10

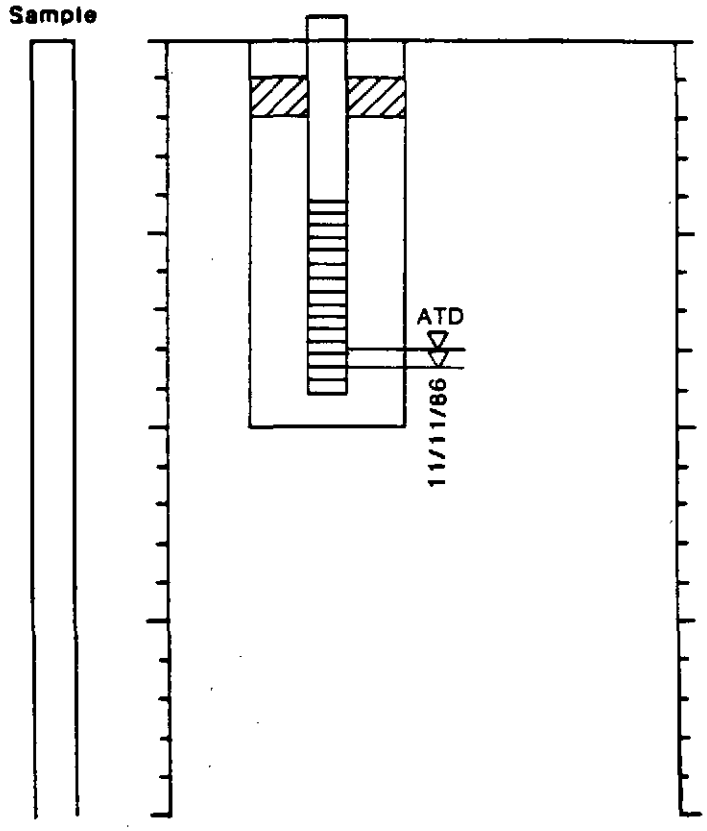
Geologic Log

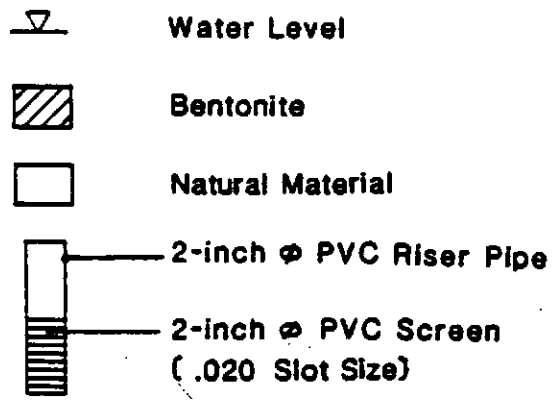


Well Design

Casing Stickup in Feet .7

Relative Elevation of Top of Well in Feet 19.33





NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

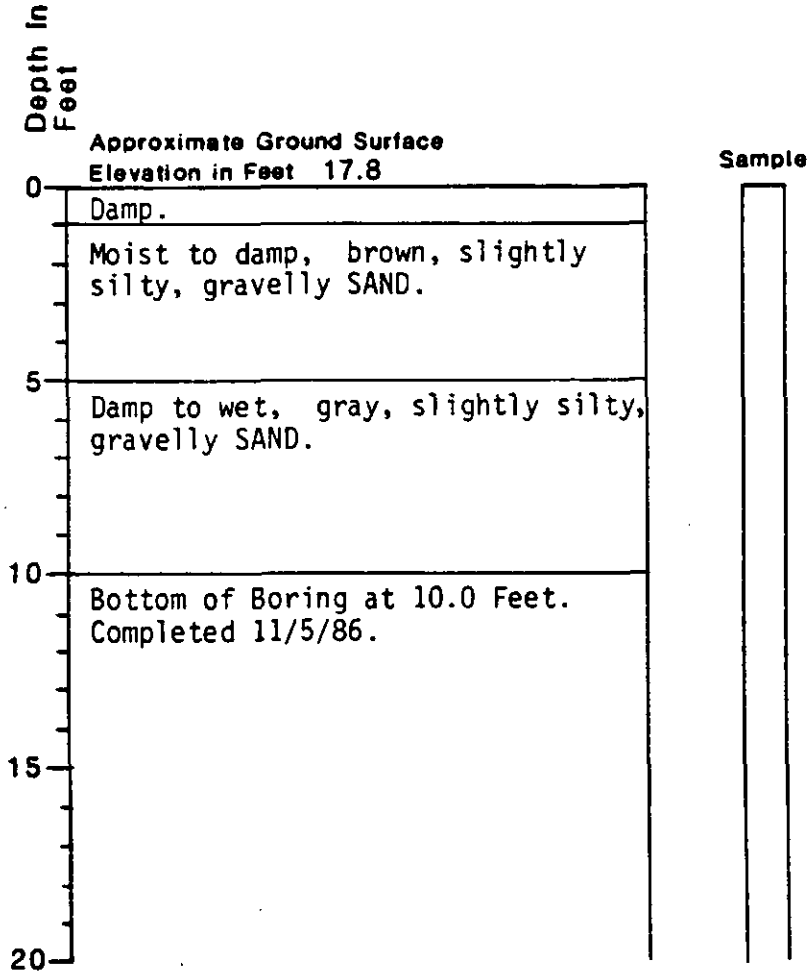
J-1784 November 1986

HART-CROWSER & associates inc.

Figure 10

Boring Log and Construction Data for Observation Well HA-11

Geologic Log

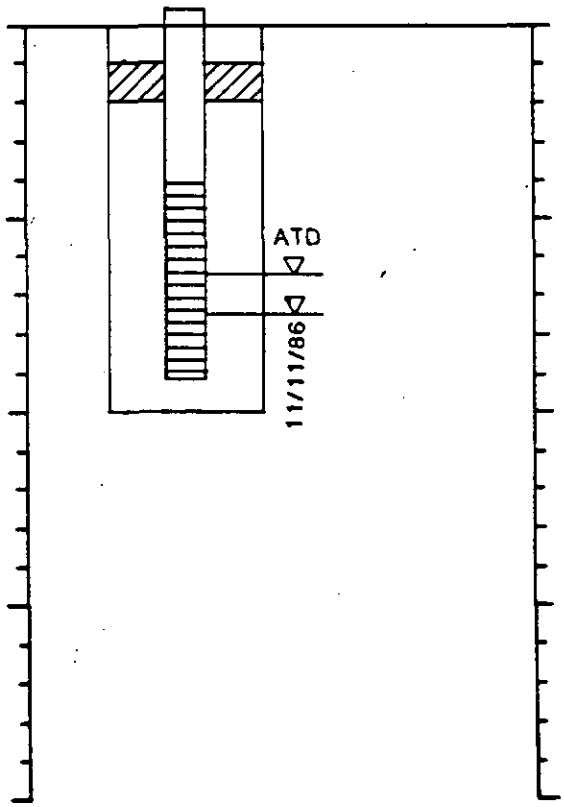


Sample

Well Design

Casing Stickup In Feet .7

Relative Elevation of Top of Well in Feet 18.51



Water Level

Bentonite

Natural Material

2-inch ⌀ PVC Riser Pipe

2-inch ⌀ PVC Screen (.020 Slot Size)

NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with the time of year. ATD: At Time of Drilling

J-1784 November 1986

HART-CROWSER & associates inc.

Figure 11

HA-15

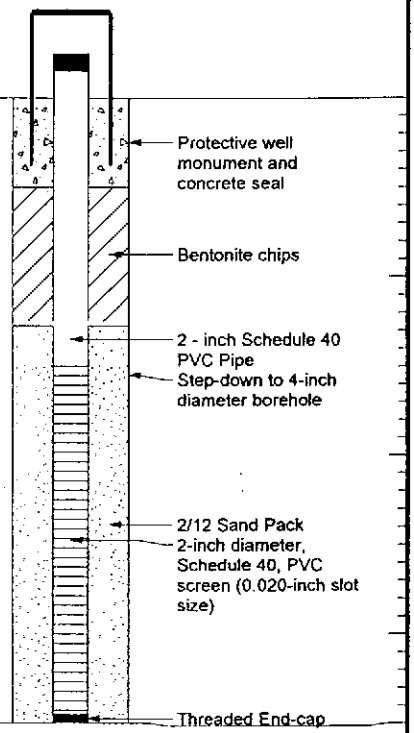
SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0						SM	Brown, silty, fine SAND with gravel (medium dense, moist)
						SP	Gray, fine SAND with trace gravel (medium dense, moist)
2						SP	Blue-gray, fine SAND with trace gravel (medium dense, moist to wet) (strong petroleum odor)
4						SP	Gray, fine SAND with trace coarse sand and gravel (medium dense, wet)
6							ATD ▽
8							
10							
12							
14							

Drilling Method: Hand Auger

Ground Elevation (ft):

Drilled By: Cascade Drilling Inc.

Detail



Boring Completed 11/25/02
Total Depth of Boring = 7.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTW\PROJECTS\706002.GPJ WELL LOG

LANDAU ASSOCIATES

ConocoPhillips - Renton Terminal
Renton, Washington

Log of HA-15

Figure A-2

HA-16

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Hand Auger

Ground Elevation (ft):

Drilled By: Cascade Drilling Inc.

Depth (ft)	USCS Symbol	Description
0	SM	Brown, silty, fine SAND with gravel (medium dense, moist)
	SP	Brown-gray, fine SAND with trace gravel (medium dense, moist to wet)
2	SP	Blue-gray, fine SAND with trace gravel (medium dense, moist to wet) (slight petroleum odor)

Detail

- Protective well monument and concrete seal
- Bentonite chips
- Step-down to 4-inch diameter borehole
- 2 - inch Schedule 40 PVC Pipe
- 2/12 Sand Pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

ATD ▽

Boring Completed 11/25/02
Total Depth of Boring = 9.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWPROJECTS\706002.GPJ WELL LOG

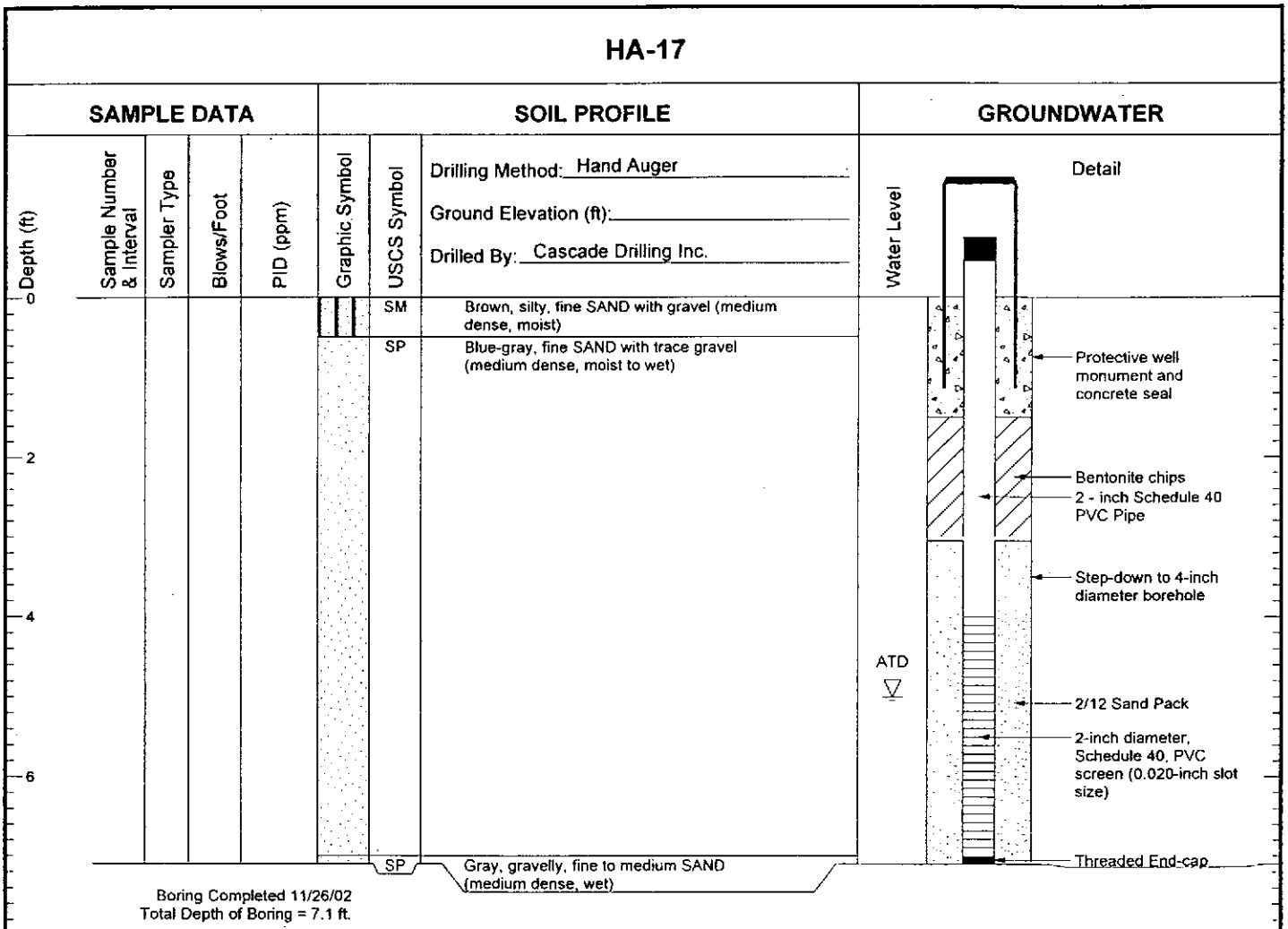
LANDAU ASSOCIATES

ConocoPhillips - Renton Terminal
Renton, Washington

Log of HA-16

Figure A-3

HA-17



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWPROJECTS\706002.GPJ WELL LOG

LANDAU ASSOCIATES

ConocoPhillips - Renton Terminal
Renton, Washington

Log of HA-17

Figure
A-4

HA-18

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Hand Auger

Ground Elevation (ft):

Drilled By: Cascade Drilling Inc.

Depth (ft)	USCS Symbol	Description
0	SM	Brown, silty, fine SAND with gravel (medium dense, moist)
	SP	Gray, fine SAND with trace gravel and trace silt (medium dense, moist to wet) (moderate petroleum odor)
6		Sand wet with gasoline @ 5.0 ft (strong petroleum odor)

Detail

- Protective well monument and concrete seal
- Bentonite chips
- 2 - inch Schedule 40 PVC Pipe
- Step-down to 4-inch diameter borehole
- 2/12 Sand Pack
- 2 - inch Diameter Schedule 40 PVC Screen (0.01 - inch slot size)
- Threaded End-cap

ATD ▽

Boring Completed 11/26/02
Total Depth of Boring = 7.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Renton, Washington

Log of HA-18

Figure A-5

HA-20

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hand Auger
Ground Elevation (ft): _____
Drilled By: Cascade Drilling Inc.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						SP	Brown, fine SAND with gravel (medium dense, moist)
2							(strong gasoline odor @ 2 ft.)
						SP	Gray, fine SAND with trace gravel (medium dense, moist) (strong gasoline odor)
4							
6							Gasoline product level @ 5.7 ft Groundwater level at @ 9.0 ft
8							
10						ML	Brown SILT with roots (medium stiff, moist to wet)
12							
14							

Water Level: ATD ▽

Detail:
- Protective well monument and concrete seal
- Bentonite chips
- 2 - inch Schedule 40 PVC Pipe
- Step-down to 4-inch diameter borehole
- 2/12 Sand Pack
- 2 - inch Diameter Schedule 40 PVC Screen (0.01 - inch slot size)
- Threaded End-cap

Boring Completed 11/26/02
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWPROJECTS\706002.GPJ WELL LOG

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Renton, Washington

Log of HA-20

Figure A-6

LAI-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						SP/ SM	Light brown, fine to medium SAND with silt and gravel (loose, moist) (no odor, no sheen)	
2	1	a2	16	10				
4	2	a2	44	5				
6						SP	Gray, fine to medium SAND with gravel (loose to medium dense, wet) (very slight gasoline-like odor, no sheen)	ATD
8	3	a2	22	0				
10	4	a2	24	0		ML	Light brown, SILT with roots (stiff, moist) (no odor, no sheen)	
12								
14								

Detail

- Protective well monument and concrete seal
- Bentonite chips
- 4-inch diameter, Schedule 40, PVC well casing
- 2/12 Sand Pack
- 4-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)
- Threaded end cap

Boring Completed 01/03/03
Total Depth of Boring = 10.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWAPROJECTS\706002.GPJ WELL LOG

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Log of LAI-1

Figure
A-7

LAI-2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
1	a2	18	37.9		SP/ SM	Light brown, fine to medium SAND with silt and gravel (loose, moist) (no odor, no sheen)	
2	a2	35	53				
3	a2	30	0.8		SP	Gray, fine to coarse SAND with gravel (medium dense to very dense, wet) (no odor, no sheen)	ATD
4	a2	50/6"	0				
5	a2	26	0		ML	Brown, SILT with roots (very stiff, moist) (no odor, no sheen)	

Depth (ft): 0, 2, 4, 6, 8, 10, 12, 14

Detail

- Protective well monument and concrete seal
- Bentonite chips
- 4-inch diameter, Schedule 40, PVC well casing
- 2/12 Sand Pack
- 4-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)
- Threaded end cap

Boring Completed 01/03/03
Total Depth of Boring = 10.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTW\PROJECTS\706002.GPJ WELL LOG

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Renton, Washington

Log of LAI-2

Figure A-8

LAI-3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						SP/ SM	Light brown, fine to medium SAND with silt and gravel (loose, moist) (no odor, no sheen)	
2	1	a2	18	9				
4	2	a2	25	10				
6	3	a2	26	3				ATD
8						SP	Gray, fine to medium SAND with gravel (loose, wet) (very slight gasoline-like odor, no sheen)	
10	4	a2	24	0				
12	5	a2	26	0		ML	Brown, SILT with roots (very stiff, moist) (no odor, no sheen)	
14								

Detail

- Protective well monument and concrete seal
- Bentonite chips
- 4-inch diameter, Schedule 40, PVC well casing
- 2/12 Sand Pack
- 4-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)
- Threaded end cap

Boring Completed 01/03/03
Total Depth of Boring = 10.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWPROJECTS\706002.GPJ WELL LOG

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ConocoPhillips - Renton Terminal
Renton, Washington

Log of LAI-3

Figure
A-9

LAI-4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Hollow-stem Auger
Ground Elevation (ft):
Drilled By: Cascade Drilling Inc.

Depth (ft)	USCS Symbol	Description
0	SP/ SM	Light brown, fine to medium SAND with silt and gravel (moist) (no odor, no sheen)
4	SP	Gray, fine to medium SAND with gravel (wet) (very strong gasoline-like odor, medium sheen)
10	ML	Brown, SILT with roots (moist) (no odor, no sheen)

ATD ▽

Detail

- Protective well monument and concrete seal
- Bentonite chips
- 4-inch diameter, Schedule 40, PVC well casing
- 2/12 Sand Pack
- 4-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)
- Threaded End-cap

Boring Completed 01/20/03
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWP\PROJECTS\706002.GPJ WELL LOG

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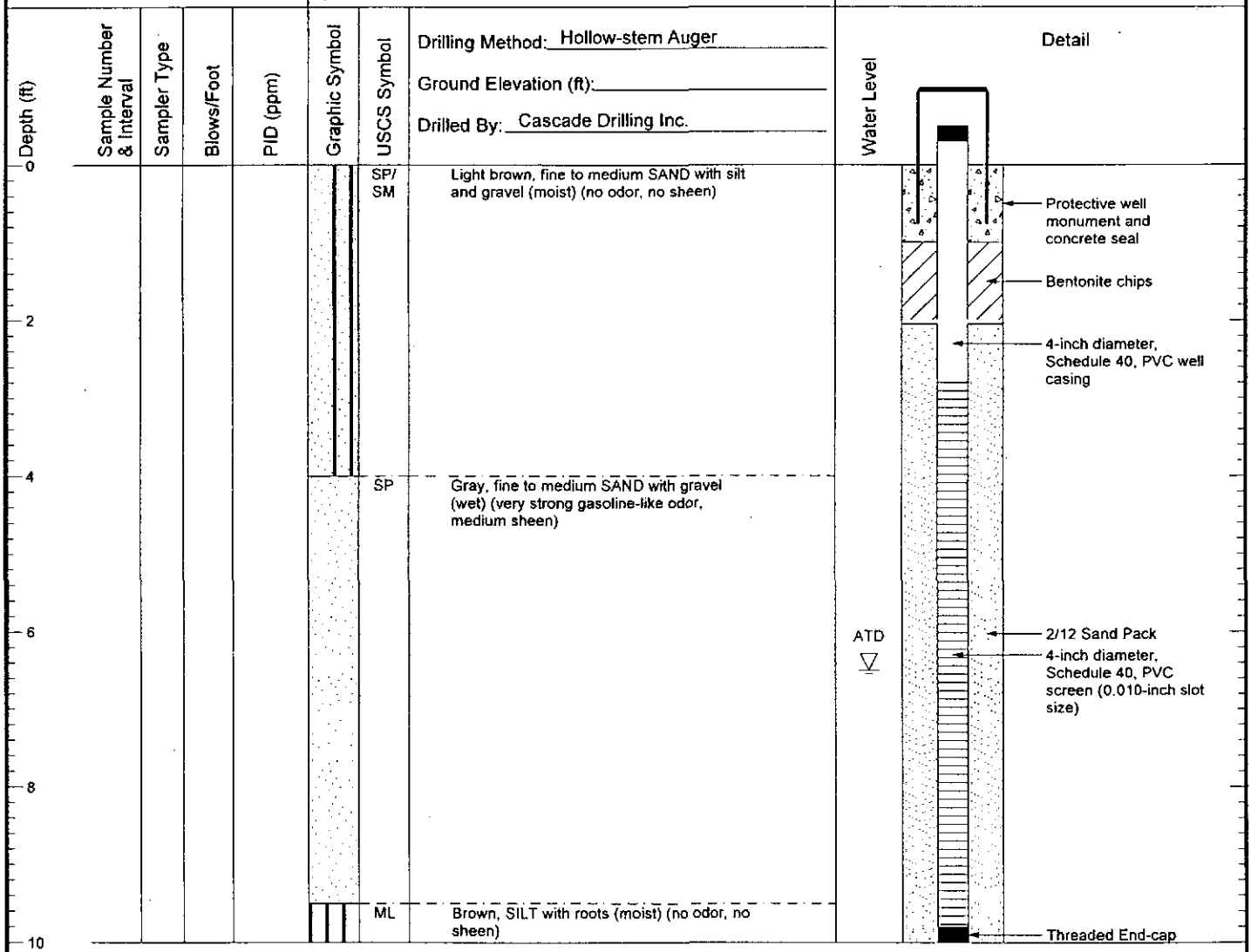
Renton, Washington

Log of LAI-4

Figure A-10

LAI-5



Boring Completed 01/20/03
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTW\PROJECTS\706002.GPJ WELL LOG

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Renton, Washington

Log of LAI-5

Figure
A-11

LAI-6

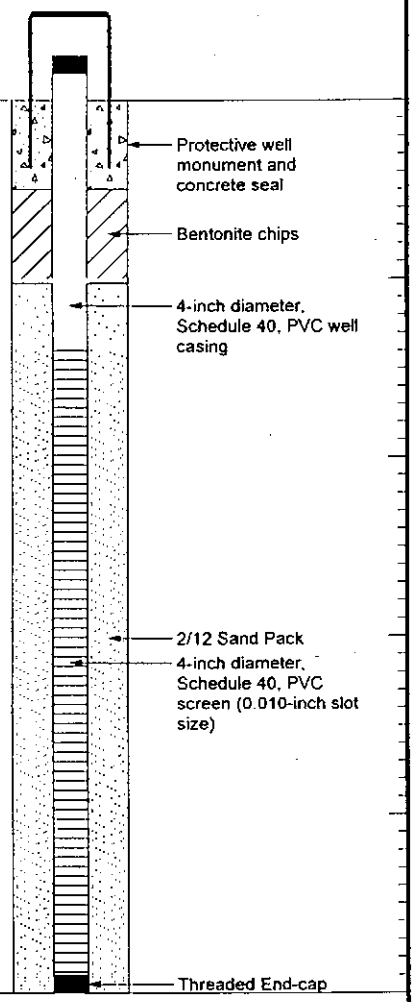
SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0						SP/SM	Light brown, fine to medium SAND with silt and gravel (moist) (no odor, no sheen)
4						SP	Gray, fine to medium SAND with gravel (wet) (very strong gasoline-like odor, medium sheen)
6							ATD ▽
10						ML	Brown, SILT with roots (moist) (no odor, no sheen)

Drilling Method: Hollow-stem Auger

Ground Elevation (ft):

Drilled By: Cascade Drilling Inc.

Detail



Boring Completed 01/20/03
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

7060002.012 2/10/03 \\EDMNAS\GINT\GINTWAPROJECTS\706002.GPJ WELL LOG

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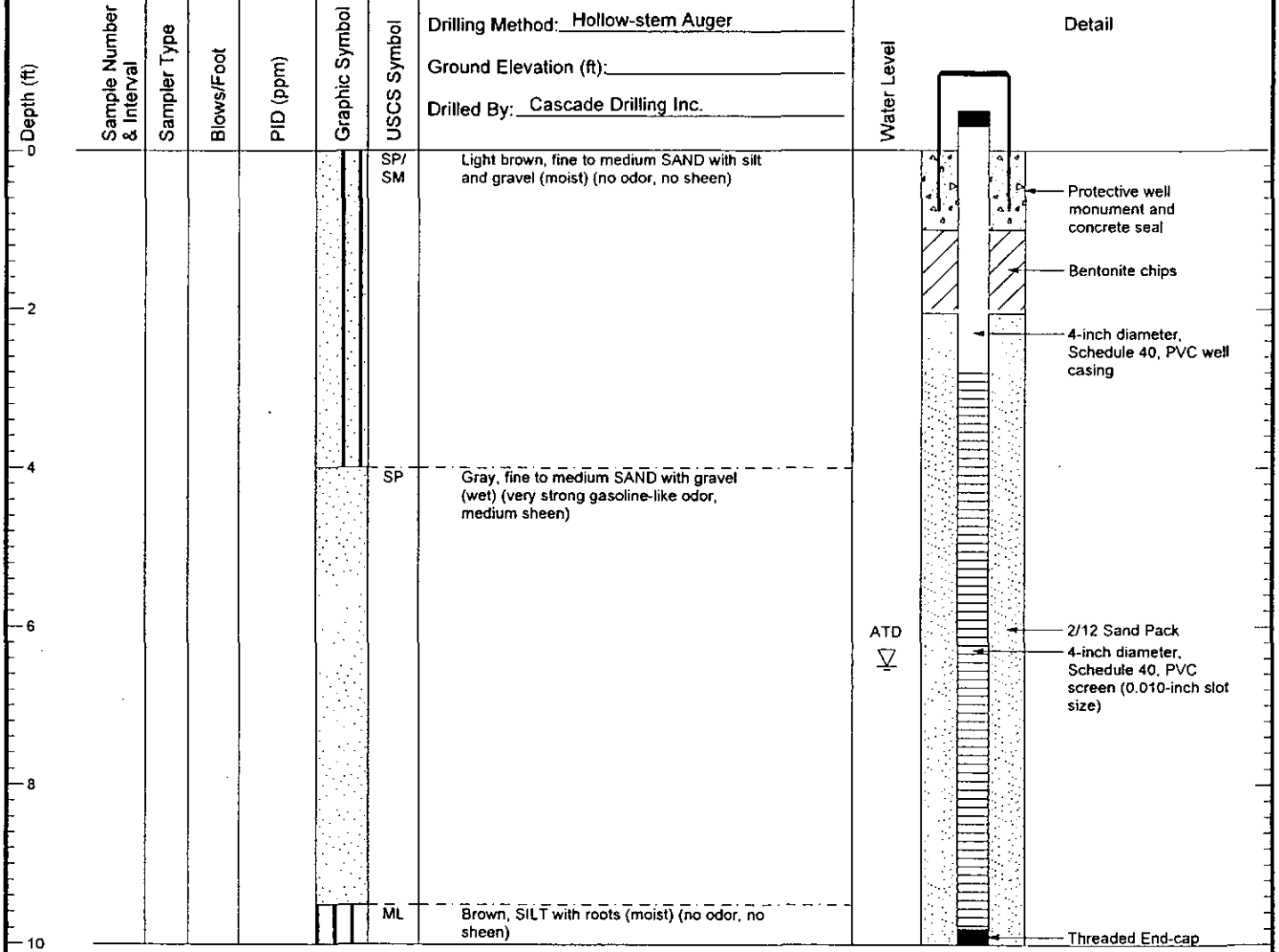
Log of LAI-6

Figure A-12

LAI-7



Boring Completed 01/21/03
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWP\PROJECTS\706002.GPJ WELL LOG

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Renton, Washington

Log of LAI-7

Figure
A-13

LAI-8

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Hollow-stem Auger

Ground Elevation (ft):

Drilled By: Cascade Drilling Inc.

Depth (ft)	USCS Symbol	
0	SP/ SM	Light brown, fine to medium SAND with silt and gravel (moist) (no odor, no sheen)
4	SP	Gray, fine to medium SAND with gravel (wet) (very strong gasoline-like odor, medium sheen)
10	ML	Brown, SILT with roots (moist) (no odor, no sheen)

ATD

Detail

- Protective well monument and concrete seal
- Bentonite chips
- 4-inch diameter, Schedule 40, PVC well casing
- 2/12 Sand Pack
- 4-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)
- Threaded End-cap

Boring Completed 01/21/03
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINT\WPROJECTS\706002.GPJ WELL LOG

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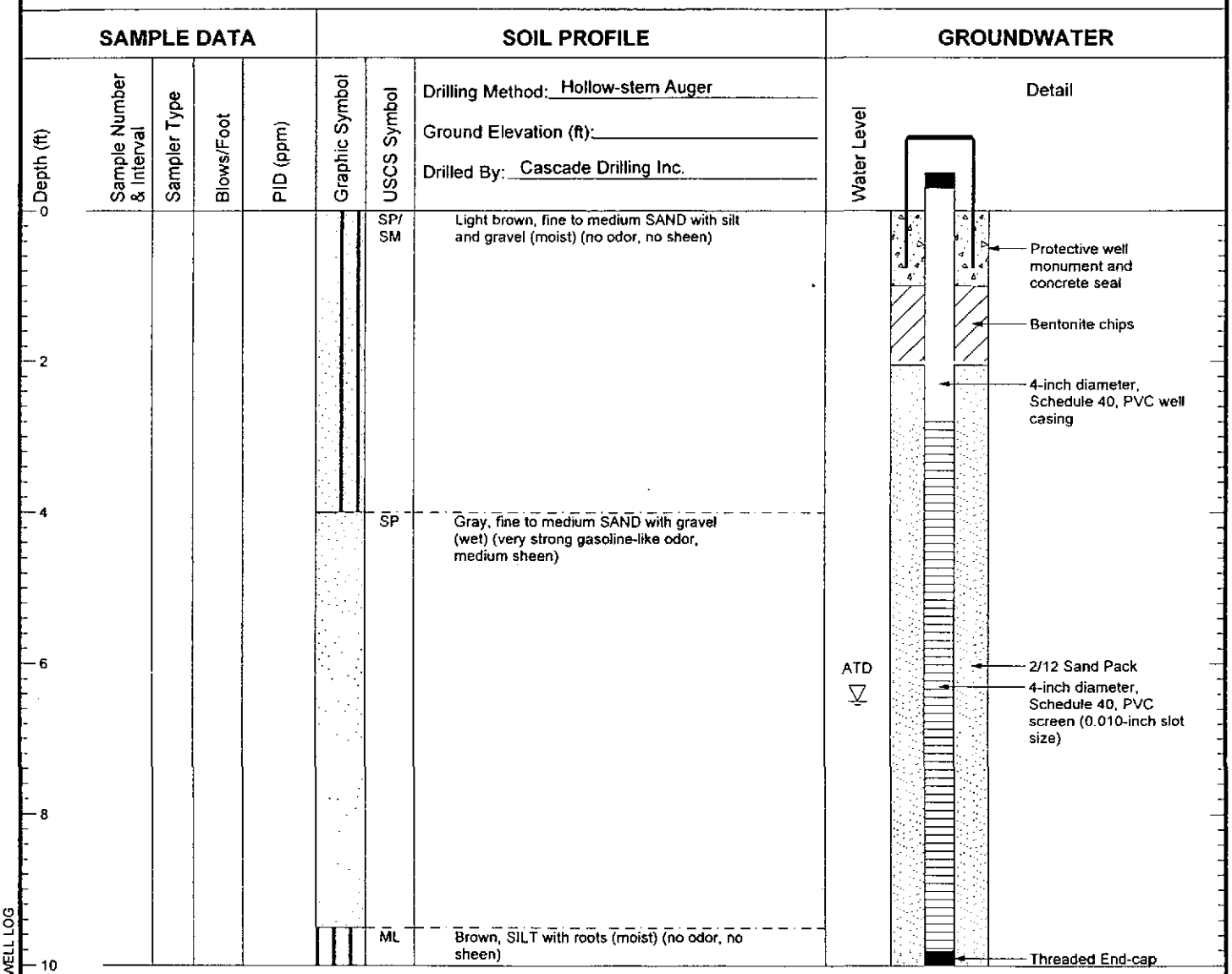
Log of LAI-8

Figure
A-14

LAI-9



Boring Completed 01/21/03
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWPROJECTS\706002.GPJ WELL LOG

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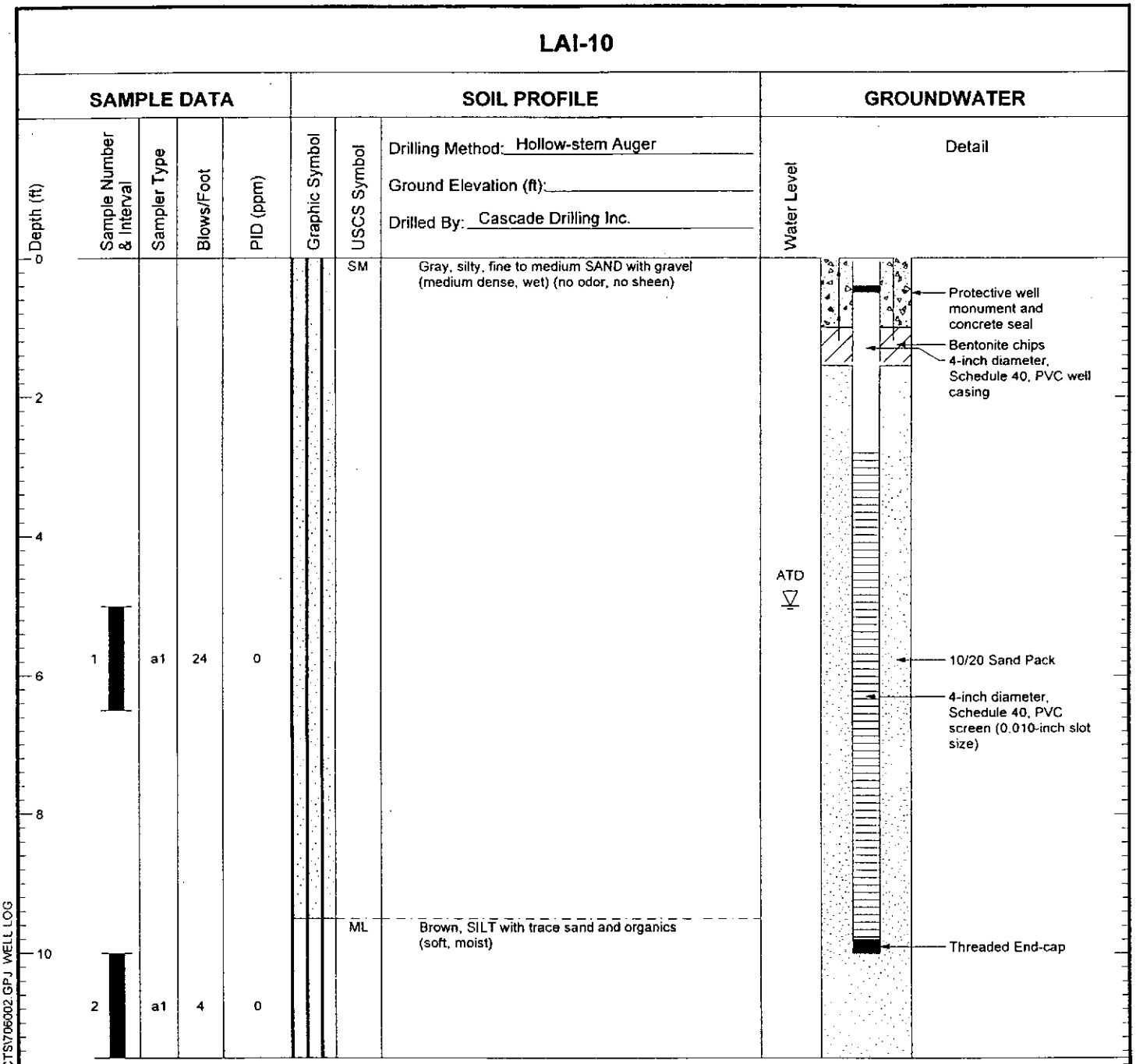
Log of LAI-9

Figure
A-15

LAI-10



Boring Completed 01/29/03
Total Depth of Boring = 11.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWP\PROJECTS\706002.GPJ WELL LOG

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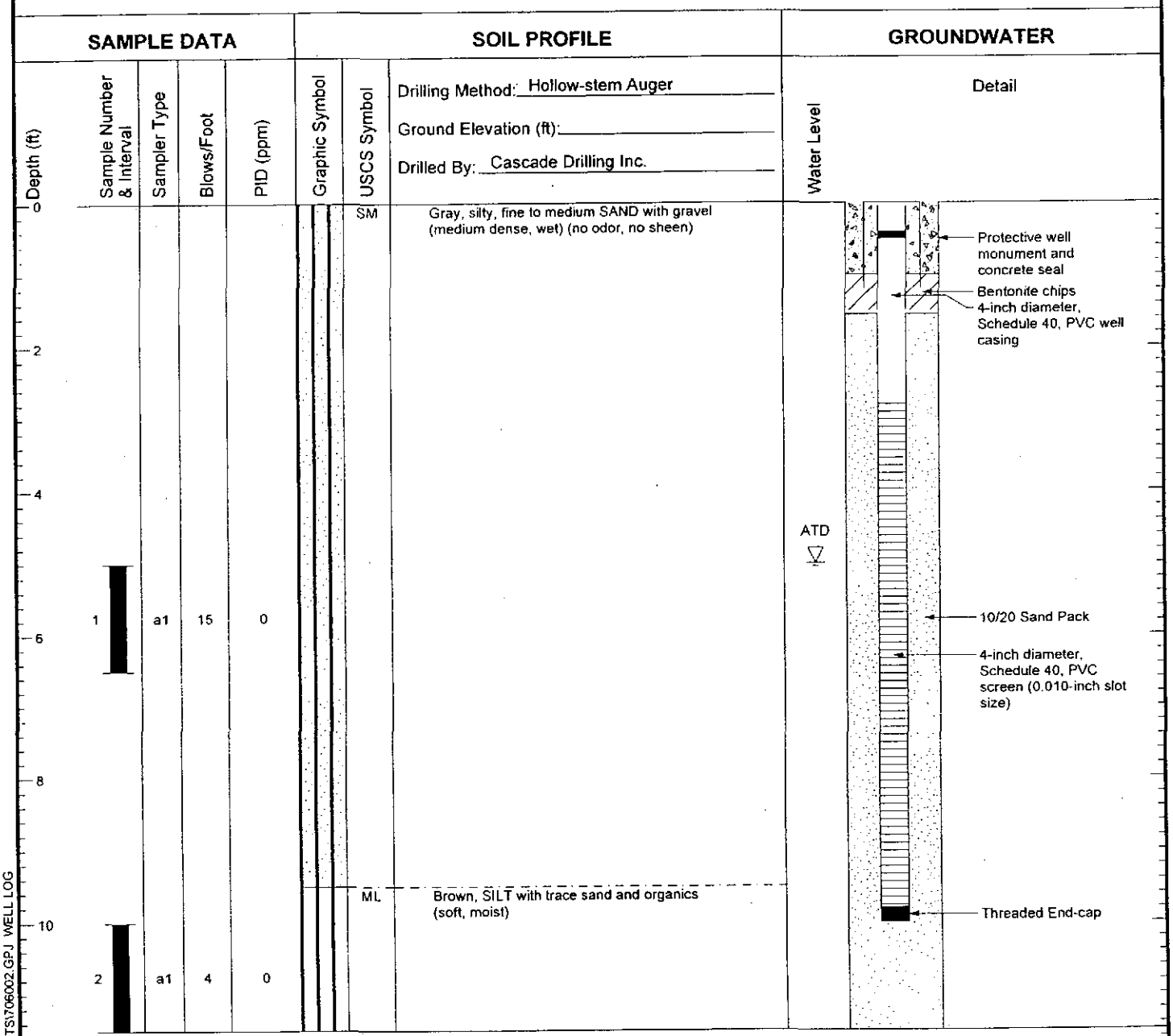
Log of LAI-10

Figure
A-16

LAI-11



Boring Completed 01/29/03
Total Depth of Boring = 11.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/10/03 \\EDMNAS\GINT\GINTWAPROJECTS\706002.GPJ WELL LOG

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Log of LAI-11

Figure A-17

LAI-12

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						SM	Gray, silty, fine to medium SAND with gravel (medium dense, wet) (no odor, no sheen)	
2								
4								▽ ATD
6	1	a1	26	0				
8								
10						ML	Brown, SILT with trace sand and organics (soft, moist)	
	2	a1	4	0				
12								
14								

Boring Completed 01/29/03
Total Depth of Boring = 11.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/11/03 \\EDMNAS\GINT\GINTWPROJECTS\706002.GPJ SOIL BORING LOG

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Renton, Washington

Log of Boring LAI-12

Figure A-18

LAI-13

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						SM	Gray, silty, fine to medium SAND with gravel (medium dense, wet) (no odor, no sheen)	
2								
4								▽ ATD
6	1	a1	23	0				
8								
10	2	a1	4	0				
12						ML	Brown, SILT with trace sand and organics (soft, moist)	
14								

Boring Completed 01/29/03
Total Depth of Boring = 11.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/11/03 \\EDMNAS\GINT\GINTWPROJECTS\706002.GPJ SOIL BORING LOG

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Renton, Washington

Log of Boring LAI-13

Figure
A-19

LAI-14

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						SM	Gray, silty, fine to medium SAND with gravel (dense, wet) (no odor, no sheen)	
2								
4								▽ ATD
6	1	a1	32	0				
8								
10						ML	Brown, SILT with trace sand and organics (stiff, moist)	
	2	a1	11	0				
12								
14								

Boring Completed 01/29/03
Total Depth of Boring = 11.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/11/03 \\EDMNAS\GINTG\INTWPROJECTS\706002.GPJ SOIL BORING LOG

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Log of Boring LAI-14

Figure A-20

LAI-15

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						SP/ SM	Light brown, fine to medium SAND with trace silt (loose, wet) (no odor, no sheen)	
2								
4								▽ ATD
6	1	a1	6	0				
8								
10						ML	Brown, sandy, SILT with organics (medium siff, moist)	
	2	a1	7	0				
12								
14								

Boring Completed 01/29/03
Total Depth of Boring = 11.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/11/03 \\EDMNAS\GINTGINTWP\PROJECTS\706002.GPJ SOIL BORING LOG

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Log of Boring LAI-15

Figure A-21

LAI-16

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						SM	Light brown, silty, fine to medium SAND with occasional gravel (loose, wet) (no odor, no sheen)	
2								
4								▽ ATD
6	1	a1	14	0				
8								
10						ML	Brown, SILT with trace sand and organics (medium siff, moist)	
	2	a1	4	0				
12								
14								

Boring Completed 01/29/03
Total Depth of Boring = 11.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

706002.012 2/11/03 \\EDMNAS\GINT\GINTWMPROJECTS\706002.GPJ SOIL BORING LOG

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Renton, Washington

Log of Boring LAI-16

Figure A-22

PROJECT: ConocoPhillips Facilty No. 3485	WELL / BORING NO: **B1**
LOCATION: 2423 Lind Ave. SW, Renton, WA	
STARTED: 4/27/05 COMPLETED: 4/27/05	NORTHING: EASTING:
DRILLING COMPANY: Cascade Drilling Inc.	GROUND ELEV: M.P. ELEV:
DRILLING EQUIPMENT: Cascade Drilling Inc.	INITIAL DTW: 5 TOTAL DEPTH: 9.0
DRILLING METHOD: push probe	STATIC DTW: BOREHOLE DIAMETER: 4"
SAMPLING EQUIPMENT:	LOGGED BY: AW CHECKED BY: AW

DEPTH (ft)	GRAPHIC LOG	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	TIME	RECOV. (%)	BLOW COUNT	PID (ppm)	DEPTH (ft)	WELL CONSTRUCTION
			Bark landscaping							
		SP	SAND brown, medium grained with fine gravel and trace fines, moist, no odor		8:42			22.4		
			@2.5': increased fines		8:47			24.7		
			@3': gray		8:53			22.7		
			@4': coarse gravel and cobbles, gray		9:01			21.4		
5			@5': moist, saturated, gravel is rounded to angular		9:15			25.6	5	abandoned with hydrated bentonite chips
					9:25(w)					
10			Boring terminated at 9' (w) = water sample taken						10	
15									15	
20									20	

PROJECT:	ConocoPhillips Facilty No. 3485	WELL / BORING NO:	**B2**
LOCATION:	2423 Lind Ave. SW, Renton, WA		
STARTED:	4/27/05 COMPLETED: 4/27/05	NORTHING:	EASTING:
DRILLING COMPANY:	Cascade Drilling Inc.	GROUND ELEV:	M.P. ELEV:
DRILLING EQUIPMENT:	Cascade Drilling Inc.	INITIAL DTW: 9	TOTAL DEPTH: 13.0
DRILLING METHOD:	push probe	STATIC DTW:	BOREHOLE DIAMETER: 4"
SAMPLING EQUIPMENT:		LOGGED BY: AW	CHECKED BY: AW

DEPTH (ft)	GRAPHIC LOG	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	TIME	RECOV. (%)	BLOW COUNT	PID (ppm)	DEPTH (ft)	WELL CONSTRUCTION
			Bark landscaping							
		SP	SAND brown, medium grained with fine to coarse gravel and fines, moist, no odor		9:32			31.3		
					9:35			31.6		
					9:38			32.0		
					9:41			32.5		
5		SM	SAND gray, fine grained with silt and fine to coarse gravel, moist						5	
					9:58			34.2		
									▽	
10		OL	SILT organic, brown black with wood fragments						10	
					10:25(w)					
		ML	SILT organic, gray, medium plastic, saturated							
			Boring terminated at 13' (w) = water sample taken							
15									15	
20									20	

ENV WELL CP 03485.GPJ SECOR_CO.GDT 5/12/05

PROJECT:	ConocoPhillips Facilty No. 3485	WELL / BORING NO:	**B3**
LOCATION:	2423 Lind Ave. SW, Renton, WA		
STARTED:	4/27/05 COMPLETED: 4/27/05	NORTHING:	EASTING:
DRILLING COMPANY:	Cascade Drilling Inc.	GROUND ELEV:	M.P. ELEV:
DRILLING EQUIPMENT:	Cascade Drilling Inc.	INITIAL DTW: 6	TOTAL DEPTH: 9.0
DRILLING METHOD:	push probe	STATIC DTW:	BOREHOLE DIAMETER: 4"
SAMPLING EQUIPMENT:		LOGGED BY: AW	CHECKED BY: AW

DEPTH (ft)	GRAPHIC LOG	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	TIME	RECOV. (%)	BLOW COUNT	PID (ppm)	DEPTH (ft)	WELL CONSTRUCTION
			Bark landscaping							
		SP	SAND brown, medium grained with fine to coarse gravel, cobbles, some silt, moist, no odor		10:22			27.7		
					10:25			23.4		
					10:28			25.9		
					10:35			19.1		abandoned with hydrated bentonite chips
5			@5': medium grained with fine gravel, saturated, odor						5	
					11:10(w)				▽	
		OL	SILT organic, brown, saturated							
10			Boring terminated at 9' (w) = water sample taken						10	
15									15	
20									20	

ENV_WELL CP 03485.GPJ SECOR CO.GDT 5/12/05

PROJECT:	ConocoPhillips Facilty No. 3485	WELL / BORING NO:	**B4**
LOCATION:	2423 Lind Ave. SW, Renton, WA		
STARTED:	4/28/05 COMPLETED: 4/28/05	NORTHING:	EASTING:
DRILLING COMPANY:	Cascade Drilling Inc.	GROUND ELEV:	M.P. ELEV:
DRILLING EQUIPMENT:	Cascade Drilling Inc.	INITIAL DTW:	TOTAL DEPTH: 13.0
DRILLING METHOD:	push probe	STATIC DTW:	BOREHOLE DIAMETER: 4"
SAMPLING EQUIPMENT:		LOGGED BY: AW	CHECKED BY: AW

DEPTH (ft)	GRAPHIC LOG	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	TIME	RECOV. (%)	BLOW COUNT	PID (ppm)
			Grass					
		SP	**SAND** brown, medium grained with trace silt, moist		8:40			19.9
			@2.5': some fine to coarse rounded gravel, some gray coloration		8:45			21.1
			@3': gray		8:50			16.7
					9:00			2.4
5			@6': moist to saturated		9:30			
			@9': gray					
10		OL	**SILT** organic, brown					
		ML	**SILT** gray, medium plastic					
			Boring terminated at 13'					
15								
20								

DEPTH (ft)	WELL CONSTRUCTION
5	abandoned with hydrated bentonite chips
10	
15	
20	

ENV_WELL CP 03485.GPJ SECOR_CO.GDT 5/12/05

SECOR International Incorporated

PROJECT NO. 01CP.03485.03

PROJECT: ConocoPhillips Facilty No. 3485	WELL / BORING NO: **B5**
LOCATION: 2423 Lind Ave. SW, Renton, WA	
STARTED: 4/28/05 COMPLETED: 4/28/05	NORTHING: EASTING:
DRILLING COMPANY: Cascade Drilling Inc.	GROUND ELEV: M.P. ELEV:
DRILLING EQUIPMENT: Cascade Drilling Inc.	INITIAL DTW: 6.5 TOTAL DEPTH: 9.0
DRILLING METHOD: push probe	STATIC DTW: BOREHOLE DIAMETER: 4"
SAMPLING EQUIPMENT:	LOGGED BY: AW CHECKED BY: AW

DEPTH (ft)	GRAPHIC LOG	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	TIME	RECOV. (%)	BLOW COUNT	PID (ppm)	DEPTH (ft)	WELL CONSTRUCTION
			Grass							
		SP	SAND brown, medium grained with trace silt, some fine to coarse gravel and cobbles moist		9:45			22.7		
					9:50			23.6		
					9:55			18.8		
5					10:00			24.6	5	abandoned with hydrated bentonite chips
					10:10(w)				▽	
			@9': some organic material, gray							
10			Boring terminated at 9' (w) = water sample taken						10	
15									15	
20									20	

ENV_WELL_CP 03485.GPJ SECOR_CO.GDT 5/12/05

PROJECT: ConocoPhillips Facility No. 3485	WELL / BORING NO: **B6**
LOCATION: 2423 Lind Ave. SW, Renton, WA	
STARTED: 4/27/05 COMPLETED: 4/27/05	NORTHING: EASTING:
DRILLING COMPANY: Cascade Drilling Inc.	GROUND ELEV: M.P. ELEV:
DRILLING EQUIPMENT: Cascade Drilling Inc.	INITIAL DTW: 8 TOTAL DEPTH: 22.0
DRILLING METHOD: push probe	STATIC DTW: BOREHOLE DIAMETER: 4"
SAMPLING EQUIPMENT:	LOGGED BY: AW CHECKED BY: AW

DEPTH (ft)	GRAPHIC LOG	USCS	LITHOLOGIC DESCRIPTION
			Gravel fill Soft dig to 5' using air wand and vacuum truck
5		SP	SILTY SAND gray, fine grained with gravel fill, moist to saturated
10		OL	SILT organic, brown
15		ML	SILT with some silt, gray and brown, moist, moderately plastic @18': lens of fine sand
20		SP SM	SILTY SAND dark gray, fine grained, saturated
			Boring terminated at 22'

SAMPLE | TIME | RECOV. (%) | BLOW COUNT | PID (ppm)

DEPTH (ft) 5 10 15 20

WELL CONSTRUCTION: abandoned with hydrated bentonite chips

ENV WELL CP 03485.GPJ SECOR_CO.GDT 5/12/05

SECOR International Incorporated

PROJECT NO. 01CP.03485.03

PROJECT: ConocoPhillips Facilty No. 3485	WELL / BORING NO: **B7**
LOCATION: 2423 Lind Ave. SW, Renton, WA	
STARTED: 4/27/05 COMPLETED: 4/27/05	NORTHING: EASTING:
DRILLING COMPANY: Cascade Drilling Inc.	GROUND ELEV: M.P. ELEV:
DRILLING EQUIPMENT: Cascade Drilling Inc.	INITIAL DTW: 7 TOTAL DEPTH: 13.0
DRILLING METHOD: push probe	STATIC DTW: BOREHOLE DIAMETER: 4"
SAMPLING EQUIPMENT:	LOGGED BY: AW CHECKED BY: AW

DEPTH (ft)	GRAPHIC LOG	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	TIME	RECOV. (%)	BLOW COUNT	PID (ppm)
			Bark landscaping					
		SP	**SAND** brown, medium grained with fine to coarse gravel and cobbles, some silt, moist, no odor		11:38			17.5
					11:42			31.6
					11:45			33.0
5			@4.5': gray		11:50			34.4
10			@10': saturated					
			@13': organic material					
			Boring terminated at 13'					
15								
20								

DEPTH (ft)	WELL CONSTRUCTION
5	abandoned with hydrated bentonite chips
10	
15	
20	

ENV_WELL_CP 03485.GPJ SECOR_CO.GDT 5/12/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **HWx-1E** PAGE 1 OF 1

SECOR

DRILLING: STARTED **9/1/05** COMPLETED: **9/1/05**
INSTALLATION: STARTED **9/1/05** COMPLETED: **9/1/05**
DRILLING COMPANY: **CDI**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT:

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **11.3** **9/2/05**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **4**
LOGGED BY: **MR**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft): **18.02**
BOREHOLE DEPTH (ft): **18.6**
WELL DEPTH (ft): **18.6**
BOREHOLE DIAMETER (in): **8**
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
1400			Hole terminated at 18.6 feet.						10	0.010 Screen

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **HWx-1W** PAGE 1 OF 1

SECOR

DRILLING: STARTED **9/2/05**	COMPLETED: **9/2/05**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **9/2/05**	COMPLETED: **9/2/05**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **CDI**		GROUND ELEV (ft):	TOC ELEV (ft): **18.50**
DRILLING EQUIPMENT:		INITIAL DTW (ft): **10.4 9/2/05**	BOREHOLE DEPTH (ft): **19.0**
DRILLING METHOD: **HSA**		STATIC DTW (ft): **NE**	WELL DEPTH (ft): **19.0**
SAMPLING EQUIPMENT:		WELL CASING DIAMETER (in): **4**	BOREHOLE DIAMETER (in): **8**
		LOGGED BY: **MR**	CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
5									5	
10									10 ▽	0.010 Screen
15									15	
1430			Hole terminated at 19 feet.							
20									20	

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAIx-2** PAGE 1 OF 1

SECOR

DRILLING: STARTED **9/2/05** COMPLETED: **9/2/05**
INSTALLATION: STARTED **9/2/05** COMPLETED: **9/2/05**
DRILLING COMPANY: **CDI**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT:

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **10.45** **9/2/05**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **4**
LOGGED BY: **MR**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft): **18.73**
BOREHOLE DEPTH (ft): **19.0**
WELL DEPTH (ft): **19.0**
BOREHOLE DIAMETER (in): **8**
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
8:30			Hole terminated at 19 feet.							0.010 Screen

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAIx-3** PAGE 1 OF 1

SECOR

DRILLING: STARTED **9/2/05** COMPLETED: **9/2/05**
INSTALLATION: STARTED **9/2/05** COMPLETED: **9/2/05**
DRILLING COMPANY: **CDI**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT:

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **10.6** **9/2/05**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **4**
LOGGED BY: **MR**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft): **18.80**
BOREHOLE DEPTH (ft): **19.0**
WELL DEPTH (ft): **19.0**
BOREHOLE DIAMETER (in): **8**
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
9:00			Hole terminated at 19 feet.							0.010 Screen

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAIx-4** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/30/05**	COMPLETED: **8/30/05**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **8/30/05**	COMPLETED: **8/30/05**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **CDI**		GROUND ELEV (ft):	TOC ELEV (ft): **22.65**
DRILLING EQUIPMENT:		INITIAL DTW (ft): **14.3** **8/30/05**	BOREHOLE DEPTH (ft): **17.0**
DRILLING METHOD: **HSA**		STATIC DTW (ft): **NE**	WELL DEPTH (ft): **17.0**
SAMPLING EQUIPMENT:		WELL CASING DIAMETER (in): **4**	BOREHOLE DIAMETER (in): **8**
		LOGGED BY: **MR**	CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No sampling							Redi Mix
										Bentonite Chip Seal
5									5	
10									10	0.010 Screen
15									15	
1000			Hole terminated at 17 feet.							
20									20	

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAIx-5** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/30/05** COMPLETED: **8/30/05**
INSTALLATION: STARTED **8/30/05** COMPLETED: **8/30/05**
DRILLING COMPANY: **CDI**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT:

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **14.25** **8/30/05**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **4**
LOGGED BY: **MR**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft): **22.51**
BOREHOLE DEPTH (ft): **15.0**
WELL DEPTH (ft): **15.0**
BOREHOLE DIAMETER (in): **8**
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal; 0.010 Screen
1100			Hole terminated at 15 feet.							

5
10
15
20

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAlx-6** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/30/05** COMPLETED: **8/30/05**
INSTALLATION: STARTED **8/30/05** COMPLETED: **8/30/05**
DRILLING COMPANY: **CDI**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT:

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **11.35** **8/30/05**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **4**
LOGGED BY: **MR**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft): **22.17**
BOREHOLE DEPTH (ft): **17.0**
WELL DEPTH (ft): **17.0**
BOREHOLE DIAMETER (in): **8**
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
1200			Hole terminated at 17 feet.							0.010 Screen

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAIx-7** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/30/05**	COMPLETED: **8/30/05**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **8/30/05**	COMPLETED: **8/30/05**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **CDI**		GROUND ELEV (ft):	TOC ELEV (ft): **22.18**
DRILLING EQUIPMENT:		INITIAL DTW (ft): **13.94 8/30/05**	BOREHOLE DEPTH (ft): **17.0**
DRILLING METHOD: **HSA**		STATIC DTW (ft): **NE**	WELL DEPTH (ft): **17.0**
SAMPLING EQUIPMENT:		WELL CASING DIAMETER (in): **4**	BOREHOLE DIAMETER (in): **8**
		LOGGED BY: **MR**	CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
1230			Hole terminated at 17 feet.							0.010 Screen

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAIx-8** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/30/05**	COMPLETED: **8/30/05**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **8/30/05**	COMPLETED: **8/30/05**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **CDI**		GROUND ELEV (ft):	TOC ELEV (ft): **22.53**
DRILLING EQUIPMENT:		INITIAL DTW (ft): **11.85** **8/30/05**	BOREHOLE DEPTH (ft): **17.0**
DRILLING METHOD: **HSA**		STATIC DTW (ft): **NE**	WELL DEPTH (ft): **17.0**
SAMPLING EQUIPMENT:		WELL CASING DIAMETER (in): **4**	BOREHOLE DIAMETER (in): **8**
		LOGGED BY: **MR**	CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix
										Bentonite Chip Seal
5									5	
10									10	0.010 Screen
									▽	
15									15	
1300			Hole terminated at 17 feet.							
20									20	

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **LAIx-9** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/30/05** COMPLETED: **8/30/05**
INSTALLATION: STARTED **8/30/05** COMPLETED: **8/30/05**
DRILLING COMPANY: **CDI**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT:

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **14.3** **8/30/05**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **4**
LOGGED BY: **MR**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft): **22.39**
BOREHOLE DEPTH (ft): **17.0**
WELL DEPTH (ft): **17.0**
BOREHOLE DIAMETER (in): **8**
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal; 0.010 Screen
1340			Hole terminated at 17 feet.							

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **RWx-2** PAGE 1 OF 1

SECOR

DRILLING: STARTED **9/1/05**	COMPLETED: **9/1/05**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **9/1/05**	COMPLETED: **9/1/05**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **CDI**		GROUND ELEV (ft):	TOC ELEV (ft): **23.11**
DRILLING EQUIPMENT:		INITIAL DTW (ft): **7.35** **9/1/05**	BOREHOLE DEPTH (ft): **17.0**
DRILLING METHOD: **HSA**		STATIC DTW (ft): **NE**	WELL DEPTH (ft): **17.0**
SAMPLING EQUIPMENT:		WELL CASING DIAMETER (in): **4**	BOREHOLE DIAMETER (in): **8**
		LOGGED BY: **MR**	CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix
										Bentonite Chip Seal
5									5	
10									10	0.010 Screen
15									15	
1500			Hole terminated at 17 feet.							
20									20	

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **RWx-5** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/31/05** COMPLETED: **8/31/05**
INSTALLATION: STARTED **8/31/05** COMPLETED: **8/31/05**
DRILLING COMPANY: **CDI**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT:

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **14.3** **8/31/05**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **4**
LOGGED BY: **MR**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft): **21.91**
BOREHOLE DEPTH (ft): **17.0**
WELL DEPTH (ft): **17.0**
BOREHOLE DIAMETER (in): **8**
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
1530			Hole terminated at 17 feet.							0.010 Screen

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

PROJECT: **3485 Renton**
LOCATION:
PROJECT NUMBER: **01CP.03485.09**

WELL / PROBEHOLE / BOREHOLE NO: **RWx-7** PAGE 1 OF 1

SECOR

DRILLING: STARTED **8/31/05**	COMPLETED: **8/31/05**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **8/31/05**	COMPLETED: **8/31/05**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **CDI**		GROUND ELEV (ft):	TOC ELEV (ft): **21.65**
DRILLING EQUIPMENT:		INITIAL DTW (ft): **11.99** **8/31/05**	BOREHOLE DEPTH (ft): **17.0**
DRILLING METHOD: **HSA**		STATIC DTW (ft): **NE**	WELL DEPTH (ft): **17.0**
SAMPLING EQUIPMENT:		WELL CASING DIAMETER (in): **4**	BOREHOLE DIAMETER (in): **8**
		LOGGED BY: **MR**	CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			No Sampling							Redi Mix; Bentonite Chip Seal
1600			Hole terminated at 17 feet.							0.010 Screen

GEO FORM 304 3485 RENTON.GPJ SECOR INTL.GDT 10/28/05

ACTON • MICKELSON • ENVIRONMENTAL, INC.

5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2A

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, 3' east of R-2, within trench 2

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,121/169,870 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.82' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	13' BGS
		Weather:	Overcast, cool
Drilling Started:	10/11/07 0915	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 0933	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs.	
5				12	POORLY GRADED GRAVEL (GP), dark greenish gray (5G 4/1), dense, moist, 95% fine to coarse gravel, predominantly coarse gravel, rounded except where broken; 5% sand; maximum size 50 cm; no evident roots or fouling.		GP		
				18				Soft drilling at 10'.	
10					POORLY GRADED SAND (SP), dark greenish gray (5GY 4/1), loose, wet, 5% fine to coarse gravel, 90% medium to coarse sand; 5% fines.		SP		
					SILT (ML), very dark grayish brown (2.5Y 3/2), soft, wet, 100% fines; roots, organic matter.		ML		

LOG_OF_BORING 1304207NEW.GPJ ACTON.GDT 11/2/07

ACTON • MICKELSON • ENVIRONMENTAL, INC.

5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2B

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, 14' east of R-2, within trench 2

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,132/169,870 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.47' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	13' BGS
		Weather:	Overcast, cool
Drilling Started:	10/11/07 0945	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1001	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs.	
5				11	POORLY GRADED GRAVEL WITH SAND (GP), dark greenish gray (5GY 4/1), dense, moist, 90% fine to coarse gravel, predominantly large gravel, rounded; 10% fine to coarse sand; maximum size 50 cm; no evident roots or fouling.		GP		
				30	▼ wet.			Soft drilling at 10'.	
10					▼ 60% fine to coarse gravel; 40% sand; maximum size 20 cm.				
					SILT (ML), very dark grayish brown (2.5Y 3/2), very soft, wet, 100% fines; roots and organic matter.		ML		

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5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2C

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, 15' east-southeast of R-2

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,132/169,863 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.61' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	16' BGS
		Weather:	Overcast, cool
Drilling Started:	10/11/07 1025	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1045	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs.	
5				36	POORLY GRADED SAND WITH SILT (SP-SM), dark greenish gray (10GY 4/1), dense, moist, 10% fine to coarse gravel; 80% fine to coarse sand, predominantly medium to coarse; 10 % fines; maximum size 50 cm.		SP-SM		
					▼ 10% fine to coarse gravel; 85% medium to coarse sand; 5% fines.				
				36					
10					▼ wet.				
					SILT (ML), very dark grayish brown (10YR 3/2), soft, wet, 100% fines; interbeds of clay (CL), 10YR4/1 dark gray; roots, organic matter.		ML		
				48					
					POORLY GRADED SAND (SP), dark greenish gray (10Y 3/1), medium, wet, 95% fine sand; 5% fines; micaceous.		SP		
15					LEAN CLAY (CL), dark gray (5Y 4/1), soft, wet, 100% fines; micaceous; roots, organic matter.		CL		

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5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2D

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, east of trench 2 across Olympic driveway

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,231/169,870 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.55' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	12' BGS
		Weather:	Overcast, cool
Drilling Started:	10/11/07 1058	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1113	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs.	
					POORLY GRADED SAND WITH GRAVEL (SP), dark greenish gray (5GY 4/1), medium, moist, 15% fine to coarse rounded gravel; 80% fine to coarse sand, predominantly fine to medium; 5 % fines; maximum size 50 cm.		SP		
5				30				Logged from air knife cuttings 3-5'.	
				36	wet.				
					CLAYEY SILT (ML-CL), very dark grayish brown (2.5Y 3/2) and gray (5Y 5/1), soft, wet, 100% fines; interbedded silt and clay; roots, organic matter.		ML-CL	Slough at top of core. Contact approx.	
10					POORLY GRADED SAND (SP), dark greenish gray (5G 4/1), loose, wet, 95% fine sand; 5% fines.		SP		

LOG_OF_BORING 1304207NEW.GPJ ACTON.GDT 11/2/07

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5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2E

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, 9' north of W-4

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,087/169,857 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.71' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	16' BGS
		Weather:	Overcast, cool
Drilling Started:	10/11/07 1125	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1220	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs.	
					POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), dark grayish brown (2.5Y 4/2), medium, moist, 20% fine to coarse rounded gravel; 70% fine to coarse sand, predominantly fine to medium; 10 % fines; maximum size 70 cm.		SP-SM	Logged from air knife cuttings 3 -5'.	
5				24	▼ dark greenish gray (5GY 4/1), 15% fine to coarse rounded gravel; 75% fine to coarse sand, predominantly fine to medium; 10 % fines; maximum size 40 cm.				
				36	▼ wet.				
10					SILT (ML), very dark grayish brown (2.5Y 3/2), soft, wet, 100% fines; organic matter, roots, wood fragments to 40 cm.		ML		
				30	LEAN CLAY (CL), dark gray (2.5Y 4/1), soft, wet, 100% fines.		CL		
					POORLY GRADED SAND (SP), dark greenish gray (10GY 3/1), medium, wet, 90% fine sand; 10% fines.		SP		
					LEAN CLAY (CL), dark gray (2.5Y 4/1), soft, wet, 100% fines.		CL		
					POORLY GRADED SAND (SP), dark greenish gray (10GY 3/1), medium, wet, 95% fine to medium sand; 5% fines.		SP		
15									

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5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2F

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, across driveway from trench 2, northeast of HA-2

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,187/169,824 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.80' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	12' BGS
		Weather:	Overcast, cool
Drilling Started:	10/11/07 1235	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1250	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs.	
					POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), dark greenish gray (10Y 3/1), medium, moist, 15% fine to coarse rounded gravel; 75% fine to coarse sand, predominantly fine to medium; 10 % fines; maximum size 40 cm.		SP-SM	Logged from air knife cuttings 2.5-5'.	
5				27					
					SILTY SAND WITH GRAVEL (SM), dark greenish gray (10Y 3/1), medium, wet, 15% fine to coarse gravel; 60% fine to coarse sand; 25 % fines; maximum size 30 cm.		SM		
					POORLY GRADED SAND (SP), dark greenish gray (10Y 4/1), medium, moist, 5% fine to coarse gravel; 95% fine to coarse sand, predominantly fine to medium; 5% fines; maximum size 20 cm.		SP		
				36	▼ wet.				
10					SILT (ML), very dark gray (2.5Y 3/1), soft, wet, 100% fines; roots.		ML		
					LEAN CLAY (CL), greenish gray (10Y 5/1), soft, wet, 100% fines; roots.		CL		
					POORLY GRADED SAND WITH SILT (SP-SM), dark greenish gray (10Y 4/1), medium, wet, 90% fine sand; 10% fines.		SP-SM		

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El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2G

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, in trench 2, 4' northeast of W-4

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,089/169,849 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.65' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	12' BGS
		Weather:	Overcast, cool, breezy
Drilling Started:	10/11/07 1310	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1345	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs. Hole caves 2 after air knifing.	
5				2	POORLY GRADED GRAVEL (GP), dark greenish gray (10GY 3/1), medium, moist, 95% fine to coarse rounded gravel ; 5% sand; moslty recovered large gravel.		GP	Soft at 7' (sand or clay).	
					POORLY GRADED SAND WITH GRAVEL (SP), dark greenish gray (10GY 3/1), medium, moist, 15% fine to coarse gravel, 80% fine to coarse sand; 5% fines; maximum size 40 cm; no evident fouling.		SP		
				28	▼ wet.				
10					SILT (ML), very dark gray (2.5Y 3/1), soft, wet, 100% fines; interbeds of clay (CL) 2.5Y4/1 dark gray; organic matter, roots, wood fragments to 40 cm.		ML		

LOG_OF_BORING 1304207NEW.GPJ ACTON.GDT 11/2/07

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5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2H

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, 16' south-southwest of R-2

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,112/169,854 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.98' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	16' BGS
		Weather:	Overcast, cool, breezy
Drilling Started:	10/11/07 1405	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1430	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs.	
5				36	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), dark greenish gray (10Y 3/1), medium, moist, 15% fine to coarse rounded gravel; 75% fine to coarse sand, predominantly fine to medium; 10 % fines; maximum size 40 cm.		SP-SM		
10				12					
				18	SILT (ML), very dark gray (2.5Y 3/1), very soft, wet, 100% fines; thin (1-3 cm) clay interbeds; organic matter, roots.		ML	Sample stuck in core barrel, liner crumpled.	
15					POORLY GRADED SAND (SP), dark greenish gray (10GY 3/1), medium, wet, 95% fine sand; 5% fines.		SP		

APPENDIX C

Elevation Data and Survey Notes

RENTON SOIL BORINGS SURVEY

Instrument set up point	Survey point	Approximate Point Location [2] Angle [1]	Approximate Distance (ft)	Elevation (ft)	
HA-9	HA-2	S 0° 00'	86.70	21.09	Reference point for elevations.
	SB A	S 73° 20' W	49.20	21.82	
	SB B	S 71° 00' W	35.80	21.47	
	SB C	S 61° 00' W	37.50	21.61	
	SB D	S 80° 10' E	65.00	21.55	
	SB E	S 72° 00' W	83.30	21.71	
	SB F	S 19° 00' E	60.80	21.80	
	SB G	S 66° 00' W	81.70	21.65	
	SB H	S 61° 30' W	61.70	21.98	
	W-3	S 55° 30' W	15.00	19.97	For check only. Slight difference from survey
	W-4	S 65° 30' W	86.70	20.95	For check only. Slight difference from survey
	R2	S 74° 00' W	50.00		

Notes

[1] Turned angle while setup on HA-9 and back site HA-2 (assumed that line was S 0 degrees)

[2] Point location is approximated and should be only used if GPS data does not compute

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5175 Hillsdale Circle #100
El Dorado Hills, CA 95762

LOG OF BORING

SB-TR2G

Facility: Former Mobil Terminal #46-080

Address: 2423 Lind Avenue SW
Renton, Washington

AME Project No.: 13042.07

Area No./ Description: Northwest corner of site, in trench 2, 4' northeast of W-4

Drilling Company:	Cascade Drilling	Location (East/North):	1,296,089/169,849 (not surveyed)
Drilled By:	Frank Scott	Ground Surface Elevation:	21.65' (not surveyed)
Drilling Method:	Direct Push	Water Depth (Date, Time):	NA
Boring Diameter:	2"	Casing Elevation:	NA
Sampling Method:	Continuous core	Total Depth (feet):	12' BGS
		Weather:	Overcast, cool, breezy
Drilling Started:	10/11/07 1310	Logged By:	J.R. Heglie, L.G.
Drilling Finished:	10/11/07 1345	Checked By:	
Source:	Original field notes	PID/FID:	

DEPTH (feet)	SAMPLE INTERVAL	SAMPLE ID	BLOW COUNTS BLOWS/6 IN. (N)	IN. RECV'D	SOIL DESCRIPTION: SOIL NAME, COLOR, RELATIVE DENSITY OR CONSISTENCY, MOISTURE, PARTICLE SIZE RANGE, OTHER	GRAPHIC LOG	SOIL CLASS	COMMENTS: DRILLING RATE AND CONDITIONS, WATER DEPTH, BACKFILL	FIELD PID READING (ppm)
0								Not logged. Cleared by air knife/vacuum excavation to approx. 5' bgs. Hole caves 2 after air knifing.	
5				2	POORLY GRADED GRAVEL (GP), dark greenish gray (10GY 3/1), medium, moist, 95% fine to coarse rounded gravel ; 5% sand; moslty recovered large gravel.		GP	Soft at 7' (sand or clay).	
					POORLY GRADED SAND WITH GRAVEL (SP), dark greenish gray (10GY 3/1), medium, moist, 15% fine to coarse gravel, 80% fine to coarse sand; 5% fines; maximum size 40 cm; no evident fouling.		SP		
				28	▼ wet.				
10					SILT (ML), very dark gray (2.5Y 3/1), soft, wet, 100% fines; interbeds of clay (CL) 2.5Y4/1 dark gray; organic matter, roots, wood fragments to 40 cm.		ML		

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-1** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **NE**
BOREHOLE DEPTH (ft): **10.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
12:45			Asphalt							Asphalt 12 inches thick surface patch
		SW	SW; gray; moist; slight petroleum odor; some silty sand; with gravel		G-1@ 1-1'			0		Fill 12 inches thick
13:10			Boring was cleared to five feet using a hand auger		13:10 G-1@ 3-3'			0		
					G-1@ 4-4'			0		
5			No Recovery		No Recovery				5	
		SW	SW; gray; moist; slight petroleum odor; some silty sand; with gravel		G-1@ 6-6'			3.2		Hydrated Bentonite Chips
					G-1@ 7-7'			4.3		
13:15					13:15 G-1@8-9' 4/20/09			4.9		
					G-1@ 9-9'			4.2		
10			Hole terminated at 10 feet.						10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-2** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **7** **4/20/09**
BOREHOLE DEPTH (ft): **10.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
11:00			Asphalt							Asphalt 6 inches thick surface patch
		SW	SW; brownish gray; dry; slight petroleum odor; medium to fine grain sand; few gravel							
11:20					11:20 G-2@2' 4/20/09			24.6		
11:23			Boring was cleared to five feet using a hand auger		11:23 G-2@ 3-3'			55.3		
11:25					11:25 G-2@ 4-4'			28.8		
					.			1540		
11:30	5				G-2@ 4.5-4.5'			1809	5	Hydrated Bentonite Chips
					11:30 G-2@ 5-5'			1343		
					. G-2@ 6-6'			1837 ▽		
					. G-2@ 7-7'			1411		
		SM	SM; gray; moist; slight petroleum odor; silty sand; some gravel		. G-2@ 8-8'					
	10				. No Recovery				10	
			Hole terminated at 10 feet.							
	15								15	

GEO FORM.304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-3** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **NE**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **---**
LOGGED BY: **T. Parise**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft):
BOREHOLE DEPTH (ft): **10.0**
WELL DEPTH (ft): **---**
BOREHOLE DIAMETER (in): **6**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
8:15			Asphalt							Asphalt 6 inches thick surface patch
		SW	SW; gray; slight petroleum odor; medium to fine grain sand; few gravel							
			Boring was cleared to five feet using a hand auger		G-3@ 4-4'			691		
								1448		
8:35	5				G-3@ 4.5-4.5' 8:35 G-3@5' 4/20/09			1760	5	Hydrated Bentonite Chips
								1673		
								1272		
					G-3@ 5.5-5.5'			1650		
					G-3@ 6-6'					
8:50		SM	SM; gray; moist; slight petroleum odor; silty sand; some gravel					367		
8:55					G-3@ 7-7' 8:50 G-3@8' 4/20/09 8:55 G-3@9' 4/20/09			1043		
	10		Hole terminated at 10 feet.						10	
	15								15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-4** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **10.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise** CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
9:10			Asphalt							Asphalt 6 inches thick surface patch
		SW	SW; gray; dry; slight petroleum odor; sand; some gravel; large cobble at 3.5 feet Boring was cleared to five feet using a hand auger							
		SW	SW; brown; dry; slight petroleum odor; sand; some gravel		G-4@ 4.5-4.5'			1818		
5		SW	SW; gray; moist; slight petroleum odor; sand; some gravel		9:40 G-4@5.5' 4/20/09			1795	5	Hydrated Bentonite Chips
9:40					G-4@ 6.5-6.5'			1933		
9:45					9:45 G-4@7.5' 4/20/09			2130		
					G-4@ 8.5-8.5'			1722		
10			Hole terminated at 10 feet.						10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-5** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **7** **4/20/09**
BOREHOLE DEPTH (ft): **10.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
10:05			Asphalt							Asphalt 6 inches thick surface patch
		SW	SW; gray; dry; slight petroleum odor; sand; some gravel; large cobble at 3.5 feet Boring was cleared to five feet using a hand auger		10:24 G-5@ 2.5-2.5'			125		
10:24					10:25 G-5@ 3-3'			151		
		SW	SW; brown; dry; slight petroleum odor; sand; some gravel					1842		
10:30					G-5@ 3.5-3.5'			1953		
5		SM	SM; brown; dry; slight petroleum odor; silty sand; few cobbles		10:30 G-5@4-5' 4/20/09			1755	5	Hydrated Bentonite Chips
					G-5@ 5-5'			1706		
					G-5@ 6-6'			710 ▽		
					G-5@ 7-7'			780		
					G-5@ 8-8'			818		
10			Hole terminated at 10 feet.		G-5@ 9-9'				10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-6** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **7** **4/20/09**
BOREHOLE DEPTH (ft): **10.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
13:40			Asphalt							Asphalt 6 inches thick surface patch
		SW	SW; brown; dry; no odor; sand; some gravel							
13:45					13:45 G-6@1' 4/20/09			1		
			Boring was cleared to five feet using a hand auger		13:50 G-6@ 3-3'			354		
					G-6@ 4-4'			78.1		
5					G-6@ 5-5'			1503	5	Hydrated Bentonite Chips
					13:55 G-6@6-7' 4/20/09			1551		
13:55		SW	SW; brown; moist; slight petroleum odor; medium grain sand; some gravel		G-6@ 7-7'			1052 ▽		
					G-6@ 8-8'			1144		
					G-6@ 9-9'			1216		
10			Hole terminated at 10 feet.						10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-7** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **7** **4/20/09**
BOREHOLE DEPTH (ft): **10.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
14:30			Asphalt							Asphalt 6 inches thick surface patch
		SW	SW; gray; moist; slight petroleum odor; medium grain sand; some gravel							
14:40					14:40 G-7@1' 4/20/09			103		
14:42					14:42 G-7@ 2-2'			106		
14:50			Boring was cleared to five feet using a hand auger		G-7@ 3-3'			115		
					G-7@ 4-4'			115		
14:52					G-7@ 5-5'			0	5	Hydrated Bentonite Chips
					G-7@ 6-6'			9		
					G-7@ 7-7'			1275 ▽		
14:55					G-7@8-9' 4/20/09			1615		
					G-7@ 9-9'			1371		
10			Hole terminated at 10 feet.						10	
15									15	

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-8** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/20/09** COMPLETED: **4/20/09**
INSTALLATION: STARTED **4/20/09** COMPLETED: **4/20/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **7 4/20/09**
BOREHOLE DEPTH (ft): **10.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
15:30			Landscaped topsoil							Topsoil
15:40		SW	SW; gray; moist; slight petroleum odor; medium grain sand; some gravel		15:40 G-8@ 1-1'			0		
15:45					15:45 G-8@ 2-2'			0		
15:50			Boring was cleared to five feet using a hand auger		15:50 G-8@ 3-3'			0.1		
					G-8@ 4-4'			13		
5					G-8@ 5-5'			60.3	5	Hydrated Bentonite Chips
					G-8@ 6-6'			0		
15:55					G-8@ 7-7'			25.7 ▽		
					G-8@ 8-8'			215		
					15:55 G-8@9-10' 4/20/09			1071		
10			Hole terminated at 10 feet.						10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-9** PAGE 1 OF 1

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **5 4/21/09**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **---**
LOGGED BY: **T. Parise**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft):
BOREHOLE DEPTH (ft): **7.0**
WELL DEPTH (ft): **---**
BOREHOLE DIAMETER (in): **6**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
11:25			Gravel surface							Gravel
		SW	**SILTY** ; SW; brown; medium grain sand; silty sand; some gravel							
11:30					11:30 G-9@ 2-2'			0.2		
11:32			Boring was cleared to five feet using a hand auger		11:32 G-9@ 3-3'			0.1		
11:33					11:33 G-9@ 4-4'			0.3		Hydrated Bentonite Chips
11:35					11:35 G-9@ 5-5'			0.3	▽ 5	
11:40					11:40 G-9@ 6-6'			5.2		
11:42			Hole terminated at 7 feet.		11:42 G-9@7' 4/21/09			17.4		
10									10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-10** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **6 4/21/09**
BOREHOLE DEPTH (ft): **7.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
9:00			Gravel surface							Gravel
		SW	SW; brown gray; moist; slight petroleum odor; medium grain sand; gravel							
					9:10 G-10@ 2-2'			0.6		
9:10										
					9:20 G-10@ 3-3'			5.1		
9:20			Boring was cleared to five feet using a hand auger							
					10:00 G-10@ 4-4'			0		Hydrated Bentonite Chips
10:00										
					10:01 G-10@ 5-5'			0.1		
10:01 5									5	
10:02					10:02 G-10@6' 4/21/09			0.1		
					. G-10@ 7-7'			2.1		
			Hole terminated at 7 feet.							
10									10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-11** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **2 4/21/09**
BOREHOLE DEPTH (ft): **5.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
10:20			Gravel surface							Gravel
		SW	SW; brown; moist; strong petroleum odor; medium grain sand; with gravel							
10:25					10:25 G-11@2' 4/21/09			0.5	▽	
10:30			Boring was cleared to five feet using a hand auger		10:30 G-11@3' 4/21/09			755		Hydrated Bentonite Chips
10:35			Moist; strong petroleum odor; hydrocarbon staining; medium grain sand; gravel		10:35 G-11@ 4-4'			47.6		
5			Hole terminated at 5 feet.		G-11@ 5-5'				5	
10									10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-12** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **2 4/21/09** BOREHOLE DEPTH (ft): **5.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise** CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
10:05			Gravel surface							Gravel
		SW	SW; brown gray; moist; strong petroleum odor; medium grain sand; with gravel							
10:10					10:10 G-12@ 2-3'			5.7	▽	
10:13			Boring was cleared to five feet using a hand auger		10:13 G-12@3' 4/21/09			96.2		Hydrated Bentonite Chips
10:20		SW	SW; brown; moist; strong petroleum odor; medium grain sand; gravel		10:20 G-11@4' 4/21/09			2477		
5			Hole terminated at 5 feet.		G-12@ 5-5'				5	
10									10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-13** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **7.5** **4/21/09**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **---**
LOGGED BY: **T. Parise**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft):
BOREHOLE DEPTH (ft): **8.0**
WELL DEPTH (ft): **---**
BOREHOLE DIAMETER (in): **6**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
8:10			Gravel surface							Gravel
		SW	SW; gray; saturated; slight petroleum odor; hydrocarbon staining; medium grain sand; with gravel							
					8:20 G-13@ 2-2'			1		
8:20										
					10:13 G-13@ 3-3'			0.8		
8:25			Boring was cleared to five feet using a hand auger							
					10:20 G-13@ 4-4'			6.7		Hydrated Bentonite Chips
8:27										
					8:30 G-13@ 5-5'			1.9	5	
8:30 5										
					8:35 G-13@ 6-6'			3.6		
8:35										
					8:40 G-13@ 7-7'			0.7		
8:40									▽	
8:45			Hole terminated at 8 feet.		8:45 G-13@8' 4/21/09			1810		
10									10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-14** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **NE**
BOREHOLE DEPTH (ft): **4.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)
7:50			Gravel surface					
		SW	SW; brown; moist; slight petroleum odor; medium grain sand; with gravel; refusal at 4 feet		8:05 G-14@ 2-2'			0.5
8:05					8:08 G-14@ 3-3'			0.6
8:08			Boring was cleared to five feet using a hand auger					
8:12			Hole terminated at 4 feet.		8:12 G-14@4' 4/21/09			50

Depth (feet): 5, 10, 15

Borehole Backfill: Gravel; Hydrated Bentonite Chips

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-15** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
LATITUDE:
GROUND ELEV (ft):
INITIAL DTW (ft): **6.5** **4/21/09**
STATIC DTW (ft): **NE**
WELL CASING DIAMETER (in): **---**
LOGGED BY: **T. Parise**

EASTING (ft):
LONGITUDE:
TOC ELEV (ft):
BOREHOLE DEPTH (ft): **6.5**
WELL DEPTH (ft): **---**
BOREHOLE DIAMETER (in): **6**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
12:20			Gravel surface							Gravel
		SW	SW; brown gray; moist; slight petroleum odor; hydrocarbon staining; medium grain sand; with gravel							
12:23					12:23 G-15@ 2-2'			0.3		
12:25			Boring was cleared to five feet using a hand auger		12:25 G-15@ 3-3'			0.5		Hydrated Bentonite Chips
12:27					12:27 G-15@ 4-4'			19.7		
12:30 5					12:30 G-15@ 5-5'			1.7	5	
12:33					12:33 G-15@6' 4/21/09			1.3	▽	
			Hole terminated at 6.5 feet.							
10									10	
15									15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-16** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **5.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise** CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
12:30			Gravel surface							Gravel
		SW	SW; brown; moist; slight petroleum odor; hydrocarbon staining; medium grain sand; with gravel							
12:35					12:35 G-16@ 2-2'			0.1		
12:40			Boring was cleared to five feet using a hand auger		12:40 G-16@3' 4/21/09			0.2		Hydrated Bentonite Chips
12:45					12:45 G-16@ 4-4'			0.3		
12:50	5		Hole terminated at 5 feet.		12:50 G-16@ 5-5'			0.3	5	
	10								10	
	15								15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

PROJECT: **ConocoPhillips Site 3485**
LOCATION: **Renton, Washington**
PROJECT NUMBER: **212302119**

WELL / PROBEHOLE / BOREHOLE NO: **G-17** PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/21/09** COMPLETED: **4/21/09**
INSTALLATION: STARTED **4/21/09** COMPLETED: **4/21/09**
DRILLING COMPANY: **Cascade Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeves/Hand Auger**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **NE**
BOREHOLE DEPTH (ft): **5.0**
STATIC DTW (ft): **NE**
WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---**
BOREHOLE DIAMETER (in): **6**
LOGGED BY: **T. Parise**
CHECKED BY: **R. Fetterly**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Borehole Backfill
10:58			Gravel surface							Gravel
		SW	SW; gray; moist; slight petroleum odor; hydrocarbon staining; medium grain sand; with gravel; cobbles <2"							
11:00					11:00 G-17@ 2-2'			0		
11:05			Boring was cleared to five feet using a hand auger		11:05 G-17@ 3-3'			0		Hydrated Bentonite Chips
11:10					11:10 G-17@4' 4/21/09			1.7		
11:15	5		Hole terminated at 5 feet.		11:15 G-17@5' 4/21/09			8	5	
	10								10	
	15								15	

GEO FORM 304 CONOCOPHILLIPS SITE 3485, RENTON, WA.GPJ SECOR INTL.GDT 6/12/09

APPENDIX E

SAMPLING AND ANALYSIS PLAN

SAMPLING AND ANALYSIS PLAN

CONOCOPHILIPS RENTON TERMINAL
RENTON, WASHINGTON

Prepared For:

CONOCOPHILLIPS COMPANY
ATLANTIC RICHFIELD COMPANY

FEBRUARY 2011
REF. NO. 070496 (3) (APP-E)
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1.0 INTRODUCTION

This Sampling and Analysis Plan (SAP) provides the details associated with implementing the scope of work related to soil, sediment, groundwater and surface water sampling outlined in the Draft RI/FS Work Plan.

A Quality Assurance Project Plan (QAPP) (Attachment F) establishes quality control and quality assurance procedures (QA/QC) to be followed during implementation of the SAP.

2.0 DELINEATION DRILLING

Delineation drilling activities include drilling soil borings and installing monitoring wells in selected locations. The soil boring and monitoring well locations are indicated on Figure 11 of the Draft RI/FS.

2.1 PRE-FIELD ACTIVITIES

2.1.1 HEALTH AND SAFETY

A site-specific health and safety plan (HASP) will be prepared in accordance with federal regulations (Title 40, Code of Federal Regulations, Section 1910.120). The HASP will identify potential physical and chemical hazards associated with the proposed field activities and will outline safe working practices.

2.1.2 UNDERGROUND UTILITY AVOIDANCE

Prior to any site work involving soil disturbance, Washington State One Call Utility Notification Service will be called to alert the utility companies in the area of the scheduled work and to request identification of all underground utilities in the vicinity of the disturbance area. A private utility locating contractor may be retained to mark private utilities and to verify public underground utilities near each of the proposed investigative locations. In addition, terminal personnel will be consulted to verify the location of subsurface utilities.

To further diminish the chances of encountering a subsurface utility, each soil boring will be hand cleared to a depth of five feet using a hand augur or other appropriate method.

2.2 INSTALLATION OF MONITORING WELLS

The following provides details of the installation and sampling procedures for the monitoring wells.

2.2.1 INSTALLATION AND SAMPLING PROCEDURES

Proposed monitoring well locations (MW-1 through MW-15, DW-1, DW-2, DW-3, D-4R and D-5R) are shown on Figure 11. Final monitoring well locations may change due to field conditions.

The drilling and well installation activities will be performed by a Washington State licensed driller using an appropriate method suitable for field conditions. The work will be supervised by a qualified person.

Construction of Monitoring Wells

The monitoring wells (with exception to DW-1, DW-2, and DW-3) will be installed into soil borings advanced in the upper saturated zone. The upper saturated zone is situated at depths of between approximately 5 and 10 feet. The final installation depth of the monitoring wells and screen placement will be determined by field conditions as determined by the qualified person.

Following completion of drilling and soil sampling activities, monitoring wells will be constructed in the boreholes using two inch diameter schedule 40 polyvinyl chloride (PVC) casing and 0.010-inch machine slotted PVC screen. The well screen will be placed in the bottom of the borehole such that at least five feet of well screen is above the water table encountered during drilling. The annular space around the well screen will be filled with clean 10-20 silica sand from the bottom of the boring to two feet above the top of the well screen casing. The remaining annular space will be filled with hydrated bentonite chips to a depth of approximately two feet. The upper two feet will be sealed with concrete and finished with a flush mount, traffic-rated well monument.

Construction of Deep Monitoring Wells

Monitoring wells DW-1, DW-2, and DW-3 will be advanced to a minimum depth of 60 feet. The final depth will be chosen based on the stratigraphy encountered during drilling and field screening with a PID.

Drilling will be completed using dual-tube sonic drilling equipment or with a hollow stem auger rig and conductor casing to prevent cross-contamination of a potential deeper aquifer and the upper perched aquifer.

Well Surveying

All wells will be surveyed to a permanent fixed point at the Site. A notch placed on the north side of the well casing will be used as the survey point and as a reference point for measuring future depth to water in the well.

Soil and Groundwater Sampling

Soil samples will be collected continuously throughout the unsaturated and smear zone during advancement of the soil borings into the upper saturated zone. Soil samples will be collected at approximately 5 foot intervals once field screening indicates the boring has been advanced past the smear zone. The sampling interval may be adjusted depending on field conditions.

Soil will be field-screened for the presence of volatile organic constituents (VOCs) using a portable photoionization detector (PID). Field screening will be completed by placing a portion of the collected soil into a sealable plastic bag and then monitoring headspace vapor concentrations using a PID. Select soil samples will be submitted for analysis of petroleum hydrocarbon constituents (Section 2.4 details the chemical analysis). The results of field observations will be recorded in field reports on boring logs. Soil lithology will be described using the United Soil Classification System (USCS).

Each monitoring well will be developed using a surge block, sediment bailer and/or portable whale pump. The well will be developed until the groundwater turbidity is 5 NTUs or until at least 20 well casing volumes have been removed. Water quality parameters will be recorded during well development. A minimum of 24 hours will separate well development and groundwater sampling.

Groundwater samples will be collected from the newly installed monitoring wells as well as the existing on-Site monitoring wells to quantify groundwater quality. Groundwater samples will be collected using low-flow sampling techniques. Groundwater samples will be submitted for chemical analysis as described in Section 1.5.1.

2.3 ADVANCEMENT OF SOIL BORINGS

Soil borings G-18 through G-38 will be advanced in and around the contaminant plume(s) to delineate petroleum contaminated soil (PCS), LNAPL, and smear zone thickness. The borings will be advanced using a direct push probe. The depth of the boring will be determined by field screening. The thickness of the LNAPL plume and smear zone will be measured using Laser Induced Fluorescence (LIF) or other appropriate method. The boring locations are shown on Figure 11. The final boring locations may change due to field conditions.

2.3.1 ADVANCEMENT AND SAMPLING PROCEDURES

Soil samples will be collected from at selected intervals based on field screening. Field screening will be conducted using the LIF technology or PID.

2.4 CHEMICAL ANALYSIS

Soil and groundwater samples will be submitted to a laboratory accredited by the Washington State Department of Ecology. Samples will be submitted for the following analysis:

Groundwater Samples

- TPH gasoline range organics (TPH-G) using Ecology Method NWTPH-Gx;
- TPH diesel range organics (TPH-D) and TPH oil range organics (TPH-O) using Ecology Method NWTPH-Dx with silica gel cleanup;
- Benzene, toluene, ethylbenzene, and total xylenes (collectively BTEX) and Methyl tertiary butyl ether (MTBE) using U.S. Environmental Protection Agency (EPA) Method 8260B;
- Ethanol by EPA Method 8015; and,
- Dissolved lead using EPA Method 6020.

Should the groundwater in the off-Site wells to the north be impacted, selected groundwater samples will be chosen for fingerprinting analyses. These analyses may help discern the source of the impacts (i.e. releases from the Site or from the Olympic Pipeline).

Soil Samples

- TPH-G using Ecology Method NWTPH-Gx;
- TPH-D and TPH-O using Ecology Method NWTPH-Dx with silica gel cleanup;
- BTEX and MTBE using U.S. Environmental Protection Agency (EPA) Method 8260B;
- Ethanol by EPA Method 8015; and,
- Total lead using EPA Method 6020.

Select soil and groundwater samples from areas with the highest contaminant concentrations will be analyzed per MTCA Table 830-1 for the following:

- n-Hexane using EPA Method 8260B;
- 1,2 Dichloroethane (EDC) using EPA Method 8260B;
- 1,2 Dibromoethane (EDB) using EPA Method 8011;
- Polynuclear Aromatic Hydrocarbons (PAHs) using EPA Method 8270SIM;
- Volatile Petroleum Hydrocarbons (VPH) using Ecology Method NWTPH-VPH; and
- Extractable Petroleum Hydrocarbons (EPH) using Ecology Method NWTPH-EPH.

Select soil samples from both shallow and deeper wells will be sampled and analyzed for the following soil physical properties for use in the groundwater model:

- Water content;
- Porosity;
- Grain Size Distribution; and
- Bulk Density.

3.0 WETLANDS MEDIA SAMPLING

Soil and surface water samples will be collected from the locations indicated on Figure 11. The soil samples will be collected during the 'dry' season (July through September). The surface water samples will be collected towards the end of the 'wet' season in the spring.

3.1 PRE-FIELD ACTIVITIES

The pre-field health and safety procedures outlined in Section 2.1 will be followed.

3.1.1 SAMPLE PROCEDURES

Surface Water Samples

Surface water samples will be collected by submerging the sample container into the water; the sample container will be opened below the water surface. The sample will be collected from undisturbed gently flowing water. This procedure will be performed to minimize the effects due to high turbulence and aeration, or if surface scum is prevalent. Samples will be submitted for chemical analysis specified in Section 2.4

Soil Samples

Soil samples will be collected using a hand augur or other appropriate method from a depth of approximately three feet in the same general location of the surface water sample. Sampling procedures are similar to those outlined in Section 2.2.1.

3.2 EQUIPMENT DECONTAMINATION

All sampling equipment will be decontaminated prior to initiating sampling activities, between sampling locations, and following completion of sampling activities.

Field sampling equipment used in the collection of soil samples will be decontaminated by washing with Alconox and rinsing with deionized water. Drilling equipment that directly contacts soil samples will be decontaminated after each exploration. Attached soil will be brushed off and any remaining visible soil will be removed with high-pressure water or steam.

Water sampling tubing will be disposable or dedicated and will not require decontamination.

3.3 FIELD QUALITY CONTROL AND DOCUMENTATION

Samples will be kept in sight of the sampling crew or in a secure, locked vehicle at all times. Transfer of samples from sampler custody to the laboratory will be documented using chain-of-custody procedures. If someone other than the sample collector transports samples to the laboratory, the collector will sign and date the Chain-of-Custody Record and insert the name of the person or firm transporting the samples under "transported by" before sealing the container with a Custody Seal.

Field personnel will record required field information for each sampling location. The person recording the data will review all data and log forms daily, so that any errors or omissions can be corrected. All completed data sheets will be removed daily from the field, photocopied, and stored in the project file.

3.4 LOCATION CONTROL

Newly-installed monitoring wells will be surveyed by a licensed surveyor to determine their coordinates, existing ground surface elevation, and elevation for the top of the PVC well casing and protective monument for the monitoring wells. All elevations will be referenced to the datum used for the existing wells. Boring locations will be surveyed using GPS and/or by measuring distances from existing base map features.

3.5 INVESTIGATION-DERIVED WASTE

Purge and rinsate water generated during monitoring and sampling events will be transferred to the groundwater treatment system settling tank for processing.

All soil waste derived during this investigation will be placed in proper containers, labeled, and disposed of or treated in accordance with appropriate waste regulations. Characterization of the waste will be derived from the results of the samples collected.

APPENDIX F

QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN

CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

Prepared For:

CONOCOPHILLIPS COMPANY
ATLANTIC RICHFIELD COMPANY

FEBRUARY 2011
REF. NO. 070496 (3) (APP-F)
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1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) establishes quality control (QC) procedures and quality assurance (QA) criteria to meet the data quality objectives (DQOs) set forth for the media sampling (soil, groundwater and surface water) to be conducted at the Site. This QAPP was developed in accordance with the *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies* (Department of Ecology, 2004).

2.0 DATA QUALITY OBJECTIVES

The DQOs for the media sampling are to obtain data in a manner such that the data are of known, appropriate, and sufficient quality to support an accurate assessment of the quality of soil, groundwater and surface water at the Site. Analytical DQOs also include obtaining data that are technically sound and properly documented; having been evaluated against established criteria for the principle data quality indicators (DQIs) (i.e., precision, accuracy, representativeness, completeness, and comparability [PARCC]) as defined in Ecology (Ecology 2001) and USEPA guidance (USEPA 1998).

The following information will be provided by the analytical laboratory to ensure that the analytical DQOs are accomplished:

- Method blank analyses will be reported for every 20 samples and the concentration of all compounds of interest identified in those blanks;
- Surrogate spike recovery data will be reported including the name and concentration of all compounds added, percent recoveries, and range of recoveries;
- Matrix spike recovery data will be reported including name and concentration of all compounds added, percent recoveries, and range of recoveries;
- Matrix duplicate analyses will be reported;
- Relative retention times for each analyte detected in the samples;
- Internal laboratory data, including sample storage, extraction, and preparation logs;
- Instrument calibration logs; and,
- Quantitative reports for all analyses performed.

3.0 QUALITY CONTROL PROCEDURES

This section describes the procedures that will be implemented to:

- Ensure sample integrity from the time of sample collection to the time of analysis in the laboratory;
- Obtain the appropriate chemical data;
- Collect field and laboratory QC samples;
- Monitor performance of the laboratory and field measurement systems;
- Correct any deviations from the methods or QA requirements established in this QAPP; and,
- Report and validate the data.

3.1 SAMPLE COLLECTION

Sample locations and sample collection methods are identified in the Sampling and Analysis Plan (Appendix E). Sampling procedures and protocols are based on proven and acceptable sampling methods. This section describes the procedures for sample collection required to meet the DQOs described in Section 2.0.

Soil and groundwater samples will be submitted to laboratory accredited by the Washington State Department of Ecology for the analysis outlined in the SAP.

3.1.1 SAMPLE DOCUMENTATION

Sampling activities will be documented in the field on appropriate forms and / or in field notebooks at the time of sampling. Each sample will be appropriately labeled and documented on a Chain-of-Custody Record as described below.

3.1.2 EQUIPMENT DECONTAMINATION

Sampling equipment will be properly decontaminated prior to collection of each sample to avoid cross-contamination between samples. Decontaminated sampling equipment will be handled in a manner that minimizes contact with potentially contaminated surfaces. Specific procedures for sampling equipment decontamination are presented in the SAP.

3.1.3 FIELD EQUIPMENT CALIBRATION AND PREVENTATIVE MAINTENANCE

Field instruments will be properly operated, calibrated, and maintained by qualified personnel according to the manufacturer's guidelines and recommendations. Documentation of routine and special preventive maintenance and calibration information will be maintained in a field log book. Each maintenance and calibration log book entry will include the date and initials of the individual performing the activity.

3.2 SAMPLE HANDLING

This section describes the procedures for sample handling following sample collection.

3.2.1 SAMPLE PRESERVATION AND STORAGE

Samples submitted to the analytical laboratories will be collected in the appropriate sample containers and preserved according to laboratory and method specifications. For TPH-G and BTEX analysis, the samples will be collected using USEPA Method 5035A to minimize the loss of volatiles. Samples will be stored on ice and delivered to the analytical laboratory.

3.2.2 SAMPLE CUSTODY

The primary objective of sample custody is to create an accurate, written record that can be used to trace the possession and handling of samples so that their quality and integrity can be maintained from collection until completion of all required analyses. Adequate sample custody will be achieved by means of approved field and analytical documentation. Such documentation includes the Chain-of-Custody Record, which is initially completed by the sampler, and is thereafter signed by those individuals who accept custody of the sample. A sample will be considered in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up or secured in a locked container or otherwise sealed so that any tampering would be evident;
- Kept in a secured area, restricted to authorized personnel only; and,

Sample control and chain-of-custody in the field and during transport to the laboratory will be conducted in general conformance with the procedures described in the following sections.

3.2.3 FIELD CUSTODY PROCEDURES

The following field custody procedures will be followed:

- As few persons as possible will handle samples;
- The sample collector will be personally responsible for the completion of the Chain-of-Custody Record and the care and custody of collected samples until they are transferred to another person, or dispatched properly under chain-of-custody rules; and,
- The Site Field Geologist / Engineer will oversee implementation of the field custody procedures and in the event of noncompliance will determine if corrective action is required.

3.2.4 SAMPLE SHIPMENT CUSTODY PROCEDURES

The following sample shipment custody procedures will be followed:

- The coolers will be shipped or hand-delivered to the analytical laboratory, accompanied by the Chain-of-Custody Record. If shipped, the original Chain-of-Custody and laboratory copy will accompany the shipment (sealed inside the shipping container); and,
- The sample collector will sign the Chain-of-Custody Record in the first signature space. When samples are transferred, the individuals relinquishing and receiving the samples will sign the Chain-of-Custody Record and document the date and time of transfer. Each person taking custody will observe whether the shipping container is correctly sealed and in the same condition as noted by the previous custodian.

3.2.5 LABORATORY CUSTODY PROCEDURES

A designated sample custodian at the laboratory will accept custody of the shipped samples and certify that the sample identification numbers match those on the Chain-of-Custody Record. If containers arrive broken or mislabeled, the laboratory will note this on the Chain-of-Custody Record and will immediately notify the project manager. The laboratory will maintain sample security and custody as appropriate and as outlined in the laboratory's QAPP.

3.2.6 SAMPLE PACKAGING AND SHIPPING

The transportation and handling of samples will be accomplished in a manner that not only protects the integrity of the samples, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the US Department of

Transportation in the Code of Federal Regulations (CFR), 49 CFR 173.6 and 173.24 (USDOT 2002a, 2002b).

Prior to shipping, samples will be placed on ice in coolers following collection. In preparation for shipping samples, the drain plug will be taped shut, and a large plastic bag will be used as a liner for the cooler. When appropriate, approximately one inch of packing material will be placed in the bottom of the liner.

The sample bottles will be placed in the cooler containing ice. Samples will be packaged carefully to avoid breakage or cross contamination using sufficient packing material and will be shipped to the off-Site analytical laboratory at the proper temperature (4°C). The Chain-of-Custody Record accompanying the samples to the laboratory will be placed inside a separate plastic bag and taped inside the cooler lid.

The cooler will be sealed with a custody seal and taped shut. Samples will be transported to the laboratory. The cooler will either be shipped to the laboratory by an overnight carrier or hand-delivered by the field personnel.

3.3 SAMPLE ANALYSIS AND TESTING

Soil and groundwater samples selected for chemical analysis outlined in the SAP. The laboratory internal QAPP and standard operating procedures (SOPs) will provide industry standard data quality procedures.

3.4 FIELD QUALITY CONTROL SAMPLES

Field QC samples will be collected to evaluate data precision and representativeness. Collection of field QC samples will allow identification of potential problems resulting from sample collection and/or sample processing in the field. A summary of the field QC samples and the frequency at which they will be collected and/or analyzed is described in the following subsections.

3.4.1 BLIND FIELD DUPLICATE

A blind field duplicate will be collected at a frequency of at least one per 20 samples per sample media (i.e., soil or groundwater), excluding QC samples. The blind field duplicate sample will consist of a split sample collected at a single sample location. Split samples will be submitted blind to the laboratory as discrete samples with fictitious sample IDs. These blind field duplicate sample results will be used to evaluate data precision.

3.5 LABORATORY QUALITY CONTROL SAMPLES

Analytical laboratory QC samples will be collected to evaluate data precision, accuracy, representativeness, completeness, and comparability of the analytical results for this investigation. Lab QC samples will be of the type and frequency specified in the governing Ecology and USEPA analytical procedures.

3.6 DATA VALIDATION AND REPORTING

Analytical reports from the laboratory for this project will be accompanied by sufficient backup data and QC results to enable reviewers to determine the quality of the data. the laboratory reports will be reviewed for internal consistency, transmittal errors, laboratory protocols, and for adherence to the QC elements specified in this QAPP at a "Level 1" (basic) review. The Level 1 Data Validation will include the following:

- Reviewing the sample holding times;
- Verifying sample numbers and analyses match those requested on the Chain-of-Custody Record;
- Verifying the required reporting limits have been achieved;
- Verifying the field duplicates, matrix spikes/matrix spike duplicates, and lab control samples were analyzed at the proper frequency;
- Verifying the surrogate compound analyses have been performed and meet QC criteria; and,
- Verifying the lab blanks are free of contaminants.

If jointly decided upon by Ecology and ConocoPhillips, data that appear to have significant deficiencies will be validated using the more comprehensive Level 2 verification and review in accordance with the USEPA functional guidelines for data validation (USEPA, 1999). Following this review, data qualifiers assigned by the laboratory may be amended, as necessary.

4.0 QUALITY ASSURANCE CRITERIA

This section describes the DQIs and the associated QA criteria that will be used to ensure the data meet the DQOs identified in Section 2.0. DQIs are quantitative statistics and qualitative descriptors used in interpreting the degree of acceptability or utility of the data (USEPA 1998). The principal DQIs include the precision, accuracy, representativeness, comparability, and completeness (PARCC parameters). Secondary DQIs include quantitation limits, sensitivity, repeatability, reproducibility, recovery, and memory effects. Acceptance criteria for the DQIs and the quantitation limits have been established to set quantitative goals for the quality of data generated in the analytical measurement process.

4.1 PARCC PARAMETERS/LIMITS

The statistical tests and target control limits (the range within which project data of acceptability should fall) for the PARCC parameters are described below. The target control limits will be used to evaluate data acceptability and are considered to be QC goals for data acceptance.

4.1.1 PRECISION

Precision is a measure of mutual agreement among individual measurements of the same property under prescribed conditions. Precision is best expressed in terms of the standard deviation or relative percent difference (RPD). QA/QC sample types that test precision include field and laboratory duplicates and matrix or blank spike duplicates.

The estimate of precision of duplicate measurements will be expressed as an RPD value, which is calculated:

$$RPD = \left| \frac{D_1 - D_2}{(D_1 + D_2) \div 2} \right| \times 100$$

D1 = first sample value

D2 = second sample value (duplicate)

The RPD values for duplicates will be calculated and compared with the laboratory's internal control limits. If control limits are exceeded, the analytical laboratory will perform the required re-extraction / re-analysis. If duplicate sample values are within five times the quantitation limit, then the control limit interval will be plus or minus two times the quantitation limit.

4.1.2 ACCURACY

Accuracy is the degree of agreement of a measurement (or an average of measurements of the same property) X, with an accepted reference or true value T, usually expressed as the difference between the two values (X-T), the difference as a percentage of the reference or true value (100 (X-T)/T), or as a ratio (YJT). Accuracy is a measure of the bias in a system and is expressed as the percent recovery of spiked (matrix, surrogate spike, or laboratory control spike) samples:

$$\text{Percent Recovery} = \frac{(\text{Spiked Sample Results} - \text{Unspiked Sample Results})}{\text{Amount of Spike Added}} \times 100$$

The target control limits for percent recovery values are specified in the governing Ecology and USEPA analytical methodologies. The percent recovery value will be calculated by the laboratory and checked against the laboratory internal or method-specific control limits. If control limits are exceeded, the analytical laboratory will perform the required re-extraction / re-analysis.

4.1.3 REPRESENTATIVENESS

Representativeness expresses the degree to which data accurately and precisely represent an actual condition or characteristic of a population. Representativeness can be evaluated using replicate samples, representative sampling locations, and blanks. Representativeness for the sampling will be accomplished using appropriate selection of sampling location and analyzing method blanks to verify that the analytical results have not been influenced by cross-contamination.

4.1.4 COMPLETENESS

Completeness is a measure of the proportion of data obtained from a sampling event that is determined to be valid. It is calculated as the number of valid data points divided by the total number of data points requested. The QA objective for completeness during this project will be 95 percent.

4.1.5 COMPARABILITY

Comparability is an expression of the confidence with which one data set can be compared to another. QA procedures in this document will provide for measurements that are consistent and representative of the media and conditions measured. All sampling procedures and analytical methods will be consistent to provide comparability of results for samples and split samples. Data collected under this QAPP also will be calculated, qualified, and reported in micrograms per liter (µg/L)

for water and milligrams per kilograms (mg/kg) for soil. These units have been selected to provide for comparability of the data with previously generated relevant Site data and pertinent criteria.

4.2 QUANTITATION LIMITS

The quantitation limits (reporting limits) for each chemical analysis that is described in Section 3.3 are targeted to be less than Model Toxics Control Act (MTCA) Method A cleanup levels. Target reporting limits are the lowest possible reporting limits for each method as performed by the laboratory. The reporting limits listed below, are goals only, to the degree that instances may arise where high sample concentrations, non-homogeneity of samples, or matrix interferences preclude achieving the desired reporting limit and associated QC criteria. In such instances, the laboratory will report the reasons for deviations from these quantitation limits.

Desired Laboratory Reporting Limits for water:

- TPH-G (13.4 µg/L)
- TPH-D (0.037 µg/L)
- TPH-O (0.061 µg/L)
- Benzene (0.12 µg/L)
- Toluene (0.21 µg/L)
- Ethylbenzene (0.20 µg/L)
- Total Xylenes (0.15 µg/L)
- MTBE (0.16 µg/L)
- Ethanol (58.18 µg/L)

Desired Laboratory Report Limits for soil:

- TPH-G (0.2 mg/kg)
- TPH-D (7.3 mg/kg)
- TPH-O (27 mg/kg)
- Benzene (0.0057 mg/kg)
- Toluene (0.0065mg/kg)
- Ethylbenzene (0.0055 mg/kg)
- MTBE (0.0098 mg/kg)
- Ethanol (0.3 mg/kg)
- Total Lead (0.3 mg/kg)

APPENDIX G

HEALTH AND SAFETY PLAN

SITE-SPECIFIC
HEALTH AND SAFETY PLAN

ConocoPhillips Renton Terminal
2423 Lind Ave. SW
Renton, Washington

Prepared For:

CONOCOPHILLIPS

DECEMBER 2010
REF. NO. 070496 (1)

Prepared by:
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Health and Safety Plan
Signature Page

Site Name: ConocoPhillips Renton Terminal

Location address: 2423 Lind Ave. SW, Renton, Washington

Ref. No.	070496	CRA Office:	Tacoma, Washington
Anticipated Start Date:	12/1/10	Anticipated Project Duration:	10+ Years
Prepared By (Signature):		Date:	
Project Manager (Signature):		Date:	
Reviewed By (Signature:)		Date:	12/3/10

This signature page must be completed and be available on site for review. This page does not however replace the QSF-016 requirements.

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this site-specific health and safety plan (HASP) is to provide specific guidelines and establish procedures for the protection of personnel performing the activities described in Section 2.0 — Site Operations. The information in this HASP has been developed in accordance with applicable standards and is, to the extent possible, based on information available to date. The HASP is also a living document in that it must continually evolve as site conditions and knowledge of the site work activities develop.

A vital element of Conestoga-Rovers & Associates' (CRA's) Health and Safety Policies and Procedures is the implementation of a site-specific HASP for field activities. This HASP, as applicable to this project, includes the following measures:

- Communicate the contents of this HASP to site personnel.
- Eliminate unsafe conditions. Efforts must be initiated to identify conditions that can contribute to an accident and to remove exposure to these conditions.
- Utilize the STAR (Stop, Think, Act, and Review) process before beginning any activity/task/job, after an incident, and/or any unusual circumstances. Stop activities to think about the task, analyze the task hazards and determine methods to reduce risk and review the results with affected personnel.
- Revise or develop Job Safety Analysis (JSA) tables for activities. Supervisors and affected personnel are responsible for JSA development. A blank JSA form has been included within Appendix B of this HASP.
- Behavioral Based Safety observations via the use of the Safe Task Evaluation Process (STEP). The STEP form is included as Appendix D of this HASP.
- Reduce unsafe acts. Personnel shall make a conscious effort to work safely. A high degree of safety awareness must be maintained so that safety factors involved in a task become an integral part of the task. Supervisory personnel shall ensure that personnel committing unsafe acts are held accountable via counseling, mentoring and, if necessary, reprimand.
- Inspect frequently. Regular safety inspections of the work site, materials, and equipment by qualified persons ensure early detection of unsafe conditions. Safety and health deficiencies shall be corrected as soon as possible, or project activities shall be suspended. Documentation of daily inspections and corrective actions should be kept with the project files.

1.2 STOP WORK AUTHORITY

All CRA employees are empowered and expected to stop the work of co-workers, subcontractors, client employees, or other contractors if any person's safety or the environment are at risk. NO repercussions will result from this action.

The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the removal of site personnel from that area and reevaluation of the hazard and the levels of protection.

1.3 PERSONNEL REQUIREMENTS

All personnel conducting activities on site must conduct their activities in compliance with all applicable Safety and Health legislation throughout North America to include, but not limited to, the Occupational Safety and Health Administration (OSHA) 29 CFR 1910, 29 CFR 1926, and CRA policies and procedures. **Project personnel must also be familiar with the procedures and requirements of this HASP**. In the event of conflicting safety procedures/requirements, personnel must implement those safety practices which afford the highest level of safety and protection.

Employees identified as CRA Short Service Employees (6 months or less) shall not be permitted to work without another non-short service CRA employee present.

1.4 PROJECT MANAGEMENT AND SAFETY RESPONSIBILITIES

Project Manager –CRA- Edwin Turner

The CRA Project Manager (PM) shall be responsible for the overall implementation of the HASP, and for ensuring that all health and safety responsibilities are carried out in conjunction with this project. This shall include, but is not limited to, review and approval of the HASP; ensuring that the STEP forms are completed properly; qualifying/directing subcontractors relative to safety and health performance; coordinating all safety and health submittals; and consultation with the site supervisor (SS) regarding appropriate changes to the HASP. The PM will also ensure the appropriate resources are provided to support the project with respect to all operations.

Site Supervisor – CRA– Matthew Davis

The SS is the person who, under the supervision of the project manager, shall be responsible for the communication of the site requirements to site project personnel and subcontractors, and is responsible for carrying out the health and safety responsibilities by making sure that:

1. All necessary cleanup and maintenance of safety equipment is conducted by project personnel.
2. Emergency phone numbers/services including hospital/clinic locations are verified/contacted.
3. Site personnel are implementing the STAR process before initiating activities.
4. JSA tables are developed/revised accordingly.
5. Forms attached to the HASP are completed, filed, and submitted correctly.
6. A pre-entry briefing is conducted and documented, which will serve to familiarize on-site personnel with the procedures, requirements, and provisions of this HASP.

Other duties include overall implementation of the HASP, and ensuring all health and safety responsibilities are carried out in conjunction with this project. This shall include, but is not limited to, review and approval of the HASP, communication of site requirements to subcontractor personnel, and consultation with the client/site representative regarding appropriate changes to the HASP.

The SS also has the responsibility of enforcing safe work practices for project employees. The SS watches for any ill affects on any crew member, especially those symptoms caused by cold/heat stress or chemical exposure. The SS oversees the safety of any visitors who enter the site. The SS maintains communication with the client/site representative(s).

Other specific duties of the SS include:

- Orders the immediate shutdown and/or stop work of site activities in the case of a medical emergency, unsafe condition or unsafe practice.
- Provides the safety equipment, personal protective equipment (PPE), and other items necessary for employees.
- Enforces the use of required safety equipment, PPE, and other items necessary for employee or community safety.

- Conducts job site inspections as a part of quality assurance for safety and health.
- Reports safety and health concerns to site and/or project management as necessary.

Regional Safety & Health Manager - CRA – Aaron Autsen

The Regional Safety & Health Manager (RSHM) is a full-time CRA employee who is trained as a health and safety professional, who serves in a consulting role to the PM and SS regarding potential health and safety issues.

Employee Safety Responsibility

CRA employees are responsible for their own safety as well as the safety of those around them. CRA employees shall use any equipment provided in a safe and responsible manner, as directed by their supervisor.

Employees are directed to take the following actions when appropriate:

- Suspend any operations which may cause an imminent health hazard to employees, subcontractors, or others. This is known as Stop Work Authority (SWA).
- Utilize the STAR process before initiating work.
- Assist in the development/revision of JSA tables that are appropriate to their current scope of work.
- Preparation, submission, and review of Behavior Based Safety observations via usage of the STEP form. The STEP form is to be used in conjunction with the appropriate JSA to identify positive aspects of task performance as well as to identify any deficiencies associated with the observed task.
- Inspect tools and other equipment before each use or as manufacturer and/or OSHA dictates.
- Correct job site hazards when possible to do so without endangering life or health.
- Report safety and health concerns to the SS, PM, or RSHM.

Subcontractors - CRA subcontractors are responsible for the development and implementation of their own Site specific HASP and agree to comply with its contents. In the event of conflicting safety procedures/requirements, personnel must implement those safety practices, which afford the highest level of safety and protection. In addition, it is also understood that non-compliance with health and safety policies and procedures may subject the subcontractor to disciplinary action up to and including termination of their contract with CRA. Subcontractors will be required to attend an initial site orientation and attend subsequent safety meetings.

All subcontractor personnel working at the Site will report to the CRA SS and, in keeping with OSHA requirements are required to comply with all procedures referenced in this HASP, the subcontractor HASP, and OSHA regulations.

Equipment Operators - All equipment operators are responsible for the safe operation of heavy equipment. Operators are responsible for inspecting their equipment on a daily basis to ensure safe performance. Brakes, hydraulic lines, backup alarms, and fire extinguishers must be inspected routinely throughout the project. Equipment will be taken out of service if an unsafe condition occurs.

Authorized Visitors - As approved by ConocoPhillips, shall be provided with all known information with respect to the site operations and hazards as applicable to the purpose of their visit. In addition, all visitors must meet ConocoPhillips Renton Terminal site requirements, as discussed in Section 7.7.

1.5 TRAINING AND MEDICAL SURVEILLANCE REQUIREMENTS

All personnel conducting work at this Site with a reasonable potential for exposure to Site contaminants will have completed the appropriate health and safety training as applicable to their job tasks/duties. The required training is referenced throughout the HASP and is also identified on each Job Safety Analysis table presented in Appendix B. All project personnel, including subcontractor personnel, are also required to view the ConocoPhillips Safety Video and then sign the ConocoPhillips video and HASP Acknowledgement Forms. In addition, since work is being conducted at a ConocoPhillips transportation facility, it is necessary for all project personnel, subcontractors, and site visitors to meet ConocoPhillips Renton Terminal requirements, which may include attending a safety orientation specific for this Site prior to performance of any work activities.

At a minimum, project personnel will have completed 40 hours of OSHA Hazardous Waste Operations and Emergency Response training and be current with their 8-hour refreshers in accordance with 29 CFR 1926.65(e). CRA personnel and all subcontractor personnel engaging in field activities shall also participate in a medical monitoring program in accordance with 29 CFR 1926.65(f).

1.5.1 SITE SPECIFIC TRAINING

An initial ConocoPhillips Renton Terminal specific site orientation shall be given by the Terminal operator for first time personnel.

An initial project and site-specific training session or briefing shall be conducted by the PM or SS prior to commencement of work activities. During this initial training session, employees shall be instructed on the following topics:

- personnel responsibilities;
- content and implementation of the HASP;
- site hazards and controls;
- site-specific hazardous procedures;
- training requirements;
- PPE requirements;
- emergency information, including local emergency response team phone numbers, route to nearest hospital, accident reporting procedures, and emergency response procedures;
- instruction in the completion of required inspections and forms;
- location of safety equipment (e.g., portable eyewash, first aid kit, fire extinguishers, etc.); and
- ConocoPhillips site requirements.

The various components of the project HASP will be presented followed by an opportunity to ask questions to ensure that each attendee understands the HASP. Personnel will not be permitted to enter or work in potentially contaminated areas of the site until they have completed the site-specific training session. Personnel successfully completing this training session shall sign the HASP Training Acknowledgement Form, which is presented in Appendix A.

In addition to the initial site briefing conducted at the commencement of the project, supplemental brief safety meetings shall be conducted by the SS to discuss potential health and safety hazards associated with upcoming tasks and necessary precautions to be taken.

1.5.2 SAFETY MEETING/HEALTH AND SAFETY PLAN REVIEW

"Tailgate" safety meetings will take place each day prior to beginning the day's work. All site personnel will attend these safety meetings conducted by the SS. The safety meetings will cover specific health and safety issues, site activities, changes in site conditions, and a review of topics covered in the site-specific pre-entry briefing. The safety meetings will be documented with written sign-in sheets containing a list of topics discussed. This form is found in Appendix A.

2.0 SITE OPERATIONS

2.1 SITE HISTORY/BACKGROUND

Mobil (the predecessor to ExxonMobil) began terminal operations at the property in 1968. In 1988, British Petroleum Exploration and Oil (BP) purchased the facility. In 1993, Tosco Corporation (ConocoPhillips) purchased the facility and has operated the facility as a bulk fuel terminal since.

Petroleum impacted soil was discovered in 1986 while removing an UST in the vicinity of the loading racks. A product recovery system was installed and began operation in 1987 to recover free product underneath the site in the vicinity of the loading racks. In 1991, a groundwater treatment system was installed on the site to address the ExxonMobil spill.

In November 2002, a release of approximately 14,800 gallons of super-unleaded gasoline from tank 2 in the south-central portion of the property was reported. Free product recovery was implemented immediately and a subsequent dual-phase extraction/soil vapor extraction system was installed in 2003.

On Agust 5, 2010, the Washington State Department of Ecology (Ecology) issued an Agreed Order (DE 722) between Ecology, ExxonMobil, and ConocoPhillips to combine and expedite sitewide cleanup efforts.

2.2 SCOPE OF WORK

This HASP covers the specific site activities that will be conducted by CRA personnel and their subcontractors. These activities are as follows:

- mobilization and demobilization of personnel, materials and equipment to/from the site;
- collection of soil and groundwater samples;
- monitoring well installations;
- gaging of monitoring wells;
- operation and maintenance activities of the two remediation systems that includes the following, but is not limited to: collecting influent and effluent groundwater

samples; vapor sampling; filter change-outs; moving and handling drums; carbon change-outs; and equipment maintenance and repairs;

- decontamination of personnel and reusable equipment.

If site operations are altered or if additional tasks are assigned, an addendum to this HASP shall be developed to address the specific hazards associated with these changes. **All addenda are to be developed in conjunction with project management and a CRA safety professional.**

3.0 HAZARD EVALUATION

This section identifies and evaluates the potential chemical, physical, and biological hazards, which may be encountered during the completion of this project. Specific activity Job Safety Analysis (JSA) tables (located in Appendix B) have been developed to address the hazards associated with the site operations outlined in Section 2.0. New JSAs will be developed on an as necessary basis if a JSA for that specific task is not available in the HASP. Additionally, current JSAs will be modified/customized in the field to ensure that the task specific requirements are addressed each time the task is performed.

3.1 CHEMICAL HAZARDS

The chemical hazards associated with conducting site operations include the potential exposure to on-site contaminants encountered during field activities such as monitoring well and soil boring installations, soil and groundwater and sampling, products used in decontamination of equipment, and support products such as fuel. The potential routes of exposure from these products during normal use may occur through inhalation of vapors/dusts or direct contact or absorption with the materials. The chemical hazards of concern that may be encountered during the tasks are identified in Table 1.0, and in the Material Safety Data Sheets (MSDS) located in Appendix C, which includes exposure limits, signs, and symptoms of exposure, chemical properties and physical characteristics.

3.1.1 CHEMICAL HAZARD CONTROLS

Exposure to potential on-site contaminants/chemicals, such as those listed in Table 1.0 and Appendix C – MSDSs, shall be controlled by:

- Monitoring air concentrations for volatile organic vapors shall be conducted in the breathing zone utilizing a PID or FID (refer to Section 5.0 for details regarding air monitoring).
- Revision of JSAs to list chemical hazards and associated hazard controls on a task specific basis.
- Dust control measures, such as wetting the immediate area, shall be employed.
- Using PPE/respiratory protection as appropriate, in areas known to have concentrations above the specified action level for each contaminant.

Monitoring can reduce risks by indicating when action levels have been exceeded, and PPE must be upgraded. Action levels are located in Section 5.0.

3.1.2 SKIN CONTACT AND ABSORPTION CONTAMINANTS

Skin contact with chemicals may be controlled by use of the proper PPE and good housekeeping procedures. The proper PPE (e.g., Tyvek, gloves) as described in Section 4.0 shall be worn for all activities where contact with potentially harmful media or materials is anticipated. Utilize manufacturer data on permeation and degradation to minimize skin contact potential (see Section 4.2.1 for additional information).

3.1.3 HAZARD COMMUNICATION

Personnel required to handle or use hazardous materials as part of their job duties will be trained and educated in accordance with the Hazard Communication standard as applicable. The training shall include instruction on the safe usage, and handling procedures of hazardous materials, how to read and access MSDSs, and the proper labeling requirements.

3.2 PHYSICAL HAZARDS

Physical hazards that may be present during project work include: noise, use of hand tools, slip/trip/hit/fall injuries, electrical energy, hazardous energy, vehicle traffic, heavy lifting, biological hazards, heat stress, and other potential adverse weather conditions. In addition, personnel must be aware that the protective equipment worn may limit dexterity and visibility and may increase the difficulty of performing some tasks.

3.2.1 HEAVY EQUIPMENT AND DRILLING SAFETY

Heavy Equipment

The following practices shall be adhered to by personnel operating heavy equipment (such as backhoes) and personnel working in the vicinity of heavy equipment:

- Heavy equipment is to be inspected when equipment is initially mobilized, delivered to a job site, or after it is repaired and returned to service, to ensure that it

meets all manufacturer and OSHA specifications (e.g., fire extinguishers, backup alarms, etc.).

- Heavy equipment is to be inspected on a daily basis. Documentation of this daily pre-operational inspection is to be filed with the project files.
- Heavy equipment is only to be operated by authorized, competent operators.
- Seat belts are to be provided on heavy equipment that is not designed for stand-up operation.
- Equipment/vehicles whose payload is loaded by crane, excavator, loader, etc. will have a cab shield and/or canopy to protect the operator.
- Personnel will not be raised/lowered in buckets.
- Personnel will not ride on fender steps or any place outside the cab.
- Before leaving the equipment controls, ensure that the equipment is in its safe resting position. For a backhoe, apply the parking brake, put the front loader bucket down on the ground level, and ensure that the rear excavator bucket is locked in the travel position. Bulldozers and scraper blades, loader buckets, dump bodies, and similar equipment will be fully lowered or blocked when not in use.
- Before raising any booms, buckets, etc., check for overhead obstructions.
- Employees involved in the operation shall not wear any loose-fitting clothing, as it has the potential to be caught in moving machinery.
- Personnel shall wear high visibility safety vests, steel toed shoes, safety glasses, hearing protection, and hard hats during heavy equipment operations.
- When moving heavy equipment or when working within 10 feet of a stationary object or in tight quarters, a spotter will be used.

Drilling Equipment

The following practices shall be adhered to by drilling personnel:

- Equipment should be inspected daily by the operator to ensure that there are no operational problems.
- The kill switch will be function-checked and verified to be operational during the documented daily equipment check.
- Personnel shall be instructed in the location and use of the emergency kill switch on the drill rig.
- Employees involved in the operation shall not wear any loose-fitting clothing, including untied shoe/boot laces, draw strings, etc., which have the potential to be caught in moving machinery.

- Before leaving the controls, shift the transmission controlling the rotary drive into neutral and place the feed lever in neutral. Before leaving the vicinity of the drill, shut down the drill engine.
- Before raising the mast, check for overhead obstructions.
- Before the mast of a drill rig is raised, the drill rig must first be leveled and stabilized with leveling jacks and/or cribbing. Re-level the drill rig if it settles after initial setup. Lower the mast only when the leveling jacks are down, and do not raise the leveling jack pads until the mast is lowered completely.
- During freezing weather, do not touch any metal parts of the drill rig with exposed flesh. Freezing of moist skin to metal can occur almost instantaneously.
- Personnel shall wear steel toed shoes, safety glasses, hearing protection, and hard hats during drilling operations.
- The area shall be roped off, marked, or posted to keep the area clear of pedestrian traffic or spectators.

3.2.2 NOISE

Project activities that include working in close proximity to the remediation systems or using power tools, that generate noise levels exceeding the decibel range of 85 dBA will require the use of hearing protection with a Noise Reduction Rating (NRR) of at least 20. Hearing protection (earplugs/muffs) will be available to personnel and visitors that would require entry into these areas.

When it is difficult to hear a coworker at normal conversation distance, the noise level is approaching or exceeding 85 dBA, and hearing protection is necessary. All site personnel who may be exposed to high noise levels will participate in CRA's Hearing Conservation Program.

3.2.3 VEHICLE TRAFFIC AND CONTROL

The following safety measures are to be taken by CRA personnel that have the potential to be exposed to vehicle traffic:

- A high visibility safety vest meeting American National Standards Insititute (ANSI) Class II garment requirements is to be worn at all times.
- Employees will work using the "buddy system".

- Cones, etc. will be used to demarcate a safe work zone around active work area(s).
- Appropriate signage will be posted as necessary to inform roadway/parking lot users of any additional control measures necessary to protect the public and CRA employees.

3.2.4 MATERIAL HANDLING AND STORAGE

Material handling and storage practices to be conducted at the project site include manual lifting of materials and possibly the use of hoisting and rigging equipment. As a rule, use mechanical means for lifting heavy loads whenever possible.

General Storage Practices

The basic safety requirement for storage areas is that the storage of materials and supplies shall not create a hazard. Additional general storage area practices include the following:

- Bags, containers, bundles, etc. stored in tiers shall be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.
- All stacked materials, cargo, etc. shall be examined for sharp edges, protrusions, signs of damage, or other factors likely to cause injury to persons handling these objects. Defects should be corrected as they are detected.
- Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage.
- Storage areas shall have provisions to minimize manual lifting and carrying. Aisles and passageways shall provide for the movement of mechanical lifting and conveyance devices.
- Stored materials shall not block or obstruct access to emergency exits, fire extinguishers, alarm boxes, first aid equipment, lights, electrical control panels, or other control boxes.
- "NO SMOKING" signs shall be conspicuously posted, as needed, in areas where combustible or flammable materials are stored and handled.

Cylindrical materials such as pipes and poles shall be stored in racks or stacked on the ground and blocked.

Special Precautions for Hazardous or Incompatible Materials Storage

Generally, materials are considered hazardous if they are ignitable, corrosive, reactive, or toxic. Manufacturers and suppliers of these materials must provide the recipient with MSDSs, which describe their hazardous characteristics and give instructions for their safe handling and storage.

Many hazardous materials are incompatible, which means they form mixtures that may have hazardous characteristics not described on the individual MSDSs. The following special precautions shall be followed regarding the storage of hazardous materials:

- Based on the information available on the MSDSs, incompatible materials shall be kept in separate storage areas
- Warning signs shall be conspicuously posted, as needed, in areas where hazardous materials are stored

3.2.5 MANUAL LIFTING

When lifting objects, use the following proper lifting techniques:

- Feet must be parted, with one foot alongside the object being lifted and one foot behind. When the feet are comfortably spread, a more stable lift can occur and the rear foot is in a better position for the upward thrust of the lift.
- Use the squat position and keep the back straight - but remember that straight does not mean vertical. A straight back keeps the spine, back muscles, and organs of the body in correct alignment. It minimizes the compression of the guts that can cause a hernia.
- Grip is one of the most important elements of correct lifting. The fingers and the hand are extended around the object you're going to lift - using the full palm. Fingers have very little power - use the strength of your entire hand.
- The load must be drawn close, and the arms and elbows must be tucked into the side of the body. Holding the arms away from the body increases the strain on the arms and elbows. Keeping the arms tucked in helps keep the body weight centered.

The body must be positioned so that the weight of the body is centered over the feet. This provides a more powerful line of thrust and also ensures better balance. Start the lift with a thrust of the rear foot. Do not twist your back while lifting or carrying heavy objects. Do not lift more than 50 pounds without getting assistance.

3.2.6 HAND AND POWER TOOLS

Hand Tools

- Hand tools must meet the manufacturer's safety standards.
- Hand tools must not be altered in any way.
- At a minimum, proper eye and hand protection must be used when working with hand tools.
- Hand tools must only be used for their intended purpose (always have the proper tool for the job).
- Wrenches (including adjustable, pipe, end, and socket wrenches) must not be used when jaws are sprung to the point that slippage occurs.
- Impact tools (such as drift pins, wedges, and chisels) must be kept free of mushroom heads.
- No open bladed cutting tools/implements will be permitted.
- Wooden handles must be free of splinters or cracks and secured tightly to the tool.
- Any damaged or defective tools must be immediately removed from service and tagged for destruction

Power Tools

- All power tools must be inspected regularly and used in accordance with the manufacturer's instructions and the tool's capabilities
- Electric tools must not be used in areas subject to fire or explosion hazards, unless they are approved for that purpose
- Portable electric tools must be connected to a Ground Fault Circuit Interrupter (GFCI) when working in wet areas
- Proper eye and hand protection must be used when working with power tools
- Personnel must be trained in the proper use of each specific tool
- Any damaged or defective power tools must be immediately tagged and removed from service

3.2.7 HOISTING AND RIGGING

Hoisting and rigging activities are not anticipated during site work. If the scope is adjusted to include these activities, stop work and contact the RHSM to update this plan.

3.2.8 CRANES AND HOISTS

The use of Cranes or Hoists are not anticipated during site work. If the scope is adjusted to include these activities, stop work and contact the RHSM to update this plan.

3.2.9 ELECTRICAL HAZARDS

Only qualified individuals will be allowed to perform work on electrical circuits or perform electrical work on equipment. No employee shall be permitted to work on any part of an electrical power circuit unless the person is protected against electric shock by de-energizing the circuit and grounding it, or ensuring that it has been locked and tagged out:

- All electrical wiring and equipment shall be a type listed by Underwriters Laboratories (UL) or Factory Mutual (FM) for the specific application.
- All installations shall comply with the National Electric Code (NEC) and the National Electric Safety Code (NESC).
- All electrical circuits shall be grounded according to NEC and NESC Code. GFCIs shall be used in the absence of properly grounded circuitry or when portable tools must be used around wet areas.
- Generators and like equipment will be grounded in accordance with NEC, unless exempted by NEC 250-6.
- All live wiring or equipment shall be guarded to protect all persons or objects from harm.

3.2.10 CONTROL OF HAZARDOUS ENERGY

Hazardous energy sources may be encountered during the servicing and maintenance of machines and equipment in which the unexpected energization or startup of the machines or equipment could cause injury to employees.

The minimum performance requirements to control hazardous energy and requires that employers develop and implement an energy control program. The elements of an energy control program are as follows:

- Lockout/tagout.
- Employee protection.
- Energy control procedure.
- Protective materials and hardware.
- Periodic inspections.
- Training and communication.
- Energy isolation.
- Employee notification.

Project personnel who are required to conduct operations and maintenance activities that will require the isolation of an energy hazard through the use of a Lockout/Tagout device shall follow the CRA program requirements and written procedures for that operation.

Employee Training

Employees authorized to attach and remove lockout/tagout devices shall be provided with initial training regarding the safe application, usage, and removal of such devices. Each authorized employee will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the associated energy, and the methods necessary for energy isolation and control.

All authorized employees will be provided with refresher training annually, or at more frequent intervals whenever the following conditions apply:

- There is a job assignment change.
- There is a change in machinery or equipment, or a process change that presents new hazards.
- There is a change in the energy control procedures.
- The supervisor has reason to believe that there are deficiencies in the employee's understanding of the following:

- The hazards associated with the energy that controls the machinery or equipment in the employee's work area.
- Application and removal procedures for lockout/tagout devices.

Employees who work in areas where lockout/tagout procedures are used shall receive initial and annual refresher training in the purpose and use of lockout/tagout devices and principles behind their use.

3.2.11 SLIP/TRIP/HIT/FALL

Slip/trip/hit/fall injuries are the most frequent of all injuries to workers. They occur for a wide variety of reasons, but can be minimized by the following prudent practices:

- spot check the work area to identify hazards;
- establish and utilize a pathway which is most free of slip and trip hazards;
- beware of trip hazards such as wet floors, slippery floors, and uneven surfaces or terrain;
- carry only loads which you can see over;
- keep work areas clean and free of clutter, especially in storage rooms and walkways;
- communicate hazards to on-site personnel;
- secure all loose clothing and ties, and remove jewelry while around machinery;
- report and/or remove hazards; and
- keep a safe buffer zone between workers using equipment and tools.

3.2.12 PORTABLE LADDERS

Employees who use ladders on work sites must be familiar with safe ladder usage.

- Use the 4-to-1 ratio. Place the ladder so its feet are 1 foot away from what it leans against for every 4 feet in height to the point where the ladder rests. Example: If the top of a 16-foot ladder leans against a wall, its feet should be placed 4 feet from the wall. The "fireman's method" is a convenient way of checking the angle of the ladder. Place your toes against the base of the ladder; fully extend both arms toward the side rail and parallel to the ground. When standing erect you should be able to hold the ladder's side rails.

- Do not use a ladder in a horizontal position as a runway or a scaffold.
- Do not place a ladder in front of a door that opens toward it unless the door is locked, blocked, or guarded by someone.
- Place a portable ladder so that both side rails have a secure footing. Provide solid footing on soft ground to prevent the ladder from sinking.
- Place the ladder's feet on a substantial and level base, not on a movable object.
- On uneven surfaces, use a block, wedge, or ladder foot.
- On wet or oily pavement, a smooth floor, or an icy or metal surface, the ladder footing must be lashed, blocked, or otherwise secured.
- Do not lean a ladder against unsafe backing, such as loose boxes or barrels.
- When using a ladder for access to high places, securely lash or otherwise fasten the ladder to prevent it from slipping.
- To gain access to a roof or elevated platform, extend the ladder at least three rungs (3 feet) above the point of support.

Ascending or Descending of Ladders

- Maintain three points of contact at all times when going up or down. If material must be handled, raise or lower it with a rope.
- Always face the ladder when ascending or descending.
- Maintain clean, dry footwear as much as possible to prevent slipping on the rungs.

3.2.13 HEAT STRESS

Recognition and Symptoms

Temperature stress is one of the most common illnesses that project personnel face when working during periods when temperatures and/or humidity are elevated. Acclimatization and frequent rest periods must be established for conducting activities where temperature stress may occur. Below are listed signs and symptoms of heat stress. Personnel should follow appropriate guidelines if any personnel exhibit these symptoms:

Heat Rash	Redness of skin. Frequent rest and change of clothing.
Heat Cramps	Painful muscle spasms in hands, feet, and/or abdomen. Administer lightly salted water by mouth, unless there are medical restrictions.
Heat Exhaustion	Clammy, moist, pale skin, along with dizziness, nausea, rapid pulse, fainting. Remove to cooler area and administer fluids.

Heat Stroke Hot dry skin; red, spotted or bluish; high body temperature of 104°F; mental confusion; loss of consciousness; convulsions or coma. Immediately cool victim by immersion in cool water. Wrap with wet sheet while fanning, sponge with cool liquid while fanning; treat for shock. **DO NOT DELAY TREATMENT. COOL BODY WHILE AWAITING AMBULANCE.**

Work Practices

The following procedures will be carried out to reduce heat stress:

- heat stress monitoring;
- acclimatization;
- work/rest regimes (schedule of breaks) – mandatory breaks scheduled in summer months or during high risk activities for heat stress;
- heat stress safety personal protective equipment (cool-vests, bandanas, etc.);
- liquids that replace electrolytes, water, and salty foods available during rest; and
- use of buddy system.

Acclimatization

The level of heat stress at which excessive heat strain will result depends on the heat tolerance capabilities of the worker. Each worker has an upper limit for heat stress beyond which the resulting heat strain can cause the worker to become a heat casualty. In most workers, appropriate repeated exposure to elevated heat stress causes a series of physiologic adaptations called acclimatization, whereby the body becomes more efficient in coping with the heat stress. Work/rest regimes planned as a component of project preparation and discussed during the daily tailgate safety meetings.

Worker Information and Training

All new and current employees who work in areas where there is a reasonable likelihood of heat injury or illness should be kept informed through continuing education programs (hazards, effects, preventative measures, drug/alcohol interaction, etc.).

3.2.14 COLD STRESS

Cold stress is similar to heat stress in that it is caused by a number of interacting factors including environmental conditions, clothing, workload, etc., as well as the physical and conditioning characteristics of the individual. Fatal exposures to cold have been reported in employees failing to escape from low environmental air temperatures or from immersion in low temperature water. Hypothermia, a condition in which the body's deep core temperature falls significantly below 98.6°F (37°C), can be life threatening. A drop in core temperature to 95°F (35°C) or lower must be prevented.

Air temperature is not sufficient to determine the cold hazard of the work environment. The wind chill must be considered as it contributes to the effective temperature and insulating capabilities of clothing. The equivalent chill temperature should be used when estimating the combined cooling effect of wind and low air temperatures on exposed skin or when determining clothing insulation requirements to maintain the body's core temperature.

The body's physiologic defense against cold includes constriction of the blood vessels, inhibition of the sweat glands to prevent loss of heat via evaporation, glucose production, and involuntary shivering to produce heat by rapid muscle contraction.

The frequency of accidents increases with cold temperature exposures as the body's nerve impulses slow down, individuals react sluggishly, and numb extremities make for increased clumsiness. Additional safety hazards include ice, snow blindness, reflections from snow, and possible skin burns from contact with cold metal.

Pain in the extremities may be the first early warning of danger to cold stress. During exposure to cold, maximum severe shivering develops when the body temperature has fallen to 95°F (35°C). This must be taken as a sign of danger to the employees on site, and cold exposures should be immediately terminated for any employee when severe shivering becomes evident. Useful physical or mental work is limited when severe shivering occurs.

Prevention of Cold Stress

There are a variety of measures that can be implemented to prevent or reduce the likelihood of employees developing cold related ailments and disorders. These include acclimatization, fluid and electrolyte replenishment, eating a well balanced diet, wearing warm clothing, the provision of shelter from the cold, thermal insulation of metal surfaces, adjusting work schedules, and employee education.

- **Acclimatization:** Acclimatization is the gradual introduction of workers into the cold environment to allow their bodies to physiologically adjust to cold working conditions. However, the physiological changes are usually minor and require repeated uncomfortably cold exposures to induce them.
- **Fluid and Electrolyte Replenishment:** Cold, dry air can cause employees to lose significant amounts of water through the skin and lungs. Dehydration affects the flow of blood to the extremities and increases the risk of cold injury. Warm, sweet, caffeine-free, non-alcoholic drinks and soup are good sources to replenish body fluids.
- **Eating a Well Balanced Diet:** Restricted diets including low salt diets can deprive the body of elements needed to withstand cold stress. Eat high-energy foods throughout the day.
- **Warm Clothing:** It is beneficial to maintain air space between the body and outer layers of clothing in order to retain body heat. However, the insulating effect provided by such air spaces is lost when the skin or clothing is wet.
- **Work/Rest Regimes:** Schedule work during the warmest part of the day, if possible. Rotate personnel and adjust the work/rest schedule to enable employees to recover from the effects of cold stress.

The parts of the body most important to keep warm are the feet, hands, head, and face. As much as 40 percent of body heat can be lost when the head is exposed.

3.2.15 HOT WORK HAZARDS

Hot work activities must be coordinated with the Terminal operator and proper permits must be in place prior to commencing hot work.

Personnel conducting hot work, including burning, pipe welding, cutting, brazing, grinding, or other activities capable of producing ignition sources, or personnel working in the vicinity of hot work, must adhere to the following practices:

- No open flames will be used without prior approval by SS.
- Torches will be equipped with anti-flashback devices.
- Where electrode holders are left unattended, electrodes will be removed and the holders will be replaced so they cannot make electrical contact.
- All arc welding and cutting cables will be completely insulated. No repairs or splices will be located within 10 feet of the electrode holder, except where splices are

insulated equal to the insulation of the original cable. Defective cable will be repaired or replaced.

- No welding, cutting, or hot work will be conducted on used drums, tanks, or containers until they have been cleaned and purged.
- Only employees with documented training and work experience in these activities shall conduct hot work.
- At a minimum, a 2A/10BC-type fire extinguisher and a first aid kit must be available. When hot work is underway, and for an agreed upon period afterwards, a fire watch must be maintained.
- Employees involved in the operation shall wear appropriate personal protective equipment specific to the task, such as a welder's helmet with an appropriate eye shade, leather or heavy duty cloth gloves, coveralls or a long-sleeved shirt and pants to prevent skin exposure, steel toed or safety shoes, hearing protection, etc.
- Appropriate activity segregation equipment, such as welding screens for welding operations, should be erected whenever practical to isolate the hot work from the remainder of the site activities and site personnel.
- The area should be cleared of any flammable and combustible materials before hot work begins.

3.2.16 ADVERSE WEATHER CONDITIONS

The SS shall decide on the continuation or discontinuation of work based on current and pending weather conditions. Electrical storms, heavy rains, hurricanes, tornado warnings, and sustained strong winds (approximately 40 mph) are examples of conditions that would call for the discontinuation of work and evacuation of site.

In addition, no work with elevated super structures (e.g., drilling, crane operations, etc.) will be permitted during any type of electrical storm or during wind events that have wind speeds exceeding 40 mph.

3.3 BIOLOGICAL HAZARDS

CRA employees conduct numerous project activities that have the possibility of encountering biological hazards, which include bloodborne pathogens, insects, spiders, and snakes. This section identifies precautions to be taken if these hazards are encountered.

3.3.1 VEGETATION OVERGROWTH

Overgrown weeds, bushes, trees, grass and other vegetation are fire and safety hazards. There are a number of hidden hazards not immediately recognized due to the overgrowth of vegetation in areas where field activities may occur, including discarded junk, litter, and debris. Construction materials such as boards, nails, concrete, and other debris may be hidden beneath blades of tall grass, weeds, and bushes. Other hazards may include steep slopes, potholes, trenches, soft spots, dips, etc.; all dangerously concealed from the view of the individual walking or operating motorized equipment in the area. Additionally, there are biological hazards such as snakes, ticks, chiggers, and mosquitoes that breed in overgrowth conditions.

Here are some simple actions you can take:

- Assess the work area and determine if the area requires vegetation clearance. Consider that overgrowth that extends above the lowest level of motorized equipment (i.e., bumper or fender) or 6 inches above your ankle has hidden hazards that you will not be able to readily identify.
- Determine if the area is safe to walk or whether you need motorized equipment. Consider the limitations of the equipment.
- Identify slip, trip, and fall hazards and remove from the general work area. Remember to give adequate clearance so that the items being removed do not pose future hazards.
- Adequately protect yourself against the hazards by wearing boots that protect the ankles, long pants, and using insecticides.
- Consider the limitations of manual or mechanical equipment for the clearance of overgrowth, particularly the safety hazards when using sling blades, machetes, weed eaters, bush hogs, or other brush removing equipment.

Before taking any action, determine whether there any ecological issues that would affect or prevent the removal of overgrowth in protected areas such as wetlands, wildlife habitats, or sanctuaries for endangered and/or protected species.

3.3.2 POISONOUS PLANTS

Common ***Poison Ivy*** grows as a small plant, a vine, and a shrub. Poison Ivy occurs in every state. The leaves always consist of three glossy leaflets. ***Poison Sumac*** grows as a

woody shrub or small tree 5 to 25 feet tall. It usually contains nine leaves, with eight paired leaves and one on top, and is common in swampy areas. The plants are potent sensitizers and can cause a mild to severe allergic reaction, referred to as "contact dermatitis". ***These plants are found in the U.S. and Canada.***

Dermatitis, in Rhus-sensitive persons, may result from contact with the milky sap found in the roots, stems, leaves, and fruit, and may be carried by contacted animals, equipment or apparel.

The best form of prevention is to avoid contact. Wearing long sleeves and gloves, and disposable clothing, such as Tyvek, is recommended in high-risk areas to avoid exposure from contaminated apparel. Barrier creams and cleaners are also recommended.

3.3.3 INSECTS

Ticks

Ticks are blood feeding external parasites of mammals, birds, and reptiles throughout the world. Some human diseases of current interest in the United States caused by tick-borne pathogens include Lyme disease, ehrlichiosis, babesiosis, rocky mountain spotted fever, tularemia, and tick-borne relapsing fever. Lyme disease is caused by a bacterial parasite called spirochete and is spread by infected ticks that live in and near wooded areas, tall grass, and brush. The ticks that cause the disease in the Northeast and Midwest are often no bigger than a poppy seed or a comma in a newsprint. The peak months for human infection are June through October. There are many other tick borne diseases such as Rocky Mountain Spotted Fever, which can be carried by a variety of ticks. The prevention and treatment of these diseases are similar to those of Lyme disease.

Prevention

Preventative measures include wearing light-colored clothing, keeping clothing buttoned, tucking pant legs in socks, and keeping shirttails tucked in. Periodic checks for ticks should be made during the day, and especially at night. Hair should also be checked by parting it and combing through it to make sure that no ticks have attached to the scalp. Also, check clothing when it is first removed, before ticks have a chance to crawl off.

The most common repellent recommended for ticks is N,N-dimethyl-m-toluamide, or DEET. It is important to follow the manufacturer's instructions found on the container for use with all insecticides especially those containing DEET.

In general, DEET insect repellent should only be applied to clothing, not directly on the skin. Do not apply to sunburns, cuts, or abrasions. Use soap and water to remove DEET once indoors.

Removal

The best way to remove a tick is removal by tweezers. If tweezers are not available, cover your fingers (tissue paper) while grasping the tick. It is important to grasp the tick as close as possible to the site of attachment and use a firm steady pull to remove it. When removing the tick, be certain to remove all the mouth parts from your skin so as not to cause irritation or infection. Wash hands immediately after with soap and water, and apply antiseptic to the area where tick was removed. Get medical attention if necessary.

Symptoms of Lyme Disease

The first symptoms of Lyme Disease usually appear from 2 days to a few weeks after a person is bitten by an infected tick. Symptoms usually consist of a ring-like red rash on the skin where the tick attached, and is often bulls eye like with red on the outside and clear in the center. The rash may be warm, itchy, tender, and/or "doughy" and appears in only 60 to 80 percent of infected persons. An infected person also has flu-like symptoms of fever, fatigue, chills, headaches, a stiff neck, and muscle aches and pains (especially knees). Rashes may be found some distance away from original rash. Symptoms often disappear after a few weeks.

Bees, Wasps, and Yellow Jackets

Insects that sting are members of the order Hymenoptera of the class Insecta. There are two major subgroups: aphids (honeybees, bumblebees) and vespids (wasps, yellow jackets, hornets). Aphids are docile and usually do not sting unless provoked. The stinger of the honeybee has multiple barbs, which usually detaches after a sting. Vespids have few barbs and can inflict multiple stings.

Types of stinging insects that might be encountered on this project site may include:

- Carpenter Bees
- Bumblebees
- Mud Dauber Wasps
- Yellow Jackets
- Cicada Killer Wasps
- Giant Hornets
- Honeybees
- Paper Wasps

Symptoms

If you are stung there are three types of reactions you can have, a normal, a toxic, or an allergic reaction.

- Normal reaction - only lasts a few hours and consists of pain, redness, swelling, itching, and warmth near the sting area.
- Toxic reaction - will last for several days and results from multiple stings and may cause cramps, headaches, fever, and drowsiness.
- Allergic reaction - might cause hives, itching, swelling, tightness in the chest area and a possibility of breathing difficulties, dizziness, unconsciousness, and cardiac arrest.

The stingers of many *Hymenoptera* may remain in the skin and should be removed as quickly as possible without concern for the method of removal. An ice cube placed over the sting will reduce pain; aspirin may also be useful. Persons with known hypersensitivity to such stings should carry a kit containing epinephrine in a prefilled syringe. Antihistamines may help decrease hives and angioedema. Persons who have severe symptoms of anaphylaxis, have positive venom skin test results, and are at risk for subsequent stings should receive immunotherapy regardless of age or time since anaphylaxis.

Precautions

The following precautions can help you avoid stings. Try to wear light colored clothing and shy away from dark or floral prints. Avoid wearing perfumes, hairsprays, colognes, and scented deodorants while working outside. If eating outside, keep all food and drinks covered; sweet foods and strong scents attract stinging insects as well. Never swat or swing at the insect, it is best to wait for it to leave, softly blow it away, or gently brush it aside. Seek medical attention when the reaction to a sting includes swelling, itching, dizziness or shortness of breath.

If physical control measures are not effective, use a pesticide that will have a minimal impact on both you and the environment.

Mosquitoes

Mosquitoe*s* are common pests that can be found in any state and any work environment where warm, humid conditions exist. Mosquitoes can pass along diseases such as West Nile virus and Malaria. Several different methods can be used to control adult mosquito

populations: repellants such as DEET, mosquito traps, foggers, and vegetation and water management. ***Mosquitoes are found from the tropics to the Arctic Circle and from lowlands to the peaks of high mountains***.

3.3.4 POISONOUS SPIDERS

Black Widow

Black Widow spiders are not usually deadly (especially to adults) and only the female is venomous. The female spider is shiny black, usually with a reddish hourglass shape on the underside of her spherical abdomen. Her body is about 1.5 inches long while the adult male's is approximately half that. The spider's span ranges between 1 to 3 inches. The adult males are harmless, have longer legs, and usually have yellow and red bands and spots over their back, and the young black widows are colored orange and white. The bite of a black widow is often not painful and may go unnoticed. However, the poison injected by the spider's bite can cause severe reactions in certain individuals.

Symptoms

Symptoms that may be experienced include abdominal pain, profuse sweating, swelling of the eyelids, pains to muscles or the soles of the feet, salivation and dry-mouth (alternating), and paralysis of the diaphragm. If a person is bitten, they should seek immediate medical attention. Clean the area of the bite with soap and water. Apply a cool compress to the bite location. Keep effected limb elevated to about heart level. Ask doctor if Tylenol or aspirin can be taken to relieve minor symptoms. Additional information can be obtained from the Poison Center (1-800-222-1222). ***Black widows are found throughout the tropics, U.S. and Canada.***

Brown Recluse

Brown recluse spiders are usually light brown in color, but in some instances they may be darker. Brown recluse spiders are highly venomous spiders, native to the United States and found coast to coast. The brown recluse can vary in size, but some can obtain bodies of 5/8 inches in length with a leg span of 1 1/2 inches in diameter. They can be identified by their three pairs of eyes along the head area and their fiddle shaped markings on the back. Most brown recluse bites are defensive rather than offensive. They generally only bite when they feel threatened.

Symptoms

If bitten by a brown recluse, an individual may experience open, ulcerated sores, which when left untreated may become infected and cause tissue necrosis. If an individual

believes a spider has bitten them, they need to seek medical attention as soon as possible. In order to minimize the occurrence of brown recluse bites, individuals should shake their clothing and shoes thoroughly, eliminate the presence of cluttered areas, and spray the building perimeters with pesticides. ***Brown recluse are found throughout the U.S., Mexico, and Canada.***

3.3.5 THREATENING DOGS

If you are approached by a frightened or menacing dog:

- Do not attempt to run and don't turn your back.
- Stay quiet, and remember to breathe.
- Be still, with arms at sides or folded over chest with hands in fists.
- Slowly walk away sideways.
- Don't stare a dog in the eyes, as this will be interpreted as a threat.
- Avoid eye contact.
- If you have a jacket, you could wrap it around your arm and should he snap, take the bite harmlessly.
- Try calling its bluff. Yell "sit!", "stay!", or "go home!". You might convince the dog that you are the stronger in the situation.

3.3.6 SNAKES

Snakes may be found in any region of the country. While many snakes encountered are not venomous, a few are; so it is best that you give a wide berth to all snakes. Of the 7,000 venomous snakebites reported each year, only about 15 prove to be fatal; so your chances of survival are extremely high. The usual snake encounter is one in which they see you before you see them, and they slither away from you quickly, startling you. If you see a snake, back away from it slowly and do not touch it. If you or someone you know are bitten, try to see and remember the color and shape of the snake, which can help with treatment of the snakebite.

Venomous snakes include the Coral Snake, Cobra, and Pit Vipers, such as the Cottonmouth (Water Moccasin), Copperhead, and Rattlesnake. The venom of pit vipers is primarily *hematoxic* because it acts upon the victim's blood system. This venom breaks down blood cells and blood vessels and affects heart action. Bite victims experience

severe burning pain, localized swelling and discoloration for the first 3 to 30 minutes, followed by nausea, vomiting, and occasional diarrhea and usually shock.

Preventing Snakebites

Watching where you step, put your hands, or sit down is one of the best ways to prevent snakebites. Poisonous snakes live on or near the ground and often like rocks, woodpiles, and other spots that offer both a place to sun and a place to hide. Most bites occur in and around the ankle. About 99 percent of all bites occur below the knee, except when someone accidentally picks up or falls on the snake.

Watching where you step and wearing boots in tall grass can prevent most snakebites. Another means to protect against snakebites is snake chaps.

Emergency First Aid for Poisonous Snakebite

Although it is important to obtain medical aid immediately, emergency first aid can slow the spread of poison from the bite. Remain calm and avoid unnecessary movement, especially if someone is with you. The rate of venom distribution throughout your body will be slower if you are still and quiet. *Do not* use home remedies, and *do not* drink alcoholic beverages.

In addition, learn the following procedures so you do not waste time before getting medical attention.

- If less than 60 minutes is required to reach a hospital or other medical aid, follow this procedure:
  - Apply a constricting band 2 to 4 inches on each side of the bite. The band should be loose enough to slip your finger under without difficulty, so that you do not cut off circulation completely. Properly applied, the constricting band can be left safely in place for 1 hour without adjustment.
  - If ice is available, place some in a towel, shirt, or other piece of cloth and apply it to the bite area. Do not bind it to the bite, but keep it loosely in place. Do not use the ice pack for more than *1 hour*. The objective is to cool the venom and slow its action, but not to freeze the tissue.
  - The primary function of the constricting band and ice pack is to slow the spread of venom through your body. Remove them slowly so there will not be a sudden rush of venom through your blood stream.

3.3.7 BLOODBORNE PATHOGENS

Hepatitis B is largely transmitted through exposure to bodily fluids containing the virus which could be found on refuse encountered in subsurface investigations. This includes medical wastes, contaminated needles and syringes, and so on. The primary method of transmission depends on the prevalence of the disease in a given area.

Prevention

Preventative measures include wearing appropriate PPE – leather work gloves, long sleeved shirt, and safety footwear. Several vaccines have been developed for the prevention of hepatitis B virus infection. These rely on the use of one of the viral proteins (hepatitis B surface antigen or HBsAg). The vaccine was originally prepared from plasma obtained from patients who had long-standing hepatitis B virus infection. However, currently these are more often made using recombinant technology, though plasma-derived vaccines continue to be used; the two types of vaccines are equally effective and safe.

4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

4.1 GENERAL

This section shall cover the applicable PPE requirements, which shall include, at a minimum, eye, face, head, foot, hand, and respiratory protection.

The purpose of PPE is to shield or isolate individuals from the chemical and physical hazards that may be encountered during work activities.

In addition the PPE requirements presented in this HASP, the PPE requirements presented in the ConocoPhillips Personal Protective Equipment Policy for transportation sites and the ConocoPhillips RM&R PPE requirements must also be followed by all personnel. ConocoPhillips PPE requirements are presented in Appendix E.

4.2 TYPES OF PERSONAL PROTECTIVE EQUIPMENT

The type of PPE for a project will vary based on the Level of Protection required to protect the employee from site physical, chemical, biological, and thermal hazards.

4.2.1 TYPES OF PROTECTIVE MATERIAL

Protective clothing is constructed of a variety of different materials for protection against exposure to specific chemicals. No universal protective material exists. All will decompose, be permeated, or otherwise fail to protect under certain circumstances.

Fortunately, most manufacturers list guidelines for the use of their products. These guidelines usually concern gloves or coveralls and generally only measure rate of degradation (failure to maintain structure). It should be noted that a protective material may not necessarily degrade but may allow a particular chemical to permeate its surface. For this reason, guidelines must be used with caution. When permeation tables are available, they should be used in conjunction with degradation tables.

In order to obtain optimum usage from PPE, the following procedures are to be followed by all site personnel using PPE:

- When using disposable coveralls, don a clean, new garment after each rest break or at the beginning of each shift.

- Inspect all clothing, gloves, and boots both prior to and during use for:
  - imperfect seams;
  - non-uniform coatings;
  - tears; and
  - poorly functioning closures.
- Inspect reusable garments, boots, and gloves both prior to and during use for:
  - visible signs of chemical permeation;
  - swelling;
  - discoloration;
  - stiffness;
  - brittleness;
  - cracks;
  - any sign of puncture; and
  - any sign of abrasion.

Reusable gloves, boots, or coveralls exhibiting any of the characteristics listed above will be discarded. PPE used in areas known or suspected to exhibit elevated concentrations of chemicals will not be reused.

4.3 RESPIRATORY PROTECTION

Although not anticipated, respiratory protection may be worn by personnel during project activities. Personnel required to work in these areas will wear an air-purifying respirator and follow the procedures and guidelines as described below and follow CRA's Respiratory Protection Program.

All personnel required to use this equipment shall first be instructed in how to properly fit a respirator to achieve the required face-piece-to-face seal for respiratory protective purposes. Conditions, which could affect this face seal, are the presence of beards, sideburns, eyeglasses, and the absence of upper or lower dentures.

The air-purifying respirator cartridges selected for use during project work at this site are organic vapor/P-100 for a full face respirator These cartridges have the ability to protect against the known contaminant concentrations.

The SS must implement Stop Work Authority and contact the PM and RSHM . Controls must be implemented. Respirators will only be worn as a last option.

All cartridges will be changed prior to breakthrough or at a minimum daily. Changes will also be made when personnel begin to experience increased inhalation resistance or breakthrough of a chemical warning property.

4.4 LEVELS OF PROTECTION

The level of protection must correspond to the level of hazard known, or suspected, in the specific work area. PPE has been selected with specific considerations to the hazards associated with site activities. The specific PPE to be used for each activity is outlined in each JSA table located in Appendix B.

- All PPE will be disposed of and/or decontaminated at the conclusion of each workday as described below. Decontamination procedures will follow the concept of decontaminating the most contaminated PPE first.
- All disposable equipment shall be removed before meal breaks and at the conclusion of the workday and replaced with new equipment prior to commencing work.
- Eating, drinking, chewing gum or tobacco, and smoking are prohibited while working in areas where the potential for chemical and/or explosive hazards may be present. Personnel must wash thoroughly before initiating any of the aforementioned activities.

4.4.1 REASSESSMENT OF PROTECTION LEVELS

Protection levels provided by PPE selection shall be upgraded or downgraded based upon a change in site conditions or the review of the results of air monitoring or the initial exposure assessment-monitoring program, if one was conducted.

When a significant change occurs, the hazards shall be reassessed. Some indicators of the need for reassessment are:

- commencement of a new work phase;
- change in job tasks during a work phase;
- change of season/weather;

- when temperature extremes or individual medical considerations limit the effectiveness of PPE;
- chemicals other than those expected to be encountered are identified;
- change in ambient levels of chemicals; and
- change in work scope, which affects the degree of contact with areas of potentially elevated chemical presence.

All proposed changes to protection levels and PPE requirements will be reviewed and approved prior to their implementation by the SS.

5.0 AIR MONITORING PROGRAM

Inhalation hazards are caused from the intake of vapors and contaminated dust. Air monitoring shall be performed while intrusive activities are taking place and initially during any O&M activity that presents the potential for vapor inhalation to detect the presence and relative level of those air contaminants which are inhalation hazards. The purpose of air monitoring is to identify and quantify airborne contaminants in order to determine the level of worker protection needed.

5.1 EXPOSURE MONITORING

As discussed above, continuous air monitoring in the work areas is not required; however, if Site conditions change such an increase odor detected in the work areas, air monitoring can be conducted using a Photoionization Detector (PID) or a Flame Ionization Detector (FID).

5.1.1 PHOTOIONIZATION DETECTORS/FLAME IONIZATION DETECTOR

Exposure to volatile organic compounds (VOCs) will be monitored with a PID with a 11.7 eV lamp or FID. The PID has the ability to detect organic vapor concentrations from 1 part per million (ppm) to 2,000 ppm.

Exposure to volatile organic compounds (VOCs) can also be monitored with a Flame Ionization Detector (FID). The FID has the ability to measure the concentration of airborne organic, combustible gases and vapors from 0.1 ppm to 50,000 ppm. However, the meter will not detect inorganic gases and vapors. If using an FID to detect high concentrations of combustible gases, then the monitor must be intrinsically safe. It does not distinguish between individual pollutants. The reading displayed represents the total concentration of all ionizable chemicals present; however, its sensitivity will vary according to compound present. An FID should not be used below 40 Fahrenheit (4°C) or by an untrained individual.

5.1.2 HEALTH AND SAFETY ACTION LEVELS

An action level is a point at which increased protection or cessation of activities is required due to the concentration of contaminants in the work area. All activities shall

be initiated in Modified Level D. The appropriate actions are to be taken at designated action levels. The initial action level(s) for site work can be located in Table 2.

In addition to the action level, an upgrade to Level C is required if:

- Any symptoms occur, as described in Section 3.0
- Requested by an individual performing the task
- Any irritation to eye, nose, throat, or skin occurs

A work stoppage and evacuation (cease and desist) at the specific work area is required if levels in the breathing zone exceed the protection factor of the respirator.

6.0 SITE CONTROL

The purpose of site control is to minimize potential contamination of workers and protect the public from hazards found on site. Site control is especially important in emergency situations.

Site control and work area demarcation will be achieved through posting of signage and placement of barricades. All active work areas will have the appropriate signage posted. Barricades and warning signs will be placed to warn personnel of potential hazards. A standby person (spotter) may be utilized in place of barricades, where appropriate. The following materials may be used to barricade work areas and control traffic, etc.:

- temporary fence;
- high visibility tape, rope, or chains; and
- traffic cones.

One pathway should be established for heavy equipment and one for personnel decontamination.

6.1 EXCLUSION ZONE (EZ)

The EZ consists of the specific work area of suspected contamination. All project personnel entering the EZ must use the required PPE, and must have the appropriate training and medical clearance for hazardous waste work. The EZ is the defined area where there is a possible respiratory and/or contact health hazard. Cones, caution tape, or other appropriate means will identify the location of each EZ.

6.2 CONTAMINATION REDUCTION ZONE (CRZ)

The CRZ or transition area will be established to perform decontamination of personnel and equipment. All personnel entering or leaving the EZ will pass through this area to prevent any cross-contamination. Tools, equipment, and machinery will be decontaminated in a specific location that will be determined by the SS. The decontamination of all personnel will be performed on Site adjacent to the EZ. Personal protective outer garments and respiratory protection, if worn, will be removed in the CRZ and prepared for cleaning or disposal. Procedures for removing PPE are presented

in Section 6.4.1. This zone is the only appropriate corridor between the EZ and the support zone (SZ).

6.3 SUPPORT ZONE (SZ)

The SZ is a clean area outside of the CRZ located to prevent personnel exposure to hazardous substances. Eating and drinking will be permitted in the support area only after proper decontamination. Smoking will not be allowed on Site. The SZ also provides an area for the storage of equipment and supplies.

The majority of site operations, as well as access to the site, will be controlled from SZ. The SZ will provide for team communications and emergency response, and sanitary facilities (i.e., Porta-Potty). Appropriate safety and support equipment also will be located in this zone.

The support zone will be located upwind of site operations, if possible, and will be used as a potential evacuation point, if appropriate. Potentially contaminated personnel and/or materials are not allowed in this zone.

6.4 COMMUNICATION

Each member of the site project team will be able to communicate with other project team members at all times. Communications may be by way of a walkie-talkie, telephone, or hand signals.

The primary means for external communication are telephones and radio. If telephone lines are not installed at a site, all team members should:

- know the location of the nearest telephone; and
- have the necessary telephone numbers readily available.

The following standard hand signals will be mandatory for all employees to understand regardless of other means of communication:

- Hand gripping throat — Cannot breathe.
- Hands on top of head — Need assistance.
- Thumbs up — OK, I'm all right, I understand.

- Thumbs down — No, negative.
- Gripping partner's wrist, or gripping both of your own hands on wrist (if partner is out of reach) – Leave area immediately.

6.5 SITE SECURITY

Site security is necessary to prevent the exposure of unauthorized, unprotected people to site hazards and to avoid interference with safe working procedures. Security shall be maintained outside of the actual work area(s) so as to prevent unauthorized entry into the work area(s). Members of the general public are to be protected from site hazards.

Most Site activities will occur within a secure area at the terminal that is closed to the general public. Activities outside of this secured perimeter shall be properly secured to prevent unauthorized entry and prevent exposure to Site hazards.

All visitors to the Site must first check in with the terminal operator and obtain clearance to be allowed onsite.

6.6 DECONTAMINATION

It is the responsibility of the SS to ensure that all personnel and pieces of equipment coming off site are properly decontaminated according to the procedures outlined below. Documentation of decontamination must be made in the field log notebook that will become part of the permanent project file.

6.6.1 PERSONNEL AND EQUIPMENT DECONTAMINATION PROCEDURES

All PPE will be disposed of and/or decontaminated at the conclusion of each workday as described below. Decontamination procedures will follow the concept of deconning the most contaminated PPE first.

All disposable equipment shall be doffed before meal breaks and at the conclusion of the workday and replaced with new equipment prior to commencing work.

Procedures for decontamination must be followed to prevent the spread of contamination and to eliminate the potential for chemical exposure.

Personnel: Decontamination will be initiated prior to exiting the contaminated work area and be completed in the Contamination Reduction Zone.

Modified Level D: First, remove outer protective wear. Remove gloves and properly dispose in designated waste container. Wash hands and face.

Level C: Wash and rinse outer gloves, boots and suit, and remove; then remove respirator; dispose of cartridges; wash respirator; remove inner gloves and dispose. Wash hands and face.

Handle all clothing inside out when possible.

Equipment: All equipment must be decontaminated with Alconox/Liquinox solution or discarded upon exit from the contaminated area in a well-ventilated area. All decon materials, wash waters, and used PPE will be drummed for subsequent disposal.

7.0 EMERGENCY PROCEDURES

7.1 ON-SITE EMERGENCIES

Emergencies can range from minor to serious conditions. Various procedures for responding to site emergencies are listed in this section. The PM or SS is responsible for contacting local emergency services, if necessary, for specific emergency situations. Various individual site characteristics will determine preliminary action to be taken to assure that these entry procedures are successfully implemented in the event of an emergency. Section 7.7 will also address the necessary ConocoPhillips Renton Terminal emergency protocols and expectations.

An Emergency Information Sheet containing the hospital location, directions, government agency phone numbers, emergency phone numbers, and a map with directions to the hospital is located in Appendix A.

7.2 ACCIDENT, INJURY, AND ILLNESS REPORTING AND INVESTIGATION

Any work-related incident, accident, injury, illness, exposure, or property loss must be reported to your supervisor, the SS, and ***within 1 hour*** through the CRA Incident Reporting System. Motor vehicle accidents must also be reported through this system. CRA's Incident Reporting Form, located in Appendix A, must also be filled out and provided to the SS. The report must be filed for the following circumstances:

- accident, injury, illness, or exposure of an employee;
- injury of a subcontractor;
- damage, loss, or theft of property; and/or
- any motor vehicle accident, regardless of fault, which involves a company vehicle, rental vehicle, or personal vehicle while the employee is acting in the course of employment.

Occupational accidents resulting in employee injury or illness will be investigated by the SS. This investigation will focus on determining the cause of the accident and modifying future work activities to eliminate the hazard.

All employees have the obligation and right to report unsafe work conditions, previously unrecognized safety hazards, or safety violations of others. If you wish to

make such a report, it may be made orally to your supervisor or other member of management, or you may submit your concern in writing, either signed or anonymously.

7.3 EMERGENCY EQUIPMENT/FIRST AID

Safety equipment will be available for use by site personnel, located within 30 feet of the work area(s), and maintained at the site. The safety equipment may include, but is not limited to, the following:

- First Aid kit (size is dependant upon the number of personnel on site):

  Contents: Each first aid kit shall contain, as a minimum (ANSI 308.1-2003):

1	Absorbent Compress (32 square inches, no side less than 4 inches)
16	Adhesive Bandages (1 inch x 3 inches)
1	Adhesive Tape (roll, 3/8 inch x 5 yards)
10	Individual Antiseptic (0.5 g)
6	Burn Treatments (Antibiotic) (each 1/32 oz.)
2 pair	Medical Exam Gloves (not to be reused)
4	Sterile Pads (3 inches x 3 inches)
1	Triangular Bandage

This list shall be placed in each first aid kit for the purposes of inspection and restocking.

- Automated External Defibrillators (AEDs) are optional first aid response equipment for conditions related to heart stoppage. A unit is available inside the terminal operators building, designated personnel must be trained in the specific AED unit in addition to First Aid and CPR certification, conduct monthly inspections, and contact listed AED Unit coordinator.
- Emergency eyewash bottles are located near each remediation system. A continuous eyewash station and chemical shower are located underneath the loading rack canopy.
- Emergency alarms as a means to alert all personnel instantaneously for an emergency.
- Fire extinguisher (at a minimum, a 2A/10BC will be on site).

7.4 EMERGENCY PROCEDURES FOR CONTAMINATED PERSONNEL

Whenever possible, personnel should be decontaminated in the contamination reduction zone before administering first aid, without causing further harm to the patient.

Skin Contact: Remove contaminated clothing, wash immediately with water, and use soap, if available.

Inhalation: Remove victim from contaminated atmosphere. Remove any respiratory protection equipment. Initiate artificial respiration, if necessary. Transport to the hospital.

Ingestion: Remove from contaminated atmosphere. Do not induce vomiting if victim is unconscious. Also never induce vomiting when acids, alkalis, or petroleum products are suspected. Transport to the hospital, if necessary.

Any person transporting an injured/exposed person to a clinic or hospital for treatment should take with them directions to the hospital and a listing of the contaminants of concern to which they may have been exposed.

Any vehicle used to transport contaminated personnel will be cleaned or decontaminated, as necessary.

7.5 SITE EVACUATION

In the event of an emergency, all CRA personnel and subcontractors will follow the ConocoPhillips Renton Terminal evacuation procedures given during the initial site visit. An emergency evacuation guide is presented in Appendix A.

7.6 SPILL AND RELEASE CONTINGENCIES

If a spill has occurred, the first step is personal safety, then controlling the spread of contamination, if possible. CRA personnel will immediately contact site management to inform them of the spill and activate emergency spill procedures.

7.7 RENTON TERMINAL SITE AND EMERGENCY REQUIREMENTS

It is important for CRA personnel to comply with Renton Terminal site procedures and emergency protocols in addition to the requirements of CRA.

The following procedure must be followed when performing work at the Renton Terminal facility:

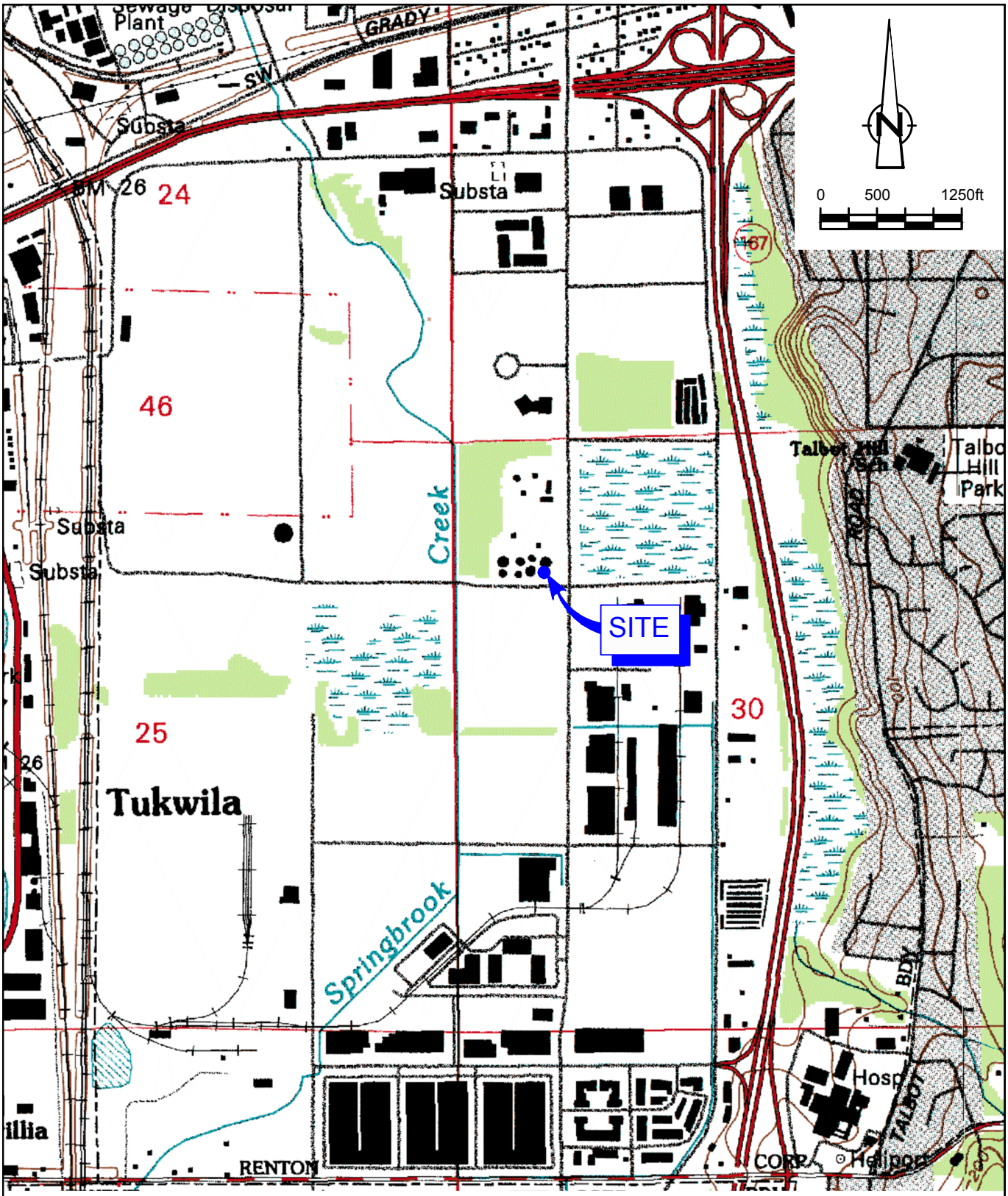
- All visitors must sign in and out at the main office
- Minimum PPE requirements for contractors and visitors are flame resistant clothing (FRC), safety toe wear, hardhat, eye protection, hand protection, and hearing protection on person available for use when necessary. PPE applies to all areas other than offices, parking lots, and inside vehicles.
- Facility access is strickly controlled and limited to employees and those with legitimate business reasons to be onsite.
- All visitors and contractors are subject to a search of their person, property, and/or vehicle. Positive identification must be presented for admission.
- The following items are restricted and not allowed on the property: Explosives, Firearms/Ammunition, other weapons, non-prescribed drugs.
- The possession, use of, or being unde the influence of drugs or alcohol is strickly prohibited.
- All suspicious behavior must be immediately reported to Terminal personnel. This includes but is not limited to, any unauthorized persons on the property, anyone making unusual enquiries, or anyone suspected to have a weapon or explosive devise.
- Immediately report any injury, fire, property damage, spill or significant incident or condition to the Terminal personnel immediately.
- In case of an emergency an alarm will sound. The alarm in the building is a loud "wooping" alarm. The outside alarm is a siren. Upon hearing an alarm, evacuate to the designated assembly areas as safely as possible and await further instructions from the safety leader or terminal personnel. Remain in the evacuation area until otherwise instructed. If you are not accounted for, a search will be conducted to find you.
- The Terminal hazardous communication program and MSDS are available for your review. Areas containing asbestos are labled. Do not disturb these areas.

8.0 RECORDKEEPING

The SS shall establish and maintain records of all necessary and prudent monitoring activities as described below:

- name and job classification of the employees involved on specific tasks;
- air monitoring/sampling results and instrument calibration logs;
- records of training acknowledgment forms (site-specific training, toolbox meetings, etc.;
- documentation of site inspections, results of inspections, and corrective actions implemented;
- records of OSHA Training Certifications for site personnel (40-Hour HAZWOPER, 8-hour refreshers, etc.; and
- emergency reports describing any incidents or accidents.

FIGURES



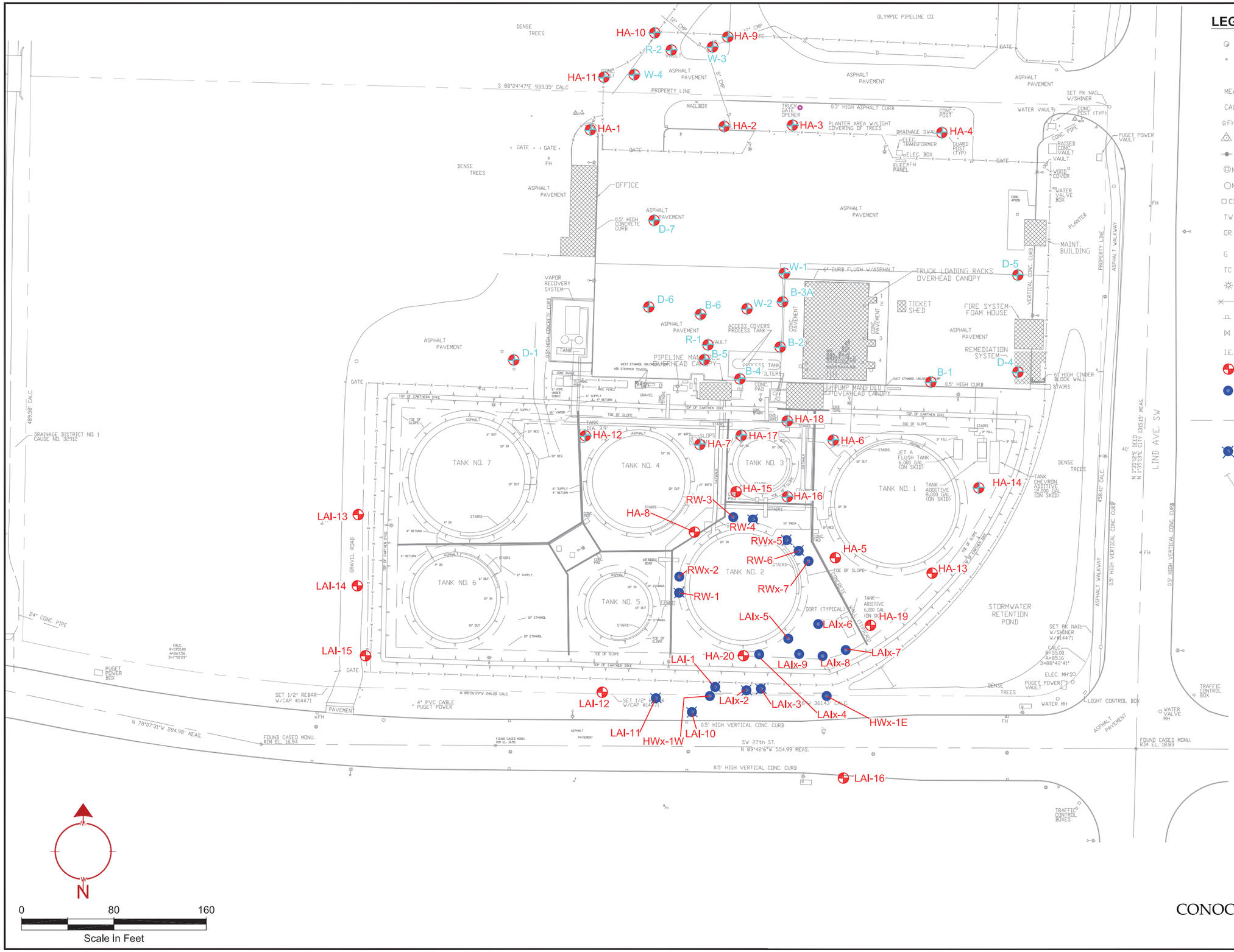
SOURCE: USGS QUADRANGLE MAP:
RENTON, WASHINGTON

figure 1

VICINITY MAP
CONOCOPHILLIPS
2423 LIND AVENUE SW
Renton, Washington

WASHINGTON

70496-95(001)GN-WA001 DEC 02/2010



LEGEND

- FOUND CASED MONU. OR MONU. AS NOTED
- SET 1/2" REBAR W/CAP #14471 OR AS NOTED
- SET TACK IN LEAD PLUG
- MEAS. MEASURED
- CALC. CALCULATED
- FH FIRE HYDRANT
- AERIAL PANEL POINT
- UTILITY POLE
- MH STORM DRAIN MANHOLE
- MH MANHOLE
- CB CATCH BASIN
- TW TOP WALL
- GR GRADE
- G GUTTER
- TC TOP CURB
- LIGHT
- FENCE LINE
- SIGN
- WATER VALVE
- I.E. INVERT ELEVATION
- MONITORING WELL
- 4" DIAMETER VERTICAL RECOVERY WELL (ACTIVELY PUMPING)
- HORIZONTAL GROUNDWATER EXTRACTION TRENCH
- 4" DIAMETER VERTICAL RECOVERY WELL (INACTIVE- NOT PUMPING)
- STORMWATER RETENTION CONTAINMENT BERM

Note

1. Updated from Matrix Technologies, Inc Drawing 10015-P-15, Dated 11/01/91.

figure 2
SITE PLAN
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

FILEPATH:K:\1-CLIENTS\ConocoPhillips\01CP\3485-2009\SITE PLAN(FIG1)3485_909.dwg|dheller|Sep 08, 2009 at 12:31|Layout: F2-SP

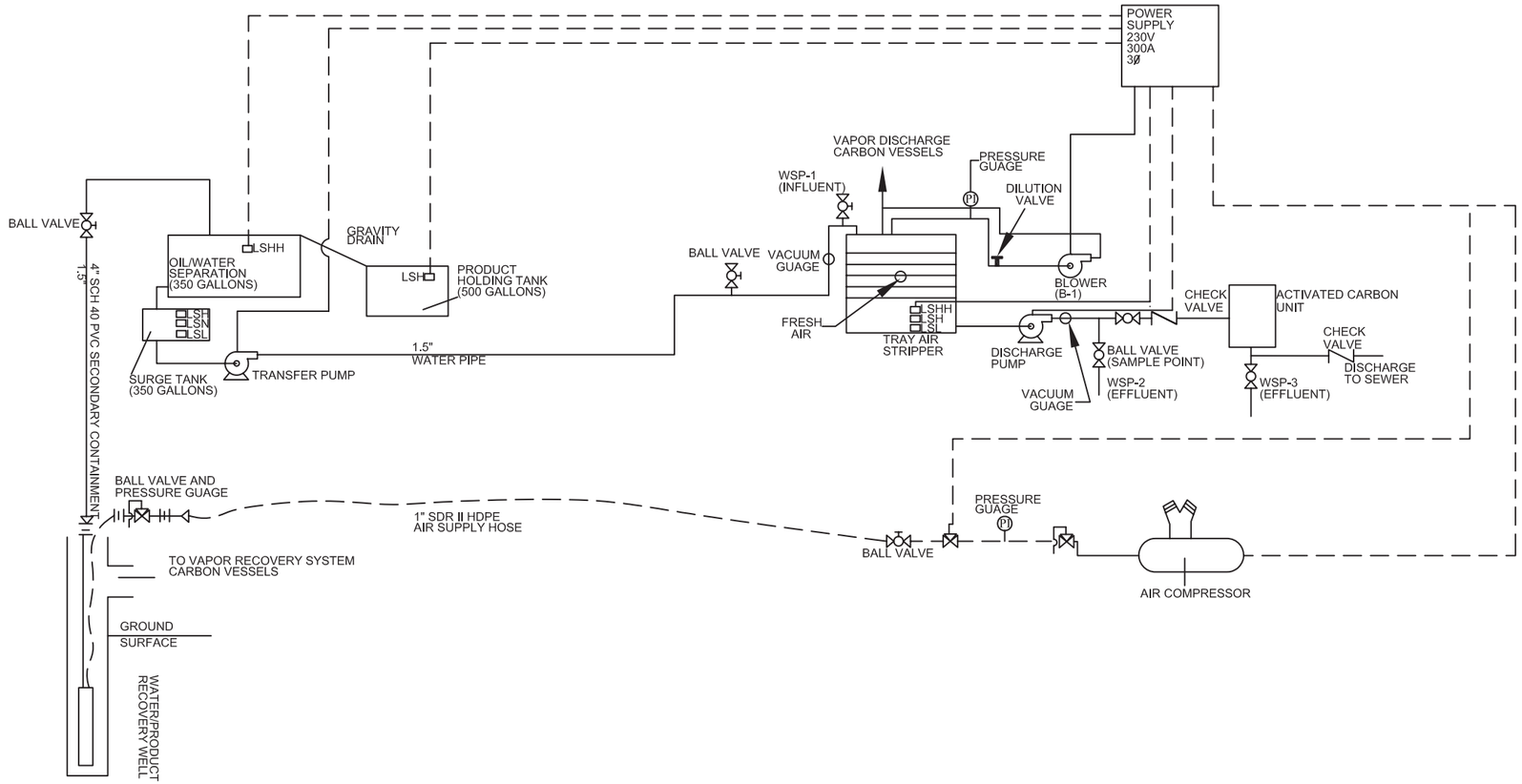


figure 3
CONOCOPHILLIPS REMEDIATION SYSTEM P&ID
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

FILEPATH:K:\1-CLIENTS\ConocoPhillips\01CP\3485-2009\MAT T\FIG.2-3485_909.dwg|dheller|Sep 08, 2009 at 12:47|Layout: F2-INSTRUMENT

T–210
EQUALIZATION TANK
650 GALLONS
POLYETHYLENE

V–220
OIL/WATER SEPARATOR
24 GPM
165 GAL OPERATING VOLUME

T–280
FREE PRODUCT STORAGE TANK
55 GALLONS
CARBON STEEL

P–290
FREE PRODUCT TRANSFER PUMP
UNKNOWN GPM
UNKNOWN FT DIS HEAD
0.75 HP

T–230
FEED TANK
650 GALLONS
POLYETHYLENE

P–240
FEED PUMP
UNKNOWN GPM
UNKNOWN FT DIS HEAD
1 HP

F–250A
BAG FILTER
25 MICRON
SIZE 2 FILTER

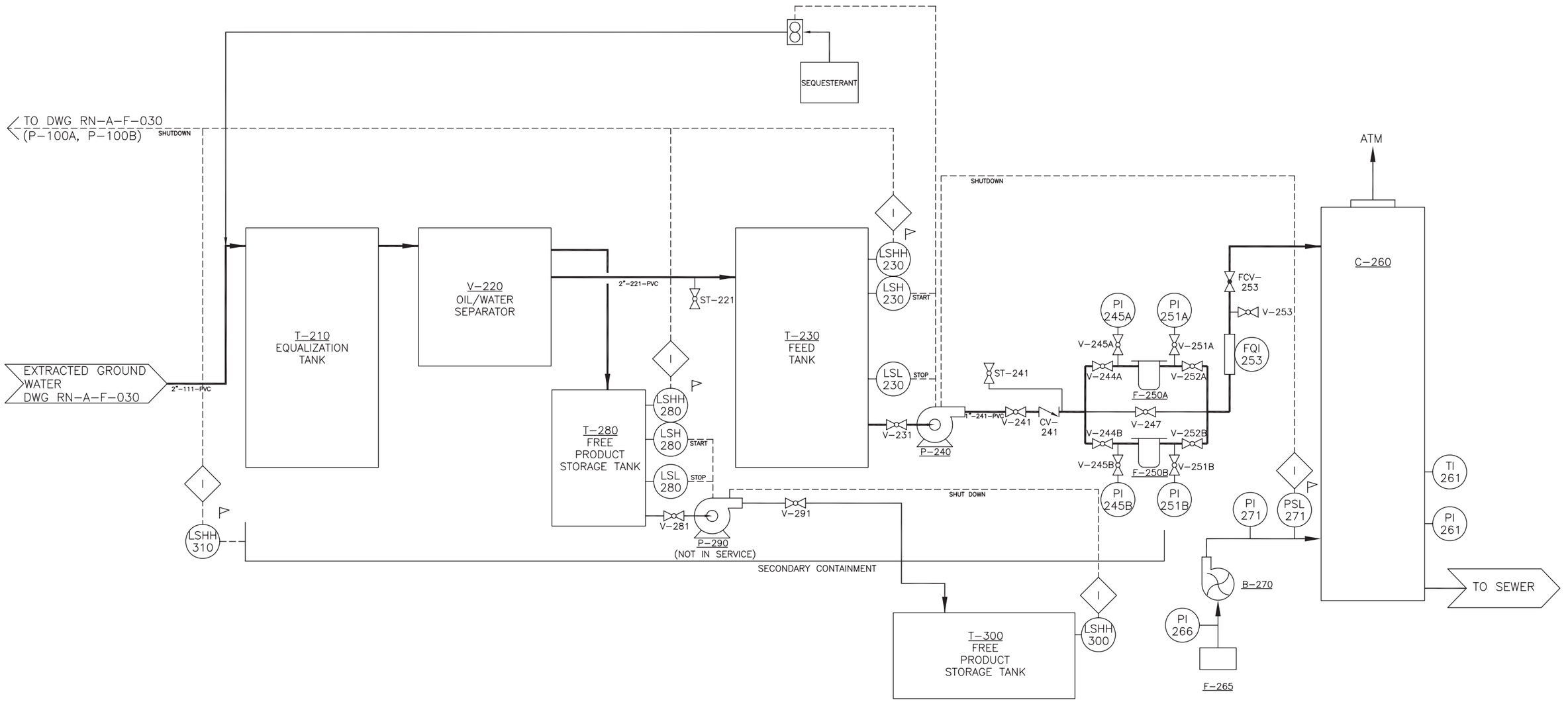
F–250B
BAG FILTER
25 MICRON
SIZE 2 FILTER

B–270
AIR STRIPPER BLOWER
488 SCFM ESTIMATED
AT 0.7 PSIG DIS
2 HP

F–265
AIR FILTER
DP OF 0.008 IN H20
AT 600 SCFM

C–260
AIR STRIPPER
UNKNOWN GPM
PRESSURE RATING: UNKNOWN
BENZENE REMOVAL: UNKNOWN
MTBE REMOVAL: UNKNOWN
FIBERGLASS REINFORCED PLASTIC

T–300
FREE PRODUCT STORAGE TANK
1,000 GALLONS



⚐ – DENOTES CRITICAL SAFETY DEVICE

figure 4
BP REMEDIATION SYSTEM P&ID
CONOCOPHILLIPS RENTON TERMINAL
RENTON, WASHINGTON

TABLES

TABLE 1

PROPERTIES OF POTENTIAL SITE CONTAMINANTS

Chemical Name (Synonyms)	Concentration at Site	Exposure Limits	Routes Of Entry	Symptoms/Health Effects	Chemical Properties	Physical Characteristics
Benzene Benzol CAS-71-43-2	21,000 ug/L	TLV: 0.5 ppm [skin] PEL: 1 ppm STEL: 2.5 ppm IDLH: 500 ppm	Inhalation Absorption (skin) Ingestion	ACUTE: Irritation to eyes, skin, respiratory tract; dizziness; headache; nausea; staggered gait; fatigue, abdominal pain. CHRONIC: Defatting of the skin, may have effects on bone marrow and immune system, decrease in blood cells. Carcinogenic to humans.	(FP) 12°F (VP) 75 mm (IP) 9.24 eV (UEL) 7.8% (LEL) 1.2%	Colorless to light-yellow liquid with an aromatic odor. Solid below 42°F.
Diesel Fuel #2 Heating Fuel #2 CAS-68476-34-6	47,000 ug/L	TLV: 100 mg/m3 PEL: NE STEL: NE IDLH:	Inhalation Ingestion Skin contact Eye contact	ACUTE: Eye irritation and burning, euphoria, dizziness, headache, discoordination, ringing in ears, convulsions, skin irritation and burning sensation, vomiting CHRONIC: Coma, respiratory arrest, defatting of the skin, central nervous system depression, possible kidney and liver damage.	(FP) > 104 F (VP) 0.40 mm (IP) NA (UEL) 10.0% (LEL) 0.3%	Colorless to straw or red oil liquid with characteristics kerosene-like odor. NOTE: Refer to MSDS for additional information.
Ethylbenzene Ethylbenzol EB CAS-100-41-4	8,900 ug/L	TLV: 100 ppm PEL: 100 ppm STEL: 125 ppm IDLH: 800 ppm	Inhalation Ingestion Skin contact Eye contact	ACUTE: Causes irritation of the eyes, skin, mucous membranes, and respiratory tract. Effects on CNS. CHRONIC: Defatting of the skin, narcosis, and coma.	(FP) 55°F (VP) 7 mm (IP) 8.76 eV (UEL) 6.7% (LEL) 0.8%	Colorless liquid with an aromatic odor.
Gasoline Motor fuel Petrol Natural gasoline CAS-8006-61-9	3,360,000 ug/L	TLV: 300 ppm PEL: NE STEL: 500 ppm IDLH: NE	Inhalation Ingestion Skin contact Absorption Eye contact	ACUTE: Irritation to eyes, skin and mucous membranes. Dermatitis, headache and fatigue. Blurred vision and slurred speech. CHRONIC: Possible liver and kidney damage. Carcinogen.	(FP) -45 °F (VP) 38-300 mm (IP) NE (UEL) 7.6% (LEL) 1.4%	Clear mobile liquid with a characteristic odor. It is recommended that atmospheric concentrations should be limited by the aromatic hydrocarbon content.
Toluene Methylbenzene Toluol CAS-108-88-3	42,000 ug/L	TLV: 20 ppm [skin] PEL: 200 ppm STEL: NE IDLH: 500 ppm	Inhalation Ingestion Absorption	ACUTE: Irritation to eyes and respiratory tract. Ingestion may cause chemical pneumonitis. Affects CNS. Unconsciousness and cardiac dysrhythmia at high level exposures. CHRONIC: Defatting of the skin. Affects CNS. Enhanced hearing damage.	(FP) 40°F (VP) 21 mm (IP) 8.82 eV (UEL) 7.1% (LEL) 1.1%	Colorless liquid with a sweet, pungent, benzene-like odor.
Xylene (o;m;p isomers) CAS-106-42-3	26,000 ug/L	TLV: 100 ppm PEL: 100 ppm STEL: 150 ppm IDLH: 900 ppm	Inhalation Absorption Ingestion	ACUTE: Irritation to eyes and respiratory tract. Ingestion may cause chemical pneumonitis. Affects CNS. CHRONIC: Defatting of the skin, lung damage resulting in chronic bronchitis. Affects CNS and blood.	(FP) 90/82/81°F (IP) 7/9/9 mm (IP) 8.56eV (UEL) 6.7% (LEL) 0.9%	Colorless liquid with an aromatic odor. (p-isomer solid <56°F).

Notes:

FP	FP - Flash Point
IDLH	IDLH - Immediately Dangerous to Life ord Health
IP	IP - Ionization Potential
NE	NE - Not Established (Information Not Available)
NA	NA - Not Applicable
CNS	CNS - Central Nervous System
PNS	PNS - Peripheral Nervous System
ppm	ppm - parts per million
mg/m3	mg/m3 - miligrams per cubic meter
PEL	PEL - OSHA Permissible Exposure Limit
STEL	STEL - Short Term Exposure Limit
TLV	TLV - ACGIH Threshold Limit Value
VP	VP - Vapor Pressure
C	C - Ceiling Exposure Limit
[skin]	[skin] - potential for dermal absorption
mm	mm - milimeters Hg (mercury)
eV	eV - electrovolts

TABLE 2

ON-SITE AIR MONITORING PROGRAM ACTION LEVELS FOR RETAIL FACILITIES
HEALTH AND SAFETY PLAN
RETAIL GAS FACILITY
SITE LOCATION

Monitoring Device	*Action Level*	*Action*
Photoionization Detector (PID) with 10.2 eV lamp or greater	***PID Action Levels for General Site Activities (sustained readings - greater than 5 minutes - taken from the worker's breathing zone)***	
	<10 ppm or Background (PID reading)	Initiate activities in Level D PPE
	≥10 ppm and <50 ppm (PID reading)	Notify CRA PM if an upgrade in respiratory protection is required. Wear FFAPR equipped with organic vapor/P100 cartridges - Level C PPE. Implement additional engineering controls.
	≥50 ppm	Shut down activities and evacuate - Notify PM/PC and RSHM immediately.

Monitoring will occur before beginning any activities (**LIST ACTIVITIES HERE**) and at least every 15 minutes during potential exposure. NOTE: Since benzene is only a small component of gasoline (less than 5%), a conservative action level of 10 ppm via PID monitoring has been adopted for use by CRA in lieu of the individual exposure levels for benzene or gasoline. The individual PEL for benzene is 1 ppm while the individual TLV for gasoline is 300 ppm.

Notes:

SHO Safety and Health Officer
FFAPR Full-Face Air Purifying Respirator
PPE Personal Protection Equipment
PPM Parts Per Million

APPENDIX A

FORMS

1. EMERGENCY CONTACT SHEET
2. HASP ACKNOWLEDGEMENT FORM
3. TAILGATE SAFETY MEETING FORM
4. COP RMR SAFETY VIDEO REVIEW FORM
5. CRA INCIDENT REPORTING FORM
6. CRA NEAR LOSS REPORTING FORM
7. COP IMPACT REPORTING FORM
8. PROPERTY ACCESS/UTILITY CLEARANCE DATA SHEET
9. HOSPITAL MAP
10. RENTON TERMINAL EMERGENCY EVACUATION ROUTE

EMERGENCY INFORMATION		
Contact	**Phone Number**	**Hospital Directions**
Local Police	**911** 425-430-7500	From Site, Turn right onto Lind Ave. SW Turn left at S. 180th St./SW 43rd St. Turn left at Talbot Rd. S. Turn left onto the hospital campus. See Attached Map.
Fire Department	**911** 425-430-7000	
Ambulance	**911**	
Local Hospital: 400 S 43rd St. Renton, WA 98058	425-228-3450	
National Poison Center	800-222-1222	
Project Manager Edwin Turner	Work: 425-563-6519 Cell: 253-951-3053	CRA – Accident Reporting System Please call **(866) 529-4886** and provide: • Name and location of caller • Description of incident • Name of any injured persons • Description of injuries • Phone number for return call.
Site Supervisor(s) Matthew Davis	Work: 253-573-1218 Cell: 253-507-6217	
CRA RSHM Aaron Autsen	Work: 916-889-8905 Cell: 916-919-0777	
Site Contact Jeff Mcbride	Work: 425-228-6142	
Client Contact Rich Solomon	Work: 562-290-1551 Cell: 714-224-9921	
Other Contact		

*** Hospital Route must be field validated before site work commences.**

HASP ACKNOWLEDGMENT SHEET

(070496 REPORT 1 HASP)

This is to certify that I have received a pre-entry briefing regarding this HASP (Renton Terminal, Renton, WA) and I understand its contents. My failure to follow and comply with the requirements contained in this plan may result in disciplinary action and/or termination.

Print Name	Signature	Date

TAILGATE SAFETY MEETING FORM
RENTON TERMINAL, RENTON, WA

Date: _____ Time: _____

Site Location: 2423 Lind Ave. SW, Renton, WA

Site Personnel in attendance:

Print Name	Signature	Company

Safety Topics/Items discussed:

Supervisor

Name: _____ Date: _____

070496 (1)

ConocoPhillips RM&R Safety Video
Acknowledgement Form

Project Name: Project Number:

This is to certify that I have reviewed the ConocoPhillips RM&R safety video and I recognize the importance of this message and understand its contents. My failure to follow and comply with these requirements contained in this video may result in disciplinary action and/or termination.

Print Name	Signature	Company	Date

Supplement to ConocoPhillips Incident First Report*

*This document is to be used as a supplement for CRA Near Loss and Incident Reporting Requirements, however this form is not required for the reporting of unsafe conditions, if the condition is corrected immediately.

Employee No.	Last Name	First Name	Project Name / Number & RM&R ID
Date of Hire	Position/T	Supervisor	Project Manager

Near Loss Investigation **Conduct a 5-Why Root Cause Analysis Investigation. In addition, if there was the potential for a significant injury or loss report the Near Loss to Accident Hot Line so it can be determined if a Detailed Tap Root Cause Analysis is necessary**	
HASP prepare? (X) Yes ( ) No Submit a PDF of HASP to Investigation Team. Was the HASP on-site? (X) Yes ( ) No	Did the safety plan identify and provide safety procedures for the specific tasks being performed when the Near Loss occurred? (X) Yes ( ) No If no, why not? (Explain)_____ Did the employee utilize the STAR process before initiating the task? (X) Yes ( ) No If no, why not? (Explain)_____
5-Why Root Cause Analysis:	
1. Why did "above" happen? Failed to be aware of all environmental conditions.	
2. Why did "1" happen?	
3. Why did "2" happen?	
4. Why did "3" happen?	
5. Why did "4" happen?	
6. Why did "5" happen?	
Additional information: Attach photos, witness statement(s), affected employee statement, accident diagrams, as applicable, to the end of this document.	

Accountability		
Investigation Team	Company	Position/Title
Final Report Date	Final Report Prepared by: (please print)	Final Report Prepared by: (signature)

Stewardship		
Will a Near Loss Summary be Prepared ( ) Yes ( ) No If yes, By:		
Quality Review By:	Date:	Findings:

Corrective Action					**Validation & Verification**		
CF	Corrective Actions (Must match Causative Factor)	Responsible Party	Due Date	Date Completed	Verified By/ Validated By	Date	Details
					Verified By:		
					Validated By:		
					Verified By:		
					Validated By:		
					Verified By:		
					Validated By:		

CRA 10 CAUSATIVE FACTORS (CF)

Personal Factors	
1	Insufficient training for task
2	Hurrying to complete the task
3	Easier if proper process not followed
4	Took shortcuts without prior incident

Company Factors	
5	Incomplete or no procedures
6	Procedures not known or enforced
7	Improper PPE
8	Improper tools
9	Improper workplace layout

External Factors	
10	Exposure to conditions

NL CONESTOGA-ROVERS & ASSOCIATES (CRA) NEAR LOSS REPORTING FORM

A Significant Near Loss must be called into Incident Hot Line: 1-866-529-4886

Instructions:
1) *Employee completes the Near Loss Report and submits to Supervisor.*
2) *Supervisor reviews and makes other comments.*
3) *Employee discusses Near Loss with Project Manager.*
4) *Submit to Regional Safety & Health Manager.*

Report Status (insert date)	Initial Report	Update Report	Final Report	Verification/Validation	Report Input into SMART Database

SECTION 1

A. Employee Identification ☐ CRA Employee ☐ Temporary Employee ☐ Subcontractor			
Employee No.	Last Name	First Name	Employee's Company - if Subcontractor
Date of Hire	Position/Title	Supervisor	Home Office Location - if CRA Employee

B. General Information			
Where did the Near Loss occur? ☐ Office ☐ Project Site ☐ Other _____ ☐ Canada ☐ United States ☐ UK		Type of Near Loss (Check all that apply) ☐ Employee Injury/Illness ☐ Vehicle Accident ☐ Property Damage ☐ Environmental	
Address of Near Loss (City, State, Province, Zip Code)		Specific Location of Near Loss (e.g., where on site)	
Date and Hour of Near Loss Month Day Year	a.m. p.m.	Date and Hour Reported to CRA Month Day Year	a.m. p.m.
Time Employee Began Work a.m. p.m.			
Witnesses? ☐ Yes ☐ No	Witness Name and Telephone Number		

C. Project Information (Project Related Near Loss Only): Project Related: ( ) Yes ( ) No				
Project #	Project Name	CRA Project Manager	Client	Client Contact
Was the Client Advised of the Near Loss? ☐ Yes ☐ No ☐ N/A	Name:	Date and Time		

SECTION 2

A Details of the Near Loss
1. What job/task was being performed when the Near Loss occurred? (Example: collecting groundwater samples).
2. Provide a detailed description of the employee's specific activities at the time of the Near Loss. Include details of equipment/materials being used, including the size and weights of objects being handled, and weather conditions at time of the Near Loss. If necessary, attach additional pages to the report.

B. Near Loss Investigation	
Conduct a 5-Why Root Cause Analysis Investigation. In addition, if there was the potential for a significant injury or loss, report the Near Loss to the Incident Hot Line (this will determine if a Tap Root Cause Analysis is necessary).	
HASP prepared? ☐ Yes ☐ No ☐ N/A Submit a PDF of HASP to Investigation Team. If yes, was the HASP on site? ☐ Yes ☐ No	Did the safety plan identify and provide safety procedures for the specific tasks being performed when the Near Loss occurred? ☐ Yes ☐ No If no, why not? (Explain) _____ Did the employee utilize the STAR process before initiating the task? ☐ Yes ☐ No If no, why not? (Explain) _____

SECTION 2 (continued)

5-Why Root Cause:	Additional information: Attach photos, witness statement(s), affected employee statement, as applicable, to the end of this document.
1. Why did "above" happen?	
2. Why did "1" happen?	
3. Why did "2" happen?	
4. Why did "3" happen?	
5. Why did "4" happen?	See Section 3 Below: Corrective Actions/ Verification and Validation
6. Why did "5" happen?	

C. Accountability

Initial Report Date Month Day Year	Initial Report Prepared by: (please print)	Initial Report Prepared by: (signature)
Investigation Team	Company	Position/Title
Final Report Date Month Day Year	Final Report Prepared by: (please print)	Final Report Prepared by: (signature)

D. Stewardship

Will a Near Loss Summary be Prepared? ☐ Yes ☐ No If yes, by:

Quality Review By:	Date:	Findings:

SECTION 3

Corrective Action					Validation & Verification		
CF	**Corrective Actions (Must match Causative Factor)**	**Responsible Party**	**Due Date**	**Date Completed**	**Verified By/ Validated By**	**Date**	**Details**
					Verified By		
					Validated By		
					Verified By		
					Validated By		
					Verified By		
					Validated By		

CRA 10 CAUSATIVE FACTORS (CF)

PERSONAL FACTORS		COMPANY FACTORS		EXTERNAL FACTORS	
1	Insufficient training for task	5	Incomplete or no procedures	10	Exposure to conditions
2	Hurrying to complete the task	6	Procedures not known or enforced		
3	Easier if proper process not followed	7	Improper PPE		
4	Took shortcuts without prior incident	8	Improper tools		
		9	Improper workplace layout		

ConocoPhillips	RM&R - IMPACT Incident First Report	Rev 7 12-Jan-10

Primary Consultant's Name:	NA/COP Employee or Other	
City/State of Consultant's Field Office:		List in "Address" field in IMPACT
Sub-Contractor Name:		
Incident Location (City, State):		
RM&R ID (4 digits):		
Site Type:		
RM&R Site Manager:		In IMPACT, Site Manager is "Responsible Supervisor"
Short Description of Incident:		

Location	

What Were Conditions Like?	Weather		Lighting	

When did incident Occur?	Month	Day	Year	Time (hrs)	Time (min	AM/PM
Date/Time Occurred						
Date/Time Reported						

Witness Name(s):	Employee/Contractor/Other	Phone

Equipment Involved:	

Incident Type:	
Incident Sub-type:	

Environmental Release Info.	Product/Material	Amount	Unit
Released			
Recovered			

Full Description of Incident:

Immediate Actions Taken:

Describe Underlying Causes/Corrective Action Plans:

Reported by (Name/Title): _____

Date: _____

Supplement to ConocoPhillips Incident First Report*

*This document is to be used as a supplement for CRA Near Loss and Incident Reporting Requirements, however this form is not required for the reporting of unsafe conditions, if the condition is corrected immediately.

CRA SMART PROGRAM
Safety Means Awareness Responsibility Teamwork

Employee No.	Last Name	First Name	Project Name / Number & RM&R ID
Date of Hire	Position/T	Supervisor	Project Manager

Near Loss Investigation
Conduct a 5-Why Root Cause Analysis Investigation. In addition, if there was the potential for a significant injury or loss report the Near Loss to Accident Hot Line so it can be determined if a Detailed Tap Root Cause Analysis is necessary

HASP prepare? (X) Yes ( ) No Submit a PDF of HASP to Investigation Team. Was the HASP on-site?(X) Yes ( ) No	Did the safety plan identify and provide safety procedures for the specific tasks being performed when the Near Loss occurred? (X) Yes ( ) No If no, why not? (Explain)_____ Did the employee utilize the STAR process before initiating the task? (X) Yes( ) No If no, why not? (Explain)_____

5-Why Root Cause Analysis:

1. Why did "above" happen? Failed to be aware of all environmental conditions.

2. Why did "1" happen?

3. Why did "2" happen?

4. Why did "3" happen?

5. Why did "4" happen?

6. Why did "5" happen?

Additional information: Attach photos, witness statement(s), affected employee statement, accident diagrams, as applicable, to the end of this document.

Accountability

Investigation Team	Company	Position/Title
Final Report Date	Final Report Prepared by: (please print)	Final Report Prepared by: (signature)

Stewardship

Will a Near Loss Summary be Prepared ( ) Yes ( ) No If yes, By:

Quality Review By:	Date:	Findings:

Corrective Action					Validation & Verification		
CF	Corrective Actions (Must match Causative Factor)	Responsible Party	Due Date	Date Completed	Verified By/ Validated By	Date	Details
					Verified By:		
					Validated By:		
					Verified By:		
					Validated By:		
					Verified By:		
					Validated By:		

CRA 10 CAUSATIVE FACTORS (CF)

Personal Factors		Company Factors		External Factors	
1	Insufficient training for task	5	Incomplete or no procedures	10	Exposure to conditions
2	Hurrying to complete the task	6	Procedures not known or enforced		
3	Easier if proper process not followed	7	Improper PPE		
4	Took shortcuts without prior incident	8	Improper tools		
		9	Improper workplace layout		

Reported By and Site Role:				**Date:**		
Supervisor's Name & Project #:						
Sub-Contractor Name:						
Incident Location (City, State):						
Short Description of Incident:						
What Were Conditions Like?	**Weather**	**Lighting**				
When did incident Occur?	**Month**	**Day**	**Year**	**Time (hrs)**	**Time (min)**	**AM/PM**
Equipment Involved:						
Incident Type:		**Incident Sub-Type:**				

IT: Near Miss, Unsafe Act, Unsafe Condition IST: Environmental, Injury/Illness, Property Damage/Loss, Quality, Security, Vehicle

Potential Immediate Cause:		
☐ **Not following procedures**	☐ **Inattention/lack of awareness**	☐ **Exposure to conditions**
☐ **Improper use of tool/equip**	☐ **Protective system (PPE)**	☐ **Workplace layout**
☐ **Improper protective methods**	☐ **Defective tools/equip**	☐ **Other:**

Full Description of Incident:

Immediate Actions Taken:

PROPERTY ACCESS/UTILITY CLEARANCE DATA SHEET

(QSF-019)

PROJECT NAME: _____ PROJECT NUMBER: _____

CRA REPRESENTATIVE: _____

CLIENT: _____ CLIENT REPRESENTATIVE: _____ PHONE: _____

ON-SITE PROPERTY ACCESS APPROVAL _____ (OWNER OR AUTHORIZED AGENT SIGNATURE)

OFF-SITE PROPERTY ACCESS APPROVAL (if applicable) _____ (OWNER OR AUTHORIZED AGENT SIGNATURE)

UTILITY CLEARANCE APPROVAL _____ (OWNER OR AUTHORIZED AGENT SIGNATURE)

CONTRACTOR VERIFICATION APPROVAL _____ (OWNER OR AUTHORIZED AGENT SIGNATURE)

UTILITIES (INDICATE THAT LOCATION/UTILITY PRESENCE WAS CHECKED) *												
Borehole/ Excavation Location	Date (m/d/y)	Telephone	Water	Storm Sewer	Sanitary Sewer	Process Sewer	Gas	Electrical	Cable	Overhead Utilities	Other	Comments/Warnings

Additional Comments:

_____

_____

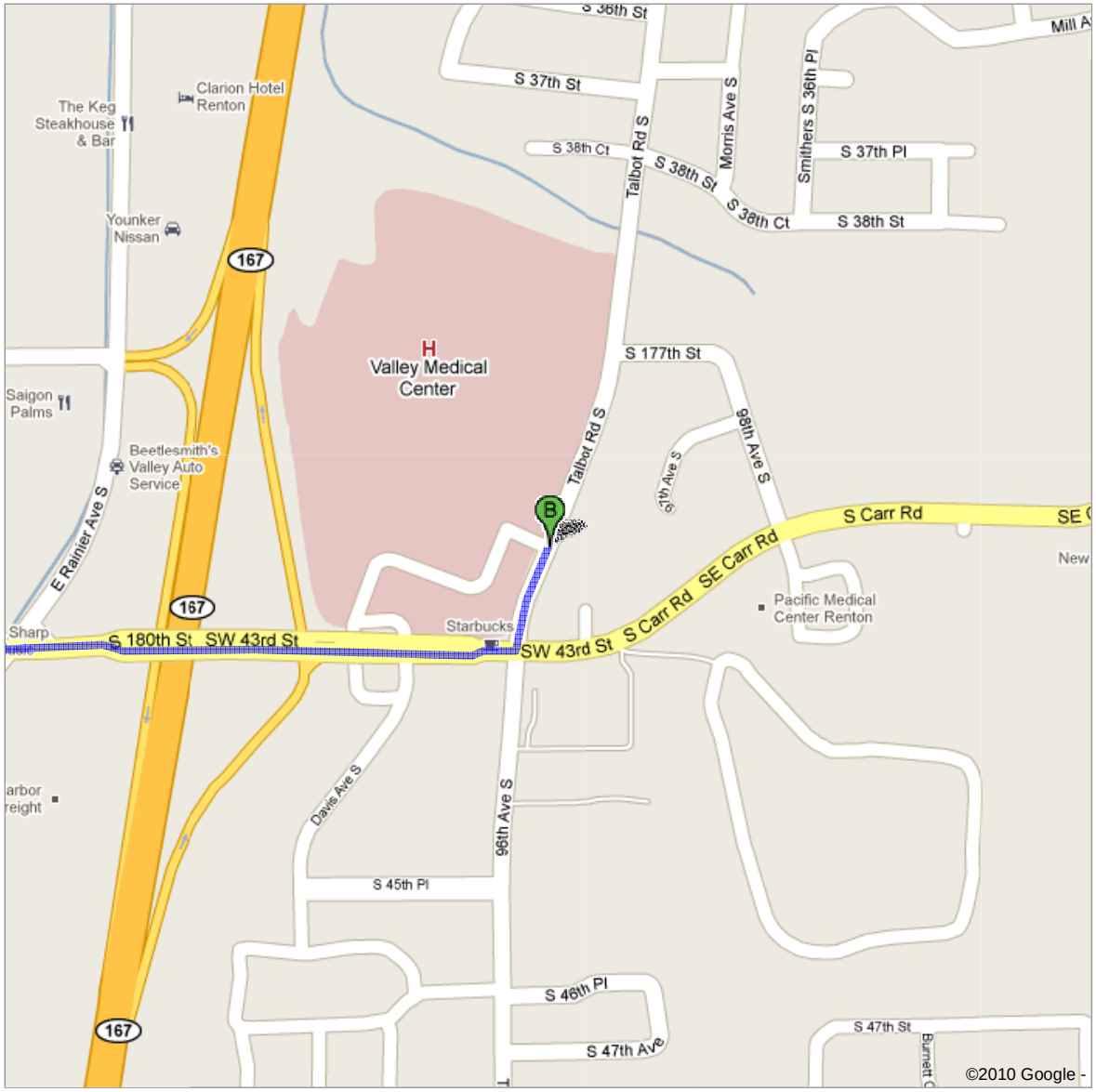
_____

* Note as appropriate, Contractor, Client or Owner, or Agent to sign, indicating no utilities are at the selected borehole/excavation locations.

THIS COMPLETED FORM IS A QUALITY RECORD

Google maps

Directions to Talbot Rd S
1.6 mi – about **6 mins**



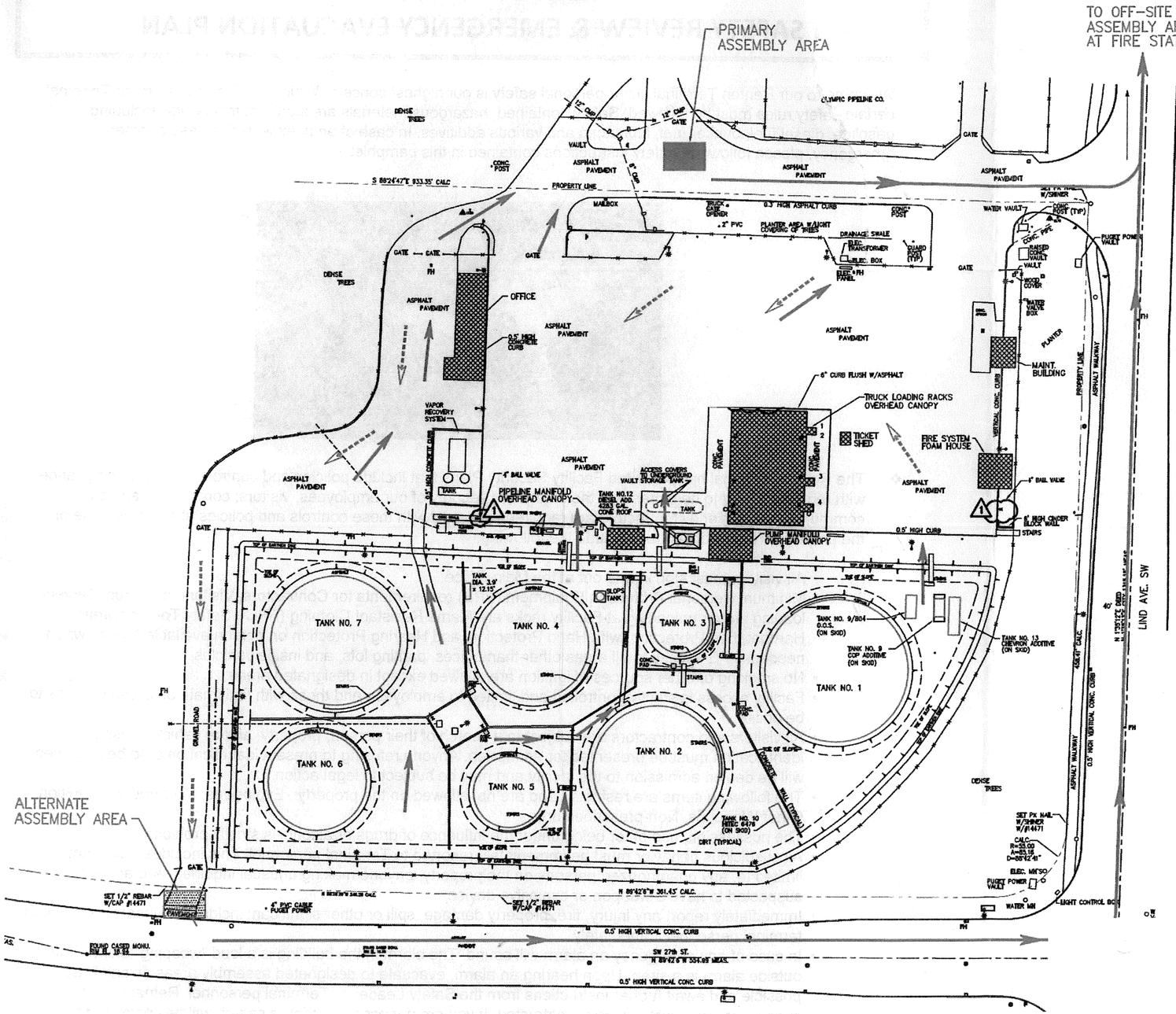
2423 Lind Ave SW, Renton, WA 98057

	1. Head **south** on **Lind Ave SW** toward **SW 27th St** About 3 mins	go 1.1 mi total 1.1 mi
	2. Turn **left** at **S 180th St/SW 43rd St** Continue to follow SW 43rd St About 2 mins	go 0.5 mi total 1.6 mi
	3. Turn **left** at **Talbot Rd S**	go 374 ft total 1.6 mi

Talbot Rd S

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.



GENERAL OR PARTIAL EVACUATION RULES

- Be aware of potential hazards
- Move upwind of emergency and/or at 90 degree angle
- If route is impassable, radio for assistance
- Listen for further announcements
- Proceed to nearest assembly area

ONCE AT ASSEMBLY AREAS

- Report to Safety Leader or Terminal Personnel
- Account for personnel
- Assess need for medical assistance
- Wait until Safety Leader or Terminal Personnel gives "All Clear" signal or issues other instructions before dispersing.

- *SAFETY AND HEALTH -ARE FIRST* -

General

The Renton Terminal is committed to responsible operation in all areas of our business. We will operate and maintain our facilities and equipment, handle our products and conduct our business in a manner to prevent personal injuries/illnesses, damage to the environment, and adverse impact to our the community. We are committed to compliance with all legal requirements applicable to the conduct of business wherever we operate.

Policy

The safety and health of all visitors, contractors, and employees is an integral part of all Terminal activities.

The management of the Renton Terminal is responsible to ensure systems are in place to provide the resources and training to prevent, identify and correct substandard practices/ conditions and maintain a safe and healthful workplace.

All employees and contractors must conduct themselves in a safe and responsible manner and follow established rules and instructions to ensure compliance with applicable operating procedures. Employees and contractors are expected to report substandard practices/conditions through their supervisor or established alternative mechanisms and to continue reporting until appropriate action is taken.

Principles

Injuries, illnesses, harm to neighbors, property or environmental damage and process losses are preventable. This is a core operating value.

Compliance with applicable legal requirements is integral to our business.

Working in a manner that preserves employee safety and health is a condition of employment.

ConocoPhillips

APPENDIX B

JOB SAFETY ANALYSIS TABLES

Job Safety Analysis (JSA)

JSA Filename: Moving and Handling Waste Drums

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority.**

Date Issued/Revised	December 3, 2010	**JSA Type**	O&M
Work Type	Remediation	**Client**	Conoco Phillips RM&R
Work Activity	Moving and Handling Waste Drums		
Work Site	Renton Terminal, WA		
Key Equipment	Multi-Phase Extraction (MPX) System		
Task-specific Training	40 hr HAZWOPER or 8 hr Refresher, HAZComm, PPE, Hand and Power Tools,		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE JOB STEPS FOR TASK-SPECIFIC REQUIREMENTS)			
☐ REFLECTIVE VEST*	☐ GOGGLES	☐ APR: _____*	☒ GLOVES*
☒ HARD HAT	☐ FACE SHIELD*	☐ SUPPLIED AIR RESPIRATOR*	☐ COVERALLS*
☐ LIFELINE / HARNESS*	☐ HEARING PROTECTION*	☐ PPE CLOTHING*	☐ OTHER* _____
☒ SAFETY GLASSES	☒ STEEL TOED BOOTS	☐ OTHER* _____	☐ OTHER* _____
ADDITIONAL PPE: * Provide specific type(s) or descriptions of this item below			
Reference the ConocoPhillips (HSE Procedure RM&R 005 personal protective equipment glove selection guideline) for recommended gloves.			
Use hearing protection as necessary based on site conditions.			

Development Team	**Position/Title**	**Reviewed By**	**Position/Title**	**Date**
		Patrick McGuire	Safety Professional	12/3/10

Job Safety Analysis (JSA)

JSA Filename: Moving and Handling Waste Drums

JOB STEPS [1]	TASK ACTIVITY	POTENTIAL HAZARD(S) [2]	CORRECTIVE MEASURE(S)[3]	Person Responsible
1	Inspect PPE for suitability and service	Lack of expected protection from hazards	• Replace all questionable PPE identified	Field Personnel
2	Opening lid and filling 55-gallon drums with waste material (i.e. waste absorbent material, PPE – Tyvek suits, etc.)	Contaminant Exposure Pinch Points Hand Injury Slip / Trip / Fall	• Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 3xx testing standard over appropriate chemical resistant gloves • Remove trip hazards in the area around the drums and the pathway to the drum;	Field Personnel
3	Moving filled waste drums to designated area	Pinch Points Hand Injury Slip / Trip / Fall Heavy Load Back and Shoulder Strain	• Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 3xx testing standard over appropriate chemical resistant gloves • Ensure that drums are sealed properly before maneuvering; • Use buddy system and proper lifting techniques; • Use moving/lifting device (Drum Dolly) to move 55 gallon drums; • Should the drums be excessively heavy, personnel may need to consider alternative lifting/moving device; • Ensure that drum is fastened to drum dolly prior to moving drum; • Remove trip hazards in the area around the drums before moving;	Field Personnel
4	Managing waste drums (55 gallon drums)	Pinch Points Slips / Trips / Fall Heavy Lifting Mislabeling Waste	• Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 3xx testing standard over appropriate chemical resistant gloves • Use lifting/moving device (Drum Dolly) to move 55 gallon drums; • Label waste appropriately (generator, contact number, identification of contents, and site location); specify type of contents; arrange for disposal.	Field Personnel
			•	
			•	
			•	
			•	

[1] Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

[2] A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress / ergonomics / lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught"

[3] Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable and quantified terms. Avoid subjective general statements such as, "be careful" or "use as appropriate".

JOB SAFETY ANALYSIS (JSA)

Decontamination of Sampling Equipment and Personnel (PPE Level D)

Safety Means Awareness Responsibility Teamwork

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority (SWA).**

Date Issued/Revised:	December 3, 2010	**JSA Type:**	Decontamination
Work Type:	Environmental	**Client:**	ConocoPhillips RM&R
Work Activity:	Decontamination of sampling equipment and personnel (PPE Level D)		
Work Site:	Renton Terminal, WA		
Key Equipment:	Alconox/Liquinox, brushes		
Task-specific Training:	Decontamination/Site Control; Quality Control/Sampling Plan		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (see job steps for task-specific requirements)					
☒ Reflective Vest	☒ Goggles	☒ Gloves*	**Supplied Air**	**APR**	
☒ Hard Hat	☐ Face Shield*	☐ Coveralls*	☐ SCBA	☐ Full Face APR	☐ Particulate ☐ Organic Vapor
☐ Lifeline/Harness*	☐ Hearing Protection*	☐ PPE Clothing*	☐ Airline Respirator (attach description)	☐ Half Mask APR	☐ Particulate/Organic Vapor Combined
☒ Safety Glasses	☒ Safety-toed Boots				☐ Acid Gas
☐ Other*			☐ Other*	☐ Other*	
ADDITIONAL PPE (*provide specific type(s) or descriptions of this item below)					
Nitrile gloves to be worn when decontaminating reusable equipment					
Utilize the CoP RM&R Glove Selection Guideline for recommended gloves					

Project Development Team						
Name	**Signature**	**Position/Title**	**Modified By**	**Reviewed By**	**Position/Title**	**Date**
				Patrick McGuire	Safety Professional	12/3/10

JOB SAFETY ANALYSIS (JSA)

Decontamination of Sampling Equipment and Personnel (PPE Level D)

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
1	Inspect PPE for suitability and service	• Lack of expected protection from hazards	• Replace all questionable PPE identified	Sampling Technician
2	Decontamination of sampling equipment to include pumps, bailers, tubing, etc.	• Contaminant exposure • Pinch points • Slip/trip/hit/fall hazards • Heavy lifting	• Wear listed PPE during decon activities (nitrile gloves) donned over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 3xx testing standard • Avoid putting hands in or near pinch points • Maintain good housekeeping, be aware of surroundings • Use proper lifting techniques, buddy lift when appropriate	Sampling personnel
3	Decontamination of personnel	• Contaminant exposure • Slip/trip/hit/fall hazards	• Dispose of used PPE in accordance with site requirements • Wash hands and face before eating, drinking, or using tobacco products • Take care when removing PPE (boots, gloves, etc.). Sit down to remove/change boots as necessary	Sampling personnel
4	Management of waste derived from decontamination activities	• Contaminant exposure • Heavy lifting	• Containerize decon waste (water, used PPE, etc) as required • Use proper lifting techniques, use buddy lifting or mechanical means when necessary	Sampling personnel

(1) Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

(2) A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

(3) Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

Job Safety Analysis (JSA)

JSA Filename: Groundwater Sampling Activities

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather (environmental) conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority.**

Date Issued/Revised	December 3, 2010	**JSA Type**	Groundwater Sampling
Work Type	Environmental	**Client**	ConocoPhillips RM&R
Work Activity	Groundwater sampling		
Work Site	Renton Terminal, WA		
Key Equipment	Bailer or peristalic pump (select one or both – address in task activity and hazards); photoionization detector; safety cones/barricades		
Task-specific Training	Electrical safety (if using pump), groundwater sampling procedures – Reference HASP for additional Site/Client safety training requirements, 40 hr HAZWOPER, PPE, & Hazard Communication		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE JOB STEPS FOR TASK-SPECIFIC REQUIREMENTS)			
☒ REFLECTIVE VEST*	☐ GOGGLES	☐ APR: _____*	☒ GLOVES*
☒ HARD HAT	☐ FACE SHIELD*	☐ SUPPLIED AIR RESPIRATOR*	☐ COVERALLS*
☐ LIFELINE / HARNESS*	☐ HEARING PROTECTION*	☐ PPE CLOTHING*	☐ OTHER* _____
☒ SAFETY GLASSES WITH SIDESHIELDS	☒ STEEL TOED BOOTS	☐ OTHER* _____	☐ OTHER* _____
ADDITIONAL PPE: * Provide specific type(s) or descriptions of this item below			
Use nitrile inner/outer gloves when handling wet sampling containers; Use abrasion/cut-resistant gloves for other tasks; Use hearing protection as necessary based on site conditions; Class II reflective vest.			
Reference the ConocoPhillips (HSE Procedure RM&R 005 personal protective equipment glove selection guideline) for recommended gloves.			

Development Team	Position/Title	Reviewed By	Position/Title	Date
		Patrick McGuire	Safety Professional	12/3/10

Job Safety Analysis (JSA)

JSA Filename: Groundwater Sampling Activities

JOB STEPS [1]	TASK ACTIVITY	POTENTIAL HAZARD(S) [2]	CORRECTIVE MEASURE(S)[3]	Person Responsible
1	Inspect/calibrate sampling equipment	Loss due to malfunctioning equipment	• Check all equipment to ensure it is in proper working order and has been calibrated to CRA and manufacturer's standards. Document.	Sampling Technician
2	Inspect PPE for suitability and service	Lack of expected protection from hazards	• Replace all questionable PPE identified	Sampling Technician
3	Establish work zone at monitoring well location	Traffic Pinch points Back strain	• Maintain awareness of on-site traffic patterns and walking paths; setup barricades • Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 3xx testing standard. • Use buddy system and proper lifting techniques.	Sampling Technician
4	Open monitoring well cover(s)	Pinch points Hand injury Biological hazards	• Avoid placing hands in pinch points • Wear Medium Duty gloves that comply with the ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx testing standard • Use the proper tool(s) when opening well covers (open face wrench/socket wrench). • Inspect for other hazards that may affect the hands (hypodermic needles, etc.) • Use PID to monitor air quality in breathing space • Heightened awareness of wasps, ants, bees, spiders, and poison plants	Sampling Technician
5	Measure water levels	Contaminant exposure Cross contamination	• Wear Light Duty gloves that comply with the ANSI Cut and Abraision Resistance level 2 EN 38821xx testing standard under appropriate chemical resistant gloves • Use PID to monitor air quality. • Decon probe and measuring tape following gauging of well.	Sampling Technician
6	Develop/purge monitoring well location (select one or both – peristalic pump or bailer – hazards will be contingent upon method)	Slips/trips/falls Cuts Pinch points Electrical (AC or DC) Back and shoulder strain	• Maintain housekeeping; be aware of ground conditions. • Wear Light Duty gloves that comply with the ANSI Cut and Abraision Resistance level 2 EN 38821xx testing standard under appropriate chemical resistant gloves Keep hands away from pinch points. • Inspect wiring, clamps, cables, etc.; avoid arcing. • Stretch affected muscles (triceps, back, neck, and shoulder) prior to/during/after activity; avoid repetitive motions and overhead lifts; use proper lifting techniques and neutral postures; take breaks.	Sampling Technician
7	Collect groundwater sample utilizing bailer or peristalic pump	Chemical exposure Cuts from container breaking Sample misidentification	• Wear Light Duty gloves that comply with the ANSI Cut and Abraision Resistance level 2 EN 38821xx testing standard under appropriate chemical resistant gloves • Inspect bottles for signs of breakage/damage; do not use suspect containers; Close glass bottles carefully – avoid cross threading lid and bottle. • Ensure sample id numbers match sample location/site plan; Check sample labels for accuracy prior to placing in container.	Sampling Technician

Job Safety Analysis (JSA)

JSA Filename: Groundwater Sampling Activities

JOB STEPS [1]	TASK ACTIVITY	POTENTIAL HAZARD(S) [2]	CORRECTIVE MEASURE(S)[3]	Person Responsible
8	Close monitoring well cover	Traffic Hand injury Pinch points	• Maintain awareness of on-site traffic patterns; verify barricades are still in place. • Wear Medium Duty gloves that comply with the ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx testing standard • Use the proper tool(s) when opening well covers (open face wrench/socket wrench). • Avoid placing hands in pinch points.	Sampling Technician
9	Pack samples in container (i.e., cooler)	Bottle breakage Chemical exposure Back strain Lost time due to sampling error	• Pack glass containers in bubble wrap or equivalent protection. • Wear Light Duty gloves that comply with the ANSI Cut and Abraision Resistance level 2 EN 38821xx testing standard under appropriate chemical resistant gloves • Use proper lifting techniques and buddy lifts (if necessary). • Ensure samples are packed/labeled/shipped correctly – doublecheck.	Sampling Technician
10	Manage any investigative derived waste (IDW)	Chemical exposure Pinch points Slips/trips/falls Heavy lifting Mislabeling waste	• Wear Medium Duty gloves that comply with the ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx testing standard under appropriate chemical resistant gloves • Avoid pinch points; use proper PPE. • Inspect for proper housekeeping; clean up work area. • Use proper lifting techniques; stretch affected muscles; do not lift more than 50 pounds unassisted – use lifting devices and a buddy to assist. • Label IDW appropriately (generator, contact number, identification of contents, and site location); specify type of contents; arrange for disposal.	Sampling Technician and Project Manager

[1] Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

[2] A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress / ergonomics / lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught"

[3] Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable and quantified terms. Avoid subjective general statements such as, "be careful" or "use as appropriate".

Job Safety Analysis (JSA)

JSA Filename: General Maintenance/Housekeeping Activities

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority.**

Date Issued/Revised	December 3, 2010	**JSA Type**	General Site Maintenance Activities
Work Type	Environmental	**Client**	ConocoPhillips RM&R
Work Activity	General maintenance activities (clearing vegetation/brush, painting wells, removing stained soils/ materials)		
Work Site	Renton Terminal, WA		
Key Equipment	Weed wacker, fuel (gasoline), garden cutters, shovel, paint		
Task-specific Training	40 hr HAZWOPER or 8 hr Refresher, HAZComm, PPE,		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE JOB STEPS FOR TASK-SPECIFIC REQUIREMENTS)			
☐ REFLECTIVE VEST*	☐ GOGGLES	☐ APR: _____*	☒ GLOVES*
☒ HARD HAT	☐ FACE SHIELD*	☐ SUPPLIED AIR RESPIRATOR*	☐ COVERALLS*
☐ LIFELINE / HARNESS*	☒ HEARING PROTECTION*	☐ PPE CLOTHING*	☐ OTHER* _____
☒ SAFETY GLASSES	☒ STEEL TOED BOOTS	☐ OTHER* _____	☐ OTHER* _____
ADDITIONAL PPE: * Provide specific type(s) or descriptions of this item below			
Hearing Protection Required - NRR-20 hearing protection,			
Reference the ConocoPhillips HSE Procedure RM&R 005 Personal Protective Equipment Glove Selection Guideline for recommended gloves.			

Development Team	Position/Title	Reviewed By	Position/Title	Date
		Patrick McGuire	Safety Professional	12/3/10

Job Safety Analysis (JSA)

JSA Filename: General Maintenance/Housekeeping Activities

JOB STEPS [1]	TASK ACTIVITY	POTENTIAL HAZARD(S) [2]	CORRECTIVE MEASURE(S)[3]	Person Responsible
1	Evaluate work area where maintenance activities will be conducted	Slip / Trip / Fall	• Keep work areas and walkways free of excess materials and debris to reduce trip hazards; • Keep all work surfaces dry when possible;	Field Personnel
		Biological Hazards	• Inspect work area upon arrival to identify biological hazards (snakes, insects, poisonous plants, etc); • Open enclosures slowly and cautiously while looking for the possible presence of biological hazards;	Field Personnel
		Fire / Explosion (Hot Work)	• Ensure that there are two 20-lb fully charged fire extinguishers are available and perform monthly inspection of each unit; • Ensure that a fire watch is implemented for vegetation clearing activities using weed wacker;	Field Personnel
2	Inspect PPE for suitability and service	Lack of expected protection from hazards	• Replace all questionable PPE identified	Field Personnel
2	Start weed wacker and clearing vegetation	Physical hazard; Noise hazard; Fire/Explosion Hazard; Slip/Trip/Fall	• Wear Medium Duty gloves that comply with the ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx testing standard • Ensure that the line trimmer is away from person (legs and arms) – point weed wacker away from body; • Ensure that proper noise protection is utilized; • Ensure work area is clear of debris; • Ensure that fire watch is in effect; • Use proper lifting techniques when handing weed wacker;	Field Personnel
3	Manual clearing of vegetation/brush (using garden cutters)	Physical hazards; Biological hazards; Pinch points;	• Wear Medium Duty gloves that comply with the ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx testing standard • Be aware of potential pinch points in work area; • Inspect areas for biological hazards before clearing brush; • Inspect clothing after completion of activities for insects (such as ticks); • Be aware of sharp branches/vegetation;	Field Personnel
4	Painting Wells	Chemical Hazards; Proper spill prevention (of paint);	• Wear Light Duty gloves that comply with the ANSI Cut and Abrasion Resistance level 2 EN 38821xx testing standard • Use spill pans and absorbent materials to ensure that paint does not spill around surrounding work areas;	Field Personnel
5	Cleaning areas with stained soils	Chemical Hazards; Proper waste containment; Physical hazards;	• Wear Medium Duty gloves that comply with the ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx testing standard under appropriate chemical resistant gloves • Properly dispose stained materials in drums for waste disposal; • Use proper lifting techniques to remove stained soils/material using shovel;	Field Personnel

[1] Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

[2] A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress / ergonomics / lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught"

[3] Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable and quantified terms. Avoid subjective general statements such as, "be careful" or "use as appropriate".

JOB SAFETY ANALYSIS (JSA)

Mobilization-Demobilization

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority (SWA).**

Date Issued/Revised:	December 3, 2010	**JSA Type:**	Mobilization/Demobilization
Work Type:	General Industry	**Client:**	ConocoPhillips RM&R
Work Activity:	Mobilization – Demobilization		
Work Site:	Renton Terminal, WA		
Key Equipment:	Company Vehicle, valid driver's license, 360-degree roof topper		
Task-specific Training:	Motor Vehicle Safety Training, Defensive Driving		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (see job steps for task-specific requirements)					
☒ Reflective Vest	☐ Goggles	☒ Gloves*	**Supplied Air**	**APR**	
☐ Hard Hat	☐ Face Shield*	☐ Coveralls*	☐ SCBA	☐ Full Face APR	☐ Particulate ☐ Organic Vapor
☐ Lifeline/Harness*	☐ Hearing Protection*	☐ PPE Clothing*	☐ Airline Respirator (attach description)	☐ Half Mask APR	☐ Particulate/Organic Vapor Combined
☒ Safety Glasses	☒ Safety-toed Boots				☐ Acid Gas
☐ Other*			☐ Other*	☐ Other*	
ADDITIONAL PPE (*provide specific type(s) or descriptions of this item below)					
Use safety glasses while loading/unloading.					
Refer to CoP RM&R's Glove Selection Guideline for appropriate hand protection.					

Project Development Team **Name**	**Signature**	**Position/Title**	**Modified By**	**Reviewed By**	**Position/Title**	**Date**
				Patrick McGuire	Safety Professional	12/3/10

JOB SAFETY ANALYSIS (JSA)

Mobilization-Demobilization

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
1	Discuss STAR and SWA	• Site personnel not aware of STAR and SWA	• Project team (CRA) discusses importance of and documentation procedures for SWA during pre-job safety meeting • Use SWA to stop any work that is unsafe	Vehicle Operator/ Passenger
2	Check weather	• Unexpected storm • Fog; rain; snow; lightening/thunder • Heat/cold stress	• Check local weather forecast • Discuss weather issues and precautions to take while driving and on site during the pre-job safety meeting • If weather conditions (e.g., fog, rain, snow, etc.) impair the ability/vision of the driver, exit at nearest safe location and assess the situation • While on site, at first sign of lightening/thunder utilize SWA and assess weather conditions • In extreme temperatures, ensure all personnel have proper clothing, hydration, and heat/cold protection (e.g., canopy, fan, glove warmers)	Vehicle Operator/ Passenger
3	Inspect PPE for suitability and service	• Lack of expected protection from hazards	• Replace all questionable PPE identified	Vehicle Operator/ Passenger
4	Load equipment into vehicle	• Back strain • Cuts • Pinch points • Hand/foot injury • Forgotten or damaged equipment	• Use proper lifting techniques and buddy system if needed • Wear medium duty gloves approved by the ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx Testing Standard • Do not place hands/fingers in pinch point locations • Wear safety-toed boots • Verify requested equipment against warehouse form • Load equipment in an organized manner to prevent shifting during transport or use cargo netting	Vehicle Operator/ Passenger
5	Complete CRA Daily Operator Vehicle Checklist	• Damaged vehicle lights, tires, windows, mirrors, horn • Inadequate vehicle documents and/or safety items	• Check for fluid leaks under vehicle • Test operation of headlights, front/rear turn signals, backup lights, brake lights, and emergency flashers • Visually check the pressure/wear of tires • Ensure the vehicle has a spare tire • Assure windshield and window glass is clean and free from obstructions • Test the windshield wipers and horn • Verify vehicle registration, insurance card, and inspection sticker is present and valid • Ensure the vehicle contains a first aid kit, fire extinguisher, and road hazard kit	Vehicle Operator
6	Check and adjust seat, steering wheel, headrest, and mirrors	• Back/body strain • Blind spot • Impaired vision	• Adjust seat, headrest, and steering wheel height so body is fully supported/comfortable and pedals are within easy reach • Ensure mirrors are properly adjusted	Vehicle Operator/ Passenger
7	Fasten seat belt(s) and ensure passenger(s) seat belts are fastened	• Serious injury, ejection, or death from collision and/or traffic citation	• Verify driver and passenger(s) seat belts are in good condition and properly latched	Vehicle Operator/ Passenger

JOB SAFETY ANALYSIS (JSA)

Mobilization-Demobilization

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
8	Ensure vehicle doors are locked	• Serious injury, ejection, or death from collision • Unwanted intrusion • Lost equipment	• Manually lock all doors to vehicle	Vehicle Operator/ Passenger
9	Start engine and check gauges and warning lights	• Vehicle breakdown	• Verify sufficient fuel and other hazard lamps (e.g., battery, oil, and temperature) are not lit	Vehicle Operator
10	Mobilize to site	• Arriving late • Collision • Injury or death to occupants or other parties	• Do not use cell phones or perform other distracting activities while vehicle is in motion • Constantly scan intersections, move eyes, check mirrors, and assess traffic lights (fresh vs. stale) • Maintain safety cushion around vehicle (front, sides, and rear) and 4-second following distance • Utilize all driving defensive techniques	Vehicle Operator/ Passenger
11	Arrive at site	• Pedestrian injury • Collision	• Maintain awareness of pedestrian/vehicular traffic when entering site and traveling to work zone	Vehicle Operator/ Passenger
12	Park vehicle	• Pedestrian injury • Collision • Property damage	• Maintain awareness of pedestrian/vehicular traffic • Park vehicle in pull-through parking space or facing the exit • Use caution and mirrors/spotter when backing vehicle	Vehicle Operator
13	Demobilization	• Collision • Injury or death to occupants or other parties	• Perform perimeter vehicle check • Maintain awareness of pedestrian/vehicular traffic when exiting site • Utilize defensive driving techniques • Complete post-departure checklist and report vehicle problems to company vehicle maintenance manager or rental car agency	Vehicle Operator/ Passenger

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(2) A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

(3) Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

JOB SAFETY ANALYSIS (JSA)

Carbon Change-Out

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority (SWA).**

Date Issued/Revised:	December 3, 2010	**JSA Type:**	O&M
Work Type:	Remediation	**Client:**	CoP RM&R
Work Activity:	Carbon change-out (vapor carbon, liquid carbon, and clay-coal) - Oversight		
Work Site:	Renton Terminal, WA		
Key Equipment:	Multi-Phase Extraction (MPX) System, vacuum truck		
Task-specific Training:	40-Hour HAZWOPER or 8-Hour Refresher, HAZComm, PPE, Mobile Equipment Operations, Hand and Power Tool Safety, Lock-Out/ Tag-Out, Hearing Conservation		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (see job steps for task-specific requirements)

☒ Reflective Vest	☐ Goggles	☒ Gloves*	**Supplied Air**	**APR**	
☒ Hard Hat	☒ Face Shield*	☐ Coveralls*	☐ SCBA	☐ Full Face APR	☐ Particulate ☐ Organic Vapor
☐ Lifeline/Harness*	☐ Hearing Protection*	☒ PPE Clothing*	☐ Airline Respirator (attach description)	☐ Half Mask APR	☐ Particulate/Organic Vapor Combined
☒ Safety Glasses	☒ Safety-toed Boots				☐ Acid Gas
☐ Other*			☐ Other*	☐ Other*	

ADDITIONAL PPE (*provide specific type(s) or descriptions of this item below)

Class II reflective vests; NRR-20 hearing protection; nitrile gloves; poly-coated Tyvek suits

Reference the ConocoPhillips HSE Procedure RM&R 005 personal protective equipment glove selection guideline for recommended gloves.

Project Development Team Name	Signature	Position/Title	Modified By	Reviewed By	Position/Title	Date
			Patrick McGuire		Safety Professional	12/3/10

JOB SAFETY ANALYSIS (JSA)

Carbon Change-Out

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
1	General site practices – Review STAR: List/review task and area hazards	• General hazards	• Refer to Site Reconnaissance JSA for descriptions of job steps, potential hazards, and preventative/corrective action • Use STAR process	CRA project personnel on site
2	Inspect PPE for suitability and service	• Lack of expected protection from hazards	• Replace all questionable PPE identified	CRA project personnel on site
3	Secure carbon vessels with straps	• Pinch points • Hand injury • Slip/trip/fall hazards • Electrical hazard	• Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Avoid placing hands in pinch points • Remove trip hazards in the area around carbon vessels • Ensure that the latches on the side of the trailer are secure prior to attaching straps • Do not attempt to move carbon vessels at any time • Follow Lock Out/Tag Out (LOTO) procedure prior to performing work	CRA project personnel on site
4	Removing caps and hosing on carbon vessels	• Pinch points • Hand injury • Slip/trip/fall hazards • Electrical hazard • Lifting hazards • Manual material handling • Back injury	• Remove trip hazards in the area around carbon vessels • Avoid placing hands in pinch points • Once removed, ensure that the caps and hosing assemblies are away from the vessels where work is conducted • Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Do not attempt to move the vessels at any time • Follow LOTO procedure prior to performing work • Reduce travel distance when there is a need to carry/lift materials • Make sure grip is adequate; wear leather/cotton gloves • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one-handed carrying if possible; maintain awareness of footing	CRA project personnel on site

JOB SAFETY ANALYSIS (JSA)

Carbon Change-Out

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
1	General site practices – Review STAR: List/review task and area hazards	• General hazards	• Refer to Site Reconnaissance JSA for descriptions of job steps, potential hazards, and preventative/corrective action • Use STAR process	CRA project personnel on site
2	Inspect PPE for suitability and service	• Lack of expected protection from hazards	• Replace all questionable PPE identified	CRA project personnel on site
7	**Subcontractor** – Vacuuming spent carbon from vessels using VAC truck and filling empty drums with spent carbon (waste drums) **CRA Personnel** – Provide oversight during vacuuming and waste drum filling process	• Pinch points • Hand injury • Slip/trip/fall hazards • Electrical hazard • Fire/explosion • Lifting hazards • Manual material handling • Back injury • Heaving equipment (vacuum truck) • High noise level	• Avoid placing hands in pinch points • Follow LOTO procedure prior to performing work • Wear medium/heavy duty gloves that meet the ANSI Cut and Abrasion Resistance Level 3 EN 388 4522 testing standard. • Wear hearing protection when vacuum truck is in operation • Inspect vacuum hosing and connectors prior to use; if faulty do not use • Be aware of vacuum hose lines connected to vacuum truck and drums • Ensure that there are two 20-pound fully charged fire extinguishers in the trailer (as per Kinder Morgan requirements) and perform monthly inspection of each unit • Ensure that a fire watch is implemented for activities that involve hot work • Perform a pre-start meeting, inform subcontractor of safe lifting practices • Refer to step 2 and the HASP for additional lifting information • Notify client when conducting work and ensure that the fire watch procedure meets facility requirements	CRA project personnel and subcontractor on site
8	Refilling vessels with vapor carbon, liquid carbon, or clay coal	• Pinch points • Hand injury • Slip/trip/fall hazards • Lifting hazards • Manual material handling • Back injury	• Refer to step 2 and the HASP for additional lifting information • Remove trip hazards in the area around carbon vessels • Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard.	CRA project personnel on site
9	Re-attach caps and hosing to the carbon vessels	• Pinch points • Hand injury • Slip/trip/fall hazards • Lifting hazards • Manual material handling • Back injury	• Refer to step 2 and the HASP for additional lifting information • Remove trip hazards in the area around carbon vessels • Ensure that caps and hosing are properly connected before starting up MPX system • Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 3xx testing standard.	CRA project personnel on site
10	Managing waste carbon (55-gallon drums)	• Pinch points • Slips/trips/fall hazards • Lifting hazards • Manual material handling • Back injury • Mislabeling waste	• Refer to step 2 and the HASP for additional lifting information Use lifting/moving device (drum dolly) to move 55-gallon drums • Label waste appropriately (generator, contact number, identification of contents, and site location); specify type of contents; arrange for disposal • Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 3xx testing standard.	CRA project personnel on site

(1) Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

JOB SAFETY ANALYSIS (JSA)

Carbon Change-Out

(2) A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

(3) Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

JOB SAFETY ANALYSIS (JSA)

Filter Bag Change-Out

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority (SWA).**

Date Issued/Revised:	December 3, 2010	**JSA Type:**	O&M
Work Type:	Remediation	**Client:**	CoP RM&R
Work Activity:	Filter bag change-out		
Work Site:	Renton Terminal, WA		
Key Equipment:	Multi-Phase Extraction (MPX) System		
Task-specific Training:	40-hour HAZWOPER or 8-hour Refresher, HAZComm, PPE, New Jersey N2 License, Lock-Out/Tag-Out		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (see job steps for task-specific requirements)					
☐ Reflective Vest	☐ Goggles	☒ Gloves*	**Supplied Air**	**APR**	
☒ Hard Hat	☒ Face Shield*	☐ Coveralls*	☐ SCBA	☐ Full Face APR	☐ Particulate ☐ Organic Vapor
☐ Lifeline/Harness*	☒ Hearing Protection*	☐ PPE Clothing*	☐ Airline Respirator (attach description)	☐ Half Mask APR	☐ Particulate/Organic Vapor Combined
☒ Safety Glasses	☒ Safety-toed Boots				☐ Acid Gas
☐ Other*			☐ Other*	☐ Other*	
ADDITIONAL PPE (*provide specific type(s) or descriptions of this item below)					
NRR-20 hearing protection (when system is operating); nitrile gloves; full face shield should be worn in place of safety glasses if there is potential for splashes.					
Reference the ConocoPhillips HSE Procedure RM&R 005 personal protective equipment glove selection guideline for recommended gloves.					

Project Development Team **Name**	**Signature**	**Position/Title**	**Modified By**	**Reviewed By**	**Position/Title**	**Date**
			Patrick McGuire		Safety Professional	12/3/10

JOB SAFETY ANALYSIS (JSA)

Filter Bag Change-Out

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
1	General site practices – Review STAR: List/review task and area hazards	• General hazards	• Refer to Site Reconnaissance JSA for descriptions of job steps, potential hazards, and preventative/corrective action • Use STAR process	CRA project personnel on site
2	Inspect PPE for suitability and service	• Lack of expected protection from hazards	• Replace all questionable PPE identified	CRA project personnel on site
1	Remove used sock filter from housing and replace with new sock filter	• Contaminant exposure • Lifting hazards • Manual material handling • Back injury • Slip/trip/fall hazards • Electrical hazard • Pinch points • Hand injury • Tight area • Potential splash hazard	• Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Perform Lock-Out/Tag-Out procedure prior to performing task • Reduce exposure to contaminant/product by wearing proper PPE including safety glasses/full face shield and nitrile gloves • Ensure that area around pump is clear and that there are no tripping hazards • Avoid placing hands in pinch points • Reduce travel distance when there is a need to carry/lift materials • Make sure grip is adequate; wear leather/cotton gloves • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one-handed carrying if possible; maintain awareness of footing	CRA project personnel on site
2	Place used sock filter in appropriate drum for disposal	• Contaminant exposure • Slip/trip/fall hazards	• Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Reduce exposure to contaminant/product by wearing proper PPE including safety glasses and nitrile gloves • Follow JSA for handing and moving waste drums	CRA project personnel on site

(1) Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

(2) A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

(3) Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

JOB SAFETY ANALYSIS (JSA)

Remedial System Vapor Sampling

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority (SWA).**

Date Issued/Revised:	December 3, 2010	**JSA Type:**	O&M
Work Type:	Remediation	**Client:**	CoP RM&R
Work Activity:	Vapor sampling at MPX System		
Work Site:	Renton Terminal, WA		
Key Equipment:	Multi-Phase Extraction (MPX) System; air sampling equipment (FID), Tedlar bags		
Task-specific Training:	40-hour HAZWOPER or 8-hour Refresher, HAZComm, PPE, Electrical Safety, Vapor Sampling Procedures, FID Use		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (see job steps for task-specific requirements)					
☐ Reflective Vest	☐ Goggles	☒ Gloves*	**Supplied Air**	**APR**	
☒ Hard Hat	☐ Face Shield*	☐ Coveralls*	☐ SCBA	☐ Full Face APR	☐ Particulate ☐ Organic Vapor
☐ Lifeline/Harness*	☒ Hearing Protection*	☐ PPE Clothing*	☐ Airline Respirator (attach description)	☐ Half Mask APR	☐ Particulate/Organic Vapor Combined
☒ Safety Glasses	☒ Safety-toed Boots				☐ Acid Gas
☐ Other*			☐ Other*	☐ Other*	
ADDITIONAL PPE (*provide specific type(s) or descriptions of this item below)					
NRR-20 hearing protection (when system is operating); nitrile gloves when sampling					
Reference the ConocoPhillips HSE Procedure RM&R 005 personal protective equipment glove selection guideline for recommended gloves.					

Project Development Team **Name**	**Signature**	**Position/Title**	**Modified By**	**Reviewed By**	**Position/Title**	**Date**
			Patrick McGuire		Safety Professional	12/3/10

JOB SAFETY ANALYSIS (JSA)

Remedial System Vapor Sampling

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
1	General site practices – Review STAR: List/review task and area hazards	• General hazards	• Refer to Site Reconnaissance JSA for descriptions of job steps, potential hazards, and preventative/corrective action • Use STAR process	Sampling Technician
2	Inspect PPE for suitability and service	• Lack of expected protection from hazards	• Replace all questionable PPE identified	Sampling Technician
1	Carry vapor sampling equipment (FID) to system shed	• Slip/trip/fall hazards • Lifting hazards • Manual material handling	• Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Ensure clear path of travel • Check for proper housekeeping • Reduce travel distance when there is a need to carry/lift materials • Make sure grip is adequate; wear leather/cotton gloves • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one-handed carrying if possible; maintain awareness of footing	Sampling Technician
2	Open sample port	• Chemical exposure	• Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Keep face away from sampling port; wear appropriate PPE • Work from cleanest to dirty (effluent to mid-carbon to influent) when vapor sampling	Sampling Technician
3	Place tubing onto sample port to measure concentration	• Chemical exposure	• Good housekeeping; know your surroundings/work environment • Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard.	Sampling Technician
4	Collect air sample in Tedlar bag and take VOC measurement using the FID OR take direct concentration readings from the sample port	• Chemical exposure	• Keep face away from sampling port and pump; • Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard.	Sampling Technician
5	Carry sampling equipment and samples to vehicle or storage area	• Lifting hazards • Manual material handling Slip/trip/fall hazards	• Wear medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Make multiple trips if necessary to manage load • Refer to step 1 and the HASP for additional lifting information • Keep load(s) appropriate sized to see over; clean up work area	Sampling Technician

(1) Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

(2) A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

(3) Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

JOB SAFETY ANALYSIS (JSA)

Remediation System Pump Installation and Maintenance

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. CRA personnel have the authority and responsibility to use **Stop Work Authority (SWA).**

Date Issued/Revised:	December 3, 2010	**JSA Type:**	Installation/O&M
Work Type:	Environmental	**Client:**	CoP RM&R
Work Activity:	Installation and maintenance of remediation pumps		
Work Site:	Renton Terminal, WA		
Key Equipment:	Groundwater Extraction Pumps		
Task-specific Training:	CRA Safety, review O&M Manual if necessary		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (see job steps for task-specific requirements)					
☒ Reflective Vest	☐ Goggles	☒ Gloves*	**Supplied Air**	**APR**	
☒ Hard Hat	☐ Face Shield*	☐ Coveralls*	☐ SCBA	☐ Full Face APR	☐ Particulate ☐ Organic Vapor
☐ Lifeline/Harness*	☐ Hearing Protection*	☒ PPE Clothing*	☐ Airline Respirator (attach description)	☐ Half Mask APR	☐ Particulate/Organic Vapor Combined
☒ Safety Glasses	☒ Safety-toed Boots				☐ Acid Gas
☒ Other*			☐ Other*	☐ Other*	
ADDITIONAL PPE (*provide specific type(s) or descriptions of this item below)					
Use Nitrile gloves when handling potentially impacted materials. Flame Retardant Clothing (FRC) must be worn as outer layer at all times.					
Reference the ConocoPhillips HSE Procedure RM&R 005 personal protective equipment glove selection guideline for recommended gloves.					
H_2S meter must be calibrated and worn at all times (one per worker).					

Project Development Team		**Position/Title**	**Modified By**	**Reviewed By**	**Position/Title**	**Date**
Name	**Signature**					
			Patrick McGuire		Safety Professional	12/3/10

JOB SAFETY ANALYSIS (JSA)

Remediation System Pump Installation and Maintenance

Job Steps[1]	Task Activity	Potential Hazard(s)[2]	Corrective Measure(s)[3]	Person Responsible
1	General site practices – Review STAR: List/review task and area hazards	• General hazards	• Refer to Site Reconnaissance JSA for descriptions of job steps, potential hazards, and preventative/corrective action • Use STAR process	Field Technician
2	Inspect PPE for suitability and service	• Lack of expected protection from hazards	• Replace all questionable PPE identified	Field Technician
3	Installing/extracting pneumatic pumps from recovery wells	• Exposure to LNAPL	• Approach and stay upwind of wellhead and pump while installing/removing pump • Install/remove pump and hose in a slow controlled manner to avoid splashing of water/oil while pump is being removed from well • Have absorbent pads on hand to wipe any oil from hoses or pump as pump is lifted • Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • Wear safety glasses with side shields required for contact with affected material; when seer splash hazard exists, also wear Tyvek sleeve with chemical resistant apron and face shield • All equipment must be intrinsically safe; confirm prior to site entry	Field Technician
4	Pneumatic pump cleaning	• Physical injury from lifting equipment/pneumatic pump handling • Environmental release • Waste disposal	• Drain and/or relieve pressure recovery system lines prior to performing work, which requires exposing such lines to the atmosphere • Follow CRA Lockout/Tagout Procedures when shutting off valves/airlines • Use the proper tool for the job (e.g., wrench or screwdrivers for disassembling pumps, etc.) if tools are broken or in poor conditions, do not use until repaired or replaced • Position hands/fingers away from work area when using tools • Do not lift of move heavy equipment (in excess of 50 pounds [23 kg]) without assistance of mechanical means or coworkers • Avoid repetitive motion and overstraining muscles, bend and lift with legs and arms, not back • Do not reach or stretch to move equipment; use stable/neutral body posture • Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • • Use plastic sheeting under equipment and oil absorbent pads while cleaning to prevent spills to soil • Dispose of potentially affected materials in a drum at the site • Pump liquids back into the EQ tank	Field Technician Field Technician Field Technician
5	Cleanup of site and recovery well locations	• Slip/trip/fall hazards	• Wear appropriate chemical resistant gloves over medium duty gloves that meet the ANSI cut and abrasion resistance level 2 EN 388 33xx testing standard. • • Keep work area free of excess material and debris • Remove travel path hazards by keeping materials/objects organized and out of walkways • Keep work surface dry when possible; clean up spills before and during work	Field Technician

(1) Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

(2) A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

(3) Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

APPENDIX C

MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheet

U.S. Department of Labor
Occupational Safety and Health Administration
This form is consistent with ANSI standard for preparation of MSDS's in accordance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

Product Type: **CENTAUR 12x40**	
Product Code: 1470	**Profile No:** 1
Effective Date: **March 31, 2008**	**Supersedes: XXXXX**

SECTION I - PRODUCT AND COMPANY INFORMATION

Company Identification (USA)	**Calgon Carbon Corporation** P.O. Box 717 Pittsburgh, PA 15230-0717	
Telephone Number(s)	Information	412-787-6700
	Emergency	412-787-6700
Company Identification (Europe)	**Chemviron Carbon** Zoning Industriel de Feluy B-7181 Feluy, Belgium	
Telephone Number(s)	Information	32 64 51 18 11
	Emergency	32 64 51 18 11

Date Prepared November 3, 2008	Signature of Preparer (optional)	

SECTION II – COMPOSITION /INFORMATION ON INGREDIENTS

Nonhazardous components are listed at 3% or greater; acute hazards are listed when present at 1% or greater and chronic hazards are listed when present at 0.01% or greater. This is not intended to be a complete compositional disclosure.

Ingredient / Component	CAS No	% by Wt
Activated Carbon (Coal based)	7440-44-0	100

SECTION III – HAZARD(S) IDENTIFICATION

Emergency Overview: Black particulate solid, pellet or powder. Contact may cause eye irritation. Dust may be slightly irritating to eyes and respiratory tract. Avoid generation of dust during handling.

CAUTION: Wet activated carbon removes oxygen from air causing a severe hazard to workers in enclosed or confined space. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state and federal regulations

OSHA Regulatory Status		Not regulated	
HMIS Ratings	Health	0	4 = Extreme/Severe 3 = High/Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
(NFPA)	Flammability	1	
	Reactivity	0	
	Special		
Protective Equipment	Safety glasses with side shields or goggles, gloves, long sleeve shirt or lab coat, long pants recommended.		
Health Effects	See Section IV		
Environmental Effects	See Section XII		

Section IV – First-Aid Measures

Route of exposure	
Eyes	Dust may cause mild irritation, possibly reddening.
Skin	Dust may cause mild irritation, possibly reddening.
Inhalation	Dust may cause mild irritation to the upper respiratory tract.
Ingestion	Dust may cause mild irritation to digestive track resulting in nausea or diarrhea.
Signs/Symptoms of Exposure	Dust may cause irritation and redness of eyes, irritation of skin and respiratory system.
Emergency and First Aid Procedures	For eye contact, immediately flush with copious amounts of water for at least 15 minutes, lifting both the upper and lower lids occasionally; seek medical attention. For skin contact, wash with soap and water; seek medical attention. For inhalation, Remove to fresh air and rest as needed; seek medical attention for any breathing difficulty. For ingestion, drink plenty of water; seek medical attention.
Medical Conditions Generally Aggravated by Exposure	People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION V – FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use an extinguishing media suitable for the surrounding fire.
Unsuitable Extinguishing Media	None known
Specific Hazards	As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Activated carbon is difficult to ignite and tends to burn slowly (smolder) without producing smoke or flame. Carbon monoxide and carbon dioxide gas may be generated if combusted. Contact with strong oxidizers such as ozone or liquid oxygen may cause rapid combustion.
Protective Equipment and Procedures	Wear NIOSH approved self-contained breathing apparatus suitable for the surrounding fire.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear protective equipment, keep unnecessary personnel away, ventilate area of spill.
Environmental Precautions	The material is not soluble but can cause a particulate emission if discharged to waterways; therefore, dike all entrances to sewers and drains to avoid introducing the material into the waterways.
Containment & Clean-up	Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal. Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation. See section XIII
Other information	NA

SECTION VII – HANDLING AND STORAGE

Handling	Avoid prolonged contact with eyes and skin. Keep away from ignition sources. Use in well ventilated areas. Protect containers from physical damage. Wash hands after handling.
Storage	Store in cool, dry, ventilated area and in closed containers. Keep away from oxidizers, heat or flames. Store away from ignition sources.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	OSHA PEL	ACGIH TLV	Other limits
Activated Carbon	5 mg/M^3 Resp	5 mg/M^3 Resp	

Exposure Guidelines	Wet activated carbon removes oxygen from air posing a hazard to workers in enclosed or confined space. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state and federal regulations.
Engineering Controls	No special ventilation requirements. Good general ventilation should be adequate. Mechanical ventilation is recommended for enclosed or confined spaces
Personal Protective Equipment	Use of NIOSH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed, i.e. gloves, safety glasses w/side shields or goggles, long sleeve shirt or lab coat, dust respirator if dusty. Other protective clothing/equipment as appropriate.
General Hygiene	The usual precautionary measures for handling chemicals should be followed: i.e. Keep away from food and beverage; remove contaminated clothing immediately; wash hands before breaks or eating; avoid contact with eyes and skin.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	NA	**Melting Point**	NA
Vapor Pressure (mm Hg.)	0	**Evaporation Rate**	NA
Vapor Density (AIR = 1)	solid	**Flash Point**	NA
Specific Gravity	0.4 to 0.7	**UEL**	NA
		LEL	NA
Flammability Limits	Ignition Temperature > 220º C		
Odor	None		
Solubility in Water	Product is not soluble.		
Appearance	Black granular or powder material		

SECTION X – STABILITY AND REACTIVITY

STABILITY	**UNSTABLE**		**CONDITIONS TO AVOID:** None
	STABLE	**XX**	
HAZARDOUS REACTION	**MAY OCCUR**		**CONDITIONS TO AVOID:** None
	WILL NOT OCCUR	**XX**	
Caution: High concentrations of organics in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may cause a bed fire. High concentrations of Ketones and Aldehydes may cause a bed temperature rise due to adsorption and oxidation.			
Incompatible Materials			Alkali Metals and Strong Oxidizers such as ozone, oxygen, permanganate, chlorine.
Hazardous Decomposition Products			Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

SECTION XI – Toxicological information

Acute Effects		
Toxicity Studies	Oral LD_{50}	Not Determined on the finished product.
	Dermal LD_{50}	Not Determined on the finished product.
Inhalation	See section IV	
Ingestion	See section IV	
Eye Irritation	See section IV	
Skin Irritation	See section IV	
Sensitization	Not Determined on the finished product.	
Target Organ (s) or System		Eyes, Skin and Upper Respiratory System
Signs and symptoms of Exposure		Irritation and redness of eyes, irritation of skin and respiratory system may result from exposure to carbon dust. See Sections III and IV
Chronic Effects		
Carcinogenicity	Not Determined on the finished product.	
Mutagenicity	Not Determined on the finished product.	
Reproductive Effects	Not Determined on the finished product.	
Developmental Factors	Not Determined on the finished product.	

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicity	Not Determined on the finished product.
Persistence/degradability	Not Determined on the finished product.
Bioaccumulation/Accumulation	Not Determined on the finished product.
Mobility in Environmental Media	Not Determined on the finished product.
Other Adverse Effects	Not Determined on the finished product.

SECTION XIII – DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state and federal laws and regulations. Local regulations may be more stringent than state or federal requirements.

SECTION XIV – TRANSPORT INFORMATION

This information as presented below only applies to the material as shipped. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Land	DOT Regulations	Proper Shipping Description	CENTAUR 12x40 (Steam Activated Carbon)
	Canadian WHMIS	Hazard Class	NA See note below
		UN/NA	UN 1362
Water	IMO / IMDG	Proper Shipping Description:	CENTAUR 12x40 (Steam Activated Carbon)
		Hazard Class	NA See note below
		UN/NA	UN 1362
Air	IACO / IATA	Proper Shipping Description	CENTAUR 12x40 (Steam Activated Carbon)
		Hazard Class	NA See note below
		UN/NA	UN 1362
		Information reported for product/size: 0.5 Kg	

This product has been tested according to the *United Nations Transport of Dangerous Goods* test protocol for a "self-heating substance". It has been specifically determined that this product does not meet the definition of a self heating substance or any other hazard class, and therefore is not a hazardous material. Please note that this information is applicable only for the Activated Carbon Product identified in this document.

SECTION XV – REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.	
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.	
TSCA	Product is listed	
California Proposition 65	Product is not listed	
Canadian classification	**WHMIS**	Product is listed.
	DSL #	Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.		
Risk and Safety Phrases	R36: Irritating to the eyes, R37: Irritating to the respiratory system, R38: Irritating to the skin,	

SECTION XVI – OTHER INFORMATION

Intended Use	The material is generally used for treatment of gases and liquids
The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for their particular use.	
While the information and recommendations set forth herein are believed to be accurate as of the date hereof, Calgon Carbon Corporation makes no warranty with respect to same and disclaims all liability for reliance there on.	

References:

NA not applicable

Legend:

ACGIH - American Conference of Governmental Industrial Hygienists
ANSI - American National Standards Institute
ATSDR - Agency for Toxic Substances and Disease Registry
C - Ceiling (limit value)
CAS # - Chemical Abstracts Service Registry Number
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
CEPA - Canadian Environmental Protection Act
CFR - Code of Federal Regulations
DOT - Department of Transportation
DSL - Domestic Substances List
EINECS - European Inventory of Existing Commercial Chemical Substances
ERAP - Emergency Response Assistance Plan
IATA - International Air Transportation Association
IARC - International Agency for Research on Cancer
ICAO - International Civil Aviation Organization
IDLH - Immediately Dangerous to Life and Health
IMO - International Maritime Organization
IMDG - International Maritime Dangerous Goods
LC_{50} - The concentration of material in air expected to kill 50% of a group of test animals
LD_{50} - Lethal Dose expected to kill 50% of a group of test animals
NFPA - National Fire Protection Association
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Association
PEL - Permissible Exposure Limit
RCRA - Resource conservation and Recovery Act
RQ - Reportable Quantity
SARA - Superfund Amendments and Reauthorization Act
STEL - Short Term Exposure Limit
TDG - Transportation of Dangerous Goods Act/Regulation
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA - Time Weighted Average
WHMIS - Workplace Hazardous Material Information System

* * * END OF MATERIAL SAFETY DATA SHEET * * *

Material Safety Data Sheet

U.S. Department of Labor
Occupational Safety and Health Administration
This form is consistent with ANSI standard for preparation of MSDS's in accordance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

Product Type: **FILTRASORB 200**	
Product Code: 1950	**Profile No:** 1
Effective Date: **March 31, 2008**	**Supersedes: XXXXX**

SECTION I - PRODUCT AND COMPANY INFORMATION

Company Identification (USA)	**Calgon Carbon Corporation** P.O. Box 717 Pittsburgh, PA 15230-0717	
Telephone Number(s)	Information	412-787-6700
	Emergency	412-787-6700
Company Identification (Europe)	**Chemviron Carbon** Zoning Industriel de Feluy B-7181 Feluy, Belgium	
Telephone Number(s)	Information	32 64 51 18 11
	Emergency	32 64 51 18 11

Date Prepared November 3, 2008	Signature of Preparer (optional)	

SECTION II – COMPOSITION /INFORMATION ON INGREDIENTS

Nonhazardous components are listed at 3% or greater; acute hazards are listed when present at 1% or greater and chronic hazards are listed when present at 0.01% or greater. This is not intended to be a complete compositional disclosure.

Ingredient / Component	CAS No	% by Wt
Activated Carbon (Coal based)	7440-44-0	100

SECTION III – HAZARD(S) IDENTIFICATION

Emergency Overview: Black particulate solid, pellet or powder. Contact may cause eye irritation. Dust may be slightly irritating to eyes and respiratory tract. Avoid generation of dust during handling.

CAUTION: Wet activated carbon removes oxygen from air causing a severe hazard to workers in enclosed or confined space. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state and federal regulations

OSHA Regulatory Status		Not regulated	
HMIS Ratings	Health	0	4 = Extreme/Severe 3 = High/Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
(NFPA)	Flammability	1	
	Reactivity	0	
	Special		
Protective Equipment	Safety glasses with side shields or goggles, gloves, long sleeve shirt or lab coat, long pants recommended.		
Health Effects	See Section IV		
Environmental Effects	See Section XII		

Section IV – First-Aid Measures

Route of exposure	
Eyes	Dust may cause mild irritation, possibly reddening.
Skin	Dust may cause mild irritation, possibly reddening.
Inhalation	Dust may cause mild irritation to the upper respiratory tract.
Ingestion	Dust may cause mild irritation to digestive track resulting in nausea or diarrhea.
Signs/Symptoms of Exposure	Dust may cause irritation and redness of eyes, irritation of skin and respiratory system.
Emergency and First Aid Procedures	For eye contact, immediately flush with copious amounts of water for at least 15 minutes, lifting both the upper and lower lids occasionally; seek medical attention. For skin contact, wash with soap and water; seek medical attention. For inhalation, Remove to fresh air and rest as needed; seek medical attention for any breathing difficulty. For ingestion, drink plenty of water; seek medical attention.
Medical Conditions Generally Aggravated by Exposure	People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION V – FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use an extinguishing media suitable for the surrounding fire.
Unsuitable Extinguishing Media	None known
Specific Hazards	As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Activated carbon is difficult to ignite and tends to burn slowly (smolder) without producing smoke or flame. Carbon monoxide and carbon dioxide gas may be generated if combusted. Contact with strong oxidizers such as ozone or liquid oxygen may cause rapid combustion.
Protective Equipment and Procedures	Wear NIOSH approved self-contained breathing apparatus suitable for the surrounding fire.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear protective equipment, keep unnecessary personnel away, ventilate area of spill.
Environmental Precautions	The material is not soluble but can cause a particulate emission if discharged to waterways; therefore, dike all entrances to sewers and drains to avoid introducing the material into the waterways.
Containment & Clean-up	Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal. Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation. See section XIII
Other information	NA

SECTION VII – HANDLING AND STORAGE

Handling	Avoid prolonged contact with eyes and skin. Keep away from ignition sources. Use in well ventilated areas. Protect containers from physical damage. Wash hands after handling.
Storage	Store in cool, dry, ventilated area and in closed containers. Keep away from oxidizers, heat or flames. Store away from ignition sources.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	OSHA PEL	ACGIH TLV	Other limits
Activated Carbon	5 mg/M^3 Resp	5 mg/M^3 Resp	

Exposure Guidelines	Wet activated carbon removes oxygen from air posing a hazard to workers in enclosed or confined space. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state and federal regulations.
Engineering Controls	No special ventilation requirements. Good general ventilation should be adequate. Mechanical ventilation is recommended for enclosed or confined spaces
Personal Protective Equipment	Use of NIOSH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed, i.e. gloves, safety glasses w/side shields or goggles, long sleeve shirt or lab coat, dust respirator if dusty. Other protective clothing/equipment as appropriate.
General Hygiene	The usual precautionary measures for handling chemicals should be followed: i.e. Keep away from food and beverage; remove contaminated clothing immediately; wash hands before breaks or eating; avoid contact with eyes and skin.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	NA	**Melting Point**	NA
Vapor Pressure (mm Hg.)	0	**Evaporation Rate**	NA
Vapor Density (AIR = 1)	solid	**Flash Point**	NA
Specific Gravity	0.4 to 0.7	**UEL**	NA
		LEL	NA
Flammability Limits	Ignition Temperature > 220º C		
Odor	None		
Solubility in Water	Product is not soluble.		
Appearance	Black granular or powder material		

SECTION X – STABILITY AND REACTIVITY

STABILITY	**UNSTABLE**		**CONDITIONS TO AVOID:** None
	STABLE	**XX**	
HAZARDOUS REACTION	**MAY OCCUR**		**CONDITIONS TO AVOID:** None
	WILL NOT OCCUR	**XX**	
Caution: High concentrations of organics in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may cause a bed fire. High concentrations of Ketones and Aldehydes may cause a bed temperature rise due to adsorption and oxidation.			
Incompatible Materials			Alkali Metals and Strong Oxidizers such as ozone, oxygen, permanganate, chlorine.
Hazardous Decomposition Products			Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

SECTION XI – Toxicological information

Acute Effects		
Toxicity Studies	Oral LD_{50}	Not Determined on the finished product.
	Dermal LD_{50}	Not Determined on the finished product.
Inhalation	See section IV	
Ingestion	See section IV	
Eye Irritation	See section IV	
Skin Irritation	See section IV	
Sensitization	Not Determined on the finished product.	
Target Organ (s) or System		Eyes, Skin and Upper Respiratory System
Signs and symptoms of Exposure		Irritation and redness of eyes, irritation of skin and respiratory system may result from exposure to carbon dust. See Sections III and IV
Chronic Effects		
Carcinogenicity	Not Determined on the finished product.	
Mutagenicity	Not Determined on the finished product.	
Reproductive Effects	Not Determined on the finished product.	
Developmental Factors	Not Determined on the finished product.	

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicity	Not Determined on the finished product.
Persistence/degradability	Not Determined on the finished product.
Bioaccumulation/Accumulation	Not Determined on the finished product.
Mobility in Environmental Media	Not Determined on the finished product.
Other Adverse Effects	Not Determined on the finished product.

SECTION XIII – DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state and federal laws and regulations. Local regulations may be more stringent than state or federal requirements.

SECTION XIV – TRANSPORT INFORMATION

This information as presented below only applies to the material as shipped. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.			
Land	DOT Regulations	Proper Shipping Description	FILTRASORB 200 (Steam Activated Carbon)
	Canadian WHMIS	Hazard Class	NA See note below
		UN/NA	UN 1362
Water	IMO / IMDG	Proper Shipping Description:	FILTRASORB 200 (Steam Activated Carbon)
		Hazard Class	NA See note below
		UN/NA	UN 1362
Air	IACO / IATA	Proper Shipping Description	FILTRASORB 200 (Steam Activated Carbon)
		Hazard Class	NA See note below
		UN/NA	UN 1362
		Information reported for product/size: 0.5 Kg	
This product has been tested according to the *United Nations Transport of Dangerous Goods* test protocol for a "self-heating substance". It has been specifically determined that this product does not meet the definition of a self heating substance or any other hazard class, and therefore is not a hazardous material. Please note that this information is applicable only for the Activated Carbon Product identified in this document.			

SECTION XV – REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.	
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.	
TSCA	Product is listed	
California Proposition 65	Product is not listed	
Canadian classification	**WHMIS**	Product is listed.
	DSL #	Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.		
Risk and Safety Phrases	R36: Irritating to the eyes, R37: Irritating to the respiratory system, R38: Irritating to the skin,	

SECTION XVI – OTHER INFORMATION

Intended Use	The material is generally used for treatment of gases and liquids
The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for their particular use.	
While the information and recommendations set forth herein are believed to be accurate as of the date hereof, Calgon Carbon Corporation makes no warranty with respect to same and disclaims all liability for reliance there on.	

References:

NA not applicable

Legend:

ACGIH - American Conference of Governmental Industrial Hygienists
ANSI - American National Standards Institute
ATSDR - Agency for Toxic Substances and Disease Registry
C - Ceiling (limit value)
CAS # - Chemical Abstracts Service Registry Number
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
CEPA - Canadian Environmental Protection Act
CFR - Code of Federal Regulations
DOT - Department of Transportation
DSL - Domestic Substances List
EINECS - European Inventory of Existing Commercial Chemical Substances
ERAP - Emergency Response Assistance Plan
IATA - International Air Transportation Association
IARC - International Agency for Research on Cancer
ICAO - International Civil Aviation Organization
IDLH - Immediately Dangerous to Life and Health
IMO - International Maritime Organization
IMDG - International Maritime Dangerous Goods
LC_{50} - The concentration of material in air expected to kill 50% of a group of test animals
LD_{50} - Lethal Dose expected to kill 50% of a group of test animals
NFPA - National Fire Protection Association
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Association
PEL - Permissible Exposure Limit
RCRA - Resource conservation and Recovery Act
RQ - Reportable Quantity
SARA - Superfund Amendments and Reauthorization Act
STEL - Short Term Exposure Limit
TDG - Transportation of Dangerous Goods Act/Regulation
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA - Time Weighted Average
WHMIS - Workplace Hazardous Material Information System

* * * END OF MATERIAL SAFETY DATA SHEET * * *

ALCONOX MSDS

Section 1 : MANUFACTURER INFORMATION

Product name: Alconox

Supplier: Same as manufacturer.

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Manufacturer emergency phone number: 800-255-3924.
813-248-0585 (outside of the United States).

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Supplier MSDS date: 2005/03/09

D.O.T. Classification: Not regulated.

Section 2 : HAZARDOUS INGREDIENTS

C.A.S.	CONCENTRATION %	Ingredient Name	T.L.V.	LD/50	LC/50
25155-30-0	10-30	SODIUM DODECYLBENZENESULFONATE	NOT AVAILABLE	438 MG/KG RAT ORAL 1330 MG/KG MOUSE ORAL	NOT AVAILABLE
497-19-8	7-13	SODIUM CARBONATE	NOT AVAILABLE	4090 MG/KG RAT ORAL 6600 MG/KG MOUSE ORAL	2300 MG/M3/2H RAT INHALATION 1200 MG/M3/2H MOUSE INHALATION
7722-88-5	10-30	TETRASODIUM PYROPHOSPHATE	5 MG/M3	4000 MG/KG RAT ORAL 2980 MG/KG MOUSE ORAL	NOT AVAILABLE
7758-29-4	10-30	SODIUM PHOSPHATE	NOT AVAILABLE	3120 MG/KG RAT ORAL 3100 MG/KG MOUSE ORAL >4640 MG/KG RABBIT DERMAL	NOT AVAILABLE

Section 2A : ADDITIONAL INGREDIENT INFORMATION

Note: (supplier).
CAS# 497-19-8: LD50 4020 mg/kg - rat oral.
CAS# 7758-29-4: LD50 3100 mg/kg - rat oral.

Section 3 : PHYSICAL / CHEMICAL CHARACTERISTICS

Physical state: Solid

Appearance & odor: Almost odourless.
White granular powder.

Odor threshold (ppm): Not available.

Vapour pressure (mmHg): Not applicable.

Vapour density (air=1): Not applicable.

By weight: Not available.

Evaporation rate (butyl acetate = 1): Not applicable.

Boiling point (°C): Not applicable.

Freezing point (°C): Not applicable.

pH: (1% aqueous solution).
9.5

Specific gravity @ 20 °C: (water = 1).
0.85 - 1.10

Solubility in water (%): 100 - > 10% w/w

Coefficient of water\oil dist.: Not available.

VOC: None

Section 4 : FIRE AND EXPLOSION HAZARD DATA

Flammability: Not flammable.

Conditions of flammability: Surrounding fire.

Extinguishing media: Carbon dioxide, dry chemical, foam.
Water
Water fog.

Special procedures: Self-contained breathing apparatus required.
Firefighters should wear the usual protective gear.

Auto-ignition temperature: Not available.

Flash point (°C), method: None

Lower flammability limit (% vol): Not applicable.

Upper flammability limit (% vol): Not applicable.

Not available.

Sensitivity to mechanical impact: Not applicable.

Hazardous combustion products: Oxides of carbon (COx).
Hydrocarbons.

Rate of burning: Not available.

Explosive power: None

Section 5 : REACTIVITY DATA

Chemical stability: Stable under normal conditions.

Conditions of instability: None known.

Hazardous polymerization: Will not occur.

Incompatible substances: Strong acids.
Strong oxidizers.

Hazardous decomposition products: See hazardous combustion products.

Section 6 : HEALTH HAZARD DATA

Route of entry: Skin contact, eye contact, inhalation and ingestion.

Effects of Acute Exposure

Eye contact: May cause irritation.

Skin contact: Prolonged contact may cause irritation.

Inhalation: Airborne particles may cause irritation.

Ingestion: May cause vomiting and diarrhea.
May cause abdominal pain.
May cause gastric distress.

Effects of chronic exposure: Contains an ingredient which may be corrosive.

LD50 of product, species & route: > 5000 mg/kg rat oral.

LC50 of product, species & route: Not available for mixture, see the ingredients section.

Exposure limit of material: Not available for mixture, see the ingredients section.

Sensitization to product: Not available.

Carcinogenic effects: Not listed as a carcinogen.

Reproductive effects: Not available.

Teratogenicity: Not available.

Mutagenicity: Not available.

Synergistic materials: Not available.

Medical conditions aggravated by exposure: Not available.

First Aid

Skin contact: Remove contaminated clothing.
Wash thoroughly with soap and water.
Seek medical attention if irritation persists.

Eye contact: Check for and remove contact lenses.
Flush eyes with clear, running water for 15 minutes while holding eyelids open: if irritation persists, consult a physician.

Inhalation: Remove victim to fresh air.
Seek medical attention if symptoms persist.

Ingestion: Dilute with two glasses of water.
Never give anything by mouth to an unconscious person.
Do not induce vomiting, seek immediate medical attention.

Section 7 : PRECAUTIONS FOR SAFE HANDLING AND USE

Leak/Spill: Contain the spill.
Recover uncontaminated material for re-use.
Wear appropriate protective equipment.
Contaminated material should be swept or shoveled into appropriate waste container for disposal.

Waste disposal: In accordance with municipal, provincial and federal regulations.

Handling procedures and equipment: Protect against physical damage.
Avoid breathing dust.
Wash thoroughly after handling.
Keep out of reach of children.
Avoid contact with skin, eyes and clothing.
Launder contaminated clothing prior to reuse.

Storage requirements: Keep containers closed when not in use.
Store away from strong acids or oxidizers.
Store in a cool, dry and well ventilated area.

Section 8 : CONTROL MEASURES

Precautionary Measures

Gloves/Type:

Neoprene or rubber gloves.

Respiratory/Type:

If exposure limit is exceeded, wear a NIOSH approved respirator.

Eye/Type:

Safety glasses with side-shields.

Footwear/Type: Safety shoes per local regulations.

Clothing/Type: As required to prevent skin contact.

Other/Type: Eye wash facility should be in close proximity.
Emergency shower should be in close proximity.

Ventilation requirements: Local exhaust at points of emission.

-----MATERIAL SAFETY DATA SHEET-----

AutoCal Solution

Compliance Technology Inc. 118 Starlite St. So. San Francisco, CA 94080-6310	Prepared: February 20, 1996 Revised: February 14, 2000

----- NOTICE-----

This information is believed to be accurate and represents the best information currently available to us. however, we make no warranty of merchantability, or fitness for any particular use, or any other warranty, express or implied, with respect to this information, and we assume no liability resulting from the use of this information. Users should make their own investigations to determine the suitability of the information for their particular needs and purposes. Compliance Technology Inc. will assist in this regard.

-----SUBSTANCE IDENTIFICATION-----

SUBSTANCE: AutoCal Solution Calibrating Buffer Solution
Trade names/synonyms: This material is also known by various catalog numbers.
Cercla ratings (scale 0-3): health=0 fire=0 reactivity=0 persistence=0
Nfpa ratings (scale 0-4): health=0 fire=0 reactivity=0

-----COMPONENTS AND CONTAMINANTS---

Component: potassium hydrogen phthalate CAS# 877-24-7 Percent: <2.0
Component: water CAS# 7732-18-5 percent: >98
Other contaminants: none

----- EXPOSURE LIMITS-----

No occupational exposure limits established by osha, acgih or niosh.

-----PHYSICAL DATA-----

Description:
Clear, colorless liquid.
Approx. boiling point: 212°F (100°C). Approx. melting point: 32°F (0°C)
Vapor pressure: 14 torr @20°C Evap. Rate: (ether=1) < 1
pH: 4.0 Solubility in water: complete Vapor density: 0.7 (H2O)

-----FIRE AND EXPLOSION DATA-----

Fire and explosion hazard: No fire hazard when exposed to heat or flame.
Flash point: not applicable
Fire fighting media: dry chemical, carbon dioxide, water spray or regu-lar foam. (1990 emergency response guidebook, dot p-5800.5) For larger fires, use water spray, fog or regular foam. (1990 emergency response guidebook, dot p-5800.5)
Fire fighting: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike fire-control water for later disposal . (1990 emergency response guidebook, dot p-5800.5 Pg. 31) Use agents suitable for the type of surrounding fire. Avoid breathing hazardous vapors, stay upwind of the fire.

-----TOXICITY-----

potassium hydrogen phthalate:
Carcinogen status: none.
Local effects: irritant - inhalation, skin, eye.
Acute toxicity level: no data available.
Target effects: no data available.
medical conditions agravated by exposure: no data available.

-----HEALTH EFFECTS AND FIRST AID-----

INHALATION

POTASSIUM HYDROGEN PHTHALATE:IRRITANT.
ACUTE EXPOSURE - MAY CAUSE IRRITATION.
CHRONIC EXPOSURE - REPEATED OR PROLONGED EXPOSURE MAY CAUSE IRRITA-TION.
FIRST AID - REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

POTASSIUM HYDROGEN PHTHALATE:IRRITANT.
ACUTE EXPOSURE - MAY CAUSE IRRITATION.
CHRONIC EXPOSURE - REPEATED OR PROLONGED EXPOSURE MAY CAUSE DERMATITIS.
FIRST AID - REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY, WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

POTASSIUM HYDROGEN PHTHALATE: IRRITANT.
ACUTE EXPOSURE-DIRECT CONTACT MAY CAUSE IRRITATION, REDNESS AND PAIN.
CRONIC EXPOSURE-REPEATED OR PROLONGED EXPOSURE MAY CAUSE CONJUNCTIVITIS
FIRST AID - WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE, OCCASIONALLY LIFTING UPPER AND LOWER LIDS UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION

POTASSIUM HYDROGEN PHTHALATE: IRRITANT.
ACUTE EXPOSURE - MAY CAUSE NAUSEA, VOMITING AND DIARRHEA.
CRONIC EXPOSURE - NOT REPORTED TO OCCUR IN HUMANS
FIRST AID - IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2-4 GLASSES OF WATER, AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT, GET MEDICAL ATTENTION IMMEDIATELY.

-----REACTIVITY-----

Reactivity: stable under normal temperatures and pressures.
Incompatibilities: AFFECTED BY STRONG OXIDIZERS WHEN DRY.
Decomposition: NONE KNOWN WHILE IN SOLUTION.
Polymerization: NONE KNOWN WHILE IN SOLUTION.

-----STORAGE AND DISPOSAL-----

Observe all federal, state and local regulations when storing or disposing of this substance. for assistance, contact the district director of the environmental protection agency.

-----PROTECTIVE EQUIPMENT-----

When using, wear eye protection to prevent contact.

Bradley Fixtures Corporation
W142 N9101 Fountain Boulevard
Menomonee Falls, Wisconsin 53052 USA

Telephone Number: 262-251-6000
Emergency Phone Number: 262-251-6000

SECTION #1 – PRODUCT IDENTIFICATION

Product: Bradley OptiAid™/ OptiAid Plus™ / OneStep™ (Blue Label)

Chemical Family: Eyewash solution

This MSDS is being provided to your company for the purpose of providing current health and safety information to your management and for your employees who work with this product. Please read the information on these sheets before attempting to use the product. You must also provide this information to those people in your company whose responsibility it is to comply with Federal, State, and/or Provincial "Right to Know" regulations. Also make sure that this information is available and disseminated to your employees before their use of the product. This information should be kept on file and made available to any employee who requests it. It is your obligation to comply with safety and health regulations pertinent to your jurisdiction.

SECTION #2 – COMPOSITION/INFORMATION ON INGREDIENTS

Component: Boric acid
CASRN 10043-35-3
No OSHA PEL(s) or ACGIH TLV(s)

Component: Sodium chloride
CASRN 7647-14-5
No OSHA PEL(s) or ACGIH TLV(s)

Component: Sodium borate
CASRN 7632-04-4
No OSHA PEL(s) or ACGIH TLV(s)

SECTION #3 – HAZARDS IDENTIFICATION

Primary Route(s) of Entry

Ingestion.

Eye Hazards

Eye contact with this product is not known to be hazardous.

Skin Hazards

Skin contact with the product is not known to be hazardous.

Ingestion Hazards

Ingestion of the product may cause mild gastric irritation.

Inhalation Hazards

If this product is used in a manner that produces a mist, inhalation of the mist may irritate the nose, throat, and upper respiratory tract.

SECTION #4 – FIRST AID MEASURES

Ingestion

Do not induce vomiting. If subject is conscious, give large quantities of milk or water. Do not attempt to give liquids to an unconscious person. If the subject is unconscious or convulsive, seek immediate medical assistance.

Eyes

None applicable.

Skin

None applicable. If clothing becomes wetted with product, replace with dry clothing.

Inhalation

If symptoms of irritation occur, remove subject from the area. Seek medical attention if necessary.

Note to Physician

The product may cause mild gastric irritation if swallowed. Individual components are present at concentrations ≤10 grams/liter each.

SECTION #5 – FIRE FIGHTING MEASURES

Fire and Explosion Hazards

This product is non-flammable and non-explosive.

Extinguishing Media

Not applicable (non-flammable mixture)

SECTION #6 – ACCIDENTAL RELEASE MEASURES

Spill Procedures

Flush away spilled product to drain with water, unless prohibited by local regulations. Consult the appropriate authorities to determine specific requirements for your jurisdiction.

SECTION #7 – HANDLING AND STORAGE

Handling Precautions

No special handling precautions are required.

Storage Precautions

Store in a cool place away from incompatible materials (see Section #10).

Work/Hygienic Practices

Wash hands and face immediately after each use.

SECTION #8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Mechanical ventilation is not required under prescribed conditions of use. If the product is used in a manner that generates airborne mist, provide appropriate ventilation (dilution, local exhaust) adequate to control mist concentrations in air.

Eye/Face Protection

Eye protection is not required.

Skin Protection

Skin protection is not required.

Respiratory Protection

Respiratory protection is not required under prescribed conditions of use. If the product is used in a manner that generates airborne mist not controlled by ventilation, wear a NIOSH-approved dust/mist respirator (rated *N95* or better) to minimize nose, throat, and respiratory tract irritation.

SECTION #9 – PHYSICAL AND CHEMICAL PROPERTIES

Percent Volatile: >98%
pH range: 6.4 – 8.4
Boiling point: >212° F./100° C.
Solubility (water): complete
Vapor pressure: not applicable
Evaporation rate: <1 (n-BuAc = 1)
Specific Gravity: *ca.* 1.00
Appearance: Clear colorless liquid

SECTION #10 – STABILITY AND REACTIVITY

Stability: stable

Hazardous Polymerization: will not occur

Incompatible Materials: Strong oxidizing agents

Hazardous Decomposition Byproducts: Not applicable

SECTION #11 – TOXICOLOGICAL INFORMATION

Toxicological Information

This product has not been subject to toxicological testing by the supplier.

Carcinogenicity

None of the components of this product are classified as potential or demonstrated human carcinogens by IARC, NTP, or OSHA.

SECTION #12 – ECOLOGICAL INFORMATION

No data available.

SECTION #13 – DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of product in accordance with applicable Federal, State/Provincial, and local regulations.

SECTION #14 – TRANSPORT INFORMATION

This product is not a *Hazardous Substance* or *Dangerous Goods* according to USDOT, TDG (Canada), ICAO, or IMO regulations.

SECTION #15 – REGULATORY INFORMATION

SARA Title III Notifications and Information

SARA Title III - Hazard Class(es): None

SARA Title III - Section 313 Supplier Notification: This product contains no chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

Controlled Products Regulations **(Canada) Information**

Components Toxicology Data

Component (CASRN)	LD_{50} (Route/Species)	LC_{50} (Species)
Boric acid (10043-35-3)	2660 mg/kg (oral/rat)	No data available
Sodium chloride (7647-14-5)	3 gm/kg (oral/rat)	> 42 gm/m³/1h (rat)
Sodium borate (7632-04-4)	3250 mg/kg (oral/mouse)	No data available

WHMIS Hazard Classification(s) of product: none applicable
Components on *Ingredients Disclosure List*: none

SECTION #16 – REVISION INFORMATION

Date of previous version: 30 January 2004

Reason(s) for revision: Addition of new product

DISCLAIMER OF EXPRESS AND IMPLIED WARRANTIES

We believe that the information contained herein is current as of the date of the Material Safety Data Sheet. Since the use of this product is not within the use of Bradley Fixtures Corporation, it is the user's obligation to determine the conditions of safe use of the product. Additionally, as data, standards, and regulations change, and conditions of use and handling are beyond our control, NO WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE AS TO THE COMPLETENESS OR CONTINUING ACCURACY OF THIS INFORMATION. The user should review any recommendations in the specific context of the intended use to determine whether or not they are appropriate.

Bradley Fixtures Corporation
W142 N9101 Fountain Boulevard
Menomonee Falls, Wisconsin 53052 USA

Número de teléfono: 262-251-6000
Número de teléfono para emergencias: 262-251-6000

SECCIÓN 1 – IDENTIFICACIÓN DEL PRODUCTO

Producto: OptiAid™ / OptiAid Plus™/ OneStep™ de Bradley (etiqueta azul)

Familia química: Solución para lavaojos

Facilitamos esta hoja MSDS a su empresa con el propósito de proporcionar información actualizada sobre salud y seguridad a la gerencia y a los empleados que trabajan con este material. Por favor lea la información en este documento antes de usar el producto. También debe facilitar esta información a las personas en su empresa que estén a cargo de cumplir las normas federales, estatales o provinciales y del "Derecho a la Información". Asegúrese también de que la información esté disponible y sea difundida a los empleados antes de usar el producto. Esta información debe mantenerse en archivo y estar a la disposición de cualquier empleado que la solicite. Es su obligación cumplir las normas de salud y seguridad que se aplican a su jurisdicción.

SECCIÓN 2 – COMPOSICIÓN/INFORMACIÓN DE LOS INGREDIENTES

Componente: Ácido bórico
CASRN 10043-35-3
Sin límite de exposición permisible (PEL) OSHA ni valor de límite del umbral (TLV) ACGIH

Componente: Cloruro de sodio
CASRN 7647-14-5
Sin límite de exposición permisible (PEL) OSHA ni valor de límite del umbral (TLV) ACGIH

Componente: Borato de sodio
CASRN 7632-04-4
Sin límite de exposición permisible (PEL) OSHA ni valor de límite del umbral (TLV) ACGIH

SECCIÓN 3 – IDENTIFICACIÓN DE RIESGOS

Rutas principales de ingreso
Ingestión.

Riesgos para los ojos
No se conocen riesgos al entrar este producto en contacto con los ojos.

Riesgos para la piel
No se conocen riesgos al entrar este producto en contacto con la piel.

Riesgos por ingestión
La ingestión de este producto puede causar ligera irritación gástrica.

Riesgos por inhalación
Si este producto se usa de manera que produzca vaporización, la inhalación de la vaporización puede irritar la nariz, la garganta y el tracto respiratorio superior.

SECCIÓN 4 – MEDIDAS PARA PRIMEROS AUXILIOS

Ingestión
No induzca el vómito. Si el sujeto está consciente, déle grandes cantidades de leche o agua. No intente darle líquidos a una persona inconsciente. Si el sujeto está inconsciente o sufre de convulsiones, busque asistencia médica de inmediato.

Ojos
No es aplicable.

Piel
No es aplicable. Si la ropa se moja con el producto, reemplácela con ropa seca.

Inhalación
Si se presentan síntomas de irritación, retire al sujeto de la zona. Busque atención médica si es necesario.

Nota para el médico
La ingestión de este producto puede causar ligera irritación gástrica. Los componentes individuales están presentes a una concentración de ≤10 gramos/litro cada uno.

SECCIÓN 5 – MEDIDAS PARA CONTROLAR INCENDIOS

Riesgos de incendio y explosión
Este producto no es inflamable y no es explosivo.

Medio de extinción
No es aplicable (mezcla no inflamable).

SECCIÓN 6 – MEDIDAS EN CASO DE LIBERACIÓN ACCIDENTAL

Procedimientos en caso de derrame
Enjuague con agua el producto derramado al drenaje, a menos que sea prohibido por las normas locales. Comuníquese con las autoridades apropiadas para determinar los requisitos específicos para su jurisdicción.

SECCIÓN 7 – MANEJO Y ALMACENAMIENTO

Precauciones de manejo
No se requieren precauciones especiales de manejo.

Precauciones de almacenamiento
Almacene en un lugar fresco lejos de materiales incompatibles (vea la Sección 10).

Prácticas de trabajo/de higiene
Lávese las manos y la cara inmediatamente después de cada uso.

SECCIÓN 8 – CONTROLES DE EXPOSICIÓN/PROTECCIÓN PERSONAL

Controles de ingeniería
No se requiere ventilación mecánica bajo las condiciones prescritas de uso. Si el producto se usa de manera que genere vaporización, proporcione ventilación apropiada (dilución, escape local), adecuada para controlar las concentraciones de vaporización en el aire.

Protección en los ojos/cara
No se requiere protección en los ojos.

Protección en la piel
No se requiere protección en la piel.

Protección respiratoria
No se requiere protección respiratoria bajo condiciones prescritas de uso. Si el producto se usa de manera que genere vaporización en el aire que no se controle con la ventilación, use un respirador para polvo o vaporización aprobado por NIOSH (con clasificación *N95* o superior) para minimizar irritaciones en la nariz, la garganta y el tracto respiratorio.

SECCIÓN 9 – PROPIEDADES FÍSICAS Y QUÍMICAS

Porcentaje de volatilidad: >98%
Valores pH: 6.4 a 8.4
Punto de ebullición: >212°F (100°C)
Solubilidad (agua): completa
Presión de vapor: no es aplicable
Tasa de evaporación: <1 (n-BuAc = 1)
Gravedad específica: aprox. 1.00
Apariencia: líquido, claro, sin color

SECCIÓN 10 – ESTABILIDAD Y REACTIVIDAD

Estabilidad: estable

Polimerización riesgosa: no ocurrirá

Materiales incompatibles: Agentes oxidantes fuertes

Derivados de descomposición riesgosa: no es aplicable

SECCIÓN 11 – INFORMACIÓN TOXICOLÓGICA

Información toxicológica
El proveedor no ha aplicado pruebas toxicológicas a este producto.

Potencial carcinógeno
Ninguno de los componentes de este producto está clasificado como carcinógeno potencial o demostrado para los humanos por IARC, NTP u OSHA.

SECCIÓN 12 – INFORMACIÓN AMBIENTAL

No hay datos disponibles.

SECCIÓN 13 – CONSIDERACIONES PARA ELIMINAR LOS DESHECHOS

Métodos para eliminar los deshechos
Elimine el producto de acuerdo con las normas federales, estatales o provinciales y locales.

SECCIÓN 14 – INFORMACIÓN DE TRANSPORTE

Este producto no es una *Sustancia riesgosa* o *Producto peligroso* de acuerdo con las normas USDOT, TDG (Canadá), ICAO o IMO.

SECCIÓN 15 – INFORMACIÓN NORMATIVA

Notificación e información SARA Título III
SARA Título III - Clases de riesgo: ninguna
SARA Título III - Sección 313, Notificación del proveedor: Este producto no contiene productos químicos sujetos a los requisitos de emisión de informes de la Sección 313 de la Ley de planeación de emergencias y derecho de la ciudadanía a la información (EPCRA) de 1986, y de 40 CFR 372.

Información sobre *Normas de productos controlados* (Canadá)
Datos toxicológicos de los componentes

Componente (CASRN)	LD_{50} (ruta/especie)	LC_{50} (especie)
Ácido bórico (10043-35-3)	2660 mg/kg (oral/rata)	No hay datos disponibles
Cloruro de sodio (7647-14-5)	3 g/kg (oral/rata)	>42 g/m^3/1 hora (rata)
Borato de sodio (7632-04-4)	3250 mg/kg (oral/ratón)	No hay datos disponibles

Clasificaciones de riesgo WHMIS del producto: ninguna es aplicable
Componentes en la *Lista de revelación de ingredientes*: ninguno

SECCIÓN 16 – INFORMACIÓN DE LA REVISIÓN

Fecha de revisión anterior: 30 enero 2004

Razones para la revisión: Adición de productos nuevos

DESCARGO DE RESPONSABILIDAD DE GARANTÍAS EXPRESAS E IMPLÍCITAS

Creemos que la información contenida en este documento es correcta hasta la fecha de elaboración de esta Hoja de datos sobre seguridad de materiales (MSDS). Debido a que el uso del producto no se encuentra bajo el control de Bradley Fixtures Corporation, es obligación del usuario determinar las condiciones de uso seguro del producto. Adicionalmente, debido a que las normas y reglamentos cambian, y las condiciones de uso y manejo no están bajo nuestro control, NO OTORGAMOS GARANTÍA EXPRESA O IMPLÍCITA EN CUANTO A LA INTEGRIDAD O EXACTITUD SUBSECUENTE DE ESTA INFORMACIÓN. El usuario debe revisar cualquier recomendación dentro del contexto específico del uso planeado para determinar si es apropiado o no.

Bradley Fixtures Corporation
W142 N9101 Fountain Boulevard
Menomonee Falls, Wisconsin 53052 USA

Numéro de téléphone: 262-251-6000
Numéro de téléphone d'urgence: 262-251-6000

SECTION 1 – IDENTIFICATION DU PRODUIT

Produit : Bradley OptiAid™/ OptiAid Plus™ / OneStep™ (étiquette bleue)

Famille chimique : Douche oculaire

La présente fiche signalétique est fournie à la société dans le but de fournir des informations d'hygiène et de sécurité actuelles à la direction ainsi qu'aux employés qui travaillent avec ce produit. Lire attentivement l'information figurant sur ces fiches avant toute tentative d'utilisation du produit. Il faut également fournir la présente information aux personnes de la société dont la responsabilité est de se conformer aux réglementations « Right to Know » à l'échelle des gouvernements fédéral, de l'état et/ou provincial. S'assurer également que la présente information soit disponible et diffusée aux employés avant leur utilisation du produit. La présente information doit être conservée sur fichier et mise à la disposition de tout employé qui en ferait la demande. Il y va de votre responsabilité de vous conformer aux réglementations d'hygiène et de sécurité pertinentes à votre juridiction.

SECTION 2 – COMPOSITION/RENSEIGNEMENTS SUR LES INGRÉDIENTS

Ingrédient : Acide borique
Numéro CAS 10043-35-3
Sans PEL OSHA ni TLV ACGIH

Ingrédient : Chlorure de sodium
Numéro CAS 7647-14-5
Sans PEL OSHA ni TLV ACGIH

Ingrédient : Borate de sodium
Numéro CAS 7632-04-4
Sans PEL OSHA ni TLV ACGIH

SECTION 3 – IDENTIFICATION DES RISQUES

Principale(s) voie(s) d'exposition
Ingestion.

Risques oculaires
Aucun contact de ce produit avec les yeux n'est connu comme étant dangereux.

Risques cutanés
Aucun contact de ce produit avec la peau n'est connu comme étant dangereux.

Risques d'ingestion
Toute ingestion du produit risque de provoquer une légère irritation gastrique.

Risques d'inhalation
Si ce produit est utilisé d'une manière générant un brouillard, toute inhalation de ce brouillard risque de provoquer une irritation du nez, de la gorge et des voies respiratoires supérieures.

SECTION 4 – MESURES DE PREMIERS SOINS

Ingestion
Ne pas faire vomir. Si la victime est consciente, lui faire avaler de grandes quantités de lait ou d'eau. Ne jamais tenter de faire avaler quoi que ce soit à une personne qui a perdu connaissance. Si la victime a perdu connaissance ou bien est en proie à des convulsions, contacter immédiatement un médecin.

Yeux
Sans objet.

Peau
Sans objet. Si le produit mouille les vêtements, en changer et mettre des vêtements secs.

Inhalation
Si des symptômes d'irritation se produisent, faire sortir la victime de l'endroit. Au besoin, contacter immédiatement un médecin.

Remarque à l'attention du médecin
Le produit risque de provoquer une légère irritation gastrique en cas d'ingestion. Les ingrédients individuels sont présents à des taux de concentration de $\leq$10 grammes/litre chacun.

SECTION 5 – MESURES DE LUTTE CONTRE L'INCENDIE

Risques d'incendie et d'explosion
Ce produit est ininflammable et non-explosif.

Produits d'extinction
Sans objet (mélange ininflammable).

SECTION 6 – MESURES EN CAS DE DÉVERSEMENT ACCIDENTEL

Procédures en cas de déversement
Rincer le produit renversé à l'eau sauf interdiction par les réglementations locales. Consulter les autorités appropriées pour déterminer les exigences spécifiques à la juridiction en question.

SECTION 7 – MANIPULATION ET ENTREPOSAGE

Précautions relatives à la manipulation
Aucune précaution relative à la manipulation n'est nécessaire.

Précautions relatives à l'entreposage
Entreposer dans un endroit frais à l'écart de matériaux incompatibles (voir Section 10).

Pratiques de travail/d'hygiène
Se laver les mains et le visage immédiatement après chaque utilisation.

SECTION 8 – CONTRÔLES DE L'EXPOSITION/PROTECTION INDIVIDUELLE

Contrôles techniques
Aucune ventilation mécanique nécessaire dans des conditions d'utilisation prescrites. Si l'utilisation du produit génère du brouillard aéroporté, fournir une ventilation adéquate (dilution, ventilation locale) pour contrôler les concentrations de brouillard dans l'air.

SECTION 8 – CONTRÔLES DE L'EXPOSITION/PROTECTION INDIVIDUELLE (Cont.)

Protection des yeux/du visage
Une protection oculaire n'est pas nécessaire.

Protection de la peau
Une protection cutanée n'est pas nécessaire.

Protection des voies respiratoires
Aucune protection des voies respiratoires nécessaire dans des conditions d'utilisation prescrites. Si l'utilisation du produit génère du brouillard aéroporté non contrôlé par une ventilation, porter un respirateur à filtre de poussière/brouillard homologué NIOSH (qualifié *N95* ou mieux) pour minimiser toute irritation du nez, de la gorge et des voies respiratoires.

SECTION 9 – PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

Pourcentage de volatilité : > 98 %
Gamme de pH : 6.4-8.4
Point d'ébullition : > 100 °C / 212 °F
Solubilité (dans l'eau) : complète
Tension de vapeur : sans objet
Taux d'évaporation : < 1 (n-BuAc = 1)
Densité spécifique : *ca.* 1.00
Apparence : Liquide incolore transparent

SECTION 10 – STABILITÉ ET RÉACTIVITÉ

Stabilité : stable

Polymérisation dangereuse : ne se produira pas

Incompatibilité avec diverses substances : Oxydants forts

Produits de décomposition dangereux : sans objet

SECTION 11 – DONNÉES TOXICOLOGIQUES

Données toxicologiques
Ce produit n'a pas été soumis aux tests toxicologiques par le fournisseur.

Cancérogénicité
Aucun composant de ce produit n'est classifié comme cancérogènes potentiels ou démontrés pour les humains par IARC, NTP ou OSHA.

SECTION 12 – DONNÉES ÉCOLOGIQUES

Aucune donnée disponible.

SECTION 13 – DIRECTIVES EN MATIÈRE D'ÉLIMINATION

Méthodes d'élimination des déchets
Éliminer le produit conformément aux réglementations des états, des gouvernements fédéral, provinciaux et municipaux en vigueur.

SECTION 14 – RENSEIGNEMENTS SUR LE TRANSPORT

Ce produit n'est pas une *Substance dangereuse* ni une *Marchandise dangereuse* d'après les réglementations DOT (USA), TMD (Canada), OACI ou OMI.

SECTION 15 – RENSEIGNEMENTS RÉGLEMENTAIRES

SARA Titre III (Notifications et renseignements)
SARA Titre III – Classe(s) de risques : néant
SARA Titre III – Section 313 (Notification à l'adresse du fournisseur) : Ce produit ne contient aucun produit chimique soumis aux exigences de déclaration de la Section 313 de l'*Emergency Planning and Community Right-To-Know Act* (EPCRA) de 1986 et de 40 CFR 372.

Règlements sur les produits contrôlés **(Canada) – Informations**
Données toxicologiques sur les ingrédients

Ingrédient (Numéro CAS)	LD_{50} (voie/espèce)	LC_{50} (espèce)
Acide borique (10043-35-3)	2660 mg/kg (oral/rat)	Aucune donnée disponible
Chlorure de sodium (7647-14-5)	3 g/kg (oral/rat)	>42 g/m^3/1 h (rat)
Borate de sodium (7632-04-4)	3250 mg/kg (oral/souris)	Aucune donnée disponible

Classification(s) des risques de produit du SIMDUT : sans objet
Composants sur la `Liste de divulgation des ingrédients` : néant

SECTION 16 – RENSEIGNEMENTS SUR LA PRÉPARATION

Date de édition précédent: 30 janvier 2004

Cause pour la révision: Ajout de nouveau produit

CLAUSE D'EXONÉRATION DE RESPONSABILITÉ DE GARANTIES EXPRESSES ET IMPLICITES

Au meilleur de notre connaissance, les informations contenues dans ce document sont exactes à la date de la Fiche signalétique. Étant donné que l'utilisation de ce produit se trouve hors du contrôle de Bradley Fixtures Corporation, l'utilisateur est en définitive seul responsable de déterminer les conditions d'utilisation sans risque du produit. En outre, étant donné que les données, normes et modifications de réglementations, conditions d'utilisation et de manipulation se trouvent hors de notre contrôle, AUCUNE GARANTIE, EXPRESSE OU IMPLICITE, N'EST ÉMISE QUANT À L'EXACTITUDE OU AU CARACTÈRE EXHAUSTIF DE L'INFORMATION CONTENUE DANS CE DOCUMENT. L'utilisateur doit examiner toute recommandation dans le contexte spécifique de l'emploi prévu pour déterminer si elle est appropriée ou non.

GRAINGER
FOR THE ONES WHO GET IT DONE

Close this window MSDS

Common Name: ALL SEASON T30 SELECT

Manufacturer: INGERSOLL-RAND

MSDS Revision Date: 1/1/2008

Grainger Item Number(s): 2YY83, 4KR55, 4KR56, 4KR57, 4KR58, 4KR59, 4KR60, 4KR61, 4LG86, 4M578, 4M579, 4M580, 4M581, 4MJ04, 4MJ05, 4TM91, 4TM92, 4TM93, 4TM94, 4TM95, 4TN87, 4ZK07, 4ZK08, 4ZK09

Manufacturer Model Number(s): 2545E10V200, 2545E10V230/460, 2545E10VS230, 2545E10VS460, 32305872, 32311219, 32312936, 32319451, 32319469, 32319477, 32319485, 32319493, 32332827, 32498511, 38485298, 38485306, 38485314, 38485322, 38485330, 85582740, 97331383, 97338099, 97338131, 97338610

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3. PHYSICAL DATA
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5. HEALTH HAZARD
6. REACTIVITY DATA
7. HANDLING AND STORAGE
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9. FIRST AID
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ALL SEASON T30 SELECT(TM)

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 01/01/2008

ALL SEASON T30 SELECT IS A DIESTER BASED SYNTHETIC LUBRICANT FORMULATED FOR USE IN INGERSOLL-RAND TYPE 30 RECIPROCATING AIR COMPRESSORS.

1. PRODUCT IDENTIFICATION

top

MIXTURE-CHEMICAL FAMILY: DIESTER

2. HAZARDOUS INGREDIENTS

top

THE COMPONENTS OF THIS PRODUCT ARE NOT LISTED AS HAZARDOUS OR TOXIC ACCORDING TO OSHA (29 CFR OSHA 1910.1200), NTP, IARC AND SARA 313.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS):
HEALTH 0
FLAMMABILITY 1

REACTIVITY 0
BASIS

HAZARD RATINGS KEY:
4 = HIGHEST
0 = LOWEST

3. PHYSICAL DATA

top

BOILING POINT: N/A

POUR POINT: -40 DEG. F

VISCOSITY: 96.9 CST @ 40 DEG. C

SPECIFIC GRAVITY: 0.92

VAPOR DENSITY: GREATER THAN AIR

PERCENT VOLATILE: NEGLIGIBLE

SOLUBILITY IN WATER: NEGLIGIBLE

EVAPORATION RATE: NOT VOLATILE, SLOWER THAN BUTYL ACETRATE

APPEARANCE: LIGHT STRAW COLORED FLUID

ODOR: MILD ESTER ODOR

4. FIRE AND EXPLOSION HAZARD DATA

top

FLASH POINT: 480 DEG. F (249 DEG. C)
METHOD USED: ASTM D92

FLAMMABLE LIMITS: NOT ESTABLISHED

FIRE FIGHTING MEDIA: WATER SPRAY, DRY CHEMICAL, FOAM OR CARBON DIOXIDE

FIRE FIGHTING PROCEDURES:
USE WATER TO KEEP FIRE-EXPOSED CONTAINER COOL. WEAR SELF-CONTAINED POSITIVE PRESSURE BREATHING APPARATUS AND FULL PROTECTIVE GEAR TO FIGHT FIRE. COOL WITH WATER SPRAY.

SPECIAL FIRE AND EXPLOSION HAZARD: NONE EXPECTED

5. HEALTH HAZARD

top

THIS PRODUCT DOES NOT CONTAIN ANY COMPONENTS CONSIDERED TO BE HEALTH HAZARDS UNDER THE OSHA HAZARD COMMUNICATION STANDARDS 29 CFR 1910.1200 OR UNDER THE WHMIS CONTROLLED PRODUCT REGULATIONS IN CANADA.

EFFECTS ON EXPOSURE:
PROLONGED OR REPEATED SKIN CONTACT MAY TEND TO REMOVE NATURAL SKIN OILS, THUS LEADING TO POSSIBLE IRRITATION AND DERMATITIS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

MAY AGGRAVATE PREVIOUS SKIN CONDITION.

SKIN CONTACT:
WITH REPEATED CONTACT, A SKIN DEFATTER. MAY DEVELOP REDNESS OR MILD IRRITATION.

SKIN ABSORPTION: NOT ESTABLISHED

INGESTION (ACUTE):
CAN CAUSE GASTROINTESTINAL IRRITATION. NO HAZARD EXPECTED IN NORMAL USE.

EYES: MILD IRRITATION.

SYSTEMIC & OTHER EFFECTS: NOT ESTABLISHED

6. REACTIVITY DATA

top

STABILITY: STABLE UNDER NORMAL STORAGE CONDITIONS

INCOMPATIBILITY:
AVOID CONTACT WITH STRONG OXIDIZERS SUCH AS LIQUID CHLORINE, CONCENTRATED OXYGEN, SODIUM HYPOCHLORITE OR CALCIUM HYPOCHLORITE.

HAZARDOUS DECOMPOSITION: BURNING WILL PRODUCE TOXIC FUMES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS

CONDITIONS TO AVOID: OPEN FLAMES

7. HANDLING AND STORAGE

top

EXPOSURE GUIDELINES:
NOT ESTABLISHED. OSHA TLV/TWA 5 MG/M3 OIL MIST CAN BE USED.

VENTILATION: LOCAL EXHAUST TO CAPTURE VAPOR, MIST OR FUMES, IF NECESSARY.

RESPIRATORY PROTECTION:
USE NIOSH-APPROVED EQUIPMENT:
FILTER, FUME OR MIST RESPIRATOR UNDER MISTY CONDITIONS.

SKIN PROTECTION:
FOR PROLONGED USE, USE CHEMICAL RESISTANT GLOVES TO MINIMIZE SKIN CONTACT.

EYE PROTECTION: USE SAFETY GLASSES WITH SIDE SHIELDS.

SPECIAL HANDLING:
IF SPLASHING OCCURS, USE APRON. DO NOT GET IN EYES, ON SKIN OR CLOTHING.
WASH THOROUGHLY AFTER HANDLING.

STORAGE:
STORE IN A COOL, DRY PLACE. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. ENVIRONMENTAL AND DISPOSAL INFORMATION

top

STEPS TO BE TAKEN IN CASE OF SPILLS:
VENTILATE AREA. PREVENT SPREAD OF SPILL. ABSORB WITH SAND OR AN INERT,

ABSORBING MATERIAL. SWEEP OR SCOOP UP AND PLACE IN A DISPOSAL CONTAINER.
DO NOT CONTAMINATE ANY LAKES, PONDS, STREAMS, GROUND WATER OR SOIL.

WASTE DISPOSAL METHOD:
DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE OR FEDERAL LAWS.

9. FIRST AID

top

EYES:
FLUSH WITH WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS OPEN WHILE FLUSHING.
IF IRRITATION PERSISTS GET MEDICAL ATTENTION.

SKIN:
REMOVE CONTAMINATED CLOTHING AND WASH SKIN THOROUGHLY WITH SOAP AND WATER.

INGESTION:
DRINK 8-10 OUNCES OF WATER. DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION
IMMEDIATELY.

INHALATION:
REMOVE TO FRESH AIR. GET MEDICAL ATTENTION IF DISCOMFORT PERSISTS.

10.

top

PREPARED BY: INGERSOLL-RAND

NOTE:
THIS INFORMATION IS FURNISHED WITHOUT WARRANTY, REPRESENTATION, INDUCEMENT
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RESPONSIBILITY FOR USE OR RELIANCE UPON SAME. CUSTOMERS ARE ENCOURAGED TO
CONDUCT THEIR OWN TESTS. BEFORE USING ANY PRODUCT, READ ITS LABEL.

EMERGENCY CONTACT:
TELEPHONE: 704/896-4500
TELEX: 572584 IRACDSN DVDS
800-B BEATY STREET
DAVIDSON, NC 28036

(IR) INGERSOLL-RAND(R*)

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT AND COMPANY INFORMATION

CHEMICAL NAME; CLASS: ISOBUTYLENE

SYNONYMS: 2-Methylpropane; Isobutylene USP
CHEMICAL FAMILY: Alkane (hydrocarbon)
FORMULA: C_4H_8

	Document Number: 20103
PRODUCT USE:	For fuel and synthetic chemical use; food additive, agricultural uses, aerosol propellant, refrigerant.
MANUFACTURED/SUPPLIED FOR:	
ADDRESS:	2700 Post Oak Drive Houston, TX 77056-8229
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300
BUSINESS PHONE:	
General MSDS Information:	1-713/896-2896
Fax on Demand:	1-800/231-1366

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a colorless, liquefied, flammable gas. The gas has an unpleasant odor similar to burning coal. Both the liquid and gas pose a serious fire hazard when accidentally released. Rapid evaporation of liquid from cylinder may cause frostbite. Flame or high temperature impinging on a localized area of the cylinder of this product can cause the cylinder to burst or rupture without activating the cylinder's relief devices. Isobutylene is an asphyxiant and presents a significant health hazard by displacing the oxygen in the atmosphere. Isobutylene can also be a narcotic at high concentrations. Provide adequate fire protection during emergency response situations.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this product is by inhalation.

INHALATION: Isobutylene also has some degree of anesthetic action and can be mildly irritating to the mucous membranes. High concentrations of this gas can cause an oxygen-deficient environment. It should be noted that before suffocation could occur, the lower flammability limit of Isobutylene in air would be exceeded; possibly causing an oxygen-deficient and explosive atmosphere. Individuals breathing an oxygen deficient atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with various levels of oxygen are as follows:

CONCENTRATION	**SYMPTOM OF EXPOSURE**
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

OTHER POTENTIAL HEALTH EFFECTS: Contact with liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after such contact can quickly subside.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: The most significant hazard associated with this product is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, and, at high concentrations, unconsciousness or death may occur. The skin of a victim of over-exposure may have a blue color. Contact with liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

CHRONIC: There are currently no known adverse health effects associated with chronic exposure to the components of this compressed gas.

TARGET ORGANS: Respiratory system.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH Ppm	OTHER ppm
Isobutylene	115-11-7	> 99%	There are no specific exposure limits for Isobutylene. Isobutylene is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					
Maximum Impurities		< 1%	None of the trace impurities in this product contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalents standards.					

This material is classified as hazardous under OSHA regulations in the United States and the WHMIS in Canada.

NE = Not Established C = Ceiling Limit

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2004 format.

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS PRODUCT WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus and Fire-Retardant Personal Protective equipment should be worn. Adequate fire protection must be provided during rescue situations.

Remove victim(s) to fresh air, as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Only trained personnel should administer supplemental oxygen.

SKIN EXPOSURE: Exposure to the liquefied gas can cause frostbite. Remove any clothing that may restrict circulation to any frozen area. Do not rub frozen parts as tissue damage may occur. As soon as practicable, place any affected area in warm water bath which has a temperature that does not exceed 105°F (40°C). NEVER USE HOT WATER. NEVER USE DRY HEAT. If area of frostbite is extensive, and if possible, remove clothing while showering with warm water. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area of the body in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

Frozen tissue is painless and appears waxy, with a possible yellow color. Frozen tissue will become swollen, painful and prone to infection when thawed. If the frozen part of the body has been thawed by the time medical attention has been obtained, cover the area with a dry sterile dressing and a large bulky protective covering.

EYE EXPOSURE: If liquid is splashed into eyes, or if irritation of the eye develops after exposure to liquid or gas, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical assistance immediately, preferably an ophthalmologist.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

FLASH POINT: -10°C (< 14°F)

AUTOIGNITION TEMPERATURE: 465°C (869°F)

FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): 1.8% Upper (UEL): 9.6%

FIRE EXTINGUISHING MATERIALS: Extinguish Isobutylene fires by shutting-off the source of the gas. Use water spray to cool fire-exposed containers, structures, and equipment.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce toxic gases including carbon monoxide and carbon dioxide.

5. FIRE-FIGHTING MEASURES (Continued)

DANGER! Fires impinging (direct flame) on the outside surface of unprotected cylinders of this product can be very dangerous. Exposure to fire could cause a catastrophic failure of the cylinder releasing the contents into a fireball and explosion of released gas. The resulting fire and explosion can result in severe equipment damage and personnel injury or death over a large area around the cylinder. For massive fires in large areas, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from area and allow fire to burn.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Static discharge may cause this product to ignite explosively, if released.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Because of the potential for a BLEVE, evacuation of non-emergency personnel is essential. If water is not available for cooling or protection of cylinder exposures, evacuate the area. The North American Emergency Response Guidebook (Guide #115) recommends 0.5 miles. Other information for pre-planning can be found in the American Petroleum Institute Publications 2510 and 2510A.

6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Evacuate immediate area. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a gas release, clear the affected area, protect people, and respond with trained personnel.

Eliminate any possible sources of ignition, and provide maximum explosion-proof ventilation. If the gas is leaking from cylinder or valve, contact the supplier. Adequate fire protection must be provided. Use only non-sparking tools and equipment during the response.

Minimum Personal Protective Equipment should be **Level B: fire-retardant protective clothing, gloves and Self-Contained Breathing Apparatus.** Use only non-sparking tools and equipment. Locate and seal the source of the leaking gas. Protect personnel attempting the shut-off with water-spray. Allow the gas to dissipate.

Combustible gas concentration must be below 10% of the LEL (1.8%) prior to entry. Monitor the surrounding area for combustible gas levels and oxygen level. The atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

THIS IS AN EXTREMELY FLAMMABLE GAS. Protection of all personnel and the area must be maintained.

7. HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this product could occur without any significant warning symptoms. Non-sparking tools should be used.

STORAGE AND HANDLING PRACTICES: Specific requirements are listed in NFPA 58. Cylinders should be stored upright (with valve-protection cap in place) and firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Keep storage area clear of materials which can burn. Do not allow area where cylinders are stored to exceed 52 °C (125 °F). Store containers away from heavily trafficked areas and emergency exits. Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Protect cylinders against physical damage.

Cylinders should be separated from oxygen cylinders, or other oxidizers, by a minimum distance of 20 ft., or by a barrier of non-combustible material at least 5 ft. high, having a fire-resistance rating of at least 0.5 hours. Isolate from other incompatible chemicals (refer to Section 10, Stability and Reactivity).

Storage areas must meet national electrical codes for Class 1 Hazardous Areas. Post “No Smoking or Open Flames” signs in storage or use areas. Consider installation of leak detection and alarm for storage and use areas. Have appropriate extinguishing equipment in the storage area (i.e. sprinkler system, portable fire extinguishers).

Keep the smallest amount on-site as is necessary. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time.

Use non-sparking ventilation systems, approved explosion-proof equipment, and appropriate electrical systems. Electrical equipment used in gas-handling operations, or located in storage areas, should be non-sparking or explosion proof. Use a check valve in the discharge line to prevent hazardous backflow. Never tamper with pressure relief devices in valves and cylinders.

7. HANDLING AND STORAGE (Continued)

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Compressed gases can present significant safety hazards. The following rules are applicable to work situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap (where provided) in-place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Use piping and equipment adequately designed to withstand pressures to be encountered. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Do not use oils or grease on gas-handling fittings or equipment. Do not "crack" valve open before connecting it, since self-ignition may occur. Leak check system with leak detection solution, never with flame. Immediately contact the supplier if there are any difficulties associated with operating cylinder valve. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, casing a leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Never strike an arc on a compressed gas cylinder or make a cylinder part of an electric circuit.

After Use: Close main cylinder valve. Valves should be closed tightly. Replace valve protection cap. Mark empty cylinders "EMPTY".

NOTE: Use only DOT or ASME code containers designed for flammable gas storage. Earth-ground and bond all lines and equipment associated with this product. Close valve after each use and when empty.

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA: Use the proper connections**,** DO NOT USE ADAPTERS*:*

THREADED**:** 0-500 PSIG **-** CGA 510
PIN-INDEXED YOKE: Not Applicable.
ULTRA HIGH INTEGRITY: Not Applicable.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (i.e. nitrogen) before attempting repairs. Always use product in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Provide natural or explosion-proof ventilation adequate to ensure Isobutylene does not reach its lower flammability limit of 1.8%. Local exhaust ventilation is preferred, because it prevents gas dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the level of flammable gas.

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen levels are below 19.5% (air-purifying respirators will not function) or during emergency response to a release of this product. During an emergency situation, before entering the area, check for flammable gas level as well as oxygen-deficient atmospheres. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards.

EYE PROTECTION: Safety glasses.

HAND PROTECTION: Wear leather gloves when handling cylinders of this product. Otherwise, wear glove protection appropriate to the specific operation for which this product is used. Use low-temperature protective gloves when working with containers of Liquid Isobutylene.

BODY PROTECTION: Use body protection appropriate for task. Cotton clothing is recommended for use to prevent static electric build-up. Safety shoes are recommended when handling cylinders. Transfer of large quantities under pressure may require use of fire retardant clothing.

9. PHYSICAL and CHEMICAL PROPERTIES

GAS DENSITY @ 21.1°C (70°F) and 1 atm: 0.14957 lb/ft^3 (2.3959 kg/m^3)
BOILING POINT: -6.9°C (19.6°F)
FREEZING/MELTING POINT @ 10 psig: -140°C (-220.6°F)
SPECIFIC GRAVITY (air = 1) @ 21.1°C (70°F): 1.997
SOLUBILITY IN WATER vol/vol @37.8°C (100°F): Insoluble.
EVAPORATION RATE (nBuAc = 1): Not applicable.
ODOR THRESHOLD: Not determined.
VAPOR PRESSURE @ 21.1°C (70°F) psig: 23.85
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.
pH: Not applicable.
MOLECULAR WEIGHT: 56.108
EXPANSION RATIO: Not applicable.
SPECIFIC VOLUME (ft^3/lb): 6.54

APPEARANCE AND COLOR: Colorless gas which is shipped as a liquefied gas under its own vapor pressure. The gas has an unpleasant odor similar to burning coal.

HOW TO DETECT THIS SUBSTANCE (warning properties): The unpleasant odor may be a warning property. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: : When ignited in the presence of oxygen, this gas will burn to produce carbon monoxide, carbon dioxide.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride).

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Contact with incompatible materials and exposure to heat, sparks and other sources of ignition. Cylinders exposed to high temperatures or direct flame can rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicity data are applicable for pure Isobutylene.

LC50 (inhalation, rat) = 620,000 mg/kg/4 hours
LC50 (inhalation, mouse) = 415,000 mg/kg

SUSPECTED CANCER AGENT: Isobutylene is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA; therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Isobutylene can cause some irritation to mucus membranes. In addition, contact with rapidly expanding gases can cause frostbite to exposed tissue.

SENSITIZATION TO THE PRODUCT: Isobutylene is not known to cause sensitization in humans.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of Isobutylene on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for Isobutylene gas.
Embryotoxcity: No embryotoxic effects have been described for Isobutylene gas.
Teratogenicity: No teratogenicity effects have been described for this Isobutylene gas.
Reproductive Toxicity: No reproductive toxicity effects have been described for Isobutylene gas.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by over-exposure to the components of this product.

11. TOXICOLOGICAL INFORMATION (Continued)

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for Isobutylene.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary; treat symptoms; reduce or eliminate exposure.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: This gas will be dissipated rapidly in well-ventilated areas.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to oxygen deficient environments. No adverse effect is anticipated to occur to plant-life.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product's effects on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to Air Liquide. Do not dispose of locally.

For emergency disposal, secure the cylinder and slowly discharge the gas to the atmosphere in a well-ventilated area or outdoors, away from all sources of ignition.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

		Alternate Description:
PROPER SHIPPING NAME:	Isobutylene	Petroleum gases, liquefied
HAZARD CLASS NUMBER and DESCRIPTION:	2.1 (Flammable Gas)	2.1 (Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1055	UN 1075
PACKING GROUP:	Not applicable.	Not applicable.
DOT LABEL(S) REQUIRED:	Flammable Gas	Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 115

MARINE POLLUTANT: Isobutylene is not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles present serious safety hazards and should be discouraged.

NOTE: Shipment of compressed gas cylinders which have not been filled with the owners consent is a violation of Federal law (49 CFR, Part 173.301 (b).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Isobutylene is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act. This product is subject to the reporting requirements of Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (40 CFR 370.21).

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

CANADIAN DSL INVENTORY STATUS: Isobutylene is listed on the Canadian DSL Inventory.

U.S. TSCA INVENTORY STATUS: Isobutylene is listed on the TSCA Inventory.

15. REGULATORY INFORMATION (Continued)

OTHER U.S. FEDERAL REGULATIONS:

- Isobutylene does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82).
- Isobutylene is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for of this gas is 10,000 pounds.
- Depending on specific operations involving the use of this product, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation Isobutylene is not listed in Appendix A, however, any process that involves a flammable gas on-site, in one location, in quantities of 10,000 lbs (4,553 kg) or greater is covered under this regulation unless it is used as a fuel.
- Isobutylene is listed as a Regulated Substance, per 40 CFR, Part 68, of the Risk Management for Chemical Releases as a flammable substance. The threshold quantity for Isobutane under this regulation is 10,000 lbs.

OTHER CANADIAN REGULATIONS: Isobutylene is categorized as a Controlled Product, Hazard Classes A, and B1 as per the Controlled Product Regulations.

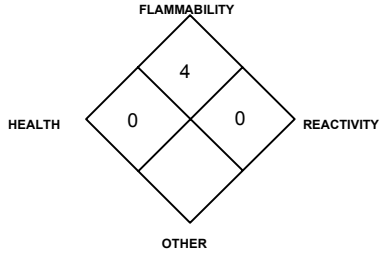
U.S. STATE REGULATORY INFORMATION: Isobutylene is covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: Liquefied Petroleum Gas.
California - Permissible Exposure Limits for Chemical Contaminants:
Florida - Substance List: Isobutylene.
Illinois - Toxic Substance List: Liquefied Petroleum Gas.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Isobutylene.
Minnesota - List of Hazardous Substances: Isobutylene.
Missouri - Employer Information/Toxic Substance List: Liquefied Petroleum Gas.
New Jersey - Right to Know Hazardous Substance List: Isobutylene.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Isobutylene.
Rhode Island - Hazardous Substance List: Liquefied Petroleum Gas.
Texas - Hazardous Substance List: Liquefied Petroleum Gas.
West Virginia - Hazardous Substance List: Liquefied Petroleum Gas.
Wisconsin - Toxic and Hazardous Substances: Liquefied Petroleum Gas.

CALIFORNIA PROPOSITION 65: Isobutylene is not on the California Proposition 65 lists.

16. OTHER INFORMATION

NFPA RATING



HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	0
FLAMMABILITY	(RED)	4
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		B

EYES RESPIRATORY HANDS BODY

See Section 8

For routine industrial applications

16. OTHER INFORMATION (Continued)

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 4221 Walney Road 5th floor, Chantilly, VA 20151-2923. Telephone: (703) 788-2700.

P-1	*"Safe Handling of Compressed Gases in Containers"*
P-14	*"Accident Prevention in Oxygen-Rich and Oxygen Deficient Atmospheres"*
SB-2	*"Oxygen Deficient Atmospheres"*
	"Handbook of Compressed Gases"

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.
9163 Chesapeake Drive, San Diego, CA 92123-1002
619/565-0302

Fax on Demand: 1-800/231-1366

AIR LIQUIDE

Gardner Denver

H.M.I.S.
Health: 0
Flammability: 1
Reactivity: 0
These ratings should be used only as a part of a fully implemented H.M.I.S. program.

Material Safety Data Sheet

Section I - Product Identification

Trade Name and Synonyms	Part Numbers:	Health Emergency Phone Number
AEON-PD	**28G23 ; 28G24 ; 28G25 : 28G28**	**(217) 222-5400**
Manufacturer's Name Gardner Denver, Inc.		**Safety Department**
Address 100 Gardner Park Peachtree City, GA 30269		Transport Emergency Phone Number
Product Identification Positive Displacement Blower Lubricant		
Chemical Names and Synonyms Polyalphaolefin	**Use or Description** Gear Oil	

Section II - Composition/Information on Ingredients

Chemical Family:	Synthetic Hydrocarbon	**CAS Number**	Proprietary
Formula:	$C_{10n}H_{20n+2}$		

Section III - Chemical and Physical Properties

Appearance:	Blue liquid	**Specific Gravity:**	(water=1):0.84-0.89
Odor:	None	**Vapor Pressure:**	<0.01mmHg@20ºC
Volatiles, Percent by Volume:	0%	**Solubility in Water:**	Insoluble
Boiling Point:	>600ºF	**Evaporation Rate (butyl acetate=1):**	Nil

Section IV - Hazards Identification

Threshold Limit Value:	5mg/m^3 ACGIH
Situations to Avoid	Avoid breathing oil mists.

This product is non-hazardous. The product contains no known carcinogens. No special warning labels are required under OSHA 29 CFR 1910.1200.

Section V - First Aid Measures

Eye Contact:	Flush eyes with water for 15 minutes and consult physician.
Skin Contact:	Upon contact with skin, wash with soap and water.
Inhalation:	Product is not toxic by inhalation. If oil mist is inhaled, remove to fresh air and consult physician.
Ingestion:	Consult physician at once. **DO NOT INDUCE VOMITING.** May cause nausea and diarrhea.

To the best of our knowledge the toxicity of this product has not been fully investigated. Analogous compounds are considered to be essentially non-toxic.

Section VI - Fire Fighting Measures

Flash Point: 405-495ºF	**Method:** Cleveland Open Cup - COC
Flammable Limits:	Not established
Autoignition Temperature	No data
Extinguishing Media:	Dry chemical; CO_2 foam; water spray (fog)
Fire Fighting Instructions:	Burning fluid may evolve irritating/noxious fumes. Firefighters should use NIOSH/MNSA-approved self-contained breathing apparatus. Use water to cool fire-exposed containers. Use water carefully near exposed liquid to avoid frothing and splashing of hot liquid.
NFPA Classification:	Not established

Section VII - Stability and Reactivity

Chemical Stability	Stable
Conditions to Avoid:	Excessive heat
Incompatibility with other Materials:	Strong oxidizers
Hazardous Decomposition Products:	Analogous compounds evolve carbon monoxide, carbon dioxide, and other unidentified fragments when burned.
Hazardous Polymerization:	Will not occur.

Section VIII - Accidental Release Measures

Safeguards (Personnel):	Wear suitable protective equipment, especially goggles.
Initial Containment:	Stop source of spill. Dike spill area. Use absorbent materials to soak up fluid (i.e. sand, sawdust, and commercially available materials).
Spill Clean-Up:	Wash spill area with large amount of water. Properly dispose of all materials.

Section IX - Handling and Storage

Handling (Personnel):	Do not take internally. Avoid contact with skin, eyes, and clothing. Upon contact with skin, wash with soap and water. Flush eyes with water for 15 minutes and consult physician. Wash contaminated clothing before reuse.
Handling (Physical Aspects):	
Storage:	Keep container tightly sealed when not in use.

Section X - Exposure Controls/Personal Protection

ENGINEERING CONTROLS:	
Ventilation:.	Local exhaust
PERSONAL PROTECTIVE EQUIPMENT:	
Respiratory Protection:	Use in well ventilated area
Protective Gloves:	Not required, but recommended, especially for prolonged exposure.
Eye Protection:	Goggles
Other Protective Equipment:	
EXPOSURE GUIDELINES:	
Applicable Exposure Limits:	

Section XI - Toxicological Information

Animal Data:	No specific animal toxicological data available for this product.

Section XII - Ecological Information

Ecotoxicological Information:	No specific aquatic data available for this product.

Section XIII - Disposal Considerations

Waste Disposal:	Incinerate this product and all associated wastes in a licensed facility in accordance with Federal, state, and local regulations.
Container Disposal:	

Section XIV - Transportation Information

Shipping Information:	DOT - Not regulated. ICAO/IMO - Not restricted.

Section XV - Regulatory Information

U.S. FEDERAL REGULATIONS:	
OSHA Hazard Determination:	Under normal conditions of use, this material is not known to be hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200.
CERCLA/Superfund:	This material is not known to contain hazardous substances in sufficient quantity to make it subject to CERCLA regulations.
SARA, Title III, 302/304:	This material is not known to contain extremely hazardous substances.
Title III Hazard Classifications Sections 311, 312:	Acute: No Chronic: No Reactivity: No Pressure: No Fire: No
SARA Title III, 313:	This material is not known to contain any chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and subject to release reporting requirements.
TSCA:	Material and/or components are listed in the TSCA Inventory of Chemical Substances (40 CFR 710).
RCRA:	This material has been evaluated for RCRA characteristics and does not meet hazardous waste criteria if discarded in its purchased form. Because of product use, transformation, mixing, processing, etc., which may render the resulting material hazardous, it is the product user's responsibility to determine at the time of disposal whether the material meets RCRA hazardous waste criteria.
Clean Water Act:	This material is not known to contain any ingredient(s) subject to the Act.
STATE REGULATIONS (U.S.):	
California "Prop 65":	Product may contain ingredient(s) known to the State of California to cause cancer, birth defects, or other reproductive harm, but the degree of exposure poses a health risk that is below the Prop 65 No Significant Risk Level for the listed chemical(s).
Pennsylvania Worker & Community Right to Know Act:	This material is not known to contain any ingredient(s) subject to the Act.
CANADIAN REGULATIONS:	This is not a WHMIS controlled product. Transport/Medical Emergency Phone Number: 613-348-3616.

Section XVI - Other Information

NFPA, NPCA-HMIS:		
NFPA Rating:		
Health	0	Personal Protection B
Flammability	1	
Reactivity	0	
NPCA-HMIS Rating:		
Health		Personal Protection B
Flammability		
Reactivity		

This information in this material safety data sheet should be provided to all who use, handle, store, transport, or are otherwise exposed to this product.

Material Safety Data Sheet

Revision Date: 05/18/09

Restek Corporation
110 Benner Circle
Bellefonte, PA 16823-8812
(814) 353-1300
(800) 356-1688 **Fax: (814) 353-1309**

I. PRODUCT IDENTIFICATION

Catalog Number / Product Name:	**30096, 30096-5XX, & 30196 / Unleaded Gasoline Standard (Unweathered)**
Revision Number:	5
Intended use:	For Laboratory use only

II. HAZARD INDENTIFICATION

Emergency Overview:

Physical Hazards:	F - Highly flammable
Health Hazards:	T - Toxic

Routes of Entry:	Ingestion Contact Inhalation
Target Organs Potentially Affected By Exposure:	skin, eyes, CNS, GI tract, respiratory system
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	No data.
Reproductive and Developmental Toxicity:	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Ingestion: Toxic if swallowed. May cause target organ failure and/or death.

III. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	99.500000
gasoline, automotive, unleaded	8006-61-9	232-349-1	0.500000

IV. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately

Eyes: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention. Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this MSDS. Induce vomiting as a last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

V. FIRE FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a Class B fire. Vapors are heavier than air and may travel to a source of ignition and flash back

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained toxic breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Use water spray/fog for cooling.

Hazardous Combustion Products: Carbon monoxide, Carbon dioxide

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section VIII at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

VII. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
gasoline, automotive, unleaded	8006-61-9	ND		No TLV	No PEL established

United Kingdom:

Chemical Name	CAS No.	EINEC No.	WEL-STEL	WEL-TWA
methanol	**67-56-1**	**200-659-6**	**250 ppm STEL; 333 mg/m3 STEL**	**200 ppm TWA; 266 mg/m3 TWA**
gasoline, automotive, unleaded	**8006-61-9**	**232-349-1**	**No data.**	**No data.**

France:

Chemical Name	CAS No.	EINEC No.	VLCTs-STEL	VME-TWA
methanol	67-56-1	200-659-6	1000 ppm VLCT; 1300 mg/m3 VLCT	**200 ppm VME (restrictive limit); 260 mg/m3 VME (restrictive limit)**
gasoline, automotive, unleaded	8006-61-9	232-349-1	No data.	**No data.**

Germany:

Chemical Name	CAS No.	EINEC No.	VELs
methanol	67-56-1	200-659-6	200 ppm TWA (exposure factor 4); 270 mg/m3 TWA (exposure factor 4)
gasoline, automotive, unleaded	8006-61-9	232-349-1	No data.

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section III, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

IX. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	Mild
pH:	No data available.
Vapor Density:	1.1 (air = 1)
Melting Point:	-98 °C
Flash Point:	No data available.
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Specific Gravity:	0.791-0.792 g/cm3 at 20 °C
Evaporation Rate:	No data available.
Odor Threshold:	No data available.
Solubility:	Moderate; 50-99%
VOC % by weight:	No data available.
Molecular Weight:	No data available.

X. STABILITY AND REACTIVITY:

Stability:	Stable under normal conditions.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

XI. TOXICOLOGICAL INFORMATION:

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat: 83.2 mg/L/4H; Inhalation LC50 Rat:64000 ppm/4H; Oral LD50 Rat:5628 mg/kg; Dermal LD50 Rabbit:15800 mg/kg
Gasoline	8006-61-9	Inhalation LC50 Rat: 300 g/m3/5M

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
Gasoline	8006-61-9	Present

ACGIH:

Chemical Name	CAS No.
No data available.	

NIOSH:

Chemical Name	CAS No.	
Gasoline	8006-61-9	potential occupational carcinogen

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
Gasoline	8006-61-9	Group 2B

XII. ECOLOGICAL INFORMATION:

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	No data
Bioaccumulation:	No data
Degradability:	Biodegrades slowly.
Ecological Toxicity Data:	0

XIII. DISPOSAL CONSIDERATIONS:

Waste Description of Spent Product:	Spent or discarded material is a hazardous waste.
Disposal Methods:	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging:	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

XIV: TRANSPORTATION INFORMATION:

United States:	
DOT Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3
Packing Group:	II
International:	
IATA Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3 (6.1)
Packing Group:	II
Marine Pollutant:	Yes

XV. REGULATORY INFORMATION:

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
gasoline, automotive, unleaded	8006-61-9	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
gasoline, automotive, unleaded	8006-61-9	X	X	-	X

EU Directives Classification:
Hazard Symbols

Risk Phrases:	R23/25:Toxic by inhalation and if swallowed. R11:Highly Flammable
Safety Phrases:	S37:Wear suitable gloves S16:Keep away from sources of ignition - No smoking

XVI: ADDITIONAL INFORMATION

Prior Version Date: 10/02/07

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APPENDIX D

SAFE TASK EVALUATION PROCESS

FIELD SAFE TASK EVALUATION PROCESS (F-STEP)

Report Status: (insert date)	Initial Report	Updated Report	Final Report	Verification/Validation	Report Input to SMART Database

Observer's Name	Date:	Time:
Client:	Project Name:	
Observer's Office:	Site Location:	
Observer's Supervisor:	Project No. (If applicable):	
Subcontractor: ☐ Yes ☐ No	Subcontractor Company Name:	

Feedback Conducted By:	Date:
Observee's Supervisor:	Time:

Check Task Being Observed (if not listed here, go to columns at right)		If checking this column, write in the specific task	
☐ Air Knifing	☐ Mob/Demob	☐ Agricultural Services	
☐ Clearing	☐ Project Oversight	☐ Construction	
☐ Demolition	☐ Soil Sampling	☐ Landfill	
☐ Drilling	☐ Stack Testing	☐ Office Operations	
☐ Electrical Work	☐ Surveys & Audits	☐ O&M	
☐ Excavation	☐ Traffic Control	☐ Pipeline	
☐ General Site Cleaning	☐ UST Removal	☐ Refinery	
☐ Heavy Equipment Operations	☐ Water Sampling	☐ Treatment Plants	
☐ IH Sampling	☐ Well Management	☐ Other	
☐ Manual Lifting			

Give a brief description of task being performed and your surroundings

Observer's Positive Comments

1.

2.

3.

Feedback Session Conclusion:
If NO Questionable Items: Brief Recap of Positive Actions/Comments
If Questionable Items: Brief Recap of Positive Actions/Comments AND Why the Questionable Item(s) Occurred

FIELD SAFE TASK EVALUATION PROCESS (F-STEP)

PERSONAL PROTECTIVE EQUIPMENT	Meets Work Standards	???	N/A	Evaluation Comments
1. Hearing Protection (e.g., Ear Plugs)			☐	
2. Head Protection (e.g., Hard Hat)			☐	
3. Eye Protection (e.g., Safety Glasses/Goggles)			☐	
4. Hand Protection (e.g., Gloves)			☐	
5. Foot Protection (e.g., Steel-toe Boots)			☐	
6. Respiratory Protection			☐	
7. Fall Protection (e.g., lanyard/harness)			☐	
8. High Visibility Clothing (e.g., Work Vest)			☐	
9. First Aid Kit/Fire Extinguisher			☐	
10. Other (be specific)			☐	
BODY POSITION	**Meets Work Standards**	**???**	**N/A**	**Evaluation Comments**
11. Proper Body Positioning When Exerting Force (Lifting/Pushing/Pulling)			☐	
12. Pinch Points/Moving Equipment - Hands/Body Placement			☐	
13. 3-Points of Contact			☐	
14. Other (be specific)			☐	
WORK ENVIRONMENT	**Meets Work Standards**	**???**	**N/A**	**Evaluation Comments**
15. Work/Walk Surface Clear (Free And Clear Pathway)			☐	
16. Housekeeping/Equipment Storage			☐	
17. Controlled Work Zone (e.g., Warning Devices, Barricades, Cones, Flags)			☐	
18. Emergency Stop/Safety Switches			☐	
19. Materials Labeled Correctly			☐	
20. Storage/Disposal of Waste			☐	
21. Other (be specific)			☐	
OPERATING PROCEDURES	**Meets Work Standards**	**???**	**N/A**	**Evaluation Comments**
22. STAR Performed/Job Planning			☐	
23. Stop Work Authority Process – understood and considered			☐	
24. JSA/JLA Reviewed and Followed			☐	
25. Daily Site Inspection			☐	
26. High Risk Task Specific (Hot Work, Confined Space, LOTO, Excavation/ Trenching)			☐	
27. Inspect Work Zone for Hazards			☐	
28. Coordinate/Communicate with Site Rep and/or others on site			☐	
29. Spotters used appropriately			☐	
30. Underground/Overhead Utilities Identified			☐	
31. Other (be specific)			☐	
TOOLS/EQUIPMENT	**Meets Work Standards**	**???**	**N/A**	**Evaluation Comments**
32. Hand/Power Tool - Selection, Condition, and Use			☐	
33. Field/Test Equipment - Selection, Condition, and Use			☐	
34. Heavy Equipment - Selection, Condition, and Use			☐	
35. Other (be specific)			☐	
Observation Total Occurrences				
% Observations to Meet Work Standards				
Item Specific to Work Task	**Meets Work Standards**	**???**		**Evaluation Comments**
Insert Task/JSA/SOP Step				
Insert Task/JSA/SOP Step				
Insert Task/JSA/SOP Step				

FIELD SAFE TASK EVALUATION PROCESS (F-STEP)

Causative Factors and Corrective Actions						Verification (Did we do w and Validation	
Item No.	CF	Corrective Actions (Must match Causative Factor)	Responsible Party	Date Due	Date Completed	Verified By/ Validated By	Date
						Verified By:	
						Validated By:	
						Verified By:	
						Validated By:	
						Verified By:	
						Validated By:	
						Verified By:	
						Validated By:	

CRA 10 CAUSATIVE FACTORS

Personal Factors		Company Factors		External F	
1	Insufficient training for task	5	Incomplete or no procedures	10	Exposure
2	Hurrying to complete the task	6	Procedures not known or enforced		
3	Easier if proper process not followed	7	Improper PPE		
4	Took shortcuts without prior incident	8	Improper tools		
		9	Improper workplace layout		

APPENDIX E

RM&R PPE REQUIREMENTS

GLOVE SELECTION GUIDELINE

Hazard	**Tasks**	**Standard***	**Representative Gloves*** **Part numbers and pricing are for DiVal Safety**
Impact Hazards, Med/Heavy Duty Puncture Cut	All drilling/direct push activities, staging to breakdown. Heavy materials handling Power tools Air knifing Hydro excavation	ANSI Cut and Abrasion Resistance Level 3 EN 388 4522	Hexarmor™ Chrome, Sm-2XL # 4026+size---$33.99/pair  Hexarmor™ GGT5, Sm-2XL # 4020+size---$46.00/pair  Hexarmor™ L5, Sm-2XL # 4018+size---$38.25/pair  Hexarmor™ SteelLeather II, Sm-2XL #5033+size---$39.90/pair  Ironclad™ Kong Glove, DiVal is not able to get this glove.
Med/Heavy Duty Puncture Cut Oil/Solvent Resistant	Tasks where materials are treated with oil or solvents	ANSI Cut and Abrasion Resistance Level 3 EN 388 4522	Ansell Alpha-Tec, #5853+size for $7.65/pair. These gloves have to be ordered by the case of 72 pairs  Memphis™ Ultra Tech Nitrile Cut & Splash, Sm-2XL, #9693+size---$6.24/pair

			 Best™ Neoprene 6780, #6780 (one size only)---$7.90/pair  Hexarmor™ TenX Threesixty, Sm-2XL, # 7090+size---$27.92/pair 
Medium Duty Cut/Puncture Gloves with Oily Surface Grip	Light materials handling, wet service	ANSI Cut and Abrasion Resistance Level 3 EN 388 44xx	Best™ Zorb-It Ultimate HV 4567, Sm-2XL, # 4567+size---$7.58/pair (must order by the DOZEN)  Ansell™ Cut Protective Glove 97-505, Sm-2XL, #97-505---$18.40/pair 
Med/Heavy Duty Cut/Puncture	Light Material Handling System O&M	ANSI Cut and Abrasion	Perfect Fit™ PF570, Sm-2XL, #PF570+size--$25.16/pair

	Use of hand tools Heavy Augering Heavy Equipment Operator	Resistance Level 2 EN 388 33xx	 Hexarmor™ Level Six, Sm-2XL, #9010+size---$30.23/pair  Ironclad™ Cut Resistant Glove, Sm-2XL, # ICR+size---$18.86/pair 
Light Duty Cut/Puncture Abrasion Only	Handling soil and groundwater samples Opening spoons Well construction	ANSI Cut and Abrasion Resistance Level 2 EN 388 21xx	Memphis™ Ninja Max, SM-2Xl, # N9676GL+size---$17.25/pair  Memphis™ UltraTech Dyneema, Sm-2XL, # 9676+size---$11.10/pair  Memphis™ Ninja Ice (Cold Weather), Sm-2XL, # N9690FC+size---$7.20/pair

			 Ansell™ Hyflex 1-511, Sm-2XL, # 11-511+size---$15.99/pair  Ansell™ Powerflex, Sm-2XL, # 80-813+size---$16.43/pair  Ironclad™ Workforce, Sm-2XI, # 2222GRBOU+size---$19.36/pair 
Light Duty Utility Glove	Observation	NA	Mechanix™ Original or Utility glove, Sm-2XL, # MG050+size---$24.45/pair 
* Reference to ANSI and EN 388 glove testing standards. Listed gloves meet the standards in the table, but are not the only gloves that meet the standard.			
This selection chart is not intended to address all chemical hazards. Gloves used for chemical protection shall provide cut/puncture resistance, or be used in tandem with cut/puncture protection. Nitrile gloves less than 8 ml thickness used for environmental sampling must be used in tandem with a cut/puncture resistant glove.			

The nitrile gloves shown below are 8 ml and can be used alone without other cut/puncture protection.

GNEP(SIZE)5T8-----$11.85/box
Sm-2XL

8005+size---$16.20/box
Sm-2XL(THESE ARE POWDER FREE)

Personal Protective Equipment

1.0 Purpose

Provide minimum requirements for personal protective equipment (PPE).

2.0 Scope

This policy applies to all ConocoPhillips employees, contractors, and visitors. Additional PPE requirements for specific tasks may be addressed in separate policies. Deviations from the policy must be approved by the Site/Program Manager.

3.0 Definitions

(reserved)

4.0 Roles and Responsibilities

4.1 Contractor Supervisors are responsible for

- Confirming required general and PPE-specific training has been completed
- Providing PPE as required by this policy.
- Enforcing the proper use of PPE as required by this policy for the task being performed.
- Removing or replacing PPE that is damaged or defective.
- Conducting hazard assessments and identifying PPE as part of the Health and Safety Plan (HASP) and/or the Job Safety Analysis (JSA.)
- Providing PPE training to personnel as required by this policy.

4.2 Site workers are responsible for:

- Being familiar with the use of PPE as required by this policy.
- Inspecting of PPE prior to use.
- Using PPE that is appropriate for the hazards and tasks.
- Maintaining PPE in a serviceable condition.
- Identifying PPE usage for non-routine tasks by using JSA or other safety review process.

4.3 ConocoPhillips Site/Program Managers are responsible for:

- Assisting with PPE selection as requested.
- Assisting with PPE Hazard Assessments as requested.
- Monitoring compliance with this policy.

5.0 Requirements

5.1 Hand Protection

5.1.1 The primary focus of hand protection should always be to eliminate hand exposure to pinch points, crush points, impact zones, and other hand hazards.

5.1.2 Gloves made of substantial material must be worn at all times when there is potential for exposure to chemicals, hot/cold materials or surfaces, and for added protection against cuts, puncture and abrasions. It is fully acknowledged that the use of any glove will not prevent all hand injuries, but their use, in many cases, minimizes the severity of the injury.

5.1.3 Gloves are required to be worn at all times inside the work/exclusion zone. Personnel shall wear hand protection appropriate to the hazard. ConocoPhillips Remediation sites have many ubiquitous cut and puncture hazards and therefore a cut and puncture resistant glove shall be the primary choice for day to day use. Consult applicable Material Safety Data Sheets when working with chemicals to assist with determining appropriate glove material and type.

5.1.4 Visually inspect gloves prior to use for signs of penetration and damage due to impact, rough treatment, or abnormal wear that might reduce the degree of safety. Replace gloves when damaged.

5.1.5 The site health and safety plan and/or job safety analysis must identify the appropriate gloves. Multiple glove types may be necessary for an entire job or project. Analysis and selection prior to starting a job or project will be useful to assure appropriate glove availability.

5.1.6 Incident reports for all finger/hand/wrist incidents shall include photos safely simulating the incident with the same glove type used, and must capture the following data:

- glove requirements specified in pre-job planning
- whether gloves were being worn at the time of the incident
- type, manufacturer and model of glove used
- area of hand or wrist affected by the incident

Corrective actions must consider improvements in hand protection including glove enhancement suggestions.

5.1.7 Tasks shall be evaluated to determine what specific hand protection is required. Appropriate gloves (i.e., impact resistant, cut resistant, etc.) for the specific job task shall be worn until that task is completed. Not all tasks that could occur at a remediation site are addressed in the guidance table below. Gloves for specialty activities such as electrical work or welding should be specified in the JSA.

Glove Selection Guideline

Hazard	Tasks	Standard *	Representative gloves*
Impact Hazards, Med/Heavy Duty Puncture Cut	All drilling/direct push activities, staging to breakdown. Heavy materials handling Power tools Air knifing Hydro excavation	ANSI Cut and Abrasion Resistance Level 3 EN 388 4522	Hexarmor™ Chrome Hexarmor™ GGT5 Hexarmor™ L5 Hexarmor™ SteelLeather III Ironclad™ Kong Glove
Med/Heavy Duty Puncture Cut Oil/Solvent Resistant	Tasks where materials are treated with oil or solvents.	ANSI Cut and Abrasion Resistance Level 3 EN 388 4522	Ansell Alpha-Tec Memphis™ Ultra Tech Nitrile Cut & Splash Best™ Neoprene 6780 Hexarmor™ TenX Threesixty
Medium Duty Cut/Puncture Gloves with Oily Surface Grip	Light materials handling, wet service	ANSI Cut and Abrasion Resistance Level 3 EN 388 44xx	Best™ Zorb-It Ultimate HV 4567 Ansell™ Cut Protective Glove 97-505
Med/Heavy Duty Cut/Puncture	Light Materials Handling System O&M Use of hand tools Hand Auguring Heavy Equipment Operator	ANSI Cut and Abrasion Resistance Level 2 EN 388 33xx	Perfect Fit™ PF570 Hexarmor™ Level Six 9010/9012 Ironclad™ Cut Resistant Glove
Light Duty Cut/Puncture Abrasion Only	Handling soil and groundwater samples Opening spoons Well construction	ANSI Cut and Abrasion Resistance Level 2 EN 388 21xx	Memphis™ Ninja Max N9676GL Memphis™ UltraTech Dyneema 9676 Memphis™ Ninja Ice (Cold Weather) Ansell™ Hyflex 11-511 Ansell™ Powerflex 80-813 Ironclad™ Workforce
Light Duty Utility Glove	Observation	NA	Mechanix™ Original or Utility glove
* Reference to ANSI and EN 388 glove testing standards. Listed gloves meet the standards in the table, but are not the only gloves that meet the standard.			
This selection chart is not intended to address all chemical hazards. Gloves used for chemical protection shall provide cut/puncture resistance, or be used in tandem with cut/puncture protection. Nitrile gloves less than 8 ml thickness used for environmental sampling must be used in tandem with a cut/puncture resistant glove.			
Gloves available in high visibility colors have shown to be effective and are preferred.			

6.0 Training and Communication Requirements

Initial training shall be provided to each worker who is required to wear personal protective equipment. At a minimum the training shall include the following:

- When PPE is necessary.
- What PPE is necessary.
- How to properly don, remove, adjust, and wear PPE.
- Limitations of PPE.
- Proper care, maintenance, useful life, and disposal of PPE.

Workers shall demonstrate, through testing or equivalent means that they comprehended the training and are able to use the PPE properly before being allowed to perform work requiring the use of PPE.

Workers shall be re-trained if there is reason to believe they do not have the understanding or skills required to properly wear and use PPE. Re-training shall also be required whenever workplace or PPE-type changes are made that affect PPE usage.

All training shall be documented and entered into a training records system.

7.0 Records

Maintain records as described below. Records may be electronic or paper format.

Record	Retention Code	Retention period
PPE Training	HRB 720	Max 12 years

Revision Summary				
Rev.	**Approval Date**	**Revision Description Details**	**Type of Communication and/or Training Required**	**Revised By**
0	11/15/2010	Initial Issue. Hand protection only.		NA

Personal Protective Equipment Policy

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Section 1 Purpose

Provide minimum requirements for personal protective equipment (PPE) as applied to the protection of the head, eyes, face, hands, feet, personal flotation devices, and fire-retardant clothing. This policy also provides a means to identify tasks that would require respiratory protection as referenced by the Pipelines and Terminals Respiratory Protection Policy and/or other Transportation Policies.

Section 2 Scope

This policy applies to all ConocoPhillips Transportation employees, contractors, and visitors – including third party truck drivers loading and/or unloading at facility racks. Additional PPE requirements for hearing protection and respiratory protection may be addressed in separate policies.

Section 3 Definitions

Chemical Goggles – a flexible-fitting eye protective device worn over safety glasses as splash protection. Chemical goggles incorporate a small hood over the anti-fog ventilation to keep splashes from contacting the eyes. Non-chemical goggles lack this hood and are intended for particle protection only.

Flame Resistant Clothing (FRC) – a specially made or treated garment that helps to reduce burn injuries from flash fires, electrical arcs, and other thermal sources by failing to sustain combustion. FRC clothing shall be marked specifically as Flame Resistant and approved for its intended use by NFPA 2112, NFPA 70E, and/or ASTM F1506/F1891.

Hardhat (helmet) – a device worn for protection of the head against impact, penetration of falling objects, electrical shock, or any combination thereof. The device must include a suitable suspension. Hardhats shall meet ANSI Z89.1 standards. The National Safety Council or ANSI does not consider bump caps to be hardhats.

New Construction – also known as a Greenfield construction site, an area where previously unused facilities and/or equipment are being installed, modified, or otherwise worked upon. The site must not be intermixed with components or facilities that contain or have previously contained product or that have been powered. The site must be clearly separated from existing facilities and must be far enough away from existing facilities to mitigate major physical hazards such as an explosion or flash fire.

Personal Protective Equipment (PPE) – specialized equipment designed to protect personnel from hazards in the workplace that cannot be reasonably engineered out or otherwise controlled.

Personnel – Company Employees, Contractors working for or under the direction of CPPL, and Visitors to a CPPL facility or worksite.

Primary Eye Protection –ANSI Z87.1 compliant safety glasses with side-shields or goggles which may be worn alone or in conjunction with secondary protection.

Safety Toe Footwear (Safety Shoes) – footwear that meets ASTM 2413-05 “Standard Specification for Performance Requirements for Foot Protection” and consisting of a sturdy, Chemical/Oil resistant exterior with slip-resistant, non-conducting soles, well defined heels, and a supportive construction rising above and supporting the ankle.

Secondary Eye Protection – Eye (and face) protection which must only be worn in conjunction with primary eye protection. Examples include but are not limited to, welding helmets and face shields.

Substantial Footwear – Oil and chemical resistant shoes or boots constructed of natural/artificial leather that cover the entire foot with non-slip soles and a defined heel. Shoes that resemble athletic shoes are acceptable only if they are American National Standard Institute ASTM F2412-05 approved and if they do not have any perforations or vent holes. Substantial footwear does not include sandals, open-toed shoes, cloth, canvas shoes, or footwear with perforations or vent holes.

Visitor – Non-facility personnel who are escorted at all times by a ConocoPhillips employee, are present on site for a short period of time (usually hours or days), and who are involved primarily in observation of ongoing work from a safe distance.

Section 4 Roles and Responsibilities

Facility and Workgroup Supervisors are responsible for:

- Providing PPE as required by this policy.
- Enforcing the proper use of PPE as required by this policy and the task being performed.
- Removing or replacing PPE that is damaged or defective.
- Conducting PPE Hazard Assessments as required by this policy.
- Requiring contractors to provide PPE usage training and equipment for their employees appropriate to the hazards and tasks being performed.
- Providing PPE training to personnel as required by this policy.

Employees are responsible for:

- Being familiar with the use of PPE as required by this policy.
- Inspecting of PPE prior to use.
- Using PPE that is appropriate for the hazards and tasks.
- Maintaining PPE in a serviceable condition.
- Participating in PPE Hazard Assessments as required by management.
- Consulting PPE Hazard Assessments prior to beginning a task.
- Identifying PPE usage for non-routine tasks by using JSA or Task Safety Review tools.

Safety Coordinators are responsible for:

- Assisting supervision with PPE selection.
- Assisting supervision with PPE Hazard Assessments.
- Assisting with and conducting, as requested, required PPE training.
- Assisting supervision in monitoring compliance with this policy.

Section 5 Requirements

5.1 Minimum PPE Requirements

In areas other than offices, parking lots, and the passenger compartment of an enclosed vehicle, all employees, contractors, and visitors entering a ConocoPhillips Transportation facility or worksite are required as a minimum to wear the following PPE:

- Hardhat as defined in Section 3
- Primary Eye Protection as defined in Section 3 (safety glasses with side shields)
- Gloves (required to be carried/available on person for use when needed)
- Safety Toe Footwear as defined in Section 3
- Flame Resistant Clothing (FRC) as defined in Section 3

- Hearing Protection (required to be carried/available on person for use when needed)

Note: PPE requirements are task dependent. It may be necessary to wear PPE in offices, parking lots, and other traditionally non-PPE required areas if certain types of work are occurring. When in doubt, complete a Hazard Assessment as outlined in Section 5.2.

Visitors may be exempt from the Safety Toe Footwear requirement provided that they wear Substantial Footwear (as defined in this policy) appropriate for the job site and working conditions/proximity do not dictate further protection. No sandals, cloth or canvas shoes, or footwear with perforation/vent holes.

Visitors are exempt from the full FRC requirement provided they wear an FRC lab coat/smock and working conditions/proximity do not dictate further protection.

Employees, contractors, and visitors are exempt from the Flame Resistant Clothing (FRC) requirement when working solely in a New Construction setting as defined in Section 3 (also known as a Greenfield construction site).

Any modifications to minimum PPE requirements shall follow the established Variance Policy. Additional task specific PPE may be required as indicated by use of the PPE Hazard Assessment process outlined in Section 5.2 or a Job Safety Analysis.

Section 5.3 contains further information and specific requirements for the minimum PPE outlined above.

5.2 Hazard Assessments

Tasks for which minimum PPE requirements do not adequately protect workers from recognized hazards shall have a PPE Hazard Assessment performed and on file for the workgroup to review.

Hazard assessments shall be documented on the PPE Hazard Assessment Form (or equivalent) included in the appendix. Performing an assessment includes task review, facility walkthrough (if applicable), employee interview, and review of past incident documentation of similar tasks. The written assessment must include the date of the assessment and employer certification.

5.3 Specific PPE Requirements

5.3.1 Head Protection

Personnel shall wear hardhats (see definition) in all areas other than offices, parking lots, and the passenger compartment of an enclosed vehicle. Non-traditional style hardhats (such as cowboy style hardhats) are not permitted.

5.3.2 Eye and Face Protection

In areas other than offices, parking lots, and the passenger compartment of an enclosed vehicle, all personnel shall wear primary eye protection (see definition) at ConocoPhillips facilities or work sites.

All personnel shall use eye protection appropriate to the hazard. Chemical goggles shall be worn when required by an MSDS or PPE Hazard Assessment.

For welding and cutting, primary eye protection (safety glasses or goggles) is required to be worn at all times. Primary eye protection is necessary to provide protection from spatter and/or rays from adjacent operations particularly at times when the welding shield is lifted or removed, as is necessary when replacing electrodes, removing slag, or inspecting the weld. Secondary eye and face protection such as a welding helmet or face shield shall also be used. Assure your welding helmet lens has a

shade appropriate for the type of welding and amperage being used. **Pancake style welding hoods are not allowed.**

Use the following Eye Protection Application Table to determine appropriate eye protection for PPE Hazard Assessments:

Eye and Face Protection Table

Operation or Task	Hazards	Protective Equipment
Acetylene – burning, welding, and cutting	Sparks, harmful radiation, molten metal, flying particles, fumes	Welding goggles - eye cup lens shade 3-8. (Full face protection (shield) must be worn if welder will be exposed to grinding or other flying debris hazards).
Chemical handling when there is potential for splash, Battery Maintenance	Splash, acid/caustic burns, vapors	Chemical goggles (for severe exposure, use chemical goggles and full face shield)
Chipping	Flying particles	Goggles or safety glasses with side shields, eyecup-type chipping goggles
Electric Arc, MIG, TIG Welding	Sparks, harmful radiation, molten metals, fumes	Welding helmet with appropriate tinted lens AND safety glasses or goggles. All individuals within 15ft. of active work must wear primary eye protection and full face protection.
Welders Helper or working near welding, cutting, or grinding	Sparks, harmful radiation, molten metals, fumes	Face shield AND safety glasses with side shields or goggles. All individuals within 15ft. of active work must wear primary eye protection and full face protection.
Test room tasks	Crude/Product splash, vapors	Primary eye protection.
Abrasive blasting	Flying particles	Blast hose operator must wear appropriate hood with integral face protection. All individuals within 15ft. of blasting operations must wear primary and secondary protection.
Drilling, woodworking, impact wrenches, striking tools	Chips, flying particles	Goggles or safety glasses with side shields

5.3.2.1 Prescription Safety Glasses

Where an employee's vision requires correction, and the employee does not have (or generally does not wear) contact lenses, the Company will provide prescription safety glasses for employees who wear corrective lenses and are exposed to recognized eye hazards as part of their assigned work.

Employees requiring prescription lenses will furnish, at their expense, a prescription from a licensed refractionist (optician, optometrist, ophthalmologist, etc.) Prescriptions must be less than two years old.

The prescription glasses must meet Z87.1 specifications and be equipped with ANSI-approved rigid side shields.

5.3.2.2 Contact Lens Use

Wearing soft or gas permeable contact lenses at work is approved with the following requirements:

- The workgroup supervisor shall be informed that the employee is wearing contact lenses.
- Personnel wearing contact lenses shall adhere to all PPE eye protection requirements.

The use of rigid (hard) non-gas permeable contact lenses at work shall be reviewed on an individual basis using the following criteria:

- A vision health care provider's written statement indicating the medical need for rigid contact lenses is furnished to the ConocoPhillips Medical Group for approval. The workgroup supervisor submits a written evaluation of potential eye hazards in the work place to the Medical Group.
- The supporting documentation and written Medical Group approval for rigid contact lens use is kept in the employee's medical file.

5.3.3 Hand Protection

In areas other than offices, parking lots, and the passenger compartment of an enclosed vehicle, all personnel shall have gloves available on their person for use when needed.

Personnel shall wear hand protection appropriate to the hazard. Refer to Appendix 2 – Glove Selection Guideline for assistance in determining the appropriate glove.

Gloves must be worn when contacting tools, equipment, and facilities unless contact with rotating equipment is possible or in similar situations where the use of gloves presents a greater hazard than their non-use. Consult your Safety Coordinator for guidance.

Consult applicable Material Safety Data Sheets when working with chemicals to assist with determining appropriate glove material and type.

Contractors are responsible for providing their employees with hand protection meeting the minimum requirements of this standard.

Use the following Glove Specification and Usage Table to determine appropriate hand protection:

Glove Specification and Usage Table

Glove Type	Specifications and Usage
Cut and Puncture Resistant	ConocoPhillips Transportation facilities have many ubiquitous cut and puncture hazards and therefore a cut and puncture resistant glove should be the primary choice for day to day use. Refer to Appendix 2 – Glove Selection Guideline
Electrically-insulated Gloves	Used by "qualified personnel" for protection from high voltage hazards.
Gloves for Mixed Hazards	When mixed hazards, such as abrasion and chemical exposures, are encountered, consult with supervision or H&S personnel for assistance with hand protection.

5.3.3.1 Glove Care, Maintenance and Limitations

- **Periodic Inspection** –

Step	Action

Step	Action
1	Visually inspect gloves prior to use for signs of penetration and damage due to impact, rough treatment, or abnormal wear that might reduce the degree of safety.
2	Replace gloves when worn or damaged.

NOTE: Electrically-insulated gloves have specific inspection and testing requirements. Gloves should undergo electrical inspection every 6 months. A pre-use inspection (blow test) shall be conducted prior to each use. Consult with I&E technical support for assistance with this activity.

- **Limitations of Protection** – Gloves are designed to provide optimum protection under average conditions. Users are cautioned that, if unusual conditions prevail (extreme temperatures, certain chemicals such as acids or caustics, prolonged exposure, etc.) the margin of safety may be reduced.

- **Permeation** – Glove protection is reduced by permeation, the process by which a chemical moves through the material on a molecular level. Permeation may occur if the wrong glove type or material is used.

5.3.4 Foot Protection

In areas other than offices, parking lots, and the passenger compartment of an enclosed vehicle, all personnel shall wear Safety Toe Footwear as defined in Section 3.

Safety Toe Footwear shall meet the following additional requirements:

- Must meet the most recent edition of ASTM 2413-05 specifications for safety footwear and must be clearly marked/stamped as such.
- Must consist of a sturdy chemical/oil resistant exterior
- Shall have slip-resistant, non-conducting soles
- Must have well defined heels
- Shall have supportive construction rising above and supporting the ankle.
- Shall be visually inspected prior to use for signs of penetration and damage due to impact, rough treatment, or abnormal wear that might reduce the degree of safety originally provided.

5.3.4.1 Providing Safety Footwear

Where required, the Company will pay up to $150 toward the purchase of safety footwear meeting the specifications of this standard and will replace them annually as needed. The employee will pay any amount over the amount paid by the Company.

Lost or stolen safety footwear will be replaced at the employee's expense.

5.3.5 Personal Flotation Device (PFD)

All Personal Flotation Devices shall meet United States Coast Guard (USCG) PFD Type I, II, III specifications or shall be a USCG-approved Type V PFD that is marked for use as a work vest, for commercial use, or for use on vessels in accordance with 46 CFR Part 160 "Coast Guard Lifesaving Equipment Specifications" standards as described in the following table:

PFD Usage Table

Classification	Type	Application
Type I	Inherently Buoyant	**Offshore**: open, rough water **Inland Waters**: where rescue may be slow coming
Type II	Inherently Buoyant	Inland or calm waters where there is a good chance for fast rescue.
Type III	Inherently Buoyant	Calm inland waters where there is a good chance of a fast rescue. Designed for general boating or the activity marked on the device.
Type V	Inherently Buoyant	Only for special uses and conditions. See its label for limits on use.

Personnel shall wear appropriate personal flotation devices during the following activities or conditions:

- When engaged in line handling activities for the purpose of mooring and un-mooring marine vessels or any other activity in which personnel may be pulled into the water.
- Where physical limitations of available working space creates a hazard of falling into the water.
- When personnel are working in boats on or over water.
- When walking or working on Perpendicular finger type piers (piers that have a length extending out over the water that is greater than their width).
- When walking or working between the water and any established boundary line that is painted on the dock or within six feet of any unprotected dock edge if no line is marked.
- When foul weather conditions exist such as high winds, ice, etc, that can increase the potential hazard of falling into the water.
- Whenever hoisting, connecting, or disconnecting transfer hoses at a marine facility.
- When walking or working on unguarded decks of vessels or barges.
- When performing maintenance or construction activities on a pipeline or facility that involves water of sufficient size and depth to introduce a drowning hazard.
- As otherwise required by facility management.

A USCG-approved Type IV throwable device (life ring) with at least 90 feet of line shall be provided at marine facilities where personnel work exposes them to the hazard of drowning. Type IV devices shall be placed at intervals not to exceed 200 feet.

Inflatable PFDs are permitted if USCG approved and self-inflating. Verify with the applicable State regulations. (**Note:** Inflatable PFDs are not approved in Washington State.)

PFDs shall be equipped with reflective material or a USCG-approved automatically activated light to aid in locating persons in the water at night.

5.3.6 Flame Resistant Clothing (FRC)

5.3.6.1 FRC Usage

FRC is required in all areas other than offices, parking lots, and the passenger compartment of an enclosed vehicle.

Only long-sleeve and long pant leg FRC coveralls or shirt/pant combinations are allowed.

Acceptable materials for FRC garments include the following:

- NOMEX
- NOMEX IIIa
- NOMEX IIIa blend
- PBI Gold
- Indura Ultra Soft
- FR Cotton

  NOTE: Other materials may be acceptable if approved by local supervision and the area safety coordinator.

All FRC must have a minimum Arc Thermal Performance Value (ATPV) of 4.6 calories/cm^2 and a minimum weight of 4.5 ounces per yard.

FRC garments shall be cared for and laundered according to the manufacturer's recommendation as listed on the garment tag/label.

Insect repellants containing DEET (diethyl-3-methylbenzamide) have been show to reduce the flame resistant properties of certain types of FRC garments and shall not be used. Permethrin based insect repellants are an acceptable alternative and have been shown to provide equal or superior protection against insects without compromising FRC.

5.3.6.2 Outer and Under Layers

FRC, when required, shall be worn as the outer layer of clothing with sleeves rolled down and all snaps, buttons, and zippers fully fastened.

FRC may be protected from soil or contamination by utilizing an outer flame resistant disposable garment such as DuPont Softguard Sontara. Such outer garments may be required during painting, tank cleaning, or equipment opening operations.

FRC raingear may be worn over the FRC garment when weather conditions require. This type of raingear shall be self-extinguishing and have non-conductive hardware.

Garments worn under FRC should be made of non-melting fibers, such as 100% cotton or wool. Avoid polyester, nylon, acrylic, or other synthetic or synthetic blend type materials.

PFDs, when required, shall be worn over FRC.

5.3.6.3 FRC Purchase Program

Employees who perform tasks regularly requiring FRC will be provided, at Company expense, an original issue of up to 3 garment sets and 1 FRC jacket. A garment set will consist of a coverall or 1 shirt and 1 pant. Replacement will be at Company expense on a "replace for wear" basis, as determined by the immediate supervisor. Lost or stolen garments will be replaced at employee expense.

5.3.6.4 Cold Weather FRC

Employees who are exposed regularly to cold weather will be provided, at Company expense, their choice of an FRC parka or insulated coverall. Cold weather FRC will be replaced, at Company expense on a "replace for wear" basis, as determined by the immediate supervisor. Lost or stolen garments will be replaced at employee expense.

Section 6 Training and Communication Requirements

Initial training shall be provided to each employee who is required to wear personal protective equipment. At a minimum the training shall include the following:

- When PPE is necessary.
- What PPE is necessary.
- How to properly don, remove, adjust, and wear PPE.
- Limitations of PPE.
- Proper care, maintenance, useful life, and disposal of PPE.

Employees shall demonstrate, through testing or equivalent means, that they comprehended the training and are able to use the PPE properly before being allowed to perform work requiring the use of PPE.

Employees shall be re-trained if there is reason to believe they do not have the understanding or skills required to properly wear and use PPE. Re-training shall also be required whenever workplace or PPE-type changes are made that affect PPE usage.

All training shall be documented and entered into a training records system.

Section 7 Records

PPE hazard assessments shall be kept on file at the facility or workgroup location and must be readily available for employee review.

Employee PPE training documentation must be maintained in a training record system or other electronic format for the duration of employment. Paper copy training records may be kept at the facility or workgroup location.

Section 8 Appendices

Appendix 1 Personal Protective Equipment Hazard Assessment and Certification

Purpose

The Personal Protective Equipment Hazard Assessment form is intended to provide a format for determining and documenting task-specific PPE. Hazard assessments are required for all job tasks where there is potential for injury to the head, eyes, face, hands, and feet. The hazard assessment is also used to determine those tasks where respiratory protection is required. The completed and signed document is considered an employer verification of workplace hazard assessment and written certification as required by 29CFR 1910.132(d).

General Requirements

Responsibility	Step	Action
Facility or Workgroup Employees	1	Complete the assessment with assistance from supervision (see instructions below).
Facility or Workgroup Supervisor	2	• Review the completed assessment(s) for completeness and accuracy. • Sign and date the reviewed assessment. • Forward the completed assessment(s) the responsible Safety Coordinator.
Safety Coordinator	3	• Determine the validity of any administrative or engineering controls that are listed on the assessment. • Return recommended revisions to the submitting supervisor for consideration. • Sign and date final assessments and return to the workgroup supervisor.
Facility or Workgroup Supervisor	4	Train current and new employees using finalized assessments.
Facility or Workgroup Supervisor	5	Retain signed assessments in facility or workgroup files allowing access for employee review at any time.

Instructions for Completing the PPE Hazard Assessment Form

Responsibility	Step	Action
Facility or Workgroup Employees	1	Complete the information in the top right-hand corner of the form omitting the supervisor and safety signatures.
Facility or Workgroup Employees	2	Fill in the “Job Classification” (example: welder, operator, yardman, engineer, pipeliner, etc.) **NOTE**: A separate assessment must be completed for each job classification.
Facility or Workgroup Employees	3	List all tasks associated with the job classification that have potential for injury to the eyes, face, hands, and feet or that might require respiratory protection (example: unbolting flanges, gauging, sweeping, grinding, using striking tools, taking samples, opening traps, cleaning vessels/tanks, etc.) **NOTE:** Several sheets may be necessary to list all appropriate tasks for the job classification. Leave a blank space between each task listed for ease of identification.
Facility or Workgroup Employees	4	List all hazards associated with the listed task (example: burns from high temperature, chemical splash, flying particles, harmful dusts, harmful/toxic vapors, light radiation, falling objects, electrical shock, contact with sharp

Responsibility	Step	Action
		objects, crushing, pinching, etc.)
Facility or Workgroup Employees	5	List any "administrative or engineering controls" in place that mitigate hazards that are identified (example: gauging procedure that prevents exposure, chemical handling in an approved exhaust hood, welding radiation shield partition, ventilation system, etc.)
Facility or Workgroup Employees	6	List the personal protective equipment necessary for the task. Be specific; i.e., hard hat, chemical goggles, safety glasses, leather gloves, etc.

Appendix 2 – Glove Selection Guideline

The objective of the ***Glove Selection Guideline*** is to provide guidance to ConocoPhillips Transportation employees and contractors/subcontractors working for ConocoPhillips Transportation, regarding our expectations for glove usage. This Guideline does not apply to third party personnel such as transport drivers or energized electrical work (refer to Exposed, Energized Electrical Policy for electrical hazard PPE requirements).

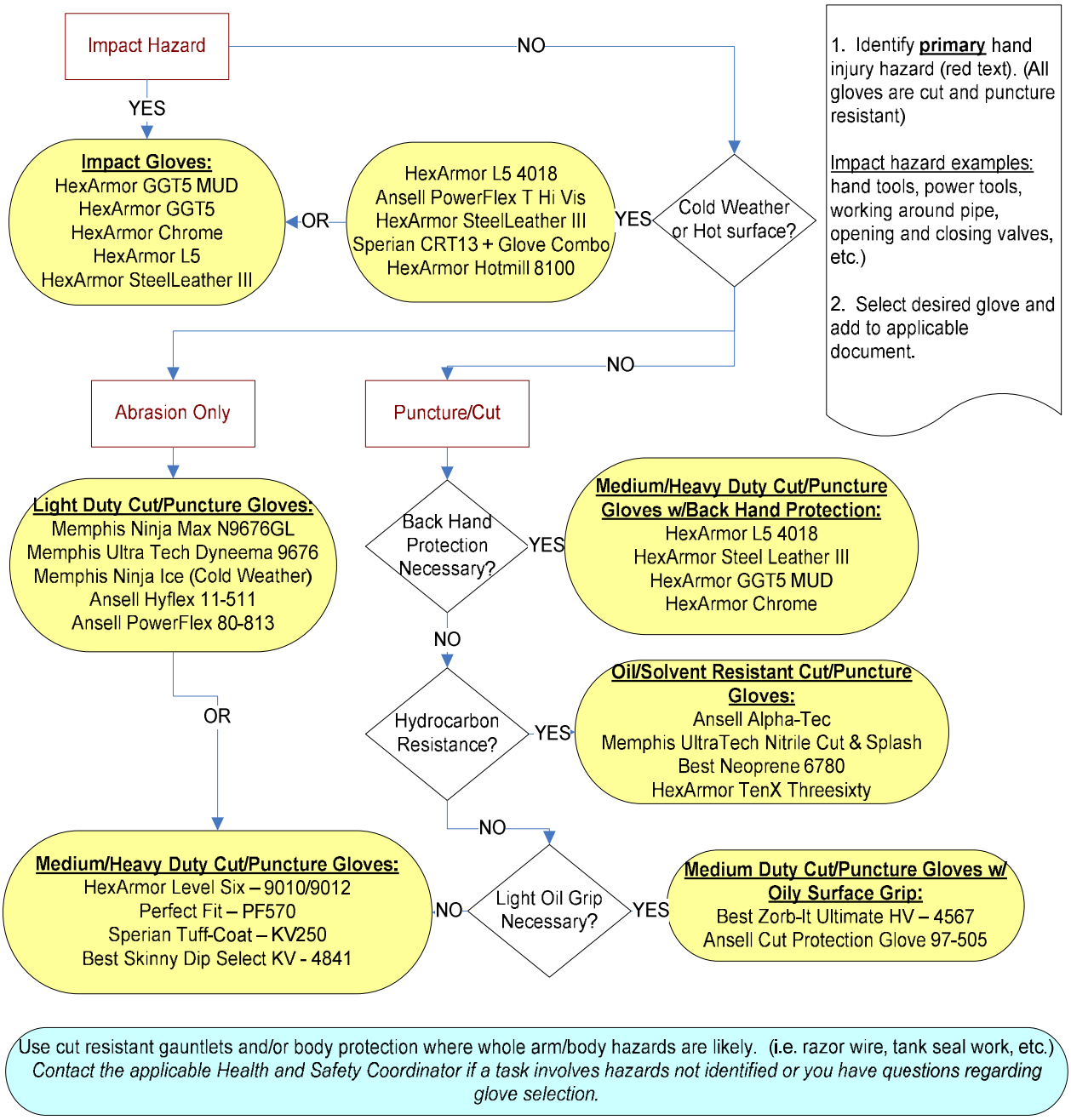
Gloves being used on ConocoPhillips Transportation locations **MUST** be evaluated using this Glove Guideline to ensure that they meet the specifications set forth in this guideline. It is expected that, through the application of this guideline, appropriate gloves will be worn for all work tasks and that workers will cease to use unapproved or inadequate gloves on our locations.

It is fully acknowledged that the use of any glove will not prevent all hand injuries. The primary focus should always be to eliminate hand exposure to pinch points, crush points, impact zones, etc.

Basic Requirements

1. Jobs **MUST** be evaluated to determine what specific hand protection is required. Appropriate gloves (i.e., impact resistant, cut resistant, etc.) for the specific job task **shall** be worn until that task is completed.
2. Site safety plan and/or job safety analysis **MUST** identify the appropriate gloves. (Multiple glove types may be necessary for an entire job or project. Analysis and selection prior to starting a job or project will be useful to assure appropriate glove availability.)
3. Barrier creams **CAN NOT** replace gloves; however, barrier creams **should** be used selectively to provide increased protection against contact dermatitis and irritation caused by chemical exposure to any exposed skin.
4. Where glove removal in the workplace is required (i.e., changing from general-purpose gloves to chemical-resistant gloves, etc.), consideration should be given to using break-away glove clips to ensure that appropriate gloves are available at all times.
5. Incident reports **MUST** capture the following data for all finger/hand/wrist incidents and **should** include photos safely simulating the incident with the same glove type used. Corrective actions **MUST** consider improvements in hand protection including glove enhancement suggestions.
    i. Did pre-job planning specify glove requirements?
    ii. Were gloves being worn at the time of the incident?
    iii. Type of glove used.
    iv. Manufacturer/Model of glove used.
    v. Area of hand or wrist affected by the incident.

New gloves, and new glove designs, will come into the market place; please provide feedback to Transportation HSE on evaluation of new products. The following selections are not all inclusive, consult with the applicable Health and Safety Coordinator for evaluation and approval of an unlisted glove.


Impact Hazard
NO
YES
Impact Gloves:
HexArmor GGT5 MUD
HexArmor GGT5
HexArmor Chrome
HexArmor L5
HexArmor SteelLeather III
OR
HexArmor L5 4018
Ansell PowerFlex T Hi Vis
HexArmor SteelLeather III
Sperian CRT13 + Glove Combo
HexArmor Hotmill 8100
YES
Cold Weather or Hot surface?
1. Identify primary hand injury hazard (red text). (All gloves are cut and puncture resistant)
Impact hazard examples: hand tools, power tools, working around pipe, opening and closing valves, etc.)
2. Select desired glove and add to applicable document.
NO
Abrasion Only
Puncture/Cut
Light Duty Cut/Puncture Gloves:
Memphis Ninja Max N9676GL
Memphis Ultra Tech Dyneema 9676
Memphis Ninja Ice (Cold Weather)
Ansell Hyflex 11-511
Ansell PowerFlex 80-813
Back Hand Protection Necessary?
YES
Medium/Heavy Duty Cut/Puncture Gloves w/Back Hand Protection:
HexArmor L5 4018
HexArmor Steel Leather III
HexArmor GGT5 MUD
HexArmor Chrome
NO
OR
Hydrocarbon Resistance?
YES
Oil/Solvent Resistant Cut/Puncture Gloves:
Ansell Alpha-Tec
Memphis UltraTech Nitrile Cut & Splash
Best Neoprene 6780
HexArmor TenX Threesixty
NO
Medium/Heavy Duty Cut/Puncture Gloves:
HexArmor Level Six – 9010/9012
Perfect Fit – PF570
Sperian Tuff-Coat – KV250
Best Skinny Dip Select KV - 4841
NO
Light Oil Grip Necessary?
YES
Medium Duty Cut/Puncture Gloves w/ Oily Surface Grip:
Best Zorb-It Ultimate HV – 4567
Ansell Cut Protection Glove 97-505
Use cut resistant gauntlets and/or body protection where whole arm/body hazards are likely. (i.e. razor wire, tank seal work, etc.)
Contact the applicable Health and Safety Coordinator if a task involves hazards not identified or you have questions regarding glove selection.

 HexArmor GGT5 MUD	 HexArmor Chrome -4026	 HexArmor Level Six Series 9010
 HexArmor SteelLeather III	 Hexarmor Level Six Series 9012	 HexArmor Ultimate L5
 HexArmor GGT5 -4020	 Ansell HyFlex 11-511	 Ansell PowerFlex T Hi Vis
 Memphis Ninja Ice	 Memphis UltraTech Dyneema PU	 Memphis Ninja Max

 Ansell PowerFlex 80-813	 Ansell Alpha-Tec	 Ansell PowerFlex 80-600
 Best Neoprene 6780	 Ansell Cut Protection Glove	 Best Skinny Dip Select KV
 Best Zorb-It Ultimate HV	 Sperian CRT13 Liner Must be used in conjunction with over-glove	 Perfect Fit PF570
 Memphis UltraTech Nitrile Cut & Splash	 HexArmor Hotmill 8100 (Cut and puncture resistant with a contact heat resistance rating of 5)	 HexArmor TenX Threesixty (Particle nitrile coating for liquid and chemical resistance)

 Sperian Tuff-Coat KV250	Wilson Supply www.iwilson.com Jeff Felker – Mgr, Safety Products & Services jfelker@iwilson.com (713) 237-3033	Contractor Orders E&R INDUSTRIAL Sperian/Ansell/Best/HexArmor Mark Vidosh-Sales Support 586-795-2400 Ext 5478 Order by phone or email; conoco@erind.com online ordering available after Sept 1 http://www.mxcop.erind.com

Revision Summary

Rev.	Approval Date	Revision Description Details	Type of Communication and/or Training Required	Revised By
0	2003-05-01	Initial Issuance.	Follow Introduction of New Policies & Procedures	HSE Leadership Team
1	2004-01-08	Removed footwear voucher reference	Review Policy	Vance Webb
2	2004-08-26	**Section 5.3.6.2** Incorportated the use of specific types of rain gear for outer covering of FRC when conditions require.	Review Policy	Vance Webb
2.1	2006-05-25	**Section 5.3.3.1** Added specific test type and inspection interval for electrically rated gloves.	Review Policy	Vance Webb
2.2	2006-11-29	Definitions Section – added definition for Personnel Section 5.1 Modified minimum PPE requirements for all facilities.	Review Policy	H&S Leadership Team
2.3	2006-12-06	**Section 5.3.5** – Added PFD requirment for working on “Finger Type” piers	Review Policy	Vance Webb (for President Transportation)
2.4	2007-12-18	**Sections 5.2 and 5.3.2** – Clarified the use of eye protection for welders.	Review Policy	Vance Webb
2.5	2009-05-04	Added Cut Resistant Glove selection into the Glove Specification and Usage Table.	Review Policy	Travis Wilke

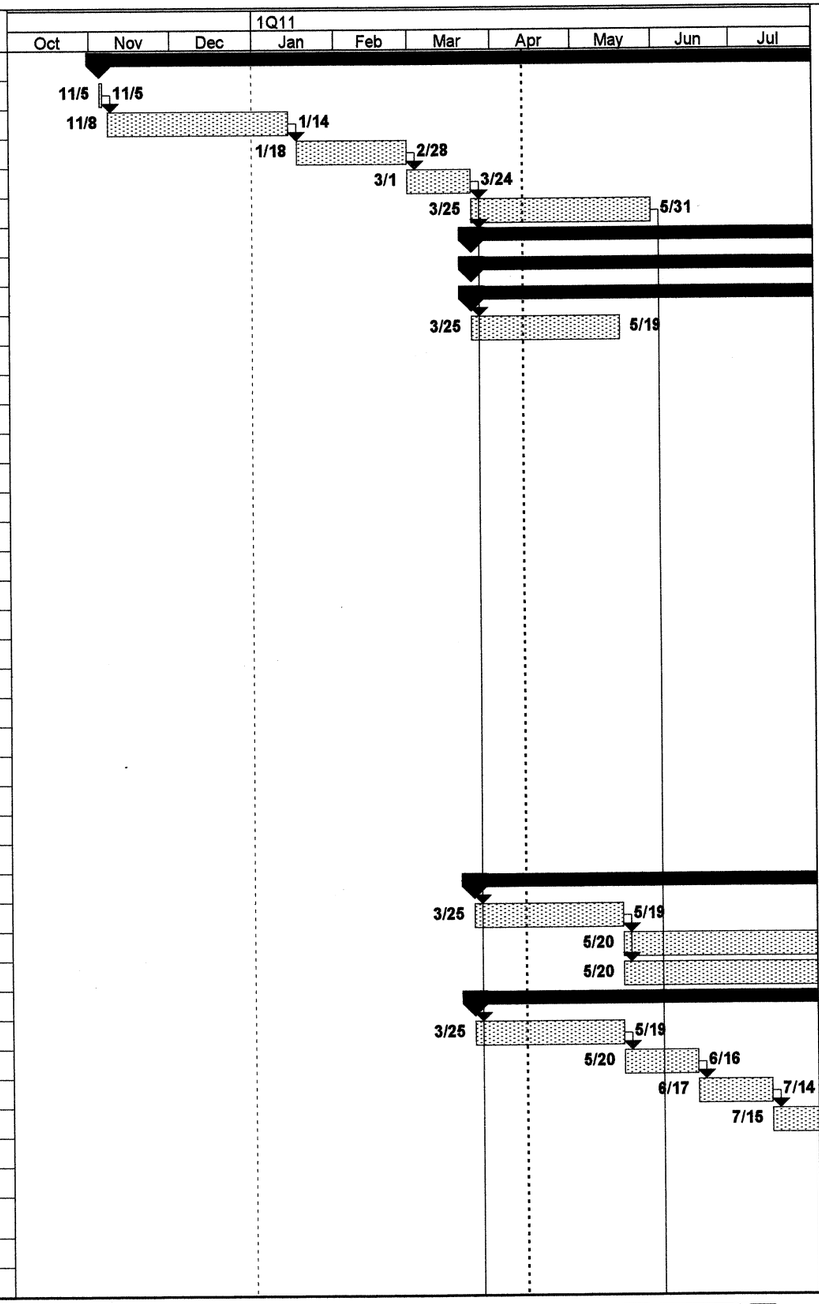
2.6	2009-08-04	**Definitions –** Removed Basic Eye Protection and added Primary and Secondary Eye Protection. **Section 5.1 –** Clarified Minimum PPE requirements. **PPE Selection Matrix –** Added Welding PPE note as well as clarified chemical goggle use. **Eye and Face Protection Table –** Added requirement for face shield use when working in proximity to various flying particle tasks**.** **Glove Specification and Usage Table –** Added minimum requirements for cut and puncture resistant gloves. **Section 5.3.5 –** Added note to check state requirements for inflatable PFD use.	Email Communication Policy Review	Travis Wilke
3	2010-04-01	Added definitions for Flame Resistant Clothing, New Construction, Visitor and clarification of the definition for "Safety Toe Footwear" Modification of the Minimum PPE Requirements to include Flame Resistant Clothing (FRC), Safety Toe Footwear, Hardhat, Gloves, and Hearing Protection. Addition of two minor exemptions; one for visitors (no Safety Toe Footwear required and full FRC not required) and one for New Construction work (no FRC required). Removal of the PPE Selection Matrix Multiple minor (non-content) edits to transform policy from a CPPL Co. Policy to a COP Transportation Policy. Multiple minor edits to clarify certain requirements.	Major Revision	HSE Policy Team
4	2010-09-30	**Added Appendix 2 –** Glove Selection Guideline	Clarification only – Policy Review	Travis Wilke

APPENDIX H

PROJECT SCHEDULE

RI/FS PROJECT SCHEDULE
(REVISION 0)
RENTON TERMINAL

ID	Task Name	Duration	Start	Finish	Predecessors
1	**REMEDIAL INVESTIGATION**	**598 days**	**Fri 11/5/10**	**Tue 2/19/13**	
2	Submit Draft RI/FS Work Plan (Deliverable 1)	1 day	Fri 11/5/10	Fri 11/5/10	
3	Comments from Ecology on Draft RI/FS Work Plan	10 wks	Mon 11/8/10	Fri 1/14/11	2
4	Submit Final RI/FS Work Plan (Deliverable 2)	30 days	Tue 1/18/11	Mon 2/28/11	3
5	Ecology Review and Approval of Final RI/FS Work Plan	18 days	Tue 3/1/11	Thu 3/24/11	4
6	Public Comment Period	48 days	Fri 3/25/11	Tue 5/31/11	5
7	**Implement RI**	**498 days**	**Fri 3/25/11**	**Tue 2/19/13**	**5**
8	**Groundwater Flow and Transport Modeling**	**498 days**	**Fri 3/25/11**	**Tue 2/19/13**	
9	**Groundwater modeling (Phase 1 - Existing Data)**	**320 days**	**Fri 3/25/11**	**Thu 6/14/12**	
10	Evaluate Hydrogeologic Setting (Task 1a Draft RI/FS Work Plan)	8 wks	Fri 3/25/11	Thu 5/19/11	5
11	Aquifer Testing (Task 1b Draft RI/FS Work Plan)	2 mons	Fri 10/7/11	Thu 12/1/11	37
12	Data Analysis/Model Target Setup (Task 1c Draft RI/FS Work Plan)	1 mon	Fri 12/2/11	Thu 12/29/11	11
13	Update SCM (Task 1d Draft RI/FS Work Plan)	1 mon	Fri 12/30/11	Thu 1/26/12	12
14	Develop Groundwater Flow Model (Task 2 Draft RI/FS Work Plan)	1 mon	Fri 1/27/12	Thu 2/23/12	13
15	Develop Contaminant Fate and Transport Model (Task 3 Draft RI/FS Work Plan)	1 mon	Fri 2/24/12	Thu 3/22/12	14
16	Evaluate remediation alternatives (Task 4 Draft RI/FS Work Plan)	1 mon	Fri 3/23/12	Thu 4/19/12	15
17	Sensitivity Analysis (Task 5 Draft RI/FS Work Plan)	1 mon	Fri 4/20/12	Thu 5/17/12	16
18	Draft Modeling Report (Task 6 Draft RI/FS Work Plan) (Deliverable 5)	1 mon	Fri 5/18/12	Thu 6/14/12	17
19	**Groundwater modeling (Phase 2 - Amend with Additional Characterization Data)**	**193 days**	**Fri 5/25/12**	**Tue 2/19/13**	
20	Evaluate Hydrogeologic Setting (Task 1a Draft RI/FS Work Plan)	2 wks	Fri 5/25/12	Tue 6/12/12	46
21	Aquifer Testing (Task 1b Draft RI/FS Work Plan)	2 mons	Wed 6/13/12	Tue 8/7/12	20
22	Data Analysis/Model Target Setup (Task 1c Draft RI/FS Work Plan)	1 mon	Wed 8/8/12	Tue 9/4/12	21
23	Update SCM (Task 1d Draft RI/FS Work Plan)	1 mon	Wed 9/5/12	Tue 10/2/12	22
24	Develop Groundwater Flow Model (Task 2 Draft RI/FS Work Plan)	1 mon	Wed 10/3/12	Tue 10/30/12	23
25	Develop Contaminant Fate and Transport Model (Task 3 Draft RI/FS Work Plan)	1 mon	Wed 10/31/12	Tue 11/27/12	24
26	Evaluate remediation alternatives (Task 4 Draft RI/FS Work Plan)	1 mon	Wed 11/28/12	Tue 12/25/12	25
27	Sensitivity Analysis (Task 5 Draft RI/FS Work Plan)	1 mon	Wed 12/26/12	Tue 1/22/13	26
28	Modeling Report update (Task 6 Draft RI/FS Work Plan) (Update to Deliverable 5)	4 wks	Wed 1/23/13	Tue 2/19/13	27
29	**Define Nature and Extent**	**100 days**	**Fri 3/25/11**	**Thu 8/11/11**	
30	Develop Preliminary SCM	8 wks	Fri 3/25/11	Thu 5/19/11	5
31	Identify Other Potential Sources of Impact to the Site	3 mons	Fri 5/20/11	Thu 8/11/11	30
32	Identify Risk Pathways and Receptors	3 mons	Fri 5/20/11	Thu 8/11/11	30
33	**Site Characterization (Phase 1)**	**200 days**	**Fri 3/25/11**	**Thu 12/29/11**	
34	Prepare Bid Plans	2 mons	Fri 3/25/11	Thu 5/19/11	5
35	Contractor Bids	4 wks	Fri 5/20/11	Thu 6/16/11	34
36	Contractor Selection and Mobilization	4 wks	Fri 6/17/11	Thu 7/14/11	35
37	Field implementation	3 mons	Fri 7/15/11	Thu 10/6/11	36
38	Initial Data Analysis	2 mons	Fri 10/7/11	Thu 12/1/11	37
39	Remedial Investigation Report (Deliverable 4)	1 mon	Fri 12/2/11	Thu 12/29/11	38
40	**Site Characterization (Phase 2 - Further Vertical and/or Horizontal Delineation Contingent Upon Results of Phase I Site Characterization)**	**105 days**	**Fri 12/30/11**	**Thu 5/24/12**	
41	Prepare supplemental work plan	3 wks	Fri 12/30/11	Thu 1/19/12	39
42	Contractor Bids	3 wks	Fri 1/20/12	Thu 2/9/12	41



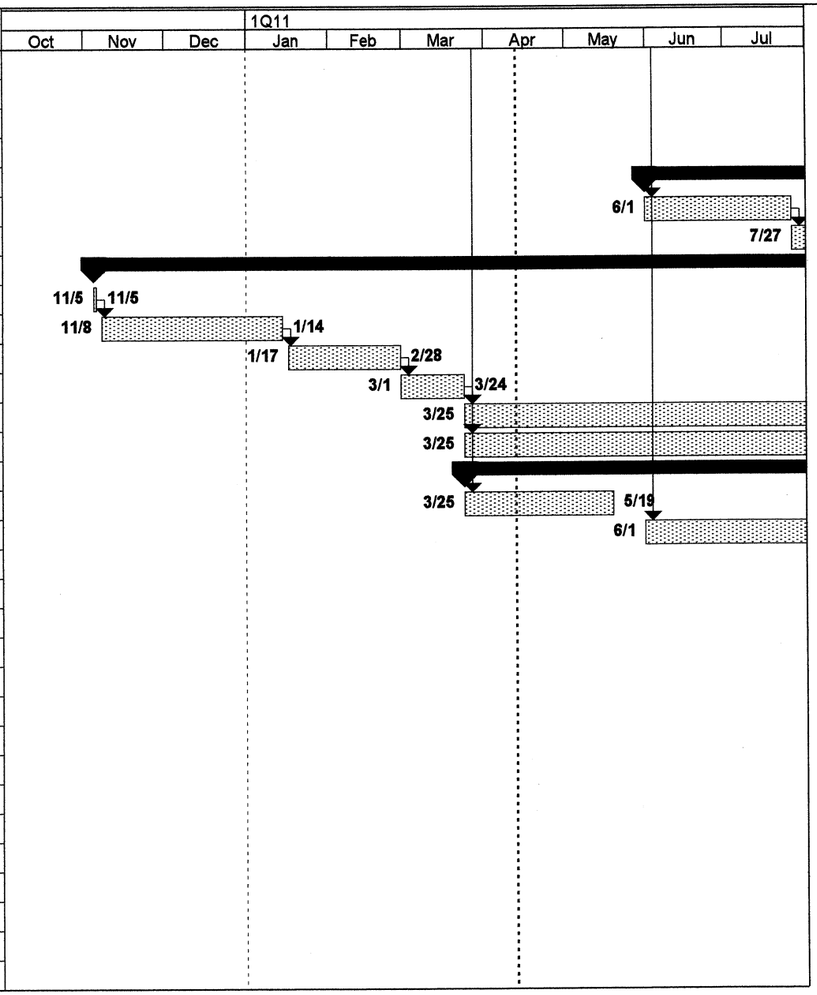
Conestoga-Rovers & Asociates

Task | Milestone | Rolled Up Task | Rolled Up Progress | External Tasks | Group By Summary

Progress | Summary | Rolled Up Milestone | Split | Project Summary | Deadline

RI/FS PROJECT SCHEDULE
(REVISION 0)
RENTON TERMINAL

ID	Task Name	Duration	Start	Finish	Predecessors
43	Contractor Selection and Mobilization	3 wks	Fri 2/10/12	Thu 3/1/12	42
44	Field implementation	4 wks	Fri 3/2/12	Thu 3/29/12	43
45	Data Analysis	4 wks	Fri 3/30/12	Thu 4/26/12	44
46	Remedial Investigation Report (Update to Deliverable 4)	4 wks	Fri 4/27/12	Thu 5/24/12	45
47	**Assessment of wetlands and stormwater pond**	**60 days**	**Wed 6/1/11**	**Tue 8/23/11**	
48	Field investigations	2 mons	Wed 6/1/11	Tue 7/26/11	6
49	Analytical data (Included in Deliverable 4)	1 mon	Wed 7/27/11	Tue 8/23/11	48
50	**INTERIM ACTIONS**	**822 days**	**Fri 11/5/10**	**Mon 12/30/13**	
51	Submit Draft Interim Action Work Plans (Deliverable 3)	1 day	Fri 11/5/10	Fri 11/5/10	
52	Comments from Ecology on Draft Interim Action Work Plans	10 wks	Mon 11/8/10	Fri 1/14/11	51
53	Submit Final Interim Action Work Plans (Update to Deliverable 3 - Compliance Monitoring Plan)	31 days	Mon 1/17/11	Mon 2/28/11	52
54	Ecology Approval of Final Interim Action Work Plans	18 days	Tue 3/1/11	Thu 3/24/11	53
55	Implement Interim Actions	36.1 mons	Fri 3/25/11	Mon 12/30/13	54
56	Assess Effectiveness of Interim Remedial Actions (Quarterly Compliance Monitoring Reports)	36.1 mons	Fri 3/25/11	Mon 12/30/13	54
57	**Engineering Assessment and stability analysis of containment dikes**	**128 days**	**Fri 3/25/11**	**Tue 9/20/11**	
58	Review existing data and identify data gaps	8 wks	Fri 3/25/11	Thu 5/19/11	5
59	Field Investigation	3 mons	Wed 6/1/11	Tue 8/23/11	6
60	Perform geotechnical analysis (using limit equilibrium analysis)	2 wks	Wed 8/24/11	Tue 9/6/11	59
61	Prepare stability analysis report (included in Deliverable 4)	2 wks	Wed 9/7/11	Tue 9/20/11	60
62	**FEASIBILITY STUDY**	**331 days**	**Fri 12/30/11**	**Fri 4/5/13**	
63	**Pilot testing and Treatability Testing**	**331 days**	**Fri 12/30/11**	**Fri 4/5/13**	
64	Prepare work plan(s) (Deliverable 6)	2 mons	Fri 12/30/11	Thu 2/23/12	39
65	Ecology review	30 days	Fri 2/24/12	Thu 4/5/12	64
66	Field Activities	3 mons	Fri 4/6/12	Thu 6/28/12	65
67	Receive Analytical Results	1 mon	Fri 6/29/12	Thu 7/26/12	66
68	Evaluate Remedial Alternates	3 mons	Fri 7/27/12	Thu 10/18/12	67
69	Prepare Feasibility Study Report	2 mons	Fri 10/19/12	Thu 12/13/12	68
70	Submit Draft RI/FS Report (Deliverable 7)	1 day	Fri 12/14/12	Fri 12/14/12	69
71	Public Comment Period on Draft RI/FS Report	45 days	Mon 12/17/12	Fri 2/15/13	70
72	Comments from Ecology on Draft RI/FS Report	1 wk	Mon 2/18/13	Fri 2/22/13	71
73	Submit Final RI/FS Report (Update to Deliverable 7)	30 days	Mon 2/25/13	Fri 4/5/13	72
74	Submit Draft Cleanup Action Plan (Deliverable 8)	60 days	Mon 4/8/13	Fri 6/28/13	73



Conestoga-Rovers & Asociates

Task | Milestone | Rolled Up Task | Rolled Up Progress | External Tasks | Group By Summary

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RI/FS PROJECT SCHEDULE
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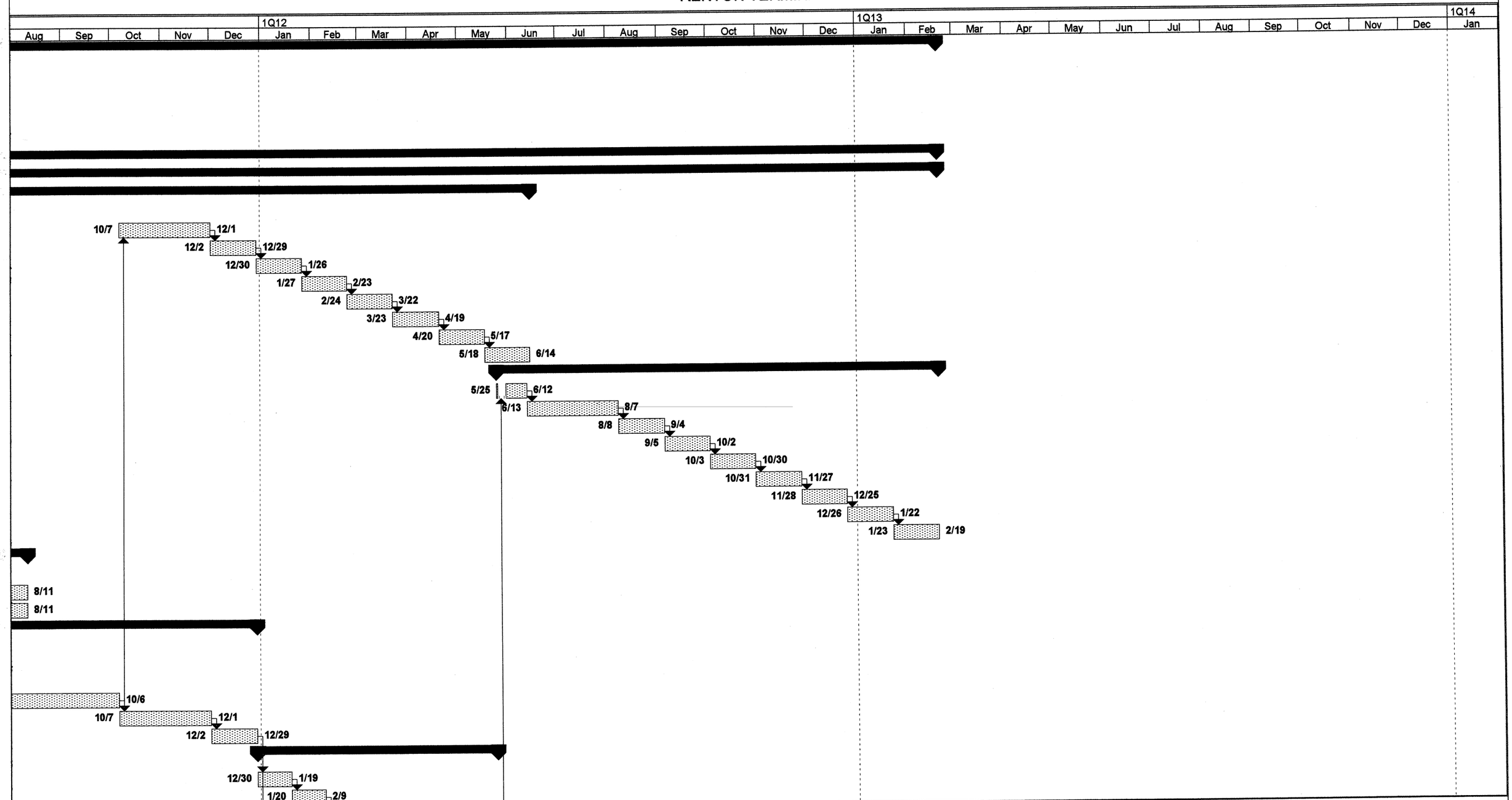

Conestoga-Rovers & Asociates	Task	Milestone	Rolled Up Task	Rolled Up Progress	External Tasks	Group By Summary
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RI/FS PROJECT SCHEDULE
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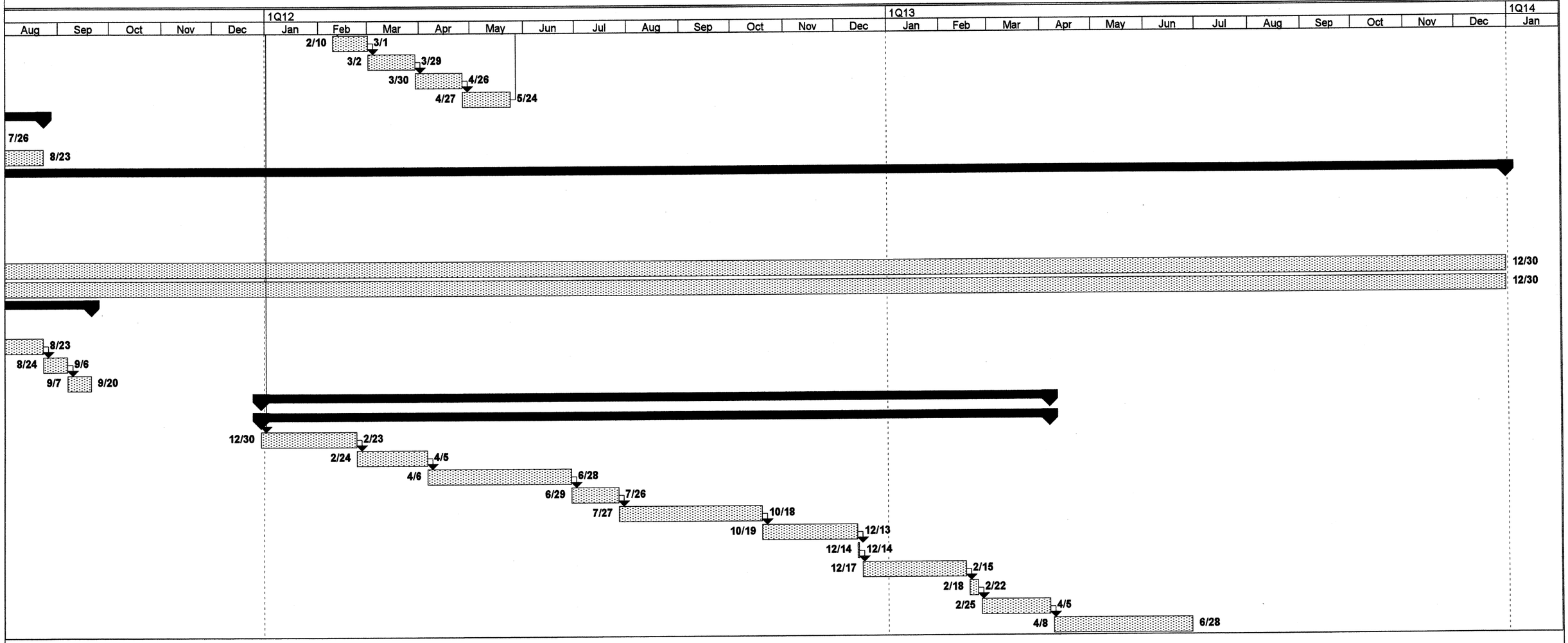

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