REVISED AGENCY REVIEW DRAFT
FEASIBILITY STUDY REPORT
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

April 28, 2017

Prepared for:
Washington State Department of Ecology
Southwest Regional Office, Toxics Cleanup Program
300 Desmond Drive SE
Lacey, Washington 98503

Prepared by:
Leidos, Inc.
18912 North Creek Parkway, Suite 101
Bothell, Washington 98011

On Behalf of:
Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, California 94583

leidos

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1. INTRODUCTION

Leidos, Inc. (Leidos), formerly SAIC Energy, Environment & Infrastructure, LLC (SAIC) has prepared this revised Feasibility Study (FS) report, on behalf of Chevron Environmental Management Company (Chevron EMC) and Texaco Downstream Properties Inc. (TDPI), pursuant to the requirements established by Agreed Order No. DE5236. This Agreed Order was entered into by the State of Washington, Department of Ecology (Ecology) and TDPI to provide for remedial action at the Cowlitz BP site (the Site) in Toledo, Washington. The Site is also known as the Cowlitz Food and Fuel site, or Former Texaco Service Station No. 211556, and is identified by the Ecology Toxics Cleanup Program as Facility Site ID No. 1166.

The purpose of the FS is to develop and evaluate cleanup action alternatives, in order to select a cleanup action to address petroleum hydrocarbon contamination in soil and groundwater at the Site, which is believed to have resulted from the past operations of two retail service station locations.

This updated version of the FS was revised to address Ecology comments, provided by letter dated February 25, 2013, on the previous agency review draft FS that was submitted by SAIC in October 2012 (SAIC, 2012b). The current FS was also revised to incorporate the findings of additional assessment work performed at the Site from 2013 to 2015.

2. BACKGROUND

2.1 SITE DESCRIPTION

The Site is located east of Interstate 5, off the Vader-Ryderwood exit, near the intersection of Cowlitz Ridge Road and Mulford Road, in Lewis County, Washington (Figure 1).

The Site is comprised of three land parcels that are currently owned by Mr. Charles Vineyard (Figure 2). An operating gasoline service station with mini-mart (currently branded as "Shell") and a restaurant (Mrs. Beesley's) are located on the two parcels north of Mulford Road (Lewis County Assessor Parcel Number [APN] 012429003001 and APN 012429004000). This portion of the Site will hereafter be referred to as the "active station." The third parcel (APN 012429002001), which is located south of Mulford Road, was formerly the location of another gasoline service station (hereafter "inactive station"). This portion of the Site has generally been vacant since approximately 1994. However, a drive-thru espresso stand (Ami Rae's Espresso & More) is believed to have been operating on this portion of the Site since sometime in 2016.

The presence of petroleum contamination was formerly confirmed at both locations. They were combined into the Cowlitz BP Site by Ecology, in part due to their common property ownership.

2.2 SITE OPERATIONS HISTORY

The properties comprising the Site were originally purchased by Mr. Frank Vineyard (deceased) as a single tax lot, which was originally used for farming. In 1955, the original lot was subdivided and several of the subdivided lots were leased.

2.2.1 Active Station Operating History

The active station property was initially leased to the Texas Oil Company (Texaco) in 1955. Texaco constructed a service station building and installed the original underground storage tanks (USTs) and piping. A leak in a product delivery line was repaired by Texaco in April

1977. It is estimated that this leak resulted in a loss of approximately 2,296 gallons of gasoline. The ownership interests in the improvements passed to Olson Brothers Garage, Inc. in 1980 and then to West Coast Oil Company in 1985.

Ron and Sheri Smith (the Smiths) purchased the active station site improvements from West Coast Oil in 1986. In March 1990, four USTs and their associated piping were removed and replaced with new fiberglass tanks and piping. During this process, petroleum contaminated soil was discovered and reported to Ecology.

In 2004, the active station improvements were sold to the current operator, Tri-Tex Oil Company of Castle Rock, Washington.

2.2.2 Inactive Station Operating History

The inactive station property was originally leased to General Petroleum Corporation in May 1955. In 1978, the property was leased by Olson Brothers Garage, Inc. and was occupied until 1984 by a Mobil service station and a small restaurant. After 1984, the station ceased operation and the above-ground infrastructure was subsequently demolished. In 1994, this property was reportedly being used as a sales lot for manufactured homes. The property has been vacant since the mid-1990s; however, a drive-thru espresso stand (Ami Rae's Espresso & More) is believed to have been operating on this portion of the Site since sometime in 2016.

2.3 SITE REGULATORY HISTORY AND SUMMARY OF INVESTIGATION AND CLEANUP ACTIONS PERFORMED TO DATE

The presence of petroleum contamination at the Site was first documented during UST upgrades performed at the active station in March 1990. Soil samples collected during this event contained gasoline-range organics (GRO) at concentrations of up 6,300 milligrams per kilogram (mg/kg). Approximately 1,000 cubic yards of petroleum contaminated soil was reportedly excavated from the UST basin and treated on-site via aeration remediation. (Cowlitz Clean Sweep, 1990)

During February 1991, four groundwater monitoring wells (B-1, B-2, B-3, and B-4) were installed at the active station. Soil samples collected from the borings did not contain petroleum constituents at concentrations exceeding MTCA Method A cleanup standards; however, groundwater samples from the wells did contain GRO and benzene, toluene, ethylbenzene and xylenes (BTEX) at concentrations exceeding MTCA Method A cleanup standards. (SECOR, 1999)

In April 1991, Ecology issued Enforcement Order No. DE 91-S123 to Mr. Frank Vineyard. The Enforcement Order required that a Remedial Investigation/ Feasibility Study (RI/FS) be performed for both the active and inactive station properties, and that the USTs at the inactive station property be removed as part of the RI/FS work activities.

Removal of the inactive station USTs was reportedly performed in January 1992. Two 6,000-gallon gasoline USTs and one 300-gallon used-oil UST were removed. Soil samples collected during the tank removal activities indicated the presence of GRO and diesel-range organics (DRO) at concentrations exceeding MTCA Method A Cleanup standards. Approximately 300 cubic yards of petroleum contaminated soil were also removed from the UST excavation and stockpiled on the property.

Remedial investigation field activities were performed at the Site in February and March 1992. A total of five soil borings were advanced and nine groundwater monitoring wells (MW-101 through MW-109) were installed to assess the extent of soil impacts at the active station, and groundwater impacts throughout the Site. None of the soil samples collected contained petroleum constituents at concentrations exceeding MTCA Method A cleanup standards; however, groundwater samples collected indicated the presence of GRO and BTEX in the vicinity of both the active and inactive station portions of the Site. (SECOR, 1999)

The original RI/FS report was completed in 1993 and a draft Cleanup Action Plan (1994 CAP) was prepared and released for public comment in May 1994. The selected cleanup alternative identified in the 1994 CAP consisted of excavating remaining contaminated soil for treatment on-site using bioremediation, followed by groundwater remediation by a pump and treat system that would re-inject treated groundwater through two infiltration trenches. However, this cleanup action was never implemented due to unauthorized actions on the inactive station property and a request by Mr. Vineyard that additional potentially liable parties (PLPs) be named by Ecology.

In October 1994, TDPI and the Smiths were named as PLPs. At the request of the PLPs, Ecology allowed additional remedial investigation activities to be performed, and a reevaluation of the selected cleanup approach that had been presented in the 1994 CAP. This work was performed pursuant to Agreed Order Nos. DE S361, S362, and S368, which were issued by Ecology in May 1995.

In August 1995, a supplemental investigation was performed by SECOR International Incorporated (SECOR), on behalf of TDPI, to further assess the extent of petroleum contaminant impact at the Site. The supplemental investigation included the collection of 21 groundwater grab samples, installation of 10 additional groundwater monitoring wells (MW-110 through MW-119), and subsequent monitoring and sampling of all newly installed and existing wells. The conclusions of the supplemental investigation were that the groundwater plume was not as extensive as previously believed, and that groundwater impacts were primarily confined to the areas around the former UST basins at the active and inactive station locations. Furthermore, the groundwater plume did not appear to be migrating or increasing in size. (SECOR, 1995)

Following completion of the supplemental investigation, additional investigation was performed to assist in the evaluation of a new cleanup approach for the Site. This included vapor extraction pilot testing, which was performed in August 1996 (SECOR, 1996) and intrinsic bioremediation sampling, which was part of the 1996 groundwater monitoring and sampling program at the Site (SECOR, 1997). Results of the vapor extraction pilot testing indicated relatively low volatile hydrocarbon removal rates (8 to 18 pounds per day at startup) and suggested additional pilot testing to facilitate design of a full-scale remediation system. Results of the intrinsic bioremediation sampling suggested that intrinsic biodegradation of petroleum hydrocarbons appeared to be occurring at the Site, and that the groundwater contaminant plume appeared to be in a relatively steady state, where hydrocarbons provided by the source, dispersed and coalesced into a plume that was then degraded.

In August 1999, an updated CAP (1999 CAP) was submitted for the Site. The 1999 CAP identified enhanced *in-situ* biodegradation as the selected cleanup remedy for petroleum contaminated soil and groundwater and groundwater at the Site. (SECOR, 1999). In May 2001,

Ecology issued Agreed Order Nos. DE00 TCPSR-297, -298, and -299 to implement the 1999 CAP.

In June 2001, a Cleanup Work Plan for the Site was submitted, which included introducing oxygen to groundwater by placing oxygen release compound (ORC®) into soil borings, installing a product recovery canister into monitoring well MW-111, and continuing groundwater monitoring. Soil boring installation for ORC® placement was performed in July 2001. Although 50 borings were originally proposed, only 37 borings were reportedly completed due to difficult drilling conditions. ORC® borings were generally placed in proximity to, or immediately up-gradient of, monitoring wells B-3, B-4, MW-101, MW-110, MW-111, and MW-115.

In May 2004, SAIC submitted a report summarizing an evaluation of groundwater data that was performed to determine the effectiveness of the 2001 ORC® application. The evaluation concluded that water-quality improvements had begun prior to the ORC® application, and that the ORC® application did not appear to have been effective, except perhaps very locally. This report further indicated that other remedial strategies were being considered to aid in further reductions of hydrocarbon concentrations at the Site. (SAIC, 2004a)

In November and December 2004, an additional investigation was performed to further delineate the extent of contaminated soil impacts at the Site. One soil boring (SB-1) was completed at the inactive station, in the vicinity of MW-101, and seven soil borings (SB-2 through SB-8) were completed at the active station, in the vicinity of MW-111. On the inactive station property, SB-1 was installed to collect additional soil data within the area of the former UST basin. On the active station, borings SB-2 though SB-8 were completed to develop a greater understanding of the soil contaminant distribution in the vicinity of MW-111, which routinely contained petroleum light non-aqueous phase liquid (LNAPL) at that time. Results of this investigation suggested that contaminated soil impacts from the active station did not appear to have migrated onto the inactive station portion of the Site. (SAIC, 2004b)

On December 20, 2004, SAIC submitted a letter report that presented the preliminary results of the November/December 2004 soil sampling activities and also discussed possible remedial alternatives to achieve the cleanup objectives for the Site. The letter concluded that excavation followed by natural attenuation would have the highest likelihood of success and provide the shortest remedial time frame. The letter further specified that a new CAP would be completed for the site. (SAIC, 2004b)

In 2006, at the request of Ecology, a revised draft CAP (2006 DCAP) was prepared for the Site and submitted to Ecology for review. The 2006 DCAP identified the following cleanup actions, which were selected by Ecology and Chevron EMC, for the Site:

- Active station – Institutional controls and surface paving for containment of contaminated soil, monitored natural attenuation of soil and groundwater, and long-term monitoring.
- Inactive station – Excavation, monitored natural attenuation of groundwater, and long-term monitoring.

Comments on the 2006 DCAP were provided by Ecology in a letter dated November 2, 2006. Among the comments, Ecology indicated that an alternative evaluation for the active station property would not be complete without considering two additional options: 1) complete excavation of contaminated soil, and 2) hot-spot excavation and removal. However, the 2006

DCAP was never finalized because on December 29, 2006, Ecology provided notice to SAIC and the PLPs that preparation of the final CAP should be delayed until a new Agreed Order could be prepared for the Site.

The new Agreed Order (No. DE 08 TCPSR-5236) became effective on March 1, 2010 and fully supersedes and replaces Agreed Order Nos. DE-00TCPSR-297, -298, and -299. This Agreed Order requires that TDPI perform the following:

1. Prepare a new FS for the Site;
2. Continue performing groundwater monitoring at the Site;
3. Prepare a DCAP according to the requirements of WAC-173-340-380; and
4. Prepare an Interim Action Work Plan and conduct an Interim Action consisting of the removal of residual contaminated soil associated with the former diesel UST at the active station and the USTs at the inactive station.

SAIC submitted an Interim Remedial Action (IRA) Work Plan for the Site, which was approved by Ecology on August 17, 2010. In accordance with the approved IRA Work Plan, SAIC completed the proposed active station diesel UST excavation (Excavation 1) and inactive station excavation (Excavation 2) in October 2010. Confirmation soil sampling results indicated that each of the excavations were successful in removing soils containing petroleum contaminants above cleanup levels in the vadose zone; however, excavation bottom samples indicated that petroleum contamination in excess of cleanup levels remained in the saturated zone at the base of each excavation. Approximately 700 pounds of ORC® were placed in the bottom of Excavation 1 and approximately 1,300 pounds of ORC® were placed in the bottom of Excavation 2, in order to enhance natural attenuation of the inaccessible petroleum contamination that was left in place. Additional details regarding implementation of the Interim Action are presented in SAIC's *Final - Interim Remedial Action Report*, dated April 14, 2011.

SAIC submitted a draft FS to Ecology on February 8, 2011. The draft FS identified monitored natural attenuation as the proposed cleanup action for the Site. Ecology provided comments on the draft FS, by letter dated April 15, 2011, which requested additional details regarding the alternatives proposed and a re-evaluation of the scoring used to rank the alternatives. Ecology also disagreed with the conclusions presented in the draft FS regarding the elimination of a soil and/or groundwater to vapor exposure pathway.

In response to Ecology's comments on the draft FS, SAIC prepared a work plan to perform supplemental assessment work at the Site, which was approved by Ecology on September 7, 2011. Field activities were performed in October 2011, which included installation of four shallow soil-vapor sampling probes (SVSP-1 through SVSP-4), and installation and sampling of one new monitoring well (MW-120). The soil-vapor sampling probes were installed on the active station portion of the Site in order to evaluate the potential of a vapor intrusion risk to the service station building and/or Mrs. Beesley's restaurant. Monitoring well MW-120 was installed on the inactive station property, to replace MW-101, in order to evaluate groundwater conditions in the vicinity of Excavation 2. Soil-vapor samples were collected from the probes on December 1, 2011. Results of the soil-vapor sampling indicated that benzene was present at one of the four sampling locations (SVSP-2) at a concentration exceeding Ecology's then-current draft soil-gas screening level. Subsequent modeling of the sampling results predicted that current conditions at the Site would not result in indoor air conditions that would create a health

risk based on an adult worker exposure scenario, but that further vapor intrusion assessment may be warranted if Site use changed in the future. Soil sampling results from installation of monitoring well MW-120, and subsequent groundwater sampling results from this well, have not detected the presence of petroleum contamination at this location. Additional details regarding these assessment activities are presented in SAIC's *Draft – Supplemental Site Assessment Summary Report* (SAIC, 2012a), which was approved by Ecology by letter dated September 4, 2012.

Following submittal of the Supplemental Site Assessment Summary Report, SAIC prepared a revised version of the FS for the Site, which was submitted to Ecology on October 31, 2012 (2012 Draft FS). The 2012 Draft FS identified Alternative 2 (partial excavation, MNA, and institutional controls) or Alternative 4 (MNA, institutional controls, and future property-wide excavation in conjunction with service station upgrades or redevelopment) as the preferred cleanup action for the Site. Ecology provided comments on the 2013 Draft FS by letter dated February 25, 2013. Based on their evaluation of the cleanup alternatives presented, Ecology identified Alternative 3 (partial excavation, air sparge/SVE, MNA, and institutional controls) as the preferred remedial alternative.

In response to Ecology's comments on the 2012 Draft FS, Chevron EMC requested a meeting with Ecology to further discuss the evaluation of cleanup alternatives. Representatives of Ecology, Chevron EMC, and SAIC met to discuss a path forward strategy for the Site on May 22, 2013. The Chevron EMC/SAIC project team suggested that the cost of Alternative 3 were disproportionate to the benefit offered, and that this aggressive remedial action was not warranted due to the limited extent of contamination remaining at the Site and the low risk for exposure to human or ecological receptors. Ecology indicated that insufficient data was available to confirm Chevron EMC's position regarding the Site, but agreed to delay completion of the FS to conduct further assessment of the Site, specifically collection of current soil sampling data and performance of an assessment to evaluate natural attenuation processes presumed to be occurring in groundwater.

On July 30, 2013, SAIC submitted a work plan to complete soil sampling and natural attenuation assessment activities at the Site (SAIC, 2013). The objectives of the assessment was to evaluate current petroleum hydrocarbon concentrations in soil on the active station portion of the Site and underlying the 2010 interim remedial action excavation areas, and to evaluate natural attenuation processes in groundwater that were believed to be responsible for ongoing reductions in dissolved-phase petroleum contamination on the active station property. Following receipt of Ecology comments on the draft work plan, provided by letter dated August 21, 2013, SAIC submitted a final work plan on September 25, 2013. The final work plan was conditionally approved by Ecology by letter dated October 2, 2013.

Field activities associated with the soil sampling portion of the work plan were completed by Leidos in November 2013, and the results were presented in Leidos' *Soil Sampling Assessment Summary Report*, dated March 28, 2014, which is included as Appendix A. Based on the results of the soil sampling assessment, Leidos concluded that the lateral and vertical extent of impacted soil at the Site may be decreasing in response to ongoing natural attenuation. However, results of the soil sampling activities also confirmed the presence of shallow soil contamination at the Site that was not consistent with a UST release. Based on these data, as well as observations of petroleum sheens in rain water at the Site, Leidos concluded that shallow soil contamination at the Site was likely the result of past and on-going surface releases that have occurred in

association with the operation of the active service station. In the areas of the former 2010 IRA excavations, confirmation soil sampling results found evidence of GRO at concentrations above the MTCA Method A cleanup level in both of the samples collected at 10.5 feet bgs in the area of Excavation 1. GRO was also detected from the sample collected at 10 feet bgs from the area of Excavation 2; however, at a concentration below the Method A cleanup level.

On October 29, 2015, Leidos submitted a report to Ecology presenting the results of natural attenuation assessment activities for groundwater performed for the Site (see Appendix B). The report included an evaluation of all available historical groundwater sampling results for the Site, as well as an evaluation of geochemical indicator data collected from 11 monitoring wells during quarterly sampling performed from September 2013 through August 2015. Based on this evaluation, Leidos concluded that conditions at the Site are appropriate to consider use of natural attenuation as a cleanup alternative for petroleum contaminated groundwater at the Site, and that, due to a lack of complete exposure pathways from impacted groundwater to human or ecological receptors, there would be little if any benefit realized from a more active cleanup strategy. However, the conclusions drawn by the natural attenuation assessment were based on an assumption that land use at the Site would remain unchanged during the estimated restoration timeframe presented in the report (approximately 33 years). Leidos further stated that future land use changes at the Site would have the potential to create complete exposure pathways or to opportunities for cost-effective remedial actions that could be implemented during property redevelopment or service station upgrades.

Ecology accepted the Natural Attenuation Assessment for Groundwater report as the Draft Final version (pending eventual public comment) by letter dated March 1, 2017. The letter also stated that by accepting the report, Ecology was concluding completion of the additional assessment work proposed by Chevron EMC in June 2013. Therefore, preparation and submittal of a revised draft FS by Chevron EMC to Ecology was the next step required under the terms of the Agreed Order for the Site.

2.4 GEOLOGY AND HYDROGEOLOGY

Geologic interpretations of the Site vicinity developed by the United States Geological Survey (USGS) indicate that Quaternary alluvial deposits of silt, sand, and gravel associated with the Cowlitz River are characteristic of the area. The alluvial deposits are bounded by outwash deposits of sand and gravel interbedded with silt and clay associated with the Fraser glaciation of the Cascade Mountains. Shallow groundwater within these deposits generally discharges into the Cowlitz River. (SECOR, 1999)

Data collected during subsequent site investigation and cleanup actions has been consistent with the USGS interpretation of the regional geology. Generally, the Site exhibits the characteristics of gravelly alluvial material with interbedded layers of sand and silt. Site data collected during drilling activities, and during the IRA excavations, indicate that the Site is underlain by sandy gravel and gravelly sand with cobbles, with varying percentages of silt. This upper stratum varies in thickness from approximately 10 feet to at least 18.5 feet and serves as a shallow aquifer in the vicinity of the Site. A clay layer of undetermined thickness has been identified beneath the sand and gravels in many of the soil borings completed at the Site, and it is believed to act as a confining bed to the overlying shallow aquifer.

Depth to water measurements collected at the Site indicate the water table is approximately 7 to 8 feet below ground surface (bgs), with a 2-foot seasonal fluctuation across the Site.

Groundwater has been observed to flow in the southeast direction, toward the Cowlitz River. A river terrace, 15 feet lower than the Site elevation, is located approximately 500 feet southeast of the Site. Shallow groundwater has been observed discharging through springs and seeps along the bank above this terrace. A groundwater potentiometric map, based on groundwater elevation data collected during the November 2016 groundwater monitoring event, is included as Figure 3.

3. DEVELOPMENT OF SITE CLEANUP STANDARDS

3.1 CONTAMINANTS OF CONCERN

MTCA defines a contaminant as "any hazardous substance that does not occur naturally or occurs at greater than natural background levels." Contaminants of concern (COCs) include those hazardous substances that are known to be present at a site, or which are suspected to be present based on information regarding the nature of a known release or past operations at a site.

Sampling data from past environmental investigations and cleanup actions have confirmed the presence of the following COCs for each of the impacted media at the Site:

Contaminants of Concern (COCs)	Soil	Groundwater
Gasoline Range Organics (GRO)	X	X
Diesel Range Organics (DRO)	X	X
Heavy Oils (HRO)	X	X
Benzene	X	X
Toluene	X	X
Ethylbenzene	X	X
Xylenes (Total)	X	X
Lead	X	X
Carcinogenic polynuclear aromatic hydrocarbons (cPAHs)	X	

3.2 POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS

MTCA [WAC 173-340-200] defines an exposure pathway as "the path a hazardous substance takes or could take from a source to an exposed organism. An exposure pathway describes the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at or originating from a site."

Potential sources of hazardous substances at the Site are petroleum contaminated soil and groundwater.

3.2.1 Soil

Contaminated soil has the potential to serve as a source of hazardous substance exposure through the following exposure pathways:

Potential Exposure Pathways – Contaminated Soil	
Potential Soil Exposure Pathway/Scenario	**Applicability**
Ingestion of, or dermal contact with, contaminated soil	**Risk to future workers -** The area of soil impacted by COCs at the site is covered by pavement or service station infrastructure on the active station property, or is located at a depth of approximately 10 – 12 feet bgs in the area of Excavation 1. Therefore, the current potential for ingestion or dermal contact is significantly limited. However, potential ingestion or direct contact exposures are possible for future workers performing excavation, site assessment, or subsurface utility work at the Site.
Inhalation of hazardous vapors and/or airborne particulates (i.e., dust) in outdoor air	**Potential risk to future workers –** Volatilization of hazard substances or dust from contaminated soil may create an inhalation exposure pathway for future workers performing excavation, site assessment, or subsurface utility work at the Site.
Inhalation of hazardous substances that have volatilized from contaminated soil and migrated to indoor air	**Potential risk to future residents or future workers –** Results of 2011 supplemental site assessment activities indicate that current conditions at the Site do not pose a vapor intrusion risk, based on an adult worker exposure scenario. However, there is potential for a complete vapor intrusion exposure pathway if land use changes at the Site in the future.
Contamination of groundwater by hazardous substances leaching from soil	**Risk to future residents or future workers -** Soil contamination in contact with groundwater has resulted in concentrations of dissolved-phase petroleum contamination in groundwater (see section 3.2.2).

3.2.2 Groundwater

Contaminated groundwater has the potential to serve as a source of hazardous substance exposure through the following exposure pathways:

Potential Exposure Pathways – Contaminated Groundwater	
Potential Groundwater Exposure Pathway/Scenario	**Applicability**
Ingestion of contaminated groundwater	**Risk to current and future residents and workers -** Drinking-water wells are currently located within ¼ mile of the Site, and future residential development could include the installation of drinking-water wells on the Site or at down-gradient locations. Potential exposures could also occur during future site redevelopment construction or during underground utility work.
Dermal contact with contaminated groundwater	**Risk to future workers -** Groundwater is typically located at a depth of approximately 6 to 10 feet bgs. Therefore, the current potential for dermal contact is significantly limited. However, dermal contact exposures are possible for workers during future site redevelopment or during utility work.
Contamination of surface water by hazardous substance migration through groundwater	**Eliminated -** Groundwater from the site is believed to eventually discharge to the Cowlitz River (approximately ¼ mile south of the Site). However, groundwater data from the Site indicate that the dissolved-phase petroleum contaminant plume is contained onsite, is not migrating, and appears to be attenuating by naturally occurring degradation processes. Therefore, surface water is not considered to be a receptor of concern.
Inhalation of hazardous vapors in outdoor air	**Potential risk to future workers –** Volatilization of hazard substances from contaminated groundwater may create an inhalation exposure pathway for future workers performing excavation, site assessment, or subsurface utility work at the Site.

Potential Exposure Pathways – Contaminated Groundwater	
Potential Groundwater Exposure Pathway/Scenario	**Applicability**
Inhalation of hazardous substances that have volatilized from contaminated groundwater and migrated to indoor air	**Potential risk to future residents or future workers –** Results of 2011 supplemental site assessment activities indicate that current site conditions do not pose a vapor intrusion risk, based on an adult worker exposure scenario. However, there is potential for a complete vapor intrusion exposure pathway if land use changes at the Site in the future.

3.3 TERRESTRIAL ECOLOGICAL EVALUATION

In addition to an evaluation of potential human health risks, MTCA [WAC 173-340-7490] requires that a Terrestrial Ecological Evaluation (TEE) be completed to determine whether a release of hazardous substances to soil may pose a threat to the terrestrial environment, and if so, to establish site-specific cleanup standards for the protection of terrestrial plants and animals.

Conditions at and adjacent to the Site are not such that require performance of a site-specific TEE. Therefore, a simplified TEE was conducted, as set forth in WAC 173-340-7492. Due to the area of contiguous undeveloped land within 500 feet of any area of the Site (greater than 4 acres), it was determined that conditions at the Site had the potential to pose a threat of significant adverse effects to terrestrial ecological receptors. Therefore, cleanup levels based on the protection of ecological receptors, as listed in MTCA Table 749-2, must be considered in development of the Site cleanup standards.

3.4 SOIL CLEANUP LEVELS AND POINTS OF COMPLIANCE

MTCA states that cleanup levels shall be based on the reasonable maximum exposure expected to occur during both current and future land use. By default, MTCA further states that residential land use represents the reasonable maximum exposure. Therefore, cleanup levels must be protective of residential or unrestricted land use. On sites where the cleanup action is routine or may involve relatively few hazardous substances, MTCA allows the use of Method A cleanup levels.

The Method A cleanup levels for soil presented in Table 740-1 (Soil Cleanup Levels for Unrestricted Land Use) of the MTCA Cleanup Regulation (WAC 173-340) are generally applicable to this Site; however, as discussed in section 3.3, soil cleanup levels for this Site must also consider the potential threat of significant adverse effects to terrestrial ecological receptors. Therefore, the values in Table 749-2 of WAC 173-340 must also be considered when developing soil cleanup levels. For the COCs identified for this Site, only DRO has a Method A cleanup level that must be revised to meet the more stringent cleanup level presented in Table 749-2.

The soil cleanup levels combined with the point of compliance determines the cleanup standard for the site. Under MTCA, the point of compliance is pathway dependent. Potential pathways for exposure to contaminants in the soil are discussed below.

Protection of Human Exposure via Direct Contact/Incidental Ingestion: The point of compliance is in the soils throughout the Site to a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface during site development activities (i.e., ground surface to 15 feet bgs).

Protection of Ecological Receptors: The standard point of compliance is in the soils throughout the site from ground surface to 15 feet bgs (the reasonable depth of soil that could be excavated

during site development and could result in exposure to ecological organisms). For sites with institutional controls preventing excavation of deeper soil, MTCA allows the use of a conditional point of compliance set in the soils throughout the site at a depth of 6 feet bgs.

Protection of Groundwater: The point of compliance is throughout the Site.

3.5 GROUNDWATER CLEANUP LEVELS AND POINTS OF COMPLIANCE

MTCA requires that groundwater cleanup levels be based on the highest beneficial use and reasonable maximum exposure under both current and future land use at the site. For groundwater, MTCA specifies that drinking water is the highest beneficial use and that ingestion of drinking water represents the reasonable maximum exposure [WAC 173-340-720]. The Method A cleanup levels for groundwater presented in Table 720-1 (Method A Cleanup Levels for Groundwater) are applicable to this Site.

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

In cases where it is not practicable to meet the cleanup level throughout the site in a reasonable restoration time frame, MTCA allows establishment of a conditional point of compliance. The conditional point of compliance shall be as close as practicable to the source of hazardous substance and not exceed the property boundary. Considering that the future land use for the active station portion of the Site is expected to remain as an operating service station, an appropriate conditional point of compliance for protection of drinking water at this Site is at the active station property boundary.

3.6 SUMMARY OF PROPOSED CLEANUP STANDARDS

Per MTCA, cleanup standards establish the concentrations of hazardous substances that are protective of human health and the environment (cleanup levels), and the location on the Site where those cleanup levels must be attained (points of compliance).

The following table presents the proposed cleanup standards that have been developed for the Site.

Media	Point of Compliance	GRO	DRO	HRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Lead	Benzo(a) pyrene (cPAHs)
Soil (mg/kg) (0 – 6 ft bgs)	Entire Site	30	460	2,000	0.03	7	6	9	250	0.1
Soil (mg/kg) (0 – 15 ft bgs)	Entire Site	30	2,000	2,000	0.03	7	6	9	250	0.1
Groundwater (micrograms per liter)	Active Station Property Boundary	800	500	500	5	1,000	700	1,000	15	0.1

These cleanup levels presented above are derived from:

- MTCA Table 740-1, Method A soil cleanup levels for unrestricted land uses;
- MTCA Table 749-2, priority contaminants of ecological concern for sites that qualify for simplified terrestrial ecological evaluation procedure; and
- MTCA Table 720-1, Method A cleanup levels for ground water.

Under WAC 173-340-7492(2)(c), MTCA states that no hazardous substance listed in Table 749-2 is, or will be, present in the soil within 6 feet of the ground surface at concentrations higher than the values provided in Table 749-2. The cleanup levels for the COCs in soil between the ground surface and 6 feet bgs were selected using the most stringent criteria in either MTCA Table 740-1 or Table 749-2. For soils deeper than 6 feet bgs, MTCA Method A CULs as listed in MTCA Table 740-1 will be used.

4. NATURE AND EXTENT OF CONTAMINATION IN EXCESS OF PROPOSED SITE CLEANUP STANDARDS

Existing contaminant impacts at the Site can be attributed to two discrete source areas. On the active station portion of the Site, soil and groundwater impacts have resulted from known releases from the gasoline USTs and ancillary piping and fuel-distribution systems located in the southern portion of that area of the Site. An additional source area is also associated with the former location of a diesel-fuel UST that was located east of the active station. The former diesel-fuel UST source area was the focus of Excavation 1, which was performed as part of the 2010 IRA at the Site.

Formerly, a third discrete source area for petroleum hydrocarbon contamination in soil and groundwater was present in the vicinity of the former UST basin on the inactive station portion of the Site. This source area was the focus of Excavation 2, which was also performed as part of the 2010 IRA. However, confirmation soil sampling results from the 2010 IRA, November 2013 soil sampling assessment, and groundwater sampling results for monitoring well MW-120 indicate that petroleum hydrocarbon impacts are no longer present in this area at concentrations above the proposed cleanup standards for the Site.

4.1 SOIL

In the southern portion of the active station area, GRO and BTEX have been detected in soil at concentrations above the proposed cleanup levels for the Site. Soil impacts in this area have generally been found at depths of 2 to 15 feet bgs and are most predominant within a narrow smear zone near the water table. Horizontal delineation of the extent of soil impacts in this area has been somewhat limited by the active station infrastructure (i.e., USTs, pump islands, and piping) and the proximity of this area to Mulford and Cowlitz Ridge roads. However, soil data from borings installed adjacent to Mulford Road (e.g. SB-18, SB-20 and SB-21) suggest that soil impacts likely extend beneath the roadway.

In the eastern portion of the active station area, soil contamination related to the former diesel UST that was located in this area has been partially addressed by the IRA excavation performed in October 2010. Within the vadose zone, soil impacts above the proposed site cleanup levels have been removed by excavation, with the result that clean samples were obtained in all sidewall samples. However, samples collected in 2013 from boring locations within the

boundary of Excavation 1 (SB-12 and SB-13) contained GRO at concentrations in excess of the proposed cleanup levels for the Site.

On the inactive station portion of the Site, previous soil impacts related to the former service station UST basin appear to have been addressed by the IRA excavation that was performed in this area in October 2010. Results for soils samples collected in 2013 from soil boring SB-11 were in compliance with the proposed cleanup standards for all COCs for the Site.

A summary of historical soil analytical data is provided in Table 1, and Figure 4 presents the approximate areal extent of petroleum contaminated soil that is believed to be remaining at the Site, and the relevant data used for horizontal delineation. Cross-sections showing both the estimated vertical and horizontal extent of petroleum contaminated soil on the active station property are also included as Figures 5 through 7.

Based on these data, a rough (i.e., "order of magnitude") approximation of the amount of petroleum contaminated soil remaining in the southern portion of the active station property was developed by assuming that within the estimated area of contaminant impact (approximately 13,500 square feet) that contaminated soil would be present from 5 to 15 feet bgs. The resulting volume of petroleum contaminated soil is estimated to be approximately 5,000 cubic yards.

4.2 GROUNDWATER

As previously presented in the *Natural Attenuation Assessment for Groundwater* (see Appendix B) completed by Leidos in October 2015, long-term groundwater sampling results indicate that groundwater conditions throughout much of the Site are in compliance with drinking water quality standards. Remaining dissolved-phase petroleum impacts exceeding the proposed Site cleanup standards are confined to a small area of the Site located immediately downgradient of the active station UST basin and pump islands, which includes the locations of monitoring wells B-3, B-4, and MW-111 (see Figure 8). Within this area, results of the natural attenuation assessment indicate that the dissolved-phase plume is shrinking due to microbial degradation that is occurring in this residual source area.

In monitoring wells B-3, B-4, and MW-111, GRO and DRO have been regularly detected above their proposed site cleanup standards, and HRO is sometimes detected at concentrations in excess of the proposed cleanup standard. Benzene has been in compliance with the proposed cleanup standard at these locations since at least 2012. Regression analysis of temporal data using Ecology's natural attenuation tool package has suggested that groundwater cleanup standards could be attained at monitoring wells B-3 and B-4 in less than 5 years, but that the restoration timeframe for monitoring well MW-111 would likely exceed 30 years for a cleanup remedy based on natural attenuation alone (see Appendix B for additional details).

A summary of historical groundwater monitoring data is provided in Table 2.

5. DEVELOPMENT OF CLEANUP ACTION ALTERNATIVES

5.1 INITIAL SCREENING OF CLEANUP ACTION COMPONENTS

The first step in developing cleanup action alternatives for the Site was to perform an initial screening of treatment technologies, containment actions, removal actions, engineered controls, institutional controls or other type of remedial actions that could become components of cleanup action alternatives to be evaluated in the FS. To begin this process, Leidos identified the following remedial action approaches, which were screened to determine their appropriateness

for further evaluation as a cleanup action alternative, or as a component of a cleanup action alternative. Each of the following remedial action approaches was selected for evaluation based on well-established histories of success in addressing petroleum related contaminants:

- Monitored Natural Attenuation
- Air Sparge
- Soil Vapor Extraction
- Multi-Phase Extraction
- In-Situ Chemical Oxidation
- Excavation
- Institutional Controls

A brief description of each approach and a discussion regarding their appropriateness for further evaluation are included in sections 5.1.1 through 5.1.7.

5.1.1 Monitored Natural Attenuation (MNA)

Under an MNA cleanup strategy, cleanup of the Site would be achieved through naturally occurring degradation of the contaminants remaining at the Site. Although MNA would eventually achieve the Site cleanup goals, it is likely that an MNA-only strategy would require a longer restoration time frame to achieve the Site cleanup objectives than alternatives including more active cleanup action components.

MNA was retained as a cleanup action component to be used in conjunction with other remedial approaches.

5.1.2 Air Sparge

Air sparge is an in-situ remediation technology that uses air injected into the subsurface to strip volatile constituents from groundwater. Implementation typically consists of injecting low pressure air into the saturated zone, through a grid of vertical injection wells.

Air sparge systems are generally capable of significantly reducing concentrations of volatile petroleum hydrocarbons in the saturated zone; however, they are rarely effective in reducing contaminant levels low enough to meet cleanup standards. This is due to the inability to control the distribution of air to ensure contact with all contaminant mass present in the subsurface. Like water, injected air will tend to follow the path of least resistance and volatile contaminants in these areas will be quickly removed, while contamination present in less permeable materials will persist due to a lack of contact with the injected air. Cleanup of additional contaminant mass then becomes limited by the contaminant's ability to diffuse from an area with low air permeability and high contaminant mass to an area with air high permeability and low contaminant mass. The effectiveness of air sparge systems is also limited to highly volatile compounds, such as gasoline constituents like BTEX. Therefore sparge systems are not effective for less volatile petroleum contamination, such as DRO or heavy oils. Air sparge systems also have limited effect in remediating vadose zone soil contamination.

Due to the limitations of air sparge technology to remediate low-volatility petroleum contamination and vadose zone soil contamination, it is not considered appropriate as a stand-

alone cleanup alternative for this Site; however, this technology was retained as a cleanup action component to be used in conjunction with other remedial approaches.

5.1.3 Soil Vapor Extraction (SVE)

SVE is a remedial technology in which air movement is induced in vadose-zone soils by applying vacuum to a series of horizontal or vertical extraction wells. The result is that air moving through pore spaces in the vadose zone causes volatile contaminants to transfer to the vapor phase, which allows the contaminants to be drawn from the subsurface with the extracted vapor stream. Typically, the contaminated vapor stream is then treated before being discharged to the atmosphere.

Because SVE is dependent on the ability to induce movement of soil vapor in the subsurface, this technology is less effective for remediating contamination in capillary fringe, and would not address contamination in saturated zone soils; therefore, it would not be well suited as a stand-alone technology to address the contaminant conditions at this Site. However, this technology was retained as a cleanup action component to be used in conjunction with other remedial approaches.

5.1.4 Multi-Phase Extraction (MPE)

MPE is an in-situ remediation technology that combines SVE with groundwater extraction. This technology is typically used at sites where some or all of the contaminant mass is located in capillary fringe or saturated zone soils. Groundwater extraction is used to dewater the contaminated soils so that they become accessible for remediation by SVE. Although some minor amount of contaminant mass will be removed by groundwater extraction, this amount is typically negligible in comparison to the amount of contaminant mass removed by the SVE component of this technology. Groundwater extraction can be achieved by vacuum drop tubes installed in each well (commonly referred to as stingers) or via groundwater extraction pumps.

Due to the high groundwater transmissivity of subsurface soils at this Site, it is unlikely that saturated zone soils could be effectively dewatered to the degree necessary to successfully implement this alternative; therefore, MPE was not retained as a cleanup action alternative component.

5.1.5 In-Situ Chemical Oxidation (ISCO)

ISCO is a remediation technology that uses a chemical oxidant (e.g., hydrogen peroxide or sodium persulfate) to transform soil or groundwater contaminants into less harmful chemical species. Application of the chemical oxidants is typically performed by injection into a series of single-use borings or dedicated injection points that can be used for multiple ISCO applications.

Success of ISCO based cleanup actions is primarily dependent on the ability to effectively distribute the selected oxidant throughout the zone of contamination. Therefore, due to the inherent unknowns associated with in-situ subsurface remediation, the success of ISCO based strategies can be difficult to predict. There are also significant health and safety concerns associated with ISCO based remediation, due to the potentially violent chemical reactions that can occur in the presence of oxidizers. Chevron EMC does not consider ISCO to be a viable cleanup alternative to be implemented at an operating service station, because of the health and safety concerns associated with this technology. Therefore, this technology was not retained as a cleanup action alternative component.

5.1.6 Excavation

Under an excavation based remediation approach, petroleum contaminated soil would be addressed by physically removing the impacted soil mass and replacing this material with clean backfill. Contaminated soil would then be transported from the Site for disposal at a regulated waste disposal facility. As previously discussed, an IRA completed at the Site in 2010 consisted of excavation to address petroleum contamination "hot-spots" on both the active and inactive station properties.

Under the current land-use scenario, the extent of contaminated soil that could be excavated on the active service station property would likely be limited by the location of nearby service station infrastructure and utilities. Also, as was the case for the 2010 IRA excavations, it is anticipated that any future excavation at the Site would be limited to a depth of approximately 12 feet bgs, due to the highly transmissive shallow aquifer beneath the Site. Observations from those excavations suggest that dewatering a future excavation would likely be cost prohibitive or technically infeasible.

Excavation was retained as a cleanup action alternative component due to its known ability to achieve significant and permanent reductions in petroleum hydrocarbon source mass at the Site.

5.1.7 Institutional Controls

Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action, or may result in exposure to hazardous substances at a site, and may include:

- Physical measures such as fences or capping;
- Restrictions to limit the use of property or resources, or requirements that cleanup action occur if existing structures or pavement are disturbed or removed;
- Maintenance requirements for engineered controls such as the inspection and repair of monitoring wells, treatment systems, caps, or groundwater barrier systems;
- Educational programs such as signs, postings, public notices, health advisories, mailings, and similar measures that educate the public and /or employees about site contamination and ways to limit exposure; and
- Financial assurances.

It is anticipated that any cleanup action alternative for the Site will include some form of institutional controls.

5.2 DESCRIPTION OF CLEANUP ACTION ALTERNATIVES

Based on the initial screening of cleanup action components, the following five cleanup action alternatives were developed to be further evaluated in the FS:

- Alternative 1: Air Sparge/SVE, MNA, and Institutional Controls
- Alternative 2: Partial Excavation, MNA, and Institutional Controls
- Alternative 3: Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls

- Alternative 4: MNA, Institutional Controls, and Future Site-Wide Excavation in Conjunction with Service Station Upgrades or Redevelopment
- Alternative 5: Site-Wide Excavation, MNA, and Institutional Controls

Descriptions of the cleanup alternatives are provided in the following sections. For each cleanup alternative, a "conceptual design" has been developed to use as a framework for comparing the alternatives. The conceptual designs include identification of the primary components of the cleanup alternative, and estimates of the implementation and restoration time frames to achieve the cleanup standards for the Site. Although site-specific conditions were considered in development of these conceptual designs, they are to a large degree based on industry rules-of-thumb or past experience implementing cleanups at similar sites. Therefore, the actual details of a future cleanup action may differ from the conceptual designs provided here.

5.2.1 Alternative 1: Air Sparge/SVE, MNA, and Institutional Controls

Under Alternative 1, air sparge and SVE remediation technologies would be combined to perform active in-situ remediation at the Site in order to reduce contaminant concentrations to the extent practicable in the vicinity of the UST basin, pump islands, and monitoring wells B-3, B-4, and MW-111, while MNA would be used to address residual petroleum contamination in the vicinity of Excavation 1 on the active station property.

The air sparge system would consist of a network of vertical air sparge wells, located throughout the plume area, to inject low pressure air (generally less than 10 pounds per square inch) into saturated-zone soils. Sparging acts to remove volatile petroleum hydrocarbons from the groundwater and soil by transferring these compounds into the vapor phase. Additional petroleum hydrocarbon concentration reduction would also take place due to enhanced natural attenuation that would result from oxygenation of impacted soil and groundwater.

In addition to the air sparge system, an SVE system would also be installed, which would consist of another network of vertical wells that would be used to extract soil vapor from vadose zone soils and capture hydrocarbon laden air emissions from the sparge system. Extracted hydrocarbon vapor would be treated on site using a catalytic oxidizer system or vapor-phase carbon treatment units.

Based on current Chevron EMC standards for air sparge/SVE system design and construction, it is estimated that approximately 24 air sparge and 8 SVE wells would be installed at the Site. Subsurface piping would be installed to connect each of the wells to a centrally located treatment system compound that would house the sparge blower(s), SVE vacuum pump(s), vapor treatment equipment, and other ancillary system components. Figure 9 shows a conceptual layout of the air sparge well network.

Implementation of this alternative is estimated to require a period of approximately two years, which would include pilot testing, system design, equipment procurement, and construction. On-site construction is estimated to take place over a period of six to ten weeks, during which there would likely be relatively significant disruptions to business operations at the active Shell station and possibly to Mrs. Beesley's restaurant.

It is estimated that the air sparge/SVE system would be operated until monitoring data indicated that operation of the system was no longer contributing to further reduction of petroleum contamination at the Site (generally one to two years). After that time, it is likely that petroleum

contamination will continue to be present at the Site, due to the limitations of controlling subsurface air flow that is inherent with both of these technologies, and because these technologies will have limited impact on reducing concentrations of DRO, heavy oils, and other less volatile petroleum constituents. Therefore, MNA would be used to address remaining petroleum contamination until cleanup standards could be achieved throughout the Site.

Alternative 1 would also include the use of institutional controls during implementation of the remedy, in order to prevent conditions that could result in human or environmental exposure to the contaminants on-site. Institutional controls would likely include: access restrictions during construction and operation phases of the air sparge/SVE system; maintenance of asphalt and/or concrete surface covers over contaminated soil; an environmental covenant to prevent groundwater use and to place controls on subsurface activities at the Site; and a soil management plan to establish guidelines for utility or other subsurface work in the right-of-ways for Mulford and Cowlitz Ridge roads.

Due to the MNA component of this alternative, it is not possible to develop a meaningful estimate of the length of time that may be required to achieve Site cleanup levels; however, it is reasonable to expect that the overall restoration time frame for this alternative would be on the order of 10 to 15 years.

Alternative 1 - Conceptual Design Summary

- Air Sparge/SVE system pilot testing, design, and construction would require approximately two years, following final approval of the CAP.
- On-site system construction would require six to ten weeks.
- System would consist of approximately 26 sparge wells and 8 SVE wells.
- Air sparge/SVE system would operate for a period of one to two years.
- Institutional controls would be used to restrict site access, require asphalt/concrete cover maintenance, and restrict groundwater use and subsurface activities at the Site.
- Following completion of the air sparge/SVE system operation, MNA would be performed until groundwater cleanup standards were met throughout the Site. Post-remedy soil and soil-vapor confirmation sampling would also be performed to demonstrate that all potential exposure pathways were permanently eliminated.
- The estimated restoration time frame to attain Site cleanup levels is 10 to 15 years.

Alternative 1 - Advantages Compared to Other Alternatives

- System installation could likely be completed without the need to shut-down business operations of the active service station or Mrs. Beesley's restaurant.
- Air sparge/SVE system could potentially remediate soil and groundwater in the vicinity of existing service station infrastructure.

Alternative 1 - Disadvantages Compared to Other Alternatives

- Air sparge/SVE system is unlikely to result in concentration reductions for DRO, heavy oils, and other less volatile petroleum constituents.

- Applicability of using air sparge/SVE at this Site is not completely known. Successful implementation would require pilot testing to evaluate feasibility and collect data for design of a full-scale system.
- System installation and operation are likely to impact business operations of the active service station and Mrs. Beesley's restaurant.

5.2.2 Alternative 2: Partial Excavation, MNA and Institutional Controls

Under Alternative 2, excavation would be performed to remove contaminated soil, to the extent practicable, in the southern portion of the active service station property. The extent of contaminated soil removed would be limited by the proximity of the existing USTs, pump islands, fuel transfer piping, utilities and roadways, which are located in this area of the Site.

Performance of the limited excavation would be implemented in a matter similar to the Interim Remedial Action excavations performed at the Site in October 2010. The excavation would be performed during September or October, in order to take advantage of the seasonal low for groundwater elevation, and to minimize impacts to business operations at the Shell station and Mrs. Beesley's restaurant, which typically see more business during the summer tourism season. Excavated soil would be transported offsite for disposal at a licensed waste disposal facility.

Figure 10 shows a preliminary estimate of the area (approximately 7,500 square feet) that would be available for excavation, based on the current understanding of station infrastructure and utilities in this area. As observed during performance of the 2010 IRA excavations, the rate of groundwater recharge in this area is relatively high, so dewatering of the excavation is not considered practicable. Therefore, the extent of soil excavation is also likely to be limited vertically by shallow groundwater. It is anticipated that the maximum depth of the excavation would be approximately 12 feet bgs, which would equate to a depth of approximately 2 feet below the seasonal-low water table elevation. Assuming this entire area could be excavated to a depth of 12 feet bgs, and that all soil between 5 and 12 feet bgs was contaminated, it is estimated that approximately 2,000 cubic yards of petroleum contaminated soil could be removed under a partial excavation alternative. This would be approximately 40 percent of the total volume of contaminated soil (5,000 cubic yards) that is estimated to be present in this portion of the Site. It should be noted that this estimate represents a best-case scenario, where the entire 7,500 square foot area can be excavated to 12 feet bgs. It is likely that some sidewalls of the excavation will require sloping, or that utilities or other infrastructure will be encountered, which would further limit the amount of impacted soil that could be removed by a partial excavation alternative. Where necessary and practicable, shoring methods may be used to maximize the practicable limits of the excavation. Cross-sectional views of the anticipated excavation area are included as Figures 11 and 12.

As was previously performed during the 2010 IRA excavations, ORC® or a similar biological or chemical oxidation enhancement could be placed into the bottom of the excavation to assist in additional contaminant mass reductions through hydrocarbon destruction that would occur in saturated soils that would remain in place below 12 feet bgs.

Implementation of this alternative is estimated to require a period of approximately one year to complete planning, permitting and implementation of the excavation. However, as previously mentioned, excavation activities are likely to be scheduled for a September/October timeframe. Actual excavation field work is estimated to take place over a period of two to four weeks,

during which there will likely be relatively significant disruptions to business operations at the active Shell station and possibly to Mrs. Beesley's restaurant.

Similar to Alternative 1, the active remediation component of this alternative is expected to be successful in only removing a portion of the petroleum contaminant mass that is estimated to be present at this Site. Therefore, this alternative also proposes the use of MNA to attain the Site cleanup standards after the active remediation component (i.e., partial excavation) has been performed.

Alternative 2 would also include the use of institutional controls during implementation of the remedy, in order to prevent conditions that could result in human or environmental exposure to the contaminants on-site. Institutional controls would likely include: access restrictions during excavation implementation; maintenance of asphalt and/or concrete surface covers over contaminated soil; an environmental covenant to prevent groundwater use and to place controls on subsurface activities at the Site; and a soil management plan to establish guidelines for utility or other subsurface work in the right-of-ways for Mulford and Cowlitz Ridge roads.

Due to the MNA component of this alternative, it is not possible to develop a meaningful estimate of the length of time that may be required to achieve Site cleanup levels; however, it is reasonable to expect that the overall restoration time frame for this alternative would be on the order of 10 to 15 years.

Alternative 2 Conceptual Design Summary

- Excavation implementation could generally occur within one year of final approval of the CAP (assumes sufficient time to plan for an excavation to be performed during seasonal groundwater and tourism low [September/October]).
- Excavation would be limited to impacted soils that could be removed without disturbing existing service station infrastructure (e.g., USTs, pump islands, fuel transfer piping) and utilities. However, the existing service station sign would be removed, and replaced following excavation, if necessary.
- An estimated 2,000 cubic yards (40 percent) of contaminated soil could be removed under a best case excavation scenario.
- An estimated 3,000 cubic yards of contaminated soil would remain following the excavation.
- ORC® or an equivalent product could be used to assist in additional contaminant mass reductions through hydrocarbon destruction in saturated soils that would remain in place below 12 feet bgs.
- Institutional controls would be used to restrict site access, require asphalt/concrete cover maintenance, and restrict groundwater use and subsurface activities at the Site.
- Following completion of the partial excavation, MNA would be performed until groundwater cleanup standards were met throughout the Site. Post-remedy soil and soil-vapor confirmation sampling would also be performed to demonstrate that all potential exposure pathways were permanently eliminated.
- The estimated restoration time frame to attain Site cleanup levels is 10 to 15 years.

Alternative 2 - Advantages Compared to Other Alternatives

- Partial source removal by excavation is likely to be more effective than Alternative 1 (air sparge/ SVE) in reducing DRO and HRO contamination.

Alternative 2 - Disadvantages Compared to Other Alternatives

- Contaminant source mass removal by excavation would be limited due to the presence of existing service station infrastructure and shallow groundwater, which is likely to result in a relatively long restoration time frame to achieve cleanup standards with MNA.
- This alternative is likely to result in more disruption to business at the active Shell service station and Mrs. Beesley's restaurant than Alternative 4, because the partial excavation would be performed during a period when both businesses would likely be operating.

5.2.3 Alternative 3: Partial Excavation, Air Sparge/SVE, MNA and Institutional Controls

Under Alternative 3, components of Alternative 1 and Alternative 2 would be combined. The first part of this alternative would be the same as for Alternative 2, which would consist of a partial excavation in the southern portion of the active service station property. Following completion of this excavation, an air sparge/SVE system would be installed to address contamination remaining in areas inaccessible for excavation.

The conceptual design for Alternative 3 assumes that the air sparge/SVE system would be similar to the system described for Alternative 1, except that the system would cover a smaller area and would therefore require less air sparge and SVE wells. A conceptual layout for the air sparge/SVE well network for Alternative 3 is shown in Figure 13.

Under Alternative 3, the timeframe for planning, permitting, and implementation of the limited excavation is expected to be the same as for Alternative 2, approximately one year. Some of the planning activities associated with the air sparge/SVE system could be performed concurrently with excavation planning and implementation. Therefore, it is expected that the air sparge/SVE system could be installed and operational by the end of year two. Similar to Alternative 1, the air sparge/SVE system would be expected to operate for a period of one to two years.

Similar to Alternative 1 and Alternative 2, it is expected that some contamination will remain in place at the Site following completion of both the excavation and air sparge/SVE remedies. The limited excavation is expected to leave a portion of the contamination in place near existing service station infrastructure and below 12 feet bgs, and the air sparge/SVE system will only be effective in reducing the volatile components of the petroleum contamination present. Therefore, this alternative also includes an MNA component to address remaining petroleum contamination until cleanup standards could be achieved throughout the Site.

Alternative 3 would also include the use of institutional controls during implementation of the remedy, in order to prevent conditions that could result in human or environmental exposure to the contaminants on-site. Institutional controls would likely include: access restrictions during excavation implementation and air sparge/SVE system construction and operation; maintenance of asphalt and/or concrete surface covers over contaminated soil; an environmental covenant to prevent groundwater use and to place controls on subsurface activities at the Site; and a soil

management plan to establish guidelines for utility or other subsurface work in the right-of-ways for Mulford and Cowlitz Ridge roads.

Again, due to the MNA component of this alternative, it is not possible to develop a meaningful estimate of the length of time that may be required to achieve Site cleanup levels; however, is reasonable to expect that the overall restoration time frame for this alternative would be approximately 10 years.

Alternative 3 Conceptual Design Summary

- Excavation implementation could generally occur within one year of final approval of the CAP (assumes sufficient time to plan for an excavation to be performed during seasonal groundwater and tourism low [September/October]).
- Excavation would be limited to impacted soils that could be removed without disturbing existing service station infrastructure (e.g., USTs, pump islands, fuel transfer piping) and utilities. However, existing service station sign would be removed, and replaced following excavation, if necessary.
- An estimated 2,000 cubic yards (40 percent) of contaminated soil could be removed under a best case excavation scenario.
- An estimated 3,000 cubic yards of contaminated soil would remain following the excavation.
- ORC® or an equivalent product could be used to assist in additional contaminant mass reductions through hydrocarbon destruction in saturated soils that would remain in place below 12 feet bgs.
- Air sparge/SVE system would consist of approximately 12 sparge wells and 4 SVE wells.
- Air sparge/SVE system would operate for a period of one to two years.
- Institutional controls would be used to restrict site access, require asphalt/concrete cover maintenance, and restrict groundwater use and subsurface activities at the Site.
- Following completion of the partial excavation and air sparge/SVE operation, MNA would be performed until groundwater cleanup standards were met throughout the Site. Post-remedy soil and soil-vapor confirmation sampling would also be performed to demonstrate that all potential exposure pathways were permanently eliminated.
- The estimated restoration time frame to attain Site cleanup levels is approximately 10 years.

Alternative 3 - Advantages Compared to Other Alternatives

- Two phases of active remediation would likely result in a shorter restoration time frame than for Alternatives 1 or 2.

Alternative 3 - Disadvantages Compared to Other Alternatives

- Two phases of active remediation would result in a greater level of disruption to business at the active Shell service station and Mrs. Beesley's restaurant, than for Alternatives 1 and 2.

- Despite two phases of active remediation, this alternative is still expected to require an MNA phase to meet the Site cleanup standards.

5.2.4 Alternative 4: MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevelopment

Under Alternative 4, cleanup goals throughout the Site would be pursued through MNA, until a change in use of the active station property, such as upgrades to the existing service station, or redevelopment of the property, would allow a property-wide excavation to be performed to remove the majority of the petroleum contamination remaining at the Site.

Figure 14 shows a preliminary estimate of the area (approximately 11,500 square feet) that would be available for excavation, based on the current understanding of station infrastructure and utilities in this area. Similar to the partial excavation component of Alternatives 2 and 3, it is anticipated that the maximum depth of the excavation would be approximately 12 feet bgs, which would equate to a depth of approximately 2 feet below the seasonal-low water table elevation. Assuming this entire area could be excavated to a depth of 12 feet bgs, and that all soil between 5 and 12 feet bgs was contaminated, it is estimated that approximately 3,000 cubic yards of petroleum contaminated soil could be removed under a property-wide excavation alternative. This would be approximately 60 percent of the total volume of contaminated soil (5,000 cubic yards) that is estimated to be present in this portion of the Site. Cross-sectional views of the anticipated excavation area are included as Figures 15 and 16.

The excavation component of this alternative would be more effective than the partial excavation that is a component of Alternatives 2 and Alternative 3; however, it is anticipated that contaminated soil will remain in saturated soils below approximately 12 feet bgs, or in the vicinity of utilities along the adjacent right-of-ways. Therefore, this alternative would also include the addition of ORC® or an equivalent product, to enhance in-situ remediation of impacted groundwater and saturated zone soils remaining after the excavation.

This alternative is considered to be an appropriate cleanup remedy for this Site because under the current land use scenario, petroleum contamination in soil and groundwater does not pose an imminent risk to human or environmental receptors. Therefore, there is limited benefit to more aggressive cleanup strategies that would provide a shorter restoration time frame, but which are more expensive and disruptive to current use of the Site. Prior to site redevelopment, exposure to hazardous substances would be prevented through the use of institutional controls, such as maintenance of asphalt/concrete surfaces to cap contaminated soil, and an environmental covenant to prevent groundwater use at the Site.

At this time, there are no known plans for upgrades to the service station infrastructure, or for redevelopment of the active station property. However, it is anticipated that some type of upgrades or redevelopment are likely to occur within the next twenty years. Therefore, the restoration timeframe for this alternative, which includes excavation implementation and post-excavation confirmation monitoring, is estimated to be less than 30 years. However, the restoration time frame for this alternative is highly dependent on the timing of station upgrades or a land-use change on the active station property. Therefore, if station upgrades or a redevelopment of the property were to occur sooner, for example in the next five to ten years, the restoration time frame would be reduced accordingly, and could potentially be equivalent or even less than the other alternatives.

Because Alternative 4 assumes that active remediation at the Site could be delayed for a period of up to approximately 20 years, this alternative would also include institutional controls to establish financial assurances for funding to perform the property-wide excavation at the time of future station upgrades or redevelopment of the property.

Alternative 4 Conceptual Design Summary

- Institutional controls would be used to restrict site access, require asphalt/concrete cover maintenance, and restrict groundwater use and subsurface activities at the Site. Institutional controls would also be used to assure funding for a future property-wide excavation.
- MNA would be performed to verify that the groundwater contaminant plume was stable and/or shrinking, until future service station upgrades or redevelopment of the property allowed a property-wide excavation to be performed.
- The property-wide excavation would remove an estimated 3,000 cubic yards (60 percent) of contaminated soil, assuming a best case excavation scenario.
- An estimated 2,000 cubic yards of contaminated soil would remain following the excavation.
- ORC® or an equivalent product would be used to assist in additional contaminant mass reductions through hydrocarbon destruction in saturated soils that would remain in place below 12 feet bgs.
- Following completion of the property-wide excavation, MNA would resume until groundwater cleanup standards were met throughout the Site. Post-remedy soil and soil-vapor confirmation sampling would also be performed to demonstrate that all potential exposure pathways were permanently eliminated.
- The estimated restoration time frame to attain Site cleanup levels is 10 to 30 years.

Alternative 4 - Advantages Compared to Other Alternatives

- Implementation of this alternative in conjunction with redevelopment or upgrades to the Site would likely allow better management of short-term risks because the one or both of the businesses at the Site would not be operating; therefore, public access to the Site could be controlled by fencing or similar physical barriers.
- Would result in the least amount of disruption to business operations of the active Shell service station and Mrs. Beesley's restaurant because it would be performed during a period when one or both of the businesses was not operating.

Alternative 4 - Disadvantages Compared to Other Alternatives

- Restoration time frame is difficult to predict due to unknowns regarding timing of future service station upgrades or redevelopment of the active station property.
- Potential to result in the longest restoration timeframe.

5.2.5 Alternative 5: Property-Wide Excavation, MNA, and Institutional Controls

Under Alternative 5, existing service station infrastructure on the active station property would be removed to allow excavation of additional petroleum contaminated soil, beyond what would

be achieved by the partial excavation component of Alternative 2 and Alternative 3. The excavation component of Alternative 5 is expected to be the same as for Alternative 4; however, under Alternative 5, the excavation would be performed as soon as practicable, instead of performing the excavation in conjunction with redevelopment, or upgrades to the service station infrastructure. Therefore, this alternative would also include restoration of the service station infrastructure following completion of the remedial excavation.

Implementation of this alternative would require long-term closure of the active service station to allow removal of service station infrastructure, followed by reconstruction of the service station facilities at the conclusion of the source removal activities.

As presented for Alternative 4, a property-wide excavation would be expected to result in removal of approximately 3,000 of the estimated 5,000 cubic yards (60 percent) of petroleum contaminated soil on the active station property. Therefore, this alternative would also include an MNA component to address remaining petroleum contamination remaining in place, and institutional controls to hazardous substance exposure pathways until Site cleanup levels were attained.

Alternative 5 Conceptual Design Summary

- Excavation implementation could generally occur within one year of final approval of the CAP (assumes sufficient time to plan for an excavation to be performed during seasonal groundwater and tourism low [September/October]).
- Existing service station infrastructure (i.e., USTs, dispensers, fuel supply piping, and station building) would be dismantled/demolished to allow additional access to contaminated soil that is believed to exist in close proximity.
- An estimated 3,000 cubic yards (60 percent) of contaminated soil would be removed under a best case excavation scenario.
- An estimated 2,000 cubic yards of contaminated saturated zone soils would remain following the excavation.
- ORC® or an equivalent product would be used to assist in additional contaminant mass reductions through hydrocarbon destruction in saturated soils that would remain in place below 12 feet bgs.
- Following completion of the excavation, MNA would be required for an estimated period of approximately five to ten years before Site cleanup levels were achieved.
- Prior to closure, institutional controls would be used to restrict site access, require asphalt/concrete cover maintenance, and restrict groundwater use at the Site.
- The estimated restoration timeframe to attain Site cleanup levels is 5 to 10 years.
- This alternative would include restoration of the active service station infrastructure.

Alternative 5 - Advantages Compared to Other Alternatives

- Active remediation component of this alternative would result in the greatest reduction in contaminant source mass, which should result in the shortest restoration time frame of all alternatives evaluated.

Alternative 5 - Disadvantages Compared to Other Alternatives

- Implementation would require long-term closure (estimated 6 months) of the active service station and would likely result in significant disruption of business operations at Mrs. Beesley's restaurant.
- Contaminated soil would still likely to remain in place below groundwater and in the vicinity of existing utilities and adjacent roadways.
- Would still rely on MNA to attain Site cleanup standards.

6. EVALUATION OF CLEANUP ACTION ALTERNATIVES

6.1 COMPLIANCE WITH THRESHOLD REQUIREMENTS

MTCA establishes the minimum requirements and procedures for selecting cleanup actions, as defined in WAC 173-340-360(2). These minimum requirements define the following threshold requirements that must be met by the selected cleanup action:

- Protection of human health and the environment;
- Compliance with cleanup standards;
- Compliance with applicable state and federal laws; and
- Provisions for compliance monitoring.

Each of the five alternatives evaluated for this FS are considered able to meet these requirements; therefore, none of the alternatives were eliminated from further consideration due to an inability to meet the threshold requirements.

6.2 COMPLIANCE WITH OTHER REQUIREMENTS

In addition to the threshold requirements, WAC 173-340-360(2) also establishes other requirements that must be fulfilled by the selected cleanup action. These requirements include:

- Provision for a reasonable restoration time frame;
- Consideration of public concerns; and
- Use of permanent solutions to the maximum extent practicable.

6.2.1 Provisions for a Reasonable Restoration Time Frame

WAC 173-340-360(4)(b) establishes the following factors that must be considered to determine whether a cleanup action provides for a reasonable restoration time frame:

- Potential risks posed by the site to human health and the environment;
- Practicability of achieving a shorter restoration time frame;
- Current use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site;
- Potential future use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site;
- Availability of alternative water supplies;

- Likely effectiveness and reliability of institutional controls;
- Ability to control and monitor migration of hazardous substances from the site;
- Toxicity of the hazardous substances at the site; and
- Natural processes that reduce concentrations of hazardous substances that have been documented to occur at the site or under similar site conditions.

An estimated restoration time frame was included in the description for each of the alternatives, presented in Section 5.2. Each of the alternatives evaluated for the FS are considered to provide for a reasonable restoration time frame, based on the following:

- Although petroleum contamination continues to be present at the Site, there are no imminent risks posed by the Site to human health or the environment, and potential exposure pathways can be effectively controlled by institutional controls.
- Land use of the Site is expected to remain as an active service station; therefore, a shorter restoration time frame will not decrease the potential for exposure to hazardous petroleum vapors associated with refueling operations, or the potential for additional petroleum releases to soil or groundwater at the Site.
- Groundwater monitoring data indicate that contamination still remaining at the Site is GRO and DRO petroleum hydrocarbons, and that more toxic petroleum constituents, such as benzene, have been attenuated by naturally occurring processes to concentrations that are approaching or are currently below cleanup levels. Additionally, groundwater monitoring data indicate that hazardous substances are not migrating from the Site.

Therefore, all of the alternatives were retained for further evaluation.

6.2.2 Consideration of Public Concerns

MTCA requires that public concerns be considered in selection of a cleanup action. This process includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the Site.

To date, TDPI is not aware of any public concerns regarding the selection of a cleanup action for this Site; therefore, none of the alternatives were eliminated from further consideration due to an inability to meet this requirement. Under MTCA, the FS will be released for public comment prior to being finalized by Ecology; therefore, if necessary, the final FS will be revised to address any public comments that are received at that time.

Consideration of public concerns is also an evaluation criterion used in the disproportionate cost analysis performed for this FS. Additional details regarding the disproportionate cost analysis and cleanup alternatives ranking are provided in Section 6.2.3.1 and Table 3

6.2.3 Use of Permanent Solutions to the Maximum Extent Practicable

In order to determine which of the alternatives uses permanent solutions to the maximum extent practicable, a disproportionate cost analysis (DCA) was performed per the requirements of WAC 173-340-360(3).

6.2.3.1 Disproportionate Cost Analysis – Cleanup Action Alternatives Ranking

To perform the DCA, the alternatives were assigned ranks on the relative degree of benefit they would provide for the evaluation criteria established by WAC 173-340-360(3)(F). Due to the nature of the DCA evaluation criteria, these ranks are based primarily on qualitative comparison, using best professional judgment. Therefore, the ranks assigned are not intended to quantify the degree of potential benefit provided by one alternative relative to another, but only to indicate the standing, relative to the other alternatives, on a scale of least to most beneficial.

For this DCA, the alternative considered to have the least benefit was assigned a rank of "1" and the other alternatives were assigned successively higher ranks based on their relative degree of increased benefit, with a maximum rank of "5." In cases where two or more alternatives were considered to have equal benefit, the highest rank assigned would be equal to the number of degrees of relative benefit for that criterion. For example, if two of the alternatives were considered to be equal in benefit, then the maximum possible rank would be 4. If all of the alternatives were considered to be equal in benefit, then the maximum possible rank would be 1.

A summary of the DCA alternative ranking, which includes a justification for the ranks assigned, is presented in Table 3.

6.2.3.2 Disproportionate Cost Analysis – Cleanup Action Alternatives Cost Estimates

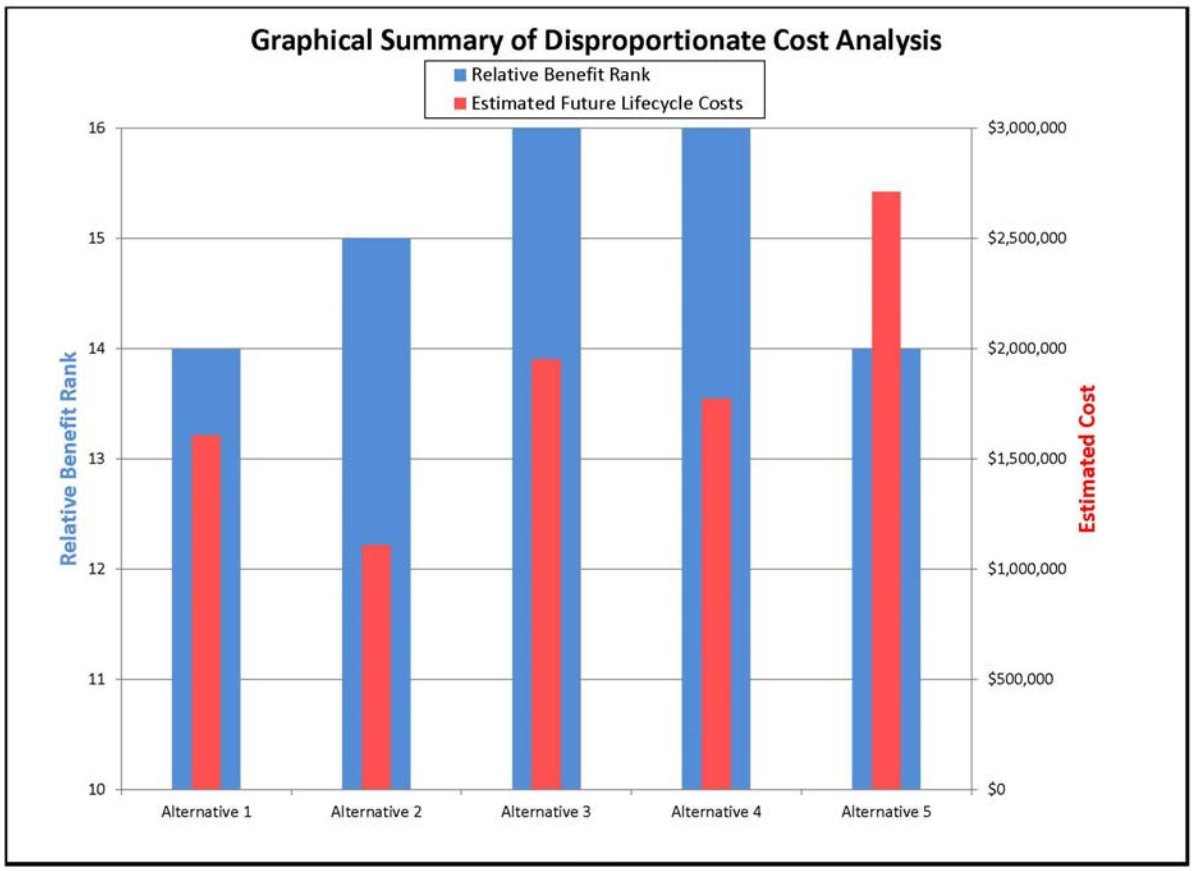
To complete the DCA, project lifecycle costs were estimated for each of the alternatives. The following estimated lifecycle costs include all costs associated with implementation of alternative, until the site cleanup levels are met and no further action is required by Ecology:

Summary of Estimated Project Lifecycle Costs				
Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
$1,607,318	$1,108,144	$1,952,093	$1,773,406	$2,711,113

Detailed cost estimates for each alternative are included in Appendix A.

6.2.3.3 Disproportionate Cost Analysis – Results

The results of the DCA are summarized graphically in the following figure:



On the figure, the relative benefit ranks for each alternative are indicated by the blue columns, which correspond to the primary (left) axis of the graph. Estimated future lifecycle costs for each alternative are indicated by the superimposed red columns, which correspond to the secondary (right) axis. Therefore, on a benefit per unit cost basis, the preferred alternative would be the one anticipated to have the greatest level of benefit above the estimated cost level. As shown on the figure, the results of the DCA for this FS indicate that Alternatives 3 and 4 would provide the greatest benefit relative to the other alternatives, with each assigned a relative benefit rank of 16. However, the estimated future lifecycle costs for Alternative 4 (MNA, institutional controls, and future property-wide excavation in conjunction with service station upgrades or redevelopment) are lower than any of the other alternatives; therefore, Alternative 4 would provide the greatest benefit and lowest project lifecycle costs relative to the other alternatives evaluated.

7. SUMMARY AND CONCLUSIONS

This FS was prepared in accordance with the MTCA Cleanup Regulations (WAC 173-340) for the purpose of developing and evaluating cleanup action alternatives to enable a cleanup action to be selected for this Site. As part of this effort, Site conditions and contaminant exposure pathways were evaluated, and five cleanup action alternatives were developed and compared in

order to identify the most appropriate action for cleanup of this Site. The conclusions drawn by this FS are based on current Chevron EMC best practices for petroleum contamination remediation, and the professional experience and judgment of the Chevron EMC and Leidos project team.

Each of the five alternatives evaluated for this FS are considered to meet the minimum requirements established by MTCA for cleanup actions and, generally speaking, the five alternatives are considered to be relatively equivalent with regard to the level of benefit they would provide toward the protection of human health and the environment at this Site. All of the alternatives are expected to require a relatively long restoration time frame, due to conditions at this Site such as: the vicinity of service station infrastructure and utilities; the presence of low-volatility petroleum contamination; the presence of petroleum contamination at depths of five or more feet below the water table; and high groundwater recharge rates in this area, which would prevent implementation of a cost-effective remedy to completely remediate the site in a short-term restoration time frame. Therefore all of the alternatives include institutional controls and MNA components to control contaminant exposure pathways and ultimately achieve the Site cleanup standards.

As discussed in Section 6.2.1, land use at this Site is expected to remain as an active service station. Therefore, a shorter restoration time frame to complete remediation of current levels of petroleum contamination in soil and groundwater will not decrease the potential for exposure to hazardous petroleum vapors associated with refueling operations, or the potential for additional petroleum releases to soil or groundwater at the Site.

Based on the evaluation of alternatives presented in the previous sections, the Chevron EMC/Leidos project team recommends selection of Alternative 4 (MNA, institutional controls, and future property-wide excavation in conjunction with service station upgrades or redevelopment) as the preferred cleanup action for this Site. Under this alternative no active remediation would take place at the Site until service station upgrades or a redevelopment of the active service station property would allow a property-wide excavation to be performed. Although this alternative has the potential for the longest restoration time frame (up to 30 years), the restoration time frame is still considered reasonable because an active service station continues to be operated at the Site, and because the potential risks posed by the Site to human health and the environment could be readily controlled by institutional controls. Also, as previously discussed, the restoration time frame for this alternative is highly dependent on the timing of station upgrades or a land-use change on the active station property. Therefore, if this type of event were to occur within a shorter time frame than the 20 year estimate assumed to evaluate this alternative, then the restoration time frame would be reduced accordingly, and could potentially be equivalent or even less than the other alternatives.

8. REFERENCES

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9. REPORT LIMITATIONS

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

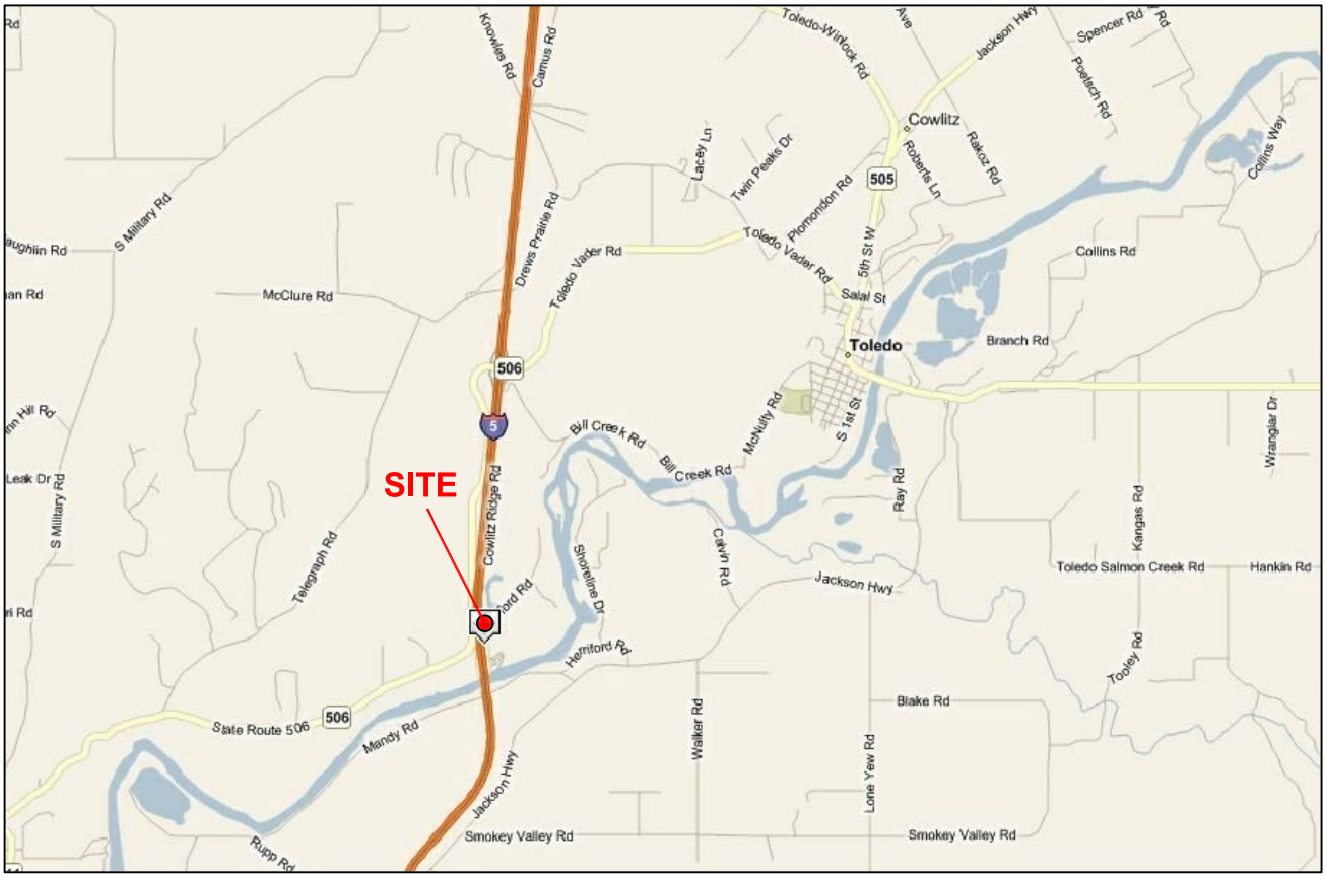
Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from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

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

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

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

Figures



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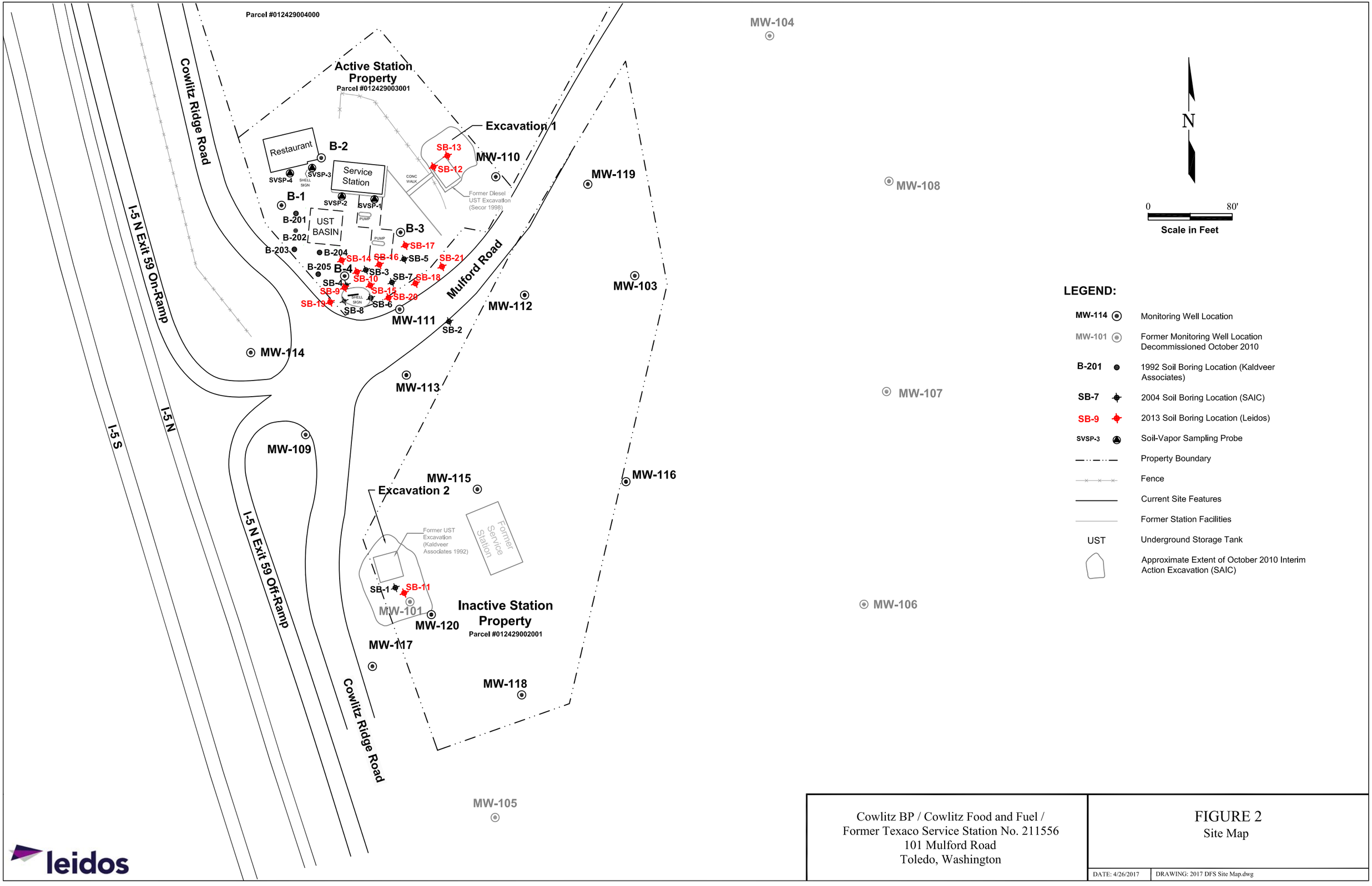
101 Mulford Road
Toledo, Washington

FIGURE 1
Vicinity Map

DATE: 2/21/2014 | DRAWING: 211556_VM.dwg



LEGEND:

MW-114	Monitoring Well Location
MW-101	Former Monitoring Well Location Decommissioned October 2010
B-201	1992 Soil Boring Location (Kaldveer Associates)
SB-7	2004 Soil Boring Location (SAIC)
SB-9	2013 Soil Boring Location (Leidos)
SVSP-3	Soil-Vapor Sampling Probe
	Property Boundary
	Fence
	Current Site Features
	Former Station Facilities
UST	Underground Storage Tank
	Approximate Extent of October 2010 Interim Action Excavation (SAIC)

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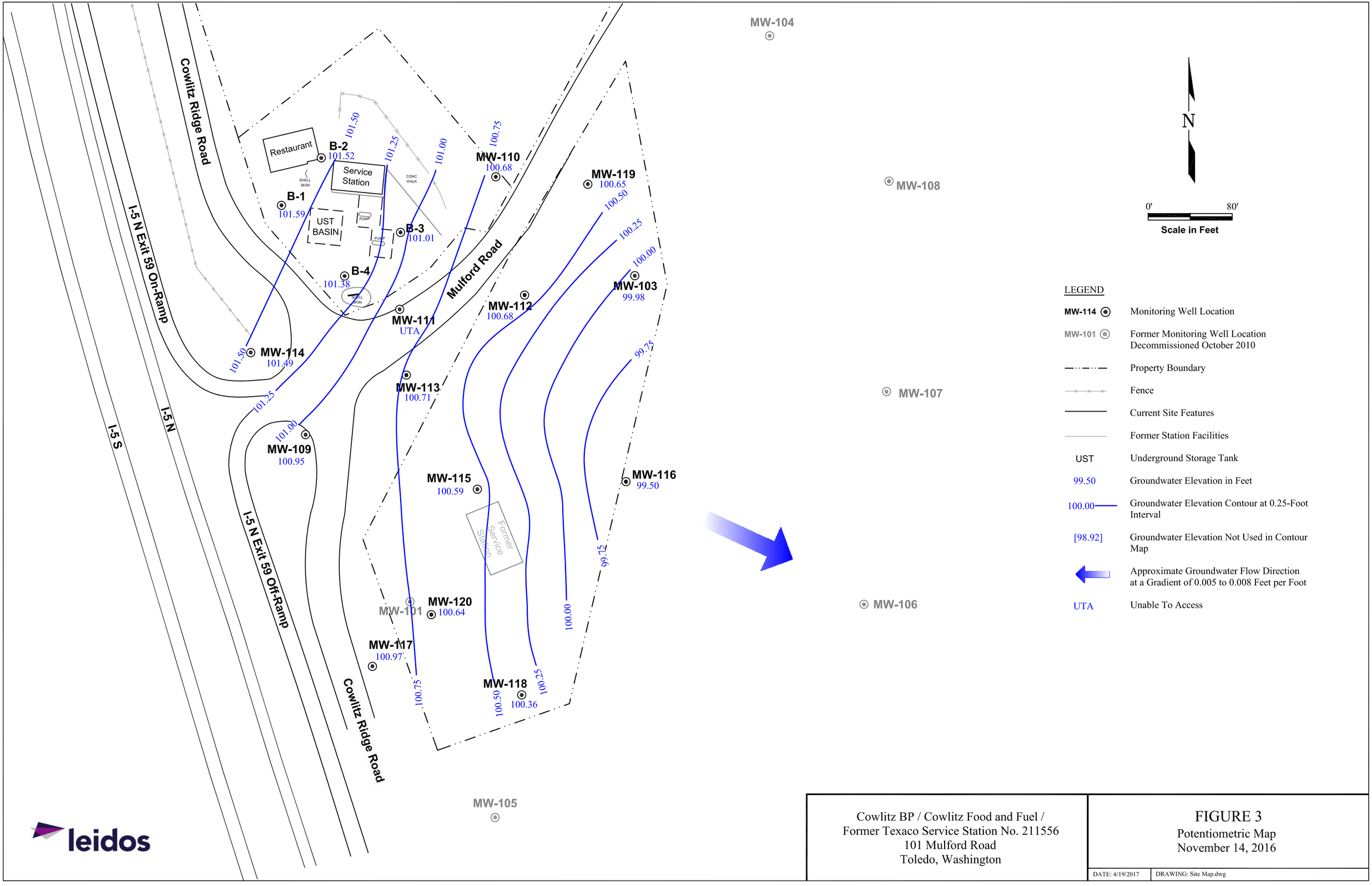
FIGURE 2
Site Map

DATE: 4/26/2017 | DRAWING: 2017 DFS Site Map.dwg



LEGEND

MW-114 ◉	Monitoring Well Location
MW-101 ◉	Former Monitoring Well Location Decommissioned October 2010
—·—·—	Property Boundary
—×—×—	Fence
———	Current Site Features
———	Former Station Facilities
UST	Underground Storage Tank
99.50	Groundwater Elevation in Feet
100.00	Groundwater Elevation Contour at 0.25-Foot Interval
[98.92]	Groundwater Elevation Not Used in Contour Map
←	Approximate Groundwater Flow Direction at a Gradient of 0.005 to 0.008 Feet per Foot
UTA	Unable To Access

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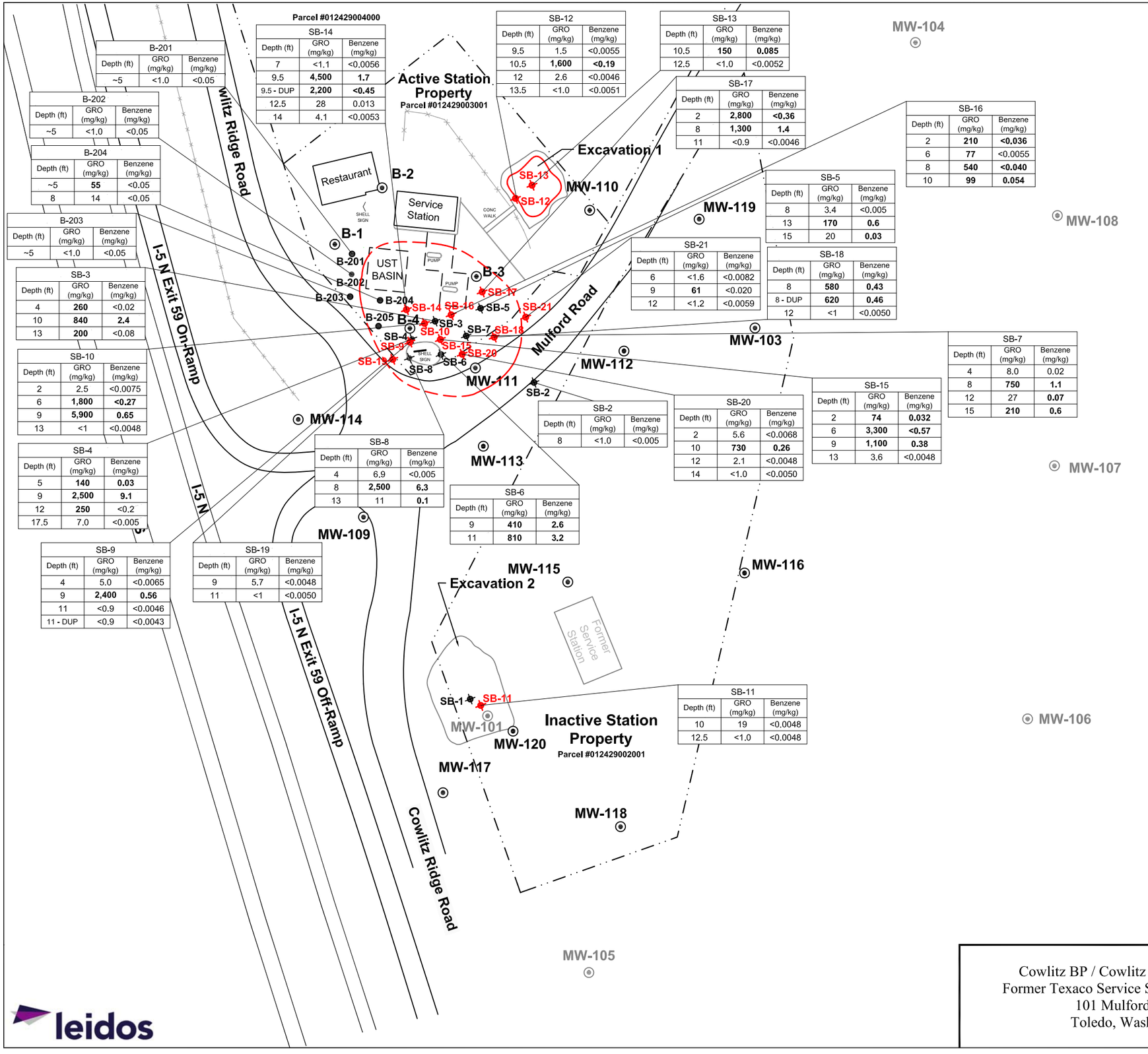
FIGURE 3
Potentiometric Map
November 14, 2016

DATE: 4/19/2017 | DRAWING: Site Map.dwg



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Toledo, Washington

FIGURE 4
Extent of Petroleum Contamination in Soil
Exceeding Proposed Cleanup Levels

DATE: 4/26/2017 | DRAWING: 2017 DFS Site Map.dwg

Parcel #012429004000

Active Station Property
Parcel #012429003001

Cowlitz Ridge Road

I-5 N Exit 59 On-Ramp

Mulford Road

Restaurant

Service Station

SHELL SIGN

CONC WALK

PUMP

PUMP

SHELL SIGN

UST BASIN

Excavation 1

A

A'

B

B'

B-1

B-2

B-3

B-4

B-201

B-202

B-203

B-204

B-205

SB-2

SB-3

SB-4

SB-5

SB-6

SB-7

SB-8

SB-9

SB-10

SB-12

SB-13

SB-14

SB-15

SB-16

SB-17

SB-18

SB-19

SB-20

SB-21

MW-110

MW-111

MW-112

MW-113

MW-114

MW-119

N

0 40'

Scale in Feet

LEGEND:

MW-114	Monitoring Well Location
B-201	1992 Soil Boring Location (Kaldveer Associates)
SB-7	2004 Soil Boring Location (SAIC)
SB-9	2013 Soil Boring Location (Leidos)
	Property Boundary
	Fence
	Current Site Features
UST	Underground Storage Tank
	Approximate Extent of Petroleum Contamination in Soil (Dashed Where Inferred)
A A'	Approximate Geologic Cross Section Transect Line

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FIGURE 5
Geologic Cross-Section Location Map

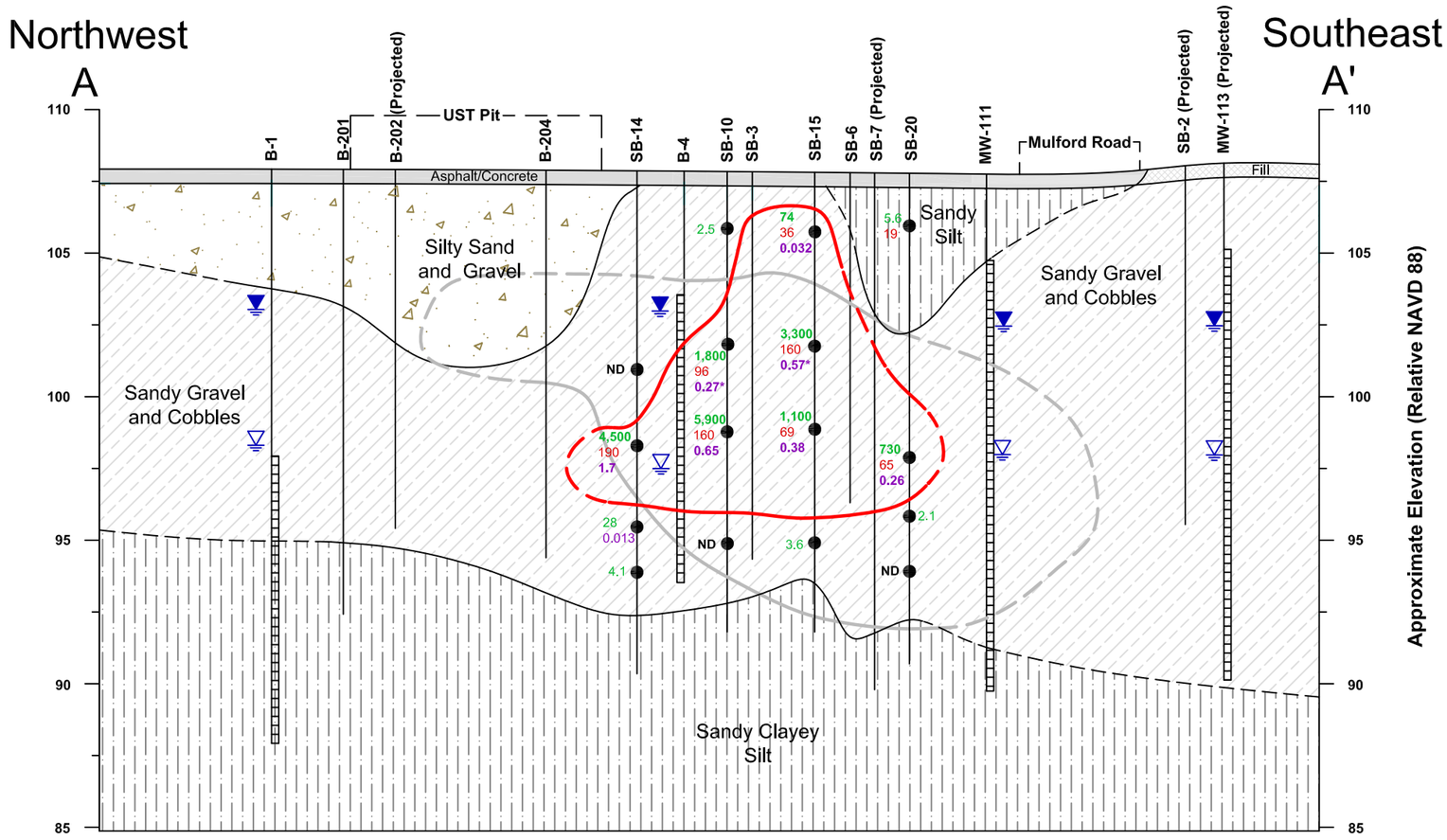
DATE: 4/26/2017 | DRAWING: 2017 DFS Site Map.dwg

LEGEND:

- Boring
- Screened interval
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on November 2013 soil sampling results (dashed where inferred)
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on pre-2005 soil sampling results (dashed where inferred)
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Soil analytical sample location
- 3,300 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 160 — Diesel-range hydrocarbon concentration in mg/kg
- 0.38 — Benzene concentration in mg/kg
- ND — No analytes were detected at or above laboratory detection limits
- **0.38** — Bold indicates analyte concentration exceeding the proposed Site cleanup standard
- **0.27*** — Analyte not detected at or above indicated laboratory detection limit; however, the detection limit exceeded the proposed Site cleanup standard
- Contact line between soil types

SOIL/ROCK CLASSIFICATION LEGEND:

- Concrete or Asphalt
- Brown, fine to coarse Sand and Gravel with some cobbles and silt
- Brown to gray, medium to coarse sandy Gravel and Cobbles
- Brown to greenish gray, fine sandy, clayey Silt



0 15 30 60

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

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FIGURE 6
Geologic Cross-Section A-A'

DATE: 4/28/2017 | DRAWING: 2017 DFS X-Section.dwg

LEGEND:

- Boring
- Screened interval
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on November 2013 soil sampling results (dashed where inferred)
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on pre-2005 soil sampling results (dashed where inferred)
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Soil analytical sample location
- 3,300 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 160 — Diesel-range hydrocarbon concentration in mg/kg
- 0.38 — Benzene concentration in mg/kg
- ND — No analytes were detected at or above laboratory detection limits
- **0.38** — Bold indicates analyte concentration exceeding the proposed Site cleanup standard
- 0.27* — Analyte not detected at or above indicated laboratory detection limit; however, the detection limit exceeded the proposed Site cleanup standard
- Contact line between soil types

SOIL/ROCK CLASSIFICATION LEGEND:

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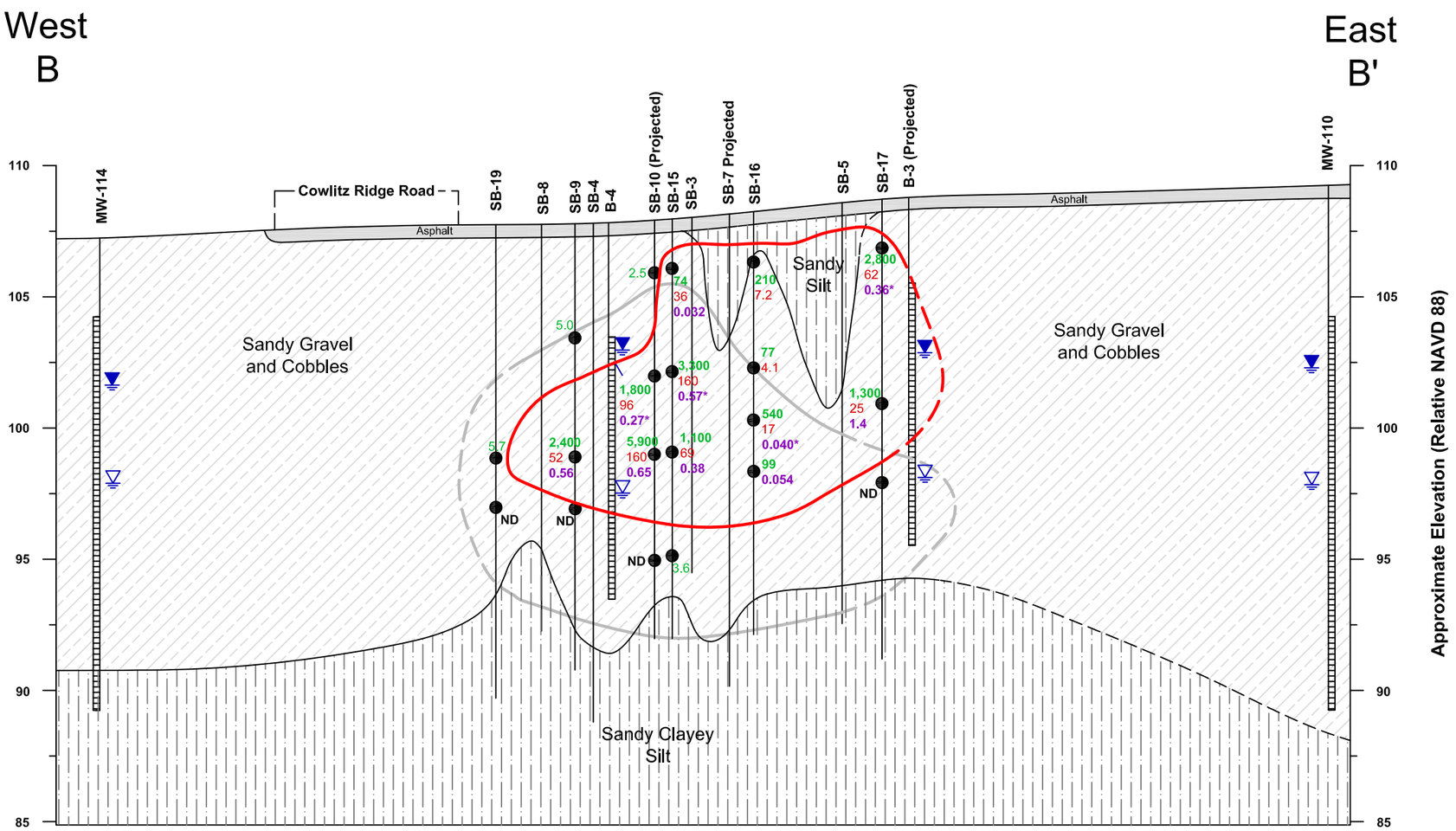
- Brown to gray, medium to coarse sandy Gravel and Cobbles
- Brown to greenish gray, fine sandy, clayey Silt



0 15 30 60

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

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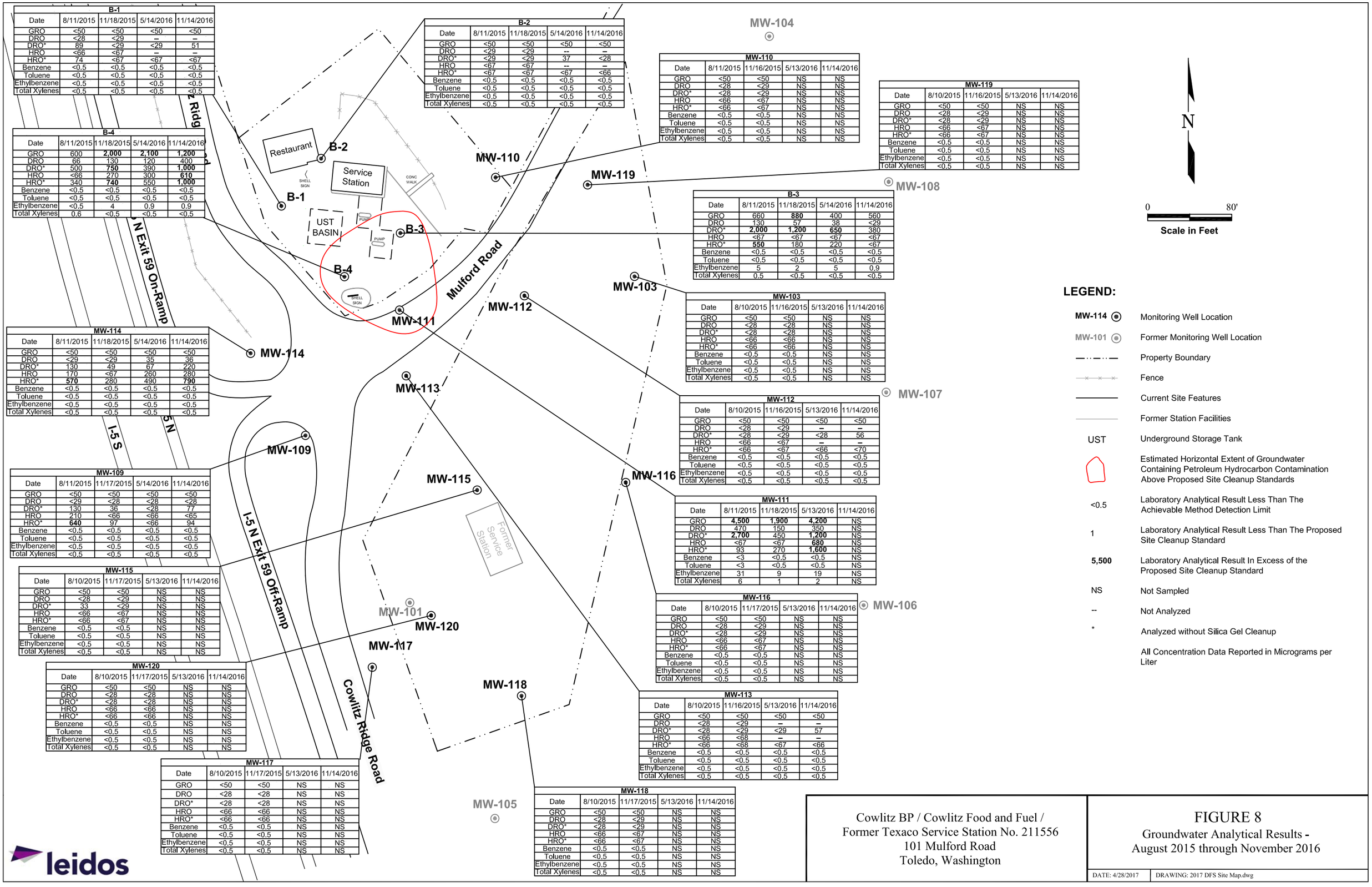
FIGURE 7

Geologic Cross-Section B-B'

DATE: 4/28/2017 | DRAWING: 2017 DFS X-Section.dwg



B-1

Date	8/11/2015	11/18/2015	5/14/2016	11/14/2016
GRO	<50	<50	<50	<50
DRO	<28	<29	–	–
DRO*	89	<29	<29	51
HRO	<66	<67	–	–
HRO*	74	<67	<67	<67
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5
Total Xylenes	<0.5	<0.5	<0.5	<0.5

B-2

Date	8/11/2015	11/18/2015	5/14/2016	11/14/2016
GRO	<50	<50	<50	<50
DRO	<29	<29	--	–
DRO*	<29	<29	37	<28
HRO	<67	<67	--	–
HRO*	<67	<67	<67	<66
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5
Total Xylenes	<0.5	<0.5	<0.5	<0.5

B-3

Date	8/11/2015	11/18/2015	5/14/2016	11/14/2016
GRO	660	**880**	400	560
DRO	130	57	38	<29
DRO*	**2,000**	**1,200**	**650**	380
HRO	<67	<67	<67	<67
HRO*	**550**	180	220	<67
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	5	2	5	0.9
Total Xylenes	0.5	<0.5	<0.5	<0.5

B-4

Date	8/11/2015	11/18/2015	5/14/2016	11/14/2016
GRO	600	**2,000**	**2,100**	**1,200**
DRO	66	130	120	400
DRO*	500	**750**	390	**1,000**
HRO	<66	270	300	**610**
HRO*	340	**740**	550	**1,000**
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	4	0.9	0.9
Total Xylenes	0.6	<0.5	<0.5	<0.5

MW-103

Date	8/10/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<28	NS	NS
DRO*	<28	<28	NS	NS
HRO	<66	<66	NS	NS
HRO*	<66	<66	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-104

Date	8/10/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-105

Date	8/10/2015	11/17/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-106

Date	8/10/2015	11/17/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-107

Date	8/10/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	<50	<50
DRO	<28	<29	–	–
DRO*	<28	<29	<28	56
HRO	<66	<67	–	–
HRO*	<66	<67	<66	<70
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5
Total Xylenes	<0.5	<0.5	<0.5	<0.5

MW-108

Date	8/10/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-109

Date	8/11/2015	11/17/2015	5/14/2016	11/14/2016
GRO	<50	<50	<50	<50
DRO	<29	<28	<28	<28
DRO*	130	36	<28	77
HRO	210	<66	<66	<65
HRO*	**640**	97	<66	94
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5
Total Xylenes	<0.5	<0.5	<0.5	<0.5

MW-110

Date	8/11/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-111

Date	8/11/2015	11/18/2015	5/13/2016	11/14/2016
GRO	**4,500**	**1,900**	**4,200**	NS
DRO	470	150	350	NS
DRO*	**2,700**	450	**1,200**	NS
HRO	<67	<67	**680**	NS
HRO*	93	270	**1,600**	NS
Benzene	<3	<0.5	<0.5	NS
Toluene	<3	<0.5	<0.5	NS
Ethylbenzene	31	9	19	NS
Total Xylenes	6	1	2	NS

MW-112

Date	8/10/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	<50	<50
DRO	<28	<29	–	–
DRO*	<28	<29	<28	56
HRO	<66	<67	–	–
HRO*	<66	<67	<66	<70
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5
Total Xylenes	<0.5	<0.5	<0.5	<0.5

MW-113

Date	8/10/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	<50	<50
DRO	<28	<29	–	–
DRO*	<28	<29	<29	57
HRO	<66	<68	–	–
HRO*	<66	<68	<67	<66
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5
Total Xylenes	<0.5	<0.5	<0.5	<0.5

MW-114

Date	8/11/2015	11/18/2015	5/14/2016	11/14/2016
GRO	<50	<50	<50	<50
DRO	<29	<29	35	36
DRO*	130	49	67	220
HRO	170	<67	260	280
HRO*	**570**	280	490	**790**
Benzene	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5
Total Xylenes	<0.5	<0.5	<0.5	<0.5

MW-115

Date	8/10/2015	11/17/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	33	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-116

Date	8/10/2015	11/17/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-117

Date	8/10/2015	11/17/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<28	NS	NS
DRO*	<28	<28	NS	NS
HRO	<66	<66	NS	NS
HRO*	<66	<66	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-118

Date	8/10/2015	11/17/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-119

Date	8/10/2015	11/16/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<29	NS	NS
DRO*	<28	<29	NS	NS
HRO	<66	<67	NS	NS
HRO*	<66	<67	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

MW-120

Date	8/10/2015	11/17/2015	5/13/2016	11/14/2016
GRO	<50	<50	NS	NS
DRO	<28	<28	NS	NS
DRO*	<28	<28	NS	NS
HRO	<66	<66	NS	NS
HRO*	<66	<66	NS	NS
Benzene	<0.5	<0.5	NS	NS
Toluene	<0.5	<0.5	NS	NS
Ethylbenzene	<0.5	<0.5	NS	NS
Total Xylenes	<0.5	<0.5	NS	NS

LEGEND:

MW-114	Monitoring Well Location
MW-101	Former Monitoring Well Location
	Property Boundary
	Fence
	Current Site Features
	Former Station Facilities
UST	Underground Storage Tank
	Estimated Horizontal Extent of Groundwater Containing Petroleum Hydrocarbon Contamination Above Proposed Site Cleanup Standards
<0.5	Laboratory Analytical Result Less Than The Achievable Method Detection Limit
1	Laboratory Analytical Result Less Than The Proposed Site Cleanup Standard
5,500	Laboratory Analytical Result In Excess of the Proposed Site Cleanup Standard
NS	Not Sampled
--	Not Analyzed
*	Analyzed without Silica Gel Cleanup
	All Concentration Data Reported in Micrograms per Liter

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Former Texaco Service Station No. 211556
101 Mulford Road
Toledo, Washington

FIGURE 8
Groundwater Analytical Results -
August 2015 through November 2016

DATE: 4/28/2017 | DRAWING: 2017 DFS Site Map.dwg

Parcel #012429004000

Active Station Property
Parcel #012429003001

No Air sparge or SVE wells planned for the area between the UST basin and pump islands due to the presence of subsurface product supply piping.

Cowlitz Ridge Road

I-5 N Exit 59 On-Ramp

Mulford Road

Restaurant

Service Station

SHELL SIGN

CONC WALK

PUMP

PUMP

UST BASIN

SHELL SIGN

Excavation 1

B-1

B-2

B-3

B-4

B-201

B-202

B-203

B-204

B-205

SB-2

SB-3

SB-4

SB-5

SB-6

SB-7

SB-8

SB-9

SB-10

SB-12

SB-13

SB-14

SB-15

SB-16

SB-17

SB-18

SB-19

SB-20

SB-21

MW-110

MW-111

MW-112

MW-113

MW-114

MW-119

N

0 40'

Scale in Feet

LEGEND:

- MW-114 — Monitoring Well Location
- B-201 — 1992 Soil Boring Location (Kaldveer Associates)
- SB-7 — 2004 Soil Boring Location (SAIC)
- SB-9 — 2013 Soil Boring Location (Leidos)
- Property Boundary
- Fence
- Current Site Features
- UST — Underground Storage Tank
- Approximate Extent of Petroleum Contamination in Soil (Dashed Where Inferred)
- Anticipated Air Sparge Zone of Influence (20' Diameter). SVE Wells Omitted for Clarity

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101 Mulford Road
Toledo, Washington

FIGURE 9
Alternative 1
Conceptual Layout of Air Sparge Wells

DATE: 4/26/2017 | DRAWING: 2017 DFS Site Map.dwg

Parcel #012429004000

Active Station Property
Parcel #012429003001

Cowlitz Ridge Road

I-5 N Exit 59 On-Ramp

Mulford Road

No excavation planned for the area in the vicinity of the UST basin and pump islands due to the presence of subsurface product supply piping and other service station infrastructure.

Partial excavation would be expected to maintain minimum 10 foot setback from edges of UST basin to prevent potential undermining of tanks due to sloughing of pea gravel backfill.

Restaurant

Service Station

SHELL SIGN

CONC WALK

UST BASIN

PUMP

PUMP

SHELL SIGN

Excavation 1

A

A'

B

B'

B-1

B-2

B-3

B-4

B-201

B-202

B-203

B-204

B-205

SB-2

SB-3

SB-4

SB-5

SB-6

SB-7

SB-8

SB-9

SB-10

SB-12

SB-13

SB-14

SB-15

SB-16

SB-17

SB-18

SB-19

SB-20

SB-21

MW-110

MW-111

MW-112

MW-113

MW-114

MW-119

N

0 40'

Scale in Feet

LEGEND:

- MW-114 — Monitoring Well Location
- B-201 — 1992 Soil Boring Location (Kaldveer Associates)
- SB-7 — 2004 Soil Boring Location (SAIC)
- SB-9 — 2013 Soil Boring Location (Leidos)
- Property Boundary
- Fence
- Current Site Features
- UST — Underground Storage Tank
- Approximate Extent of Petroleum Contamination in Soil (Dashed Where Inferred)
- Estimated Extent of Partial Excavation
- A — A' Approximate Geologic Cross-Section Transect Line

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101 Mulford Road
Toledo, Washington

FIGURE 10

Alternatives 2 & 3
Estimated Extent of Partial Excavation
(Plan View)

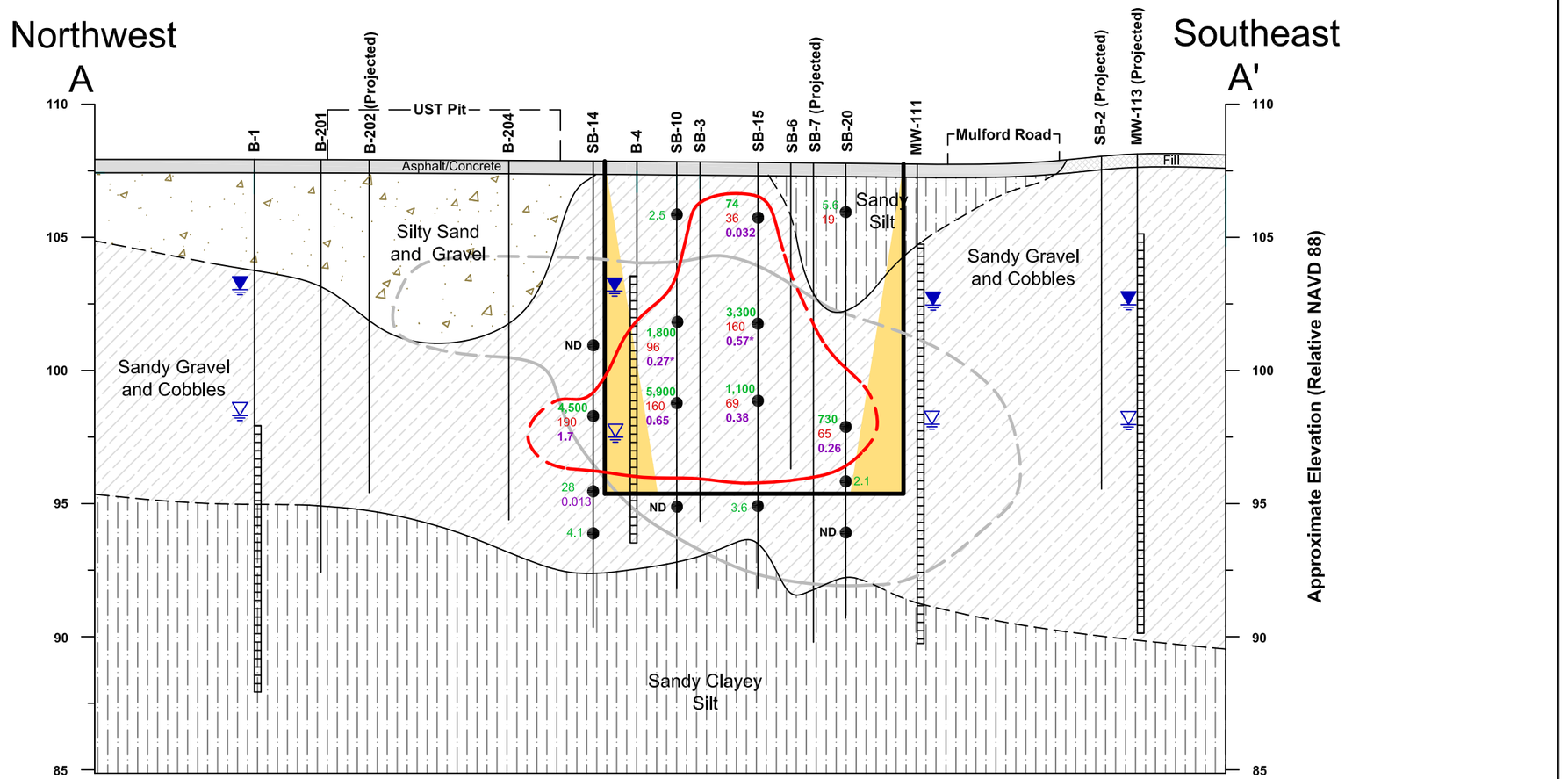
DATE: 4/28/2017 | DRAWING: 2017 DFS Site Map.dwg

LEGEND:

- Boring
- Screened interval
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on 2013 soil sampling results (dashed where inferred)
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on pre-2005 soil sampling results (not shown, see Table 1)
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Soil analytical sample location
- 28 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 10 — Diesel-range hydrocarbon concentration in mg/kg
- 0.001 — Benzene concentration in mg/kg
- ND — No analytes were detected at or above laboratory detection limits
- **0.13** — Bold indicates analyte concentration exceeding the proposed Site cleanup standard
- **0.05*** — Analyte not detected at or above indicated laboratory detection limit; however, the detection limit exceeded the proposed Site cleanup standard
- Contact line between soil types
- Estimated extent of partial excavation
- Area within anticipated excavation boundary that may be inaccessible due to sidewall sloping requirements (area shown assumes standard sidewall slope of 1:1)

SOIL/ROCK CLASSIFICATION LEGEND:

- Concrete or Asphalt
- Brown, fine to coarse Sand and Gravel with some Cobbles and Silt
- Brown to gray, medium to coarse sandy Gravel and Cobbles
- Brown to greenish gray, fine sandy, clayey SILT



0 15 30 60

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

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Former Texaco Service Station No. 211556
101 Mulford Road
Toledo, Washington

FIGURE 11
Alternatives 2 & 3
Estimated Extent of Partial Excavation
(Cross-Sectionional View A-A')

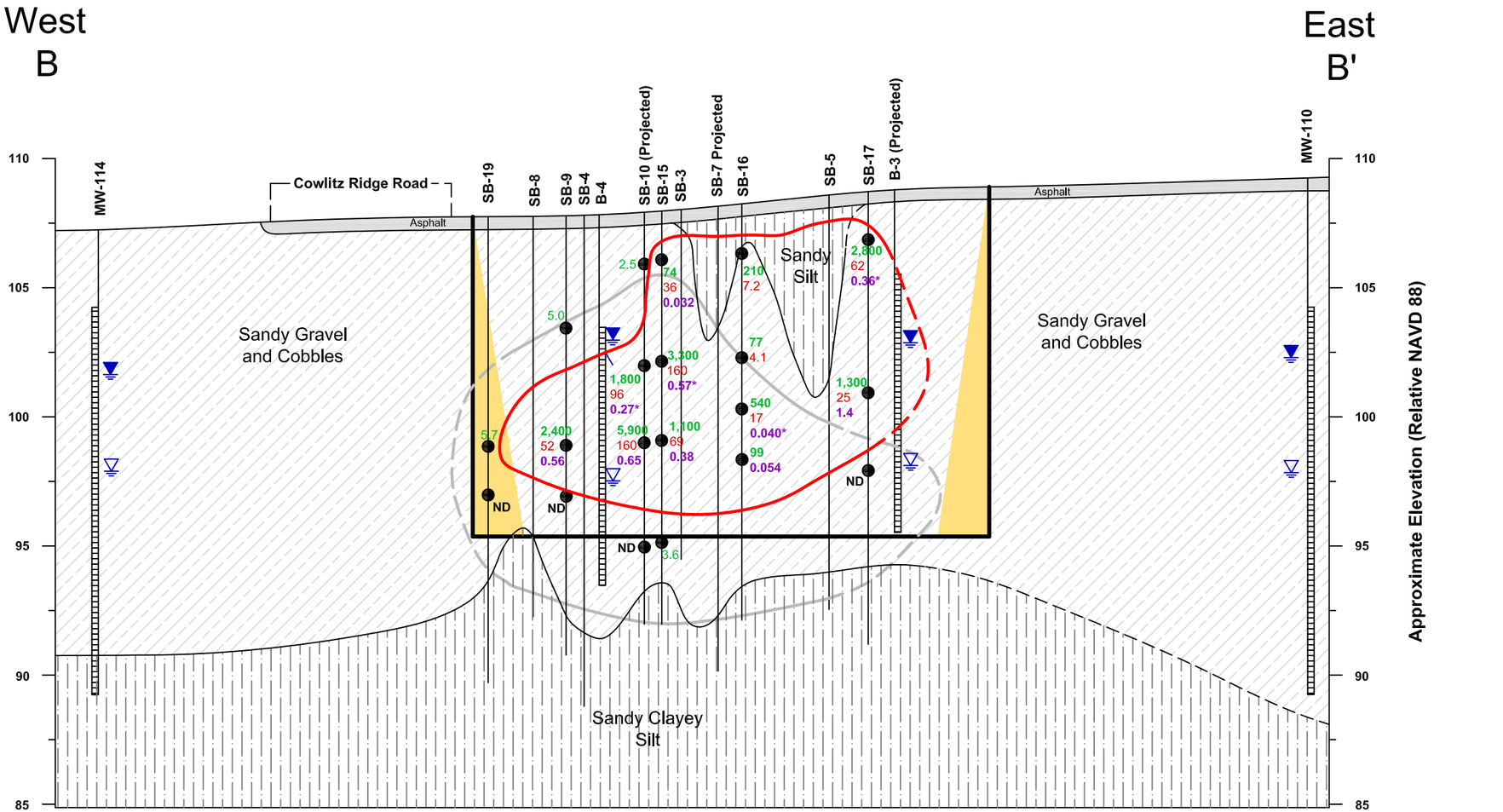
DATE: 4/28/2017 | DRAWING: 2017 DFS X-Section.dwg

LEGEND:

- Boring
- Screened interval
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on 2013 soil sampling results (dashed where inferred)
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on pre-2005 soil sampling results (not shown, see Table 1)
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Soil analytical sample location
- 28 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 10 — Diesel-range hydrocarbon concentration in mg/kg
- 0.001 — Benzene concentration in mg/kg
- ND — No analytes were detected at or above laboratory detection limits
- **0.13** — Bold indicates analyte concentration exceeding the proposed Site cleanup standard
- **0.05*** — Analyte not detected at or above indicated laboratory detection limit; however, the detection limit exceeded the proposed Site cleanup standard
- Contact line between soil types
- Estimated extent of partial excavation
- Area within anticipated excavation boundary that may be inaccessible due to sidewall sloping requirements (area shown assumes standard sidewall slope of 1:1)

SOIL/ROCK CLASSIFICATION LEGEND:

- Concrete or Asphalt
- Brown, fine to coarse Sand and Gravel with some Cobbles and Silt
- Brown to gray, medium to coarse sandy Gravel and Cobbles
- Brown to greenish gray, fine sandy, clayey SILT



0 15 30 60

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

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FIGURE 12
Alternatives 2 & 3
Estimated Extent of Partial Excavation
(Cross-Sectionional View B-B')

DATE: 4/28/2017 | DRAWING: 2017 DFS X-Section.dwg

Parcel #012429004000

Active Station Property
Parcel #012429003001

No excavation planned for the area in the vicinity of the UST basin and pump islands due to the presence of subsurface product supply piping and other service station infrastructure.

Partial excavation would be expected to maintain minimum 10 foot setback from edges of UST basin to prevent potential undermining of tanks due to sloughing of pea gravel backfill.

Cowlitz Ridge Road

I-5 N Exit 59 On-Ramp

Mulford Road

Restaurant

Service Station

SHELL SIGN

CONC WALK

PUMP

PUMP

UST BASIN

Excavation 1

B-1
B-2
B-3
B-4
B-201
B-202
B-203
B-204
B-205

SB-2
SB-3
SB-4
SB-5
SB-6
SB-7
SB-8
SB-9
SB-10
SB-12
SB-13
SB-14
SB-15
SB-16
SB-17
SB-18
SB-19
SB-20
SB-21

MW-110
MW-111
MW-112
MW-113
MW-114
MW-119

N

0 40'

Scale in Feet

LEGEND:

- MW-114 — Monitoring Well Location
- B-201 — 1992 Soil Boring Location (Kaldveer Associates)
- SB-7 — 2004 Soil Boring Location (SAIC)
- SB-9 — 2013 Soil Boring Location (Leidos)
- Property Boundary
- Fence
- Current Site Features
- UST — Underground Storage Tank
- Approximate Extent of Petroleum Contamination in Soil (Dashed Where Inferred)
- Estimated Extent of Partial Excavation
- Anticipated Air Sparge Zone of Influence (20' Diameter). SVE Wells Omitted for Clarity

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101 Mulford Road
Toledo, Washington

FIGURE 13
Alternative 3
Estimated Extent of Partial Excavation and Air Sparge Well Layout

DATE: 4/28/2017 | DRAWING: 2017 DFS Site Map.dwg

Parcel #012429004000

Active Station Property
Parcel #012429003001

Cowlitz Ridge Road

I-5 N Exit 59 On-Ramp

Mulford Road

Restaurant

Service Station

SHELL SIGN

CONC WALK

Excavation 1

UST BASIN

PUMP

PUMP

SHELL SIGN

A

A'

B

B'

B-1

B-2

B-3

B-4

B-201

B-202

B-203

B-204

B-205

SB-2

SB-3

SB-4

SB-5

SB-6

SB-7

SB-8

SB-9

SB-10

SB-12

SB-13

SB-14

SB-15

SB-16

SB-17

SB-18

SB-19

SB-20

SB-21

MW-110

MW-111

MW-112

MW-113

MW-114

MW-119

N

0 40'

Scale in Feet

LEGEND:

- MW-114 — Monitoring Well Location
- B-201 — 1992 Soil Boring Location (Kaldveer Associates)
- SB-7 — 2004 Soil Boring Location (SAIC)
- SB-9 — 2013 Soil Boring Location (Leidos)
- Property Boundary
- Fence
- Current Site Features
- UST — Underground Storage Tank
- Approximate Extent of Petroleum Contamination in Soil (Dashed Where Inferred)
- Estimated Extent of Property-Wide Excavation
- A — A' Approximate Geologic Cross-Section Transect Line

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Toledo, Washington

FIGURE 14
Alternatives 4 & 5
Estimated Extent of Property-Wide Excavation (Plan View)

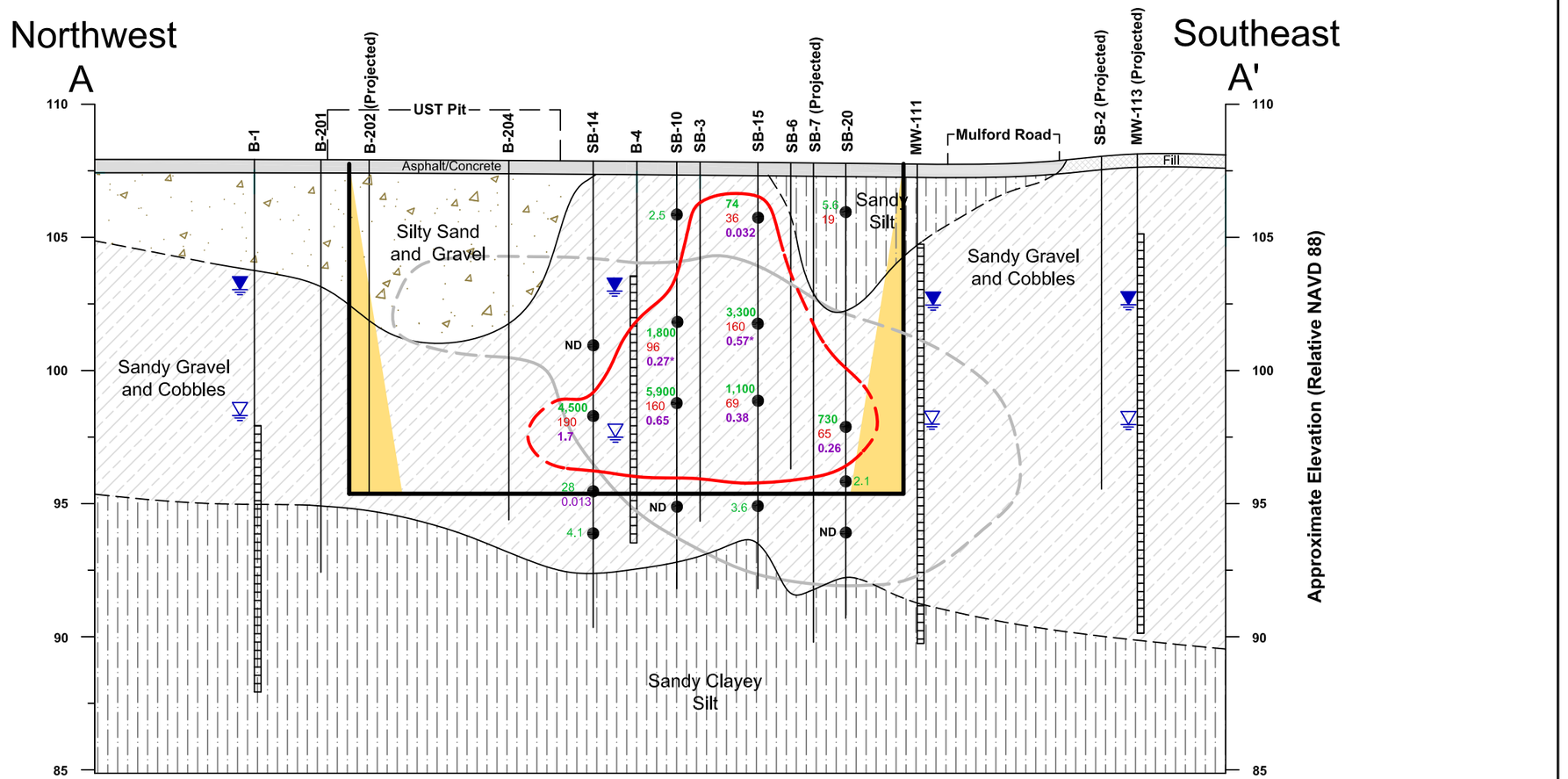
DATE: 4/26/2017 | DRAWING: 2017 DFS Site Map.dwg

LEGEND:

- Boring
- Screened interval
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on 2013 soil sampling results (dashed where inferred)
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on pre-2005 soil sampling results (not shown, see Table 1)
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Soil analytical sample location
- 28 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 10 — Diesel-range hydrocarbon concentration in mg/kg
- 0.001 — Benzene concentration in mg/kg
- ND — No analytes were detected at or above laboratory detection limits
- **0.13** — Bold indicates analyte concentration exceeding the proposed Site cleanup standard
- 0.05* — Analyte not detected at or above indicated laboratory detection limit; however, the detection limit exceeded the proposed Site cleanup standard
- Contact line between soil types
- Estimated extent of partial excavation
- Area within anticipated excavation boundary that may be inaccessible due to sidewall sloping requirements (area shown assumes standard sidewall slope of 1:1)

SOIL/ROCK CLASSIFICATION LEGEND:

- Concrete or Asphalt
- Brown, fine to coarse Sand and Gravel with some Cobbles and Silt
- Brown to gray, medium to coarse sandy Gravel and Cobbles
- Brown to greenish gray, fine sandy, clayey SILT



0 15 30 60

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

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Toledo, Washington

FIGURE 15
Alternatives 4 & 5
Estimated Extent of Property-Wide Excavation
(Cross-Sectionional View A-A')

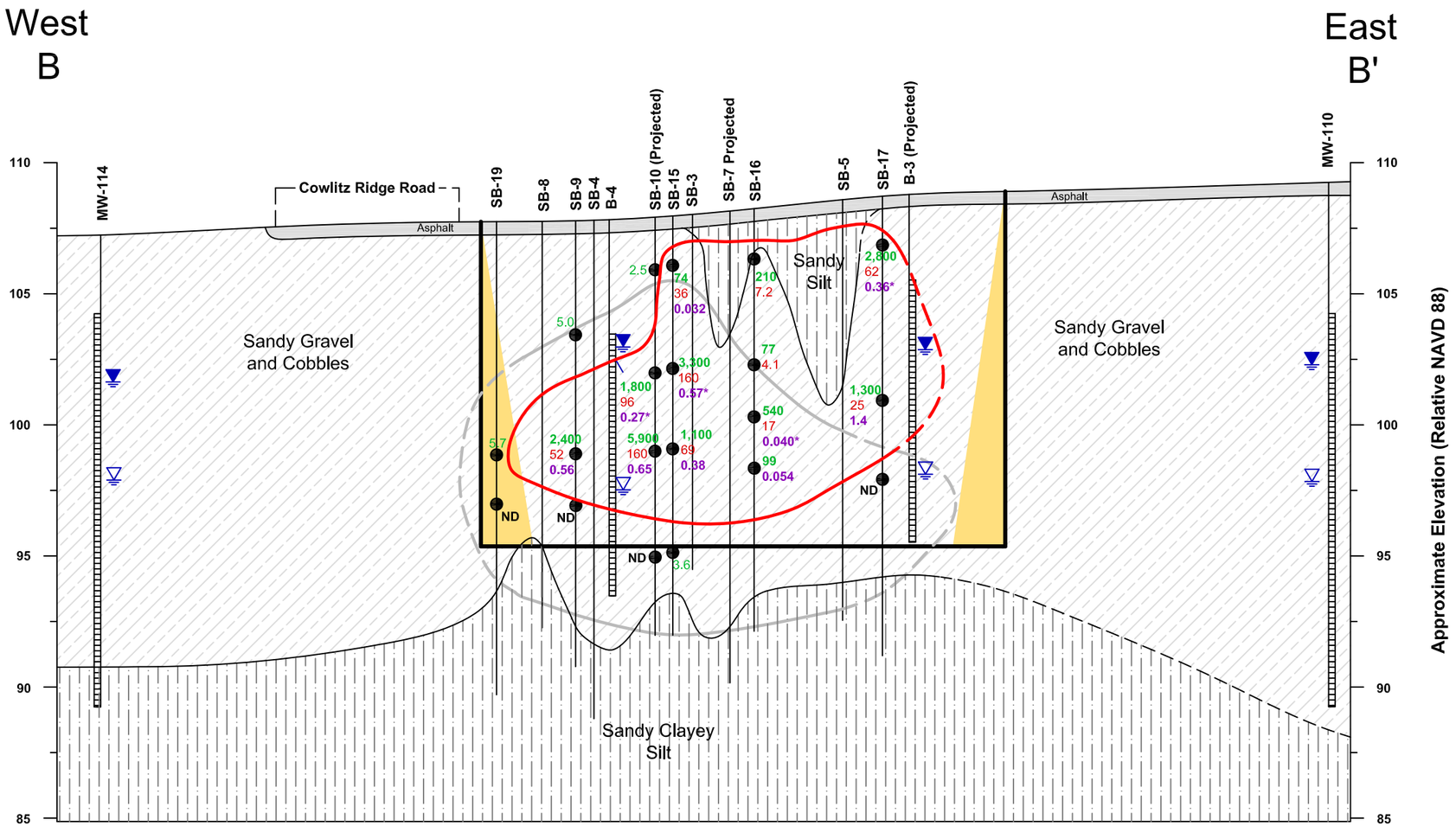
DATE: 4/28/2017 | DRAWING: 2017 DFS X-Section.dwg

LEGEND:

- Boring
- Screened interval
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on 2013 soil sampling results (dashed where inferred)
- Estimated extent of soil contamination exceeding proposed Site cleanup standards, based on pre-2005 soil sampling results (not shown, see Table 1)
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Soil analytical sample location
- 28 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 10 — Diesel-range hydrocarbon concentration in mg/kg
- 0.001 — Benzene concentration in mg/kg
- ND — No analytes were detected at or above laboratory detection limits
- **0.13** — Bold indicates analyte concentration exceeding the proposed Site cleanup standard
- **0.05*** — Analyte not detected at or above indicated laboratory detection limit; however, the detection limit exceeded the proposed Site cleanup standard
- Contact line between soil types
- Estimated extent of partial excavation
- Area within anticipated excavation boundary that may be inaccessible due to sidewall sloping requirements (area shown assumes standard sidewall slope of 1:1)

SOIL/ROCK CLASSIFICATION LEGEND:

- Concrete or Asphalt
- Brown, fine to coarse Sand and Gravel with some Cobbles and Silt
- Brown to gray, medium to coarse sandy Gravel and Cobbles
- Brown to greenish gray, fine sandy, clayey SILT



0 15 30 60

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

leidos

Cowlitz BP / Cowlitz Food and Fuel /
Former Texaco Service Station No. 211556
101 Mulford Road
Toledo, Washington

FIGURE 16
Alternatives 4 & 5
Estimated Extent of Property-Wide Excavation
(Cross-Sectionional View B-B')

DATE: 4/28/2017 | DRAWING: 2017 DFS X-Section.dwg

Tables

TABLE 1
SUMMARY OF HISTORICAL SOIL ANALYTICAL DATA
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

SAMPLE ID	DEPTH (ft.)	DATE SAMPLED	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Benzo(a) anthracene[1] (mg/kg)	Benzo(a) pyrene[1] (mg/kg)	Benzo(b) fluoranthene[1] (mg/kg)	Benzo(k) fluoranthene[1] (mg/kg)	Chrysene[1] (mg/kg)	Dibenz(a,h) anthracene[1] (mg/kg)	Indeno (1,2,3-cd) pyrene[1] (mg/kg)	Total Toxicity of Benzo(a) pyrene[2] (mg/kg)	Total Lead (mg/kg)
B-201-80	UNK	pre 2004	<1.0	--	--	<0.05	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--
B-202-80	UNK	pre 2004	<1.0	--	--	<0.05	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--
B-203-65	UNK	pre 2004	<1.0	--	--	<0.05	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--
B-204-75	UNK	pre 2004	**55**	--	--	<0.05	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--
B-204-125	UNK	pre 2004	14	--	--	<0.05	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--
SB-2	8	12/1/2004	<1.0	<3	<10	<0.005	<0.005	<0.005	<0.02	--	--	--	--	--	--	--	--	--
SB-3-4	4	12/1/2004	**260**	62	37	<0.02	<0.02	0.1	0.3	--	--	--	--	--	--	--	--	8.76
SB-3-10	10	12/1/2004	**840**	34	14	**2.4**	0.7	4.9	**9.7**	--	--	--	--	--	--	--	--	5.50
SB-3-13	13	12/1/2004	**200**	--	--	<0.08	<0.1	0.4	0.9	--	--	--	--	--	--	--	--	3.05
SB-4-5	5	12/1/2004	**140**	63	75	**0.03**	<0.02	0.07	<0.2	--	--	--	--	--	--	--	--	21.1
SB-4-9	9	12/1/2004	**2500**	130	<100	**9.1**	2.9	**7.5**	<8	--	--	--	--	--	--	--	--	5.90
SB-4-12	12	12/1/2004	**250**	--	--	<0.2	<0.2	0.6	0.8	--	--	--	--	--	--	--	--	2.93
SB-4-17.5	17.5	12/1/2004	7.0	<3.0	21	<0.005	<0.005	0.01	<0.02	--	--	--	--	--	--	--	--	8.09
SB-5-8	8	12/2/2004	3.4	--	--	<0.005	<0.005	0.006	<0.02	--	--	--	--	--	--	--	--	4.94
SB-5-13	13	12/2/2004	**170**	3.4	<10	**0.6**	<0.2	0.7	0.8	--	--	--	--	--	--	--	--	4.13
SB-5-15	15	12/2/2004	20	--	--	**0.03**	<0.005	0.1	0.1	--	--	--	--	--	--	--	--	4.89
SB-6-9	9	12/2/2004	**410**	--	--	**2.6**	0.8	3.4	4.5	--	--	--	--	--	--	--	--	6.82
SB-6-11	11	12/2/2004	**810**	--	--	**3.2**	0.8	4.7	6.3	--	--	--	--	--	--	--	--	3.4
SB-7-4	4	12/2/2004	8	<3.0	<10	0.02	<0.005	0.02	<0.02	--	--	--	--	--	--	--	--	4.89
D-120204-1	4	12/2/2004	7.6	<3.0	<10	0.02	<0.02	0.01	<0.02	--	--	--	--	--	--	--	--	4.76
SB-7-7.5	8	12/2/2004	**750**	--	--	**1.1**	<0.4	3.1	3	--	--	--	--	--	--	--	--	5.05
SB-7-12	12	12/2/2004	27	<3.0	<10	0.07	<0.02	0.05	0.1	--	--	--	--	--	--	--	--	2.77
SB-7-15	15	12/2/2004	**130**	--	--	**0.6**	<0.2	0.4	0.7	--	--	--	--	--	--	--	--	3.02
D-120204-2	15	12/2/2004	**210**	--	--	**0.5**	<0.08	0.6	1	--	--	--	--	--	--	--	--	2.45
SB-8-4	4	12/2/2004	6.9	<3.0	<10	<0.005	<0.005	0.008	<0.02	--	--	--	--	--	--	--	--	4.91
SB-8-4 Matrix Spike	4	12/2/2004	3.5	<3.0	<10	<0.005	<0.005	<0.005	<0.02	--	--	--	--	--	--	--	--	7.02
SB-8-4 Matrix Dup	4	12/2/2004	8.9	<3.0	<10	<0.005	<0.005	0.01	0.02	--	--	--	--	--	--	--	--	7.45
SB-8-8	8	12/2/2004	**2500**	130	<20	**6.3**	<4	**6.1**	**11**	--	--	--	--	--	--	--	--	6.52
SB-8-13	13	12/2/2004	11	<3.0	14	**0.1**	0.01	0.01	0.04	--	--	--	--	--	--	--	--	7.87
EX1-10-5	5	10/6/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-11-5	5	10/6/2010	16	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-12-3	3	10/6/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-13-3	3	10/6/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-14-9.5	9.5	10/6/2010	<10	140	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-15-5	5	10/6/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-16-3	3	10/6/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-23-5	5	10/6/2010	22	160	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-24-3	3	10/6/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-25-9.5	9.5	10/6/2010	28	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-26-5	5	10/6/2010	24	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-27-3	5	10/6/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-28-9.5	9.5	10/7/2010	12	<50	<100	<0.02	<0.05	<0.05	<0.15	0.0010	<0.00084	0.0016	<0.00084	0.0026	<0.00084	<0.00084	0.001	7.91
EX1-29-9.5	9.5	10/7/2010	25	<50	<100	<0.02	<0.05	<0.05	<0.15	0.00091	0.0011	0.0017	<0.00081	0.0014	<0.00081	0.00088	0.002	11.4
EX1-31-5	5	10/7/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-32-3	3	10/7/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-35-5	5	10/7/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-36-3	3	10/7/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-37-6	6	10/7/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--

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COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

SAMPLE ID	DEPTH (ft.)	DATE SAMPLED	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Benzo(a) anthracene[1] (mg/kg)	Benzo(a) pyrene[1] (mg/kg)	Benzo(b) fluoranthene[1] (mg/kg)	Benzo(k) fluoranthene[1] (mg/kg)	Chrysene[1] (mg/kg)	Dibenz(a,h) anthracene[1] (mg/kg)	Indeno (1,2,3-cd) pyrene[1] (mg/kg)	Total Toxicity of Benzo(a) pyrene[2] (mg/kg)	Total Lead (mg/kg)
EX1-38-9	9	10/7/2010	22	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-39-3	3	10/7/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-40-10	10	10/7/2010	20	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-41-5	5	10/7/2010	10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-42-3	3	10/7/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-49-9	9	10/8/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-50-9	9	10/8/2010	19	120	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-52-9.5	9.5	10/8/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-52-9.5 Dup	9.5	10/8/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-53-10	10	10/11/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-53-10 Dup	10	10/11/2010	<10	--	--	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-54-10	10	10/11/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-54-10 Dup	10	10/11/2010	--	<50	<100	--	--	--	<0.15	--	--	--	--	--	--	--	--	--
EX1-56-10	10	10/12/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-56-10 Dup	10	10/12/2010	<10	--	--	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-57-10	10	10/12/2010	26	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-57-10 Dup	10	10/12/2010	--	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--
EX1-58-10	10	10/12/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-59-5	5	10/12/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-60-10	10	10/12/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-61-12	12	10/12/2010	**260**	105	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-62-12	12	10/12/2010	**50**	<50	<100	<0.02	<0.05	<0.05	<0.15	0.00089	0.0011	0.0014	0.00089	0.0034	0.00089	0.00089	0.002	9.50
EX1-63-12	12	10/12/2010	**750**	<50	<100	<0.02	<0.05	<0.05	<0.15	0.00074	0.00074	0.00074	0.00074	0.0016	0.00074	0.00074	0.001	6.16
EX1-64-12	12	10/12/2010	**71**	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX1-65-12	12	10/12/2010	**65**	65	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-1-8.5	8.5	10/13/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-2-8.5	8.5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-3-5	5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-4-3	3	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-5-8.5	8.5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-5-8.5 Dup	8.5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-6-5	5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-7-3	3	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-8-8.5	8.5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-9-5	5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-10-3	3	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-11-8.5	8.5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-12-5	5	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-13-3	3	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-13-3 Dup	3	10/14/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-15-3	3	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-15-3 Dup	3	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-16-5	5	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-17-8.5	8.5	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-18-3	3	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-19-5	5	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-20-8.5	8.5	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-21-3	3	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--

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101 Mulford Road
Toledo, Washington

SAMPLE ID	DEPTH (ft.)	DATE SAMPLED	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Benzo(a) anthracene[1] (mg/kg)	Benzo(a) pyrene[1] (mg/kg)	Benzo(b) fluoranthene[1] (mg/kg)	Benzo(k) fluoranthene[1] (mg/kg)	Chrysene[1] (mg/kg)	Dibenz(a,h) anthracene[1] (mg/kg)	Indeno (1,2,3-cd) pyrene[1] (mg/kg)	Total Toxicity of Benzo(a) pyrene[2] (mg/kg)	Total Lead (mg/kg)
EX2-22-5	5	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-23-3	3	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-24-5	5	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-25-8.5	8.5	10/18/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-26-8.5	8.5	10/19/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-27-3	3	10/19/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-28-5	5	10/19/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-29-8.5	8.5	10/19/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-30-3	3	10/19/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-30-3 Dup	3	10/19/2010	--	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--
EX2-31-5	5	10/19/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-32-8.5	8.5	10/19/2010	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-33-10.5	10.5	10/20/2010	29	<50	<100	<0.02	0.06	<0.05	0.18	--	--	--	--	--	--	--	--	--
EX2-34-10.5	10.5	10/20/2010	29	<50	<100	<0.02	<0.05	<0.05	0.11	--	--	--	--	--	--	--	--	--
EX2-35-10.5	10.5	10/20/2010	**980**	<50	<100	<0.02	0.08	1.1	4.40	--	--	--	--	--	--	--	--	--
EX2-36-10.5	10.5	10/20/2010	22	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-37-10.5	10.5	10/20/2010	22	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
EX2-37-10.5 Dup	10.5	10/20/2010	27	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--
SB-9-4	4	11/4/2013	5.0	<3.7	<12	<0.0065	<0.0065	0.0072	<0.019	<0.00082	<0.00082	<0.00082	<0.00082	<0.00041	<0.00082	<0.00082	0.001	8.80
SB-9-9	9	11/8/2013	**2,400**	52	<11	**0.56**	4.5	<2.7	5.0	0.0053	0.0020	0.0020	0.00082	0.0050	<0.00073	<0.00073	0.003	4.63
SB-9-11	11	11/8/2013	<0.9	<3.3	<11	<0.0046	<0.0046	<0.0046	<0.014	<0.00074	<0.00074	<0.00074	<0.00074	<0.00037	<0.00074	<0.00074	0.001	3.40
DUP-3-110813	11	11/8/2013	<0.9	<3.2	<11	<0.0043	0.0051	<0.0043	<0.013	<0.00072	<0.00072	<0.00072	<0.00072	<0.00036	<0.00072	<0.00072	0.001	2.64
SB-10-2	2	11/4/2013	2.5	<3.9	<13	<0.0075	0.013	0.023	0.11	<0.00085	<0.00085	<0.00085	<0.00085	0.0013	<0.00085	<0.00085	0.001	7.57
SB-10-6	6	11/6/2013	**1,800**	96	<12	**<0.27**	0.35	1.0	1.9	0.0070	0.0037	0.0036	0.0019	0.0080	<0.00082	<0.00082	0.005	10.7
SB-10-9	9	11/7/2013	**5,900**	160	<11	**0.65**	4.2	**7.5**	**15**	0.012	0.0046	0.0041	0.0014	0.011	<0.00075	0.0012	0.007	7.13
SB-10-13	13	11/7/2013	<1	<3.3	<11	<0.0048	<0.0048	<0.0048	<0.15	<0.00073	<0.00073	<0.00073	<0.00073	0.00080	<0.00073	<0.00073	0.001	2.53
SB-11-10	10	11/6/2013	19	<3.3	<11	<0.0048	0.0049	0.024	0.046	0.00075	<0.00073	0.0017	0.00097	0.0024	<0.00073	<0.00073	0.001	5.79
SB-11-12.5	12.5	11/6/2013	<1	<3.3	<11	<0.0048	<0.0048	<0.0048	<0.014	<0.00073	<0.00073	<0.00073	<0.00073	<0.00037	<0.00073	<0.00073	0.001	6.79
SB-12-9.5	9.5	11/6/2013	1.5	<3.3	15	<0.0055	<0.0055	<0.0055	<0.016	0.0015	0.0021	0.0032	0.0011	0.0026	<0.00074	0.0011	0.003	6.34
SB-12-10.5	10.5	11/6/2013	**1,600**	**2,500**	<110	**<0.19**	2.2	<1.5	3.4	<0.0072	<0.0072	<0.0072	<0.0072	0.017	<0.0072	<0.0072	0.011	11.0
SB-12-12	12	11/6/2013	2.6	<3.3	<11	<0.0046	<0.0046	<0.0046	<0.014	<0.00073	<0.00073	<0.00073	<0.00073	<0.00037	<0.00073	<0.00073	0.001	5.70
SB-12-13.5	13.5	11/6/2013	<1.0	<3.3	<11	<0.0051	0.017	<0.0051	<0.015	<0.00073	<0.00073	<0.00073	<0.00073	<0.00036	<0.00073	<0.00073	0.001	7.21
SB-13-10.5	10.5	11/7/2013	**150**	82	14	**0.085**	0.32	0.17	0.88	<0.00074	<0.00074	0.0011	<0.00074	0.0014	<0.00074	<0.00074	0.001	7.34
SB-13-12.5	12.5	11/7/2013	>1.0	<3.4	<11	<0.0052	<0.0052	<0.0052	<0.015	<0.00075	<0.00075	<0.00075	<0.00075	<0.00037	<0.00075	<0.00075	0.001	6.78
SB-14-7	7	11/5/2013	<1.1	<3.5	<12	<0.0056	<0.0056	<0.0056	<0.017	0.0039	0.0055	0.0098	0.0042	0.018	0.0027	0.0017	0.008	8.67
SB-14-9.5	9.5	11/7/2013	**4,500**	190	<11	**1.7**	**8.2**	<5.3	**9.7**	0.027	0.012	0.011	0.0037	0.026	0.0011	0.0022	0.017	7.24
DUP-1-110713	9.5	11/7/2013	**2,200**	150	<11	**<0.45**	<2.6	1.6	4.2	0.014	0.0060	0.0053	0.0021	0.013	<0.00073	0.0012	0.008	6.21
SB-14-12.5	12.5	11/7/2013	28	<3.3	<11	0.013	0.032	0.054	0.059	<0.00074	<0.00074	<0.00074	<0.00074	<0.00037	<0.00074	<0.00074	0.001	3.60
SB-14-14	14	11/7/2013	4.1	<3.2	<11	<0.0053	0.0065	0.0059	<0.016	<0.00072	<0.00072	<0.00072	<0.00072	<0.00036	<0.00072	<0.00072	0.001	1.85
SB-15-2	2	11/5/2013	**74**	36	83	**0.032**	0.086	0.22	0.65	<0.00092	0.00093	0.0019	<0.00092	0.0034	<0.00092	<0.00092	0.002	11.5
SB-15-6	6	11/6/2013	**3,300**	160	<11	**<0.57**	1.4	3.8	5.7	0.015	0.0079	0.0074	0.0037	0.016	0.00079	0.0013	0.011	12.5
SB-15-9	9	11/7/2013	**1,100**	69	<11	**0.38**	1.4	**6.8**	7.2	0.0051	0.0021	0.0021	0.00081	0.0048	<0.00071	<0.00071	0.003	4.24
SB-15-13	13	11/7/2013	3.6	<3.4	<11	<0.0048	<0.0048	0.041	<0.014	<0.00076	<0.00076	<0.00076	<0.00076	<0.00038	<0.00076	<0.00076	0.001	1.78
SB-16-2	2	11/6/2013	**210**	7.2	<14	**<0.036**	<0.15	0.15	0.24	<0.00091	<0.00091	<0.00091	<0.00091	<0.00045	<0.00091	<0.00091	0.001	11.4
SB-16-6	6	11/6/2013	**77**	4.1	<11	<0.0055	0.034	0.012	0.096	0.0029	0.0018	0.0016	0.00081	0.0025	<0.00073	<0.00073	0.003	13.4
SB-16-8	8	11/7/2013	**540**	17	12	**<0.040**	0.17	0.42	0.67	0.0070	0.0029	0.0024	0.00093	0.0055	<0.00074	<0.00074	0.004	5.05
SB-16-10	10	11/7/2013	**99**	<3.4	12	**0.054**	0.097	0.22	0.20	<0.00075	<0.00075	0.0018	<0.00075	0.0011	<0.00075	<0.00075	0.001	6.84
SB-17-2	2	11/6/2013	**2,800**	62	33	**<0.36**	1.1	**7.9**	**65**	0.0018	<0.00086	0.0020	<0.00086	0.0026	<0.00086	<0.00086	0.002	19.3

TABLE 1
SUMMARY OF HISTORICAL SOIL ANALYTICAL DATA
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

SAMPLE ID	DEPTH (ft.)	DATE SAMPLED	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Benzo(a) anthracene[1] (mg/kg)	Benzo(a) pyrene[1] (mg/kg)	Benzo(b) fluoranthene[1] (mg/kg)	Benzo(k) fluoranthene[1] (mg/kg)	Chrysene[1] (mg/kg)	Dibenz(a,h) anthracene[1] (mg/kg)	Indeno (1,2,3-cd) pyrene[1] (mg/kg)	Total Toxicity of Benzo(a) pyrene[2] (mg/kg)	Total Lead (mg/kg)
SB-17-8	8	11/8/2013	**1,300**	25	<11	**1.4**	1.7	**10**	**20**	0.0027	0.0011	0.0013	<0.00074	0.0032	<0.00074	<0.0074	0.002	3.64
SB-17-11	11	11/8/2013	<0.9	<3.3	<11	<0.0046	<0.0046	<0.0046	<0.014	<0.00075	<0.00075	<0.00075	<0.00075	<0.00037	<0.00075	<0.000075	0.001	2.67
SB-18-8	8	11/7/2013	**580**	<3.4	<11	**0.43**	1.2	1.4	0.84	<0.00074	<0.00074	<0.00074	<0.00074	0.00055	<0.00074	<0.00074	0.001	4.55
DUP-2-110713	8	11/7/2013	**620**	7.8	<11	**0.46**	1.3	1.5	0.92	<0.00074	<0.00074	<0.00074	<0.00074	0.00044	<0.00074	<0.00074	0.001	4.09
SB-18-12	12	11/7/2013	<1	<3.5	<12	<0.0050	<0.0050	<0.0050	<0.015	<0.00077	<0.00077	<0.00077	<0.00077	<0.00038	<0.00077	<0.00077	0.001	3.00
SB-19-9	9	11/8/2013	5.7	<3.2	<11	<0.0048	0.014	0.014	0.042	<0.00072	<0.0072	<0.00072	<0.00072	0.00062	<0.00072	<0.00072	0.008	3.55
SB-19-11	11	11/8/2013	<1	<3.2	<11	<0.0050	<0.0050	<0.0050	<0.015	<0.00072	<0.00072	<0.00072	<0.00072	<0.00036	<0.00072	<0.00072	0.001	2.97
SB-20-2	2	11/8/2013	5.6	19	16	<0.0068	0.0068	<0.0091	<0.020	<0.00087	<0.00087	<0.00087	<0.00087	0.00098	<0.00087	<0.00087	0.001	5.29
SB-20-10	10	11/8/2013	**730**	65	<11	**0.26**	0.96	2.1	1.1	0.0054	0.0023	0.0021	0.00072	0.0050	<0.00071	<0.00071	0.003	5.80
SB-20-12	12	11/8/2013	2.1	<3.3	<11	<0.0048	<0.0048	0.0077	<0.014	<0.00073	<0.00073	<0.00073	<0.00073	<0.00036	<0.00073	<0.00073	0.001	6.07
SB-20-14	14	11/8/2013	<1.0	<3.4	<11	<0.0050	<0.0050	<0.0050	<0.015	<0.00075	<0.00075	<0.00075	<0.00075	<0.00037	<0.00075	<0.00075	0.001	3.94
SB-21-6	6	11/8/2013	<1.6	<3.7	<12	<0.0082	<0.0082	<0.0082	<0.025	<0.00082	<0.00082	<0.00082	<0.00082	<0.00041	<0.00082	<0.00082	0.001	3.83
SB-21-9	9	11/8/2013	**61**	3.3	<11	**<0.020**	<0.069	0.049	0.12	<0.00072	<0.00072	<0.00072	<0.00072	0.00061	<0.00072	<0.00072	0.001	4.42
SB-21-12	12	11/8/2013	<1.2	<3.3	<11	<0.0059	<0.0059	<0.0059	<0.018	<0.00073	<0.00073	<0.00073	<0.00073	<0.00037	<0.00073	<0.00073	0.001	4.62
Proposed Site Cleanup Standards			**30**	**460[3]/2,000[4]**	**2,000**	**0.03**	**7.0**	**6.0**	**9.0**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.1**	**250**

ABBREVIATIONS:
DRO = Diesel Range Organics
HRO = Oil Range Organics
GRO = Gasoline Range Organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
T. LEAD = Total Lead
CULs = Cleanup levels
Dup = Duplicate
Ecology = Washington State Department of Ecology
EPA = United States Environmental Protection Agency
mg/kg = Milligrams per kilogram
MTCA = Model Toxics Control Act
UNK = Unknown

NOTES:
1 Carcinogenic polycyclic aromatic hydrocarbons (cPAHs).
2 Total toxicity of benzo(a)pyrene calculated using Toxicity Equivalency Factors provided in Table 708-2 of WAC 173-340-900. In cases where the analytical result was less than the reporting limit, the reporting limit value was used as the concentration to calculate total toxicity.
3 Proposed Cleanup Standard for TPH-DRO in soil from ground surface to 6 feet below ground surface.
4 Proposed Cleanup Standard for TPH-DRO in soil from 6 to 15 feet below ground surface.
Results in bold indicate analyte reported in concentration exceeding proposed site cleanup standards.
-- = Not Analyzed

ANALYTICAL METHODS:
Gasoline Range Organics Analyzed by Ecology Method NWTPH-Gx.
Diesel Range Organics Analyzed by Ecology Method NWTPH-Dx with silica-gel cleanup.
Heavy Oils Analyzed by Ecology Method NWTPH-Dx with silica-gel cleanup.
Benzene, Toluene, Ethylbenzene, and Total Xylenes Analyzed by EPA Method 8021B (2004 and older) and EPA Method 8260B (2010)
cPAHs analyzed by EPA Method 8270C SIM.
Total Lead analyzed by EPA Method 6020.

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-103															
2/14/91		107.81	--	8.08	--	99.73	--	--	--	--	--	--	--	--	--
2/18/92		107.81	--	8.08	--	99.73	--	--	--	--	--	--	--	--	--
3/9/92		107.81	--	7.80	--	100.01	--	<50	--	--	--	--	--	--	--
3/13/92		107.81	--	8.08	--	99.73	<250	<250	<50	--	--	--	--	--	--
4/21/92		107.81	--	7.78	--	100.03	--	--	<50	--	--	--	--	--	--
3/3/94		107.81	--	--	--	--	<250	<250	<50	<13	--	--	--	--	--
6/13/95		107.81	--	8.55	--	99.26	<250	<250	<50	--	--	--	--	--	<3.0
8/22/95		107.81	--	--	--	--	<250	<250	<50	--	--	--	--	--	<2.0
8/23/95		107.81	--	8.91	--	98.90	<250	<250	<50	--	--	--	--	--	<2.0
11/28/95		107.81	--	7.30	--	100.51	<250	<250	<50	--	--	--	--	--	<2.0
3/12/96		107.81	--	8.03	--	99.78	<250	<250	<50	--	--	--	--	--	<2.0
6/26/96		107.81	--	8.67	--	99.14	<250	<250	<50	--	--	--	--	--	<2.0
10/9/96		107.81	--	8.82	--	98.99	<250	<250	<50	--	--	--	--	--	<2.0
2/12/97		107.81	--	7.81	--	100.00	<250	<250	<50	--	--	--	--	--	<2.0
4/22/97		107.81	--	7.42	--	100.39	<250	<250	<50	--	--	--	--	--	<2.0
8/5/97		107.81	--	8.83	--	98.98	257	110	257	--	--	--	--	--	<2.0
11/11/97		107.81	--	9.01	--	98.80	<250	<250	<50	--	--	--	--	--	<2.0
2/11/98		107.81	--	8.03	--	99.78	<250	<250	<50	--	--	--	--	--	<2.0
5/28/98		107.81	--	8.17	--	99.64	<250	<250	<50	--	--	--	--	--	2.84
8/20/98		107.81	--	9.21	--	98.60	<250	<250	<50	--	--	--	--	--	<1.0
11/19/98		107.81	--	9.03	--	98.78	<250	<250	<50	--	--	--	--	--	<1.0
3/11/99		107.81	--	7.51	--	100.30	<250	<250	<50	--	--	--	--	--	<1.0
5/25/99		107.81	--	8.51	--	99.30	<250	<250	<50	--	--	--	--	--	--
8/17/99		107.81	--	8.93	--	98.88	<250	<250	<50	--	--	--	--	--	<1.0
11/19/99		107.81	--	7.18	--	100.63	<250	<250	<80	--	--	--	--	--	<1.0
3/9/00		107.81	--	7.48	--	100.33	<250	<250	<80	--	--	--	--	--	<1.0
6/13/00		107.81	--	8.29	--	99.52	<250	<250	<80	--	--	--	--	--	<1.0
9/26/00		107.81	--	9.05	--	98.76	<250	<250	--	--	--	--	--	--	<1.0
12/13/00		107.81	--	8.65	--	99.16	<250	<250	--	--	--	--	--	--	<1.0
2/28/01		107.81	--	8.34	--	99.47	<250	<250	89	--	--	--	--	--	<1.0
5/2/01		107.81	--	8.12	--	99.69	<250	<250	214	--	--	--	--	--	<1.0
10/30/02		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
4/18/03		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
7/11/03		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
10/31/03		107.81	UNABLE TO LOCATE - COVERED BY SOIL					--	--	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-103 (cont.)															
12/30/03		107.81	--	7.32	0.00	100.49	<50	<85	<110	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		107.81	UNABLE TO LOCATE - COVERED BY SOIL					--	--	--	--	--	--	--	--
7/20/04		107.81	--	9.09	0.00	98.72	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--
10/7/04		107.81	--	8.66	0.00	99.15	<160	<50	--	--	--	--	--	--	--
1/27/05		107.81	--	7.95	0.00	99.86	<83	<83	<48	--	--	--	--	--	--
4/12/05		107.81	--	7.65	0.00	100.16	<78	<78	<48	--	--	--	--	--	--
7/18/05		107.81	--	8.76	0.00	99.05	<79	<79	<48	--	--	--	--	--	--
10/21/05		107.81	--	8.87	0.00	98.94	<79	<79	<48	--	--	--	--	--	--
9/5/07		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
5/27-28/08		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
8/27-29/08		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
11/17-19/08		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
2/16-18/09		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
5/4-6/09		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
8/19-21/09		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
11/18-20/09		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
2/8-10/10		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
5/12-13/10		107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
08/12/10	LFP	107.81	--	8.90	0.00	98.91	30	120	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
11/3-4/10		107.81	--	7.69	0.00	100.12	<29	91	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.17
2/3-4/11	LFP	107.81	--	7.99	0.00	99.82	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
05/24/11	LFP	107.81	--	8.25	0.00	99.56	30	340	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.13
8/23-24/11	LFP	107.81	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
11/7-9/11	LFP	107.81	--	8.90	0.00	98.91	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.12
2/6-8/12	LFP	107.81	--	7.80	0.00	100.01	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	107.81	--	8.05	0.00	99.76	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.083
8/1-3/12	LFP	107.81	--	8.95	0.00	98.86	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.088
11/26-28/12	LFP	107.81	--	7.36	0.00	100.45	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	107.81	--	7.85	0.00	99.96	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.087
5/6-8//13	LFP	107.81	--	8.60	0.00	99.21	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.13
9/9-13/13	LFP	107.81	--	8.55	0.00	99.26	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
11/18-21/13	LFP	107.81	--	7.62	0.00	100.19	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.21
2/4-11/14	LFP	107.81	--	8.36	0.00	99.45	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
6/12-14/14	LFP	107.81	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-103 (cont.)															
8/18-21/14	LFP	107.81	--	6.81	0.00	101.00	<29/<29	<68/<68	62	<0.5	<0.5	<0.5	<0.5	<0.5	0.18
11/19-20/14	LFP	107.81	--	8.41	0.00	99.40	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	107.81	--	7.83	0.00	99.98	<29/<29	<69/<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	107.81	--	8.77	0.00	99.04	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.12
8/10-11/15	LFP	107.81	--	9.35	0.00	98.46	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.13
11/16-18/15	LFP	107.81	--	6.67	0.00	101.14	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.00
05/13-14/16	LFP	107.81	--	8.60	0.00	99.21	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
11/14/16	LFP	107.81	--	7.83	0.00	99.98	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
MW-109															
3/13/92		107.35	--	7.72	0.00	99.63	--	--	<50	--	--	--	--	--	--
4/21/92		107.35	--	7.42	0.00	99.93	--	--	--	--	--	--	--	--	--
3/3/94		107.35	--	--	0.00	--	**900**	**1,500**	**4,900**	--	--	--	--	--	--
8/22/95		107.35	--	8.57	0.00	98.78	**2,900**	**2,400**	<50	--	--	--	--	--	--
11/28/95		107.35	--	5.87	0.00	101.48	480	**1,900**	72	--	--	--	--	--	<2.0
3/12/96		107.35	--	7.16	0.00	100.19	<250	<750	<50	--	--	--	--	--	<2.0
6/26/96		107.35	--	8.24	0.00	99.11	**554**	<750	<50	--	--	--	--	--	<2.0
10/9/96		107.35	--	8.54	0.00	98.81	405	<750	<50	--	--	--	--	--	<2.0
2/12/97		107.35	--	5.82	0.00	101.53	393	**1,290**	<50	--	--	--	--	--	<2.0
4/22/97		107.35	--	7.10	0.00	100.25	356	**1,270**	<50	--	--	--	--	--	<2.0
8/5/97		107.35	--	8.81	0.00	98.54	**560**	**1,690**	<50	--	--	--	--	--	<2.0
11/11/97		107.35	--	7.57	0.00	99.78	269	**780**	<50	--	--	--	--	--	<2.0
2/11/98		107.35	--	6.20	0.00	101.15	387	**1,700**	<50	--	--	--	--	--	<2.0
5/28/98		107.35	--	7.62	0.00	99.73	332	**920**	<50	--	--	--	--	--	2.25
8/20/98		107.35	--	9.00	0.00	98.35	**520**	**1,450**	<50	--	--	--	--	--	<1.0
11/19/98		107.35	--	8.21	0.00	99.14	409	**1,130**	<50	--	--	--	--	--	<1.3
3/11/99		107.35	--	6.94	0.00	100.41	**539**	**2,000**	<80	--	--	--	--	--	<1.0
5/25/99		107.35	--	8.13	0.00	99.22	**916**	--	<80	--	--	--	--	--	--
8/17/99		107.35	--	8.66	0.00	98.69	**1,520**	**7,770**	<80	--	--	--	--	--	<1.0
11/19/99		107.35	--	6.65	0.00	100.70	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		107.35	--	5.67	0.00	101.68	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		107.35	--	6.65	0.00	100.70	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		107.35	--	8.36	0.00	98.99	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		107.35	--	7.72	0.00	99.63	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		107.35	--	7.44	0.00	99.91	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		107.35	--	9.50	0.00	97.85	<250	<500	<80	--	--	--	--	--	<1.0
10/30/02		107.35	--	8.69	0.00	98.66	<250	<500	<80	<0.500	<0.500	<0.500	<1.0	--	6.44

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-109 (cont.)															
1/23/03		107.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		107.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		107.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		107.35	--	7.63	0.00	99.72	<250	<500	<50	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]
12/31/03		107.35	--	6.42	0.00	100.93	<50	440	**2,300**	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		107.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		107.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/6/04		107.35	--	7.71	0.00	99.64	<81	110	<50	--	--	--	--	--	--
10/24/05		107.35	--	7.93	0.00	99.42	<81	<100	<48	--	--	--	--	--	--
9/5/07		107.35	--	8.45	0.00	98.90	<79	240	91	--	--	--	--	--	0.15
5/27-28/08		107.35	--	7.86	0.00	99.49	<79	<98	<50	<0.5	0.6	<0.5	<0.5	<0.5	<0.050
8/27-29/08	LFP	107.35	--	7.92	0.00	99.43	<79	<99	<50	<5	<5	<5	<5	<5	<0.050
11/17-19/08	LFP	107.35	--	6.60	0.00	100.75	35	110	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	107.35	--	7.59	0.00	99.76	53	130	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.093
5/4-6/09	LFP	107.35	--	7.09	0.00	100.26	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	107.35	--	8.35	0.00	99.00	49	290	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
11/18-20/09	LFP	107.35	--	5.74	0.00	101.61	98	340	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
2/8-10/10	LFP	107.35	--	7.04	0.00	100.31	31	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
5/12-13/10	LFP	107.35	--	7.41	0.00	99.94	60	270	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
08/11/10	LFP	107.35	--	8.90	0.00	98.45	34	300	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.1
11/3-4/10	LFP	107.35	--	6.37	0.00	100.98	65	430	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
2/3-4/11	LFP	107.35	--	7.12	0.00	100.23	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
05/23/11	LFP	107.35	--	7.26	0.00	100.09	47	**520**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
8/23-24/11	LFP	107.35	--	8.35	0.00	99.00	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.12
11/7-9/11	LFP	107.35	--	8.00	0.00	99.35	<300	**890**	84	<0.5	<0.5	0.6	<0.5	<0.5	0.19
2/6-8/12	LFP	107.35	--	6.85	0.00	100.50	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	107.35	--	6.90	0.00	100.45	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	107.35	--	8.13	0.00	99.22	<30	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.034
11/26-28/12	LFP	107.35	--	6.42	0.00	100.93	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	107.35	--	6.95	0.00	100.40	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	107.35	--	7.35	0.00	100.00	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	107.35	--	7.34	0.00	100.01	<31/<31	<72/<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.62
11/18-22/13	LFP	107.35	--	8.12	0.00	99.23	<29/68	<67/170	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
02/4-11/14	LFP	107.35	--	7.33	0.00	100.02	<30/<30	<70/<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.20
6/12-14/14	LFP	107.35	--	7.31	0.00	100.04	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--[8]
8/18-21/14	LFP	107.35	--	9.93	0.00	97.42	INSUFFICIENT WATER								

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-109 (cont.)															
11/19-20/14	LFP	107.35	--	7.38	0.00	99.97	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	107.35	--	6.91	0.00	100.44	<30/<30	<69/<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	107.35	--	7.29	0.00	100.06	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.12
8/10-11/15	LFP	107.35	--	8.62	0.00	98.73	<29/130	210/**640**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	**136**
11/16-18/15	LFP	107.35	--	5.34	0.00	102.01	<28/36	<66/97	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.0028
5/13-14/16	LFP	107.35	--	7.76	0.00	99.59	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	--	<0.13
11/14/16	LFP	107.35	--	6.40	0.00	100.95	<28/77	<65/65	<50	<0.5	<0.5	<0.5	<0.5	--	0.55
MW-110															
8/22/95		108.89	--	9.62	0.00	99.27	400	<750	**11,000**	--	--	--	--	--	--
11/28/95		108.89	--	8.08	0.00	100.81	**540**	<750	**6,000**	--	--	--	--	--	14
3/12/96		108.89	--	8.74	0.00	100.15	340	<750	**3,600**	--	--	--	--	--	14
6/26/96		108.89	--	9.41	0.00	99.48	274	<750	**2,750**	--	--	--	--	--	8.14
10/9/96		108.89	--	9.67	0.00	99.22	<250	<750	**1,160**	--	--	--	--	--	5.96
2/12/97		108.89	--	8.42	0.00	100.47	393	<750	**1,830**	--	--	--	--	--	11.7
4/22/97		108.89	--	8.18	0.00	100.71	371	<750	**1,950**	--	--	--	--	--	7.27
8/5/97		108.89	--	9.80	0.00	99.09	282	<750	**1,480**	--	--	--	--	--	3.16
11/11/97		108.89	--	8.57	0.00	100.32	**659**	<750	**2,330**	--	--	--	--	--	**22.9**
2/11/98		108.89	--	8.54	0.00	100.35	390	<750	**2,040**	--	--	--	--	--	**15.3**
5/28/98		108.89	--	8.69	0.00	100.20	324	<750	**1,350**	--	--	--	--	--	**15.5**
8/20/98		108.89	--	10.91	0.00	97.98	<250	<750	**812**	--	--	--	--	--	1.55
11/19/98		108.89	--	9.51	0.00	99.38	258	<750	637	--	--	--	--	--	7.27
3/11/99		108.89	--	8.09	0.00	100.80	486	<500	**2,350**	--	--	--	--	--	11
5/25/99		108.89	--	9.28	0.00	99.61	<250	--	**2,950**	--	--	--	--	--	--
8/17/99		108.89	--	9.81	0.00	99.08	<250	<500	749	--	--	--	--	--	2.2
11/19/99		108.89	--	7.77	0.00	101.12	453	--	**2,030**	--	--	--	--	--	**32.4**
3/9/00		108.89	--	8.15	0.00	100.74	<250	<500	**3,780**	--	--	--	--	--	9.59
6/13/00		108.89	--	8.81	0.00	100.08	<250	<500	**2,330**	--	--	--	--	--	5.45
9/26/00		108.89	--	9.98	0.00	98.91	<250	<500	--	--	--	--	--	--	2.83
12/13/00		108.89	--	9.37	0.00	99.52	<250	<500	**1,340**	--	--	--	--	--	4.15
2/28/01		108.89	--	9.07	0.00	99.82	<250	<500	**1,800**	--	--	--	--	--	6.32
5/2/01		108.89	--	8.62	0.00	100.27	<250	<500	**905**	--	--	--	--	--	4.23
10/30/02		108.89	--	10.28	0.00	98.61	<250	<500	**3,880**	<2.50	<2.50	22.5	108	--	6.36
1/23/03		108.89	--	8.74	0.00	100.15	<250	<500	**1,190**	0.902	0.585	9.83	13.9	--	**26.5**[5]
4/18/03		108.89	--	8.40	0.00	100.49	<250	<500	499	1.94	<0.500	0.799	1.65	--	**16.8**[5]
7/11/03		108.89	--	9.99	0.00	98.90	<250	<500	586	1.76	<0.500	1.08	1.11	--	2.11[5]
10/31/03		108.89	--	9.25	0.00	99.64	<250	<500	184	0.529	<0.500	<0.500	<1.0	--	<1.0[5]

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-110 (cont.)															
12/31/03		108.89	--	7.94	0.00	100.95	**1,800**	410	<99	<10	<2.0	23	25	--	**17.3**
5/3/04		108.89	--	9.56	0.00	99.33	<250	<500	454	1.8	<0.500	<0.500	<1.0	--	3.86[5]
7/20/04		108.89	--	10.03	0.00	98.86	<250	<500	308	0.893	<0.500	<0.500	<1.0	--	<1.0[5]
10/6/04		108.89	--	9.38	0.00	99.51	<79	<99	160	--	--	--	--	--	--
1/27/05		108.89	--	8.65	0.00	100.24	<81	<100	150	--	--	--	--	--	--
4/12/05		108.89	--	8.22	0.00	100.67	370	<100	290	--	--	--	--	--	--
7/18/05		108.89	--	9.50	0.00	99.39	<79	<99	100	--	--	--	--	--	--
7/18/05 (D)		108.89	--	9.50	0.00	99.39	<79	<99	100	--	--	--	--	--	--
10/20/05		108.89	--	9.62	0.00	99.27	82	100	110	--	--	--	--	--	--
9/4/07		108.89	--	10.08	0.00	98.81	<150	220	290	--	--	--	--	--	5
5/27-28/08	LFP	108.89	--	9.52	0.00	99.37	<76	<96	210	<0.5	<0.5	9	0.7	<0.5	9.1
8/27-29/08	LFP	108.89	--	9.60	0.00	99.29	120	<100	240	<5	<5	<5	<5	<5	1.5
11/17-19/08	LFP	108.89	--	8.17	0.00	100.72	410	<68	150	<0.5	<0.5	<0.5	<0.5	<0.5	**34.1**
2/16-18/09	LFP	108.89	--	9.23	0.00	99.66	58	170	<50	<0.5	<0.5	<0.5	<0.5	<0.5	**27.7**
5/4-6/09	LFP	108.89	--	8.60	0.00	100.29	380	**670**	96	<0.5	<0.5	<0.5	<0.5	<0.5	5.4
8/19-21/09	LFP	108.89	--	9.98	0.00	98.91	<30	76	69	<0.5	<0.5	<0.5	<0.5	<0.5	0.63
11/18-20/09	LFP	108.89	--	6.97	0.00	101.92	200	<67	670	<0.5	<0.5	2	<0.5	<0.5	5
2/8-10/10	LFP	108.89	--	8.64	0.00	100.25	51	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	12.5
5/12-13/10	LFP	108.89	--	9.08	0.00	99.81	39	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	4.2
08/11/10	LFP	108.89	--	9.75	0.00	99.14	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.4
11/3-4/10	LFP	108.89	--	8.15	0.00	100.74	49	98	<50	<0.5	<0.5	<0.5	<0.5	<0.5	2.5
2/3-4/11	LFP	108.89	--	8.77	0.00	100.12	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.72
05/24/11	LFP	108.89	--	8.90	0.00	99.99	<29	180	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.43
8/23-24/11	LFP	108.89	--	9.96	0.00	98.93	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.62
11/7-9/11	LFP	108.89	--	9.30	0.00	99.59	<31	<72	95	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
2/6-8/12	LFP	108.89	--	8.40	0.00	100.49	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
5/2-4/12	LFP	108.89	--	8.40	0.00	100.49	<31	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.23
8/1-3/12	LFP	108.89	--	8.46	0.00	100.43	50	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.093
11/26-28/12	LFP	108.89	--	7.95	0.00	100.94	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.30
02/4-6/13	LFP	108.89	--	8.38	0.00	100.51	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	108.89	--	9.52	0.00	99.37	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.23
9/9-13/13	LFP	108.89	--	9.03	0.00	99.86	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.39
11/18-21/13	LFP	108.89	--	8.22	0.00	100.67	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.33
02/4-11/14	LFP	108.89	--	8.98	0.00	99.91	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.16
6/12-14/14	LFP	108.89	--	9.50	0.00	99.39	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
8/18-21/14	LFP	108.89	--	8.53	0.00	100.36	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-110 (cont.)															
11/19-20/14	LFP	108.89	--	9.08	0.00	99.81	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.94
2/17-20/15	LFP	108.89	--	8.39	0.00	100.50	<30/<30	<70/<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	108.89	--	9.51	0.00	99.38	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.46
8/10-11/15	LFP	108.89	--	10.23	0.00	98.66	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.88
11/16-18/15	LFP	108.89	--	6.54	0.00	102.35	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.00
5/13-14/16	LFP	108.89	--	9.04	0.00	99.85	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
11/14/16	LFP	108.89	--	8.21	0.00	100.68	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
MW-111															
8/22/95		107.12	--	7.86	0.00	99.26	360	<750	**33,000**	--	--	--	--	--	--
11/28/95		107.12	--	6.14	0.00	100.98	**640**	<750	**17,000**	--	--	--	--	--	10
3/12/96		107.12	--	6.84	0.00	100.28	290	<750	**11,000**	--	--	--	--	--	7.6
6/26/96		107.12	--	7.55	0.00	99.57	479	<750	**7,690**	--	--	--	--	--	4.8
10/9/96		107.12	--	7.81	0.00	99.31	256	<750	**3,560**	--	--	--	--	--	4.7
2/12/97		107.12	--	6.52	0.00	100.60	**631**	<750	**17,200**	--	--	--	--	--	8.7
4/22/97		107.12	--	6.31	0.00	100.81	**920**	<750	**13,800**	--	--	--	--	--	5.3
8/5/97		107.12	--	7.90	0.00	99.22	444	<750	**4,290**	--	--	--	--	--	3.5
11/11/97		107.12	--	6.70	0.00	100.42	**770**	<750	**14,300**	--	--	--	--	--	12.4
2/11/98		107.12	--	6.65	0.00	100.47	**587**	<750	**13,600**	--	--	--	--	--	8.3
5/28/98		107.12	--	6.89	0.00	100.23	**526**	<750	**11,200**	--	--	--	--	--	**16.6**
8/20/98		107.12	--	9.08	0.00	98.04	**637**	<750	**5,950**	--	--	--	--	--	1.7
11/19/98		107.12	--	7.60	0.00	99.52	**3,890**	<750	**10,500,000**	--	--	--	--	--	2.2
1/22/99		107.12	--	5.36	0.00	101.76	--	--	**19,000**	--	--	--	--	--	--
3/11/99		107.12	--	6.19	0.00	100.93	**611**	<500	**6,910**	--	--	--	--	--	6.3
5/25/99		107.12	--	7.43	0.00	99.69	388	--	**8,500**	--	--	--	--	--	4.2
8/17/99		107.12	--	7.98	0.00	99.14	**547**	<500	**17,600**	--	--	--	--	--	3
11/19/99		107.12	--	5.87	0.00	101.25	**547**	--	**27,900**	--	--	--	--	--	14.4
3/9/00		107.12	--	6.27	0.00	100.85	**12,400**	**646**	**20,800**	--	--	--	--	--	11.8
6/13/00		107.12	--	6.91	0.00	100.21	**7,670**	<500	**29,600**	--	--	--	--	--	12.8
9/26/00		107.12	--	8.37	0.00	98.75	--	--	--	--	--	--	--	--	--
12/13/00		107.12	--	7.65	0.00	99.47	**13,800**	<500	**23,100**	--	--	--	--	--	4.1
2/28/01		107.12	--	7.26	0.00	99.86	**3,740**	<500	**16,400**	--	--	--	--	--	5.6
5/2/01		107.12	--	6.89	0.00	100.23	**7,530**	<500	**17,700**	--	--	--	--	--	10.7
10/30/02		107.12	8.42	8.70	0.28	98.64	NOT SAMPLED DUE TO THE PRESENCE OF LNAPL					--	--	--	--
1/23/03		107.12	6.95	6.99	0.04	100.16	NOT SAMPLED DUE TO THE PRESENCE OF LNAPL					--	--	--	--
4/18/03		107.12	6.83	6.89	0.06	100.28	NOT SAMPLED DUE TO THE PRESENCE OF LNAPL					--	--	--	--
7/11/03		107.12	8.18	8.25	0.07	98.93	NOT SAMPLED DUE TO THE PRESENCE OF LNAPL					--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-111 (cont.)															
10/31/03		107.12	7.45	7.48	0.03	99.66	NOT SAMPLED DUE TO THE PRESENCE OF LNAPL					--	--	--	--
12/31/03		107.12	--	6.40	0.00	100.72	**50,000**	**2,800**	300	**8.3**	6.5	**1,100**	**3,300**	--	**15.2**
05/03/04		107.12	7.76	7.79	0.03	99.35	NOT SAMPLED DUE TO THE PRESENCE OF LNAPL					--	--	--	--
7/20/04		107.12	8.10	8.16	0.06	99.01	NOT SAMPLED DUE TO THE PRESENCE OF LNAPL					--	--	--	--
10/6/04		107.12	--	7.54	0.00	99.58	240	<100	**5,700**	--	--	--	--	--	--
1/27/05		107.12	--	6.79	0.00	100.33	310	<98	**8,800**	--	--	--	--	--	--
1/27/05(D)		107.12	--	6.79	0.00	100.33	310	<98	**9,100**	--	--	--	--	--	--
4/12/05		107.12	--	6.32	0.00	100.80	**820**	<100	**10,000**	--	--	--	--	--	--
4/12/05(D)		107.12	--	6.32	0.00	100.80	**850**	<110	**10,000**	--	--	--	--	--	--
7/18/05		107.12	--	7.75	0.00	99.37	460	<96	**6,300**	--	--	--	--	--	--
10/20/05		107.12	--	7.84	0.00	99.28	--	--	--	--	--	--	--	--	--
9/4/07		107.12	--	8.26	0.00	98.86	**1,100**	<220	**6,800**	--	--	--	--	--	2.8
9/4/07		107.12	--	--	0.00	--	<81	<100	<50	--	--	--	--	--	<0.047
5/27-28/08		107.12	--	7.64	0.00	99.48	NOT SAMPLED DUE TO OBSTRUCTION IN WELL @ 7 FEET						--	--	--
8/27-29/08		107.12	--	7.71	0.00	99.41	NOT SAMPLED DUE TO OBSTRUCTION IN WELL @ 8 FEET						--	--	--
11/17-19/08	LFP	107.12	--	6.27	0.00	100.85	**2,300**	<1,400	**18,000**	3	<1	300	220	<1	**36.8**
2/16-18/09	LFP	107.12	--	7.36	0.00	99.76	350	74	**20,000**	4	2	190	110	<1	8.5
5/4-6/09	LFP	107.12	--	6.62	0.00	100.50	**1,200**	<70	**13,000**	**8**	2	220	120	<0.5	**20.1**
8/19-21/09	LFP	107.12	--	8.12	0.00	99.00	**780**	<70	**11,000**	4	0.6	180	130	<0.5	5.3
11/18-20/09	LFP	107.12	--	5.42	0.00	101.70	400	<68	**4,700**	**5**	0.7	53	21	<0.5	6.3
2/08-10/10	LFP	107.12	--	6.79	0.00	100.33	**2,700**	<140	**19,000**	**16**	1	270	110	<0.5	**18.8**
5/11-13/10	LFP	107.12	--	7.25	0.00	99.87	**3,400**	380	**21,000**	**10**	1	300	110	<1	**22.6**
08/11/10	LFP	107.12	--	7.92	0.00	99.20	**1,300**	<700	**9,200**	4	<1	220	55	<1	**20.2**
11/3-4/10	LFP	107.12	--	6.12	0.00	101.00	**1,700**	**640**	**7,000**	4	<1	160	68	<1	**29.5**
2/3-4/11	LFP	107.12	--	6.91	0.00	100.21	**2,800**	<340	**14,000**	**10**	0.9	250	72	<0.5	**19.9**
05/24/11	LFP	107.12	--	7.03	0.00	100.09	**500**	130	**2,700**	<0.5	<0.5	65	15	<0.5	2.8
8/23-24/11	LFP	107.12	--	9.16	0.00	97.96	**1,600**	<69	**6,900**	3	<0.5	130	11	<0.5	12.2
11/7-9/11	LFP	107.12	--	7.85	0.00	99.27	**4,700**	<730	**20,000**	1	<1	140	26	<1	**45.8**
2/6-8/12	LFP	107.12	--	6.55	0.00	100.57	**690**	110	**5,100**	**5**	<0.5	140	<0.5	<0.5	**22.1**
5/2-4/12	LFP	107.12	--	6.50	0.00	100.62	420	<68	**4,400**	**5**	0.7	170	23	<0.5	8.9
8/1-3/12	LFP	107.12	--	7.93	0.00	99.19	**620**	140	**6,900**	0.6	<0.5	<0.5	12	<0.5	**22.9**
11/26-28/12	LFP	107.12	--	6.07	0.00	101.05	**15,000**	<3,500	**5,200**	4	<0.5	140	32	<0.5	**36.1**
02/4-6/13	LFP	107.12	--	6.53	0.00	100.59	**2,300**	**710**	**7,500**	<3	<3	120	24	<0.5	**17.8**
05/6-8/13	LFP	107.12	--	7.46	0.00	99.66	300	<67	**5,500**	2	<0.5	100	13	<0.5	**16.6**
9/9-13/13	LFP	107.12	--	7.15	0.00	99.97	330/**3,600**	<66/89	**5,500**	1	<0.5	110	39	<0.5	**59.4**
11/18-22/13	LFP	107.12	--	6.42	0.00	100.70	370/**1,000**	<66/<66	**3,300**	0.9	<0.5	77	13	<0.5	**17.8**

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-111 (cont.)															
2/4-11/14	LFP	107.12	--	7.11	0.00	100.01	410/**1,000**	<68/<68	**4,800**	1	<0.5	75	7	<0.5	**27.3**
6/12-14/14	LFP	107.12	--	7.70	0.00	99.42	380/**1,200**	<67/83	**4,200**	2	<0.5	130	14	<0.5	**16.1**
8/18-21/14	LFP	107.12	--	8.07	0.00	99.05	310/**1,400**	<67/100	**4,700**	1	<0.5	49	1	<0.5	1.09
11/19-20/14	LFP	107.12	--	6.47	0.00	100.65	430/**1,800**	<69/320	**6,000**	2	<0.5	120	11	<0.5	**45.3**
2/17-20/15	LFP	107.12	--	6.57	0.00	100.55	230/**730**	<68/180	**3,600**	1	<0.5	44	3	<0.5	14.3
5/11-15/15	LFP	107.12	--	9.02	0.00	98.10	320/**1,000**	<66/<66	**4,400**	1	<0.5	71	5	<0.5	0.0202
8/10-11/15	LFP	107.12	--	8.43	0.00	98.69	470/**2,700**	<67/93	**4,500**	<3	<3	31	6	<3	12.5
11/16-18/15	LFP	107.12	--	4.59	0.00	102.53	150/450	<67/270	**1,900**	<0.5	<0.5	9	1	<0.5	0.0078
5/13-14/16	LFP	107.12	--	8.95	0.00	98.17	350/**1,200**	**680/1,600**	**4,200**	<0.5	<0.5	19	2	--	7.8
11/14/16	LFP	107.12	--	--	--	--	WELL FLOODED-UNABLE TO ACCESS						2	--	7.8
MW-112															
8/22/95		107.58	--	8.42	0.00	99.16	<250	<750	480	--	--	--	--	--	--
11/28/95		107.58	--	6.73	0.00	100.85	<250	<750	150	--	--	--	--	--	5.8
3/12/96		107.58	--	7.43	0.00	100.15	<250	<750	250	--	--	--	--	--	<2.0
6/26/96		107.58	--	8.12	0.00	99.46	<250	<750	63.8	--	--	--	--	--	<2.0
10/9/96		107.58	--	8.36	0.00	99.22	<250	<750	93.1	--	--	--	--	--	2.62
2/12/97		107.58	--	7.11	0.00	100.47	322	<750	**1,250**	--	--	--	--	--	2.99
4/22/97		107.58	--	6.85	0.00	100.73	<250	<750	323	--	--	--	--	--	<2.0
8/5/97		107.58	--	8.45	0.00	99.13	<250	<750	124	--	--	--	--	--	<2.0
11/11/97		107.58	--	7.26	0.00	100.32	<250	<750	112	--	--	--	--	--	<2.0
2/11/98		107.58	--	7.25	0.00	100.33	<250	<750	658	--	--	--	--	--	<2.0
5/28/98		107.58	--	7.46	0.00	100.12	315	<750	713	--	--	--	--	--	10.4
8/20/98		107.58	--	9.64	0.00	97.94	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		107.58	--	8.20	0.00	99.38	<250	<750	367	--	--	--	--	--	<1.0
3/11/99		107.58	--	6.79	0.00	100.79	<250	<500	**1,370**	--	--	--	--	--	1.42
5/25/99		107.58	--	7.97	0.00	99.61	<250	--	<80	--	--	--	--	--	--
8/17/99		107.58	--	8.51	0.00	99.07	<250	<500	106	--	--	--	--	--	<1.6
11/19/99		107.58	--	6.46	0.00	101.12	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		107.58	--	6.85	0.00	100.73	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		107.58	--	7.48	0.00	100.10	<250	<500	**824**	--	--	--	--	--	2.14
9/26/00		107.58	--	8.66	0.00	98.92	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		107.58	--	8.07	0.00	99.51	<250	<500	<80	--	--	--	--	--	<1.0
2/28/01		107.58	--	7.77	0.00	99.81	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		107.58	--	7.31	0.00	100.27	<250	<500	710	--	--	--	--	--	1.44
10/30/02		107.58	--	8.95	0.00	98.63	<250	<500	95.7	<0.500	<0.500	<0.500	<1.00	--	2.63
1/23/03		107.58	--	7.39	0.00	100.19	<250	<500	178	<0.500	<0.500	0.730	<1.00	--	<1.0[5]

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-112 (cont.)															
4/18/03		107.58	--	7.28	0.00	100.30	<250	<500	93.4	<0.500	<0.500	<0.500	<1.00	--	<1.0[5]
7/11/03		107.58	--	8.68	0.00	98.90	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	<1.0[5]
10/31/03		107.58	--	8.04	0.00	99.54	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	<1.0[5]
12/30/03		107.58	--	6.62	0.00	100.96	<50	<77	<97	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		107.58	--	8.22	0.00	99.36	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	<1.0[5]
7/20/04		107.58	--	8.69	0.00	98.89	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--
10/7/04		107.58	--	8.06	0.00	99.52	<82	<100	<50	--	--	--	--	--	--
7/18/05		107.58	--	8.26	0.00	99.32	<77	<96	<48	--	--	--	--	--	--
10/21/05		107.58	--	8.25	0.00	99.33	<82	<100	48	--	--	--	--	--	--
9/5/07		107.58	--	8.79	0.00	98.79	<79	<99	<50	--	--	--	--	--	0.52
5/27-28/08	LFP	107.58	--	8.22	0.00	99.36	<80	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.24
8/27-29/08	LFP	107.58	--	8.26	0.00	99.32	<79	<99	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.92
11/17-19/08	LFP	107.58	--	6.87	0.00	100.71	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.057
2/16-18/09	LFP	107.58	--	7.92	0.00	99.66	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.51
5/4-06/09	LFP	107.58	--	7.26	0.00	100.32	120	<69	380	2	<0.5	<0.5	<0.5	<0.5	2.1
8/19-21/09	LFP	107.58	--	8.67	0.00	98.91	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.27
11/18-20/09	LFP	107.58	--	5.58	0.00	102.00	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.36
2/8-10/10	LFP	107.58	--	7.35	0.00	100.23	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.46
5/12-13/10	LFP	107.58	--	7.77	0.00	99.81	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.58
08/12/10	LFP	107.58	--	8.45	0.00	99.13	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.29
11/3-4/10	LFP	107.58	--	6.85	0.00	100.73	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.19
2/3-4/11	LFP	107.58	--	8.21	0.00	99.37	49	89	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.56
05/24/11	LFP	107.58	--	7.58	0.00	100.00	<29	270	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.49
8/23-24/11	LFP	107.58	--	8.52	0.00	99.06	**860**	<66	72	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
11/7-9/11	LFP	107.58	--	8.35	0.00	99.23	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.24
2/6-8/12	LFP	107.58	--	7.10	0.00	100.48	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
5/2-4/12	LFP	107.58	--	7.20	0.00	100.38	<30	<69	68	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
8/1-3/12	LFP	107.58	--	8.45	0.00	99.13	<31	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.39
11/26-28/12	LFP	107.58	--	6.67	0.00	100.91	<30	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.14
02/4-6/13	LFP	107.58	--	7.22	0.00	100.36	<28	<66	50	<0.5	<0.5	<0.5	<0.5	<0.5	0.64
5/6-8/13	LFP	107.58	--	8.00	0.00	99.58	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.47
9/9-13/13	LFP	107.58	--	7.71	0.00	99.87	<29/32	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.85
11/18-22/13	LFP	107.58	--	6.76	0.00	100.82	<29/33	<67/<67	68	<0.5	<0.5	<0.5	<0.5	<0.5	0.58
2/4-11/2014	LFP	107.58	--	7.67	0.00	99.91	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.38
6/12-14/14	LFP	107.58	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/18-21/14	LFP	107.58	--	8.63	0.00	98.95	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.36

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-112 (cont.)															
11/19-20/14	LFP	107.58	--	7.71	0.00	99.87	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.13
2/17-20/15	LFP	107.58	--	7.33	0.00	100.25	<30/<30	<69/<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.083
5/11-15/15	LFP	107.58	--	8.19	0.00	99.39	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.460
8/10-11/15	LFP	107.58	--	8.90	0.00	98.68	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.200
11/16-18/15	LFP	107.58	--	5.65	0.00	101.93	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.0014
5/13-14/16	LFP	107.58	--	8.18	0.00	99.40	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	--	<0.13
11/14/16	LFP	107.58	--	6.90	0.00	100.68	56	<70	<50	<0.5	<0.5	<0.5	<0.5	--	0.33
MW-113															
8/22/95		108.44	--	9.26	0.00	99.18	320	<750	**3,100**	--	--	--	--	--	--
11/28/95		108.44	--	7.55	0.00	100.89	<250	<750	180	--	--	--	--	--	<2.0
3/12/96		108.44	--	8.26	0.00	100.18	<250	<750	750	--	--	--	--	--	<2.0
6/26/96		108.44	--	8.95	0.00	99.49	<250	<750	**809**	--	--	--	--	--	2.43
10/9/96		108.44	--	9.21	0.00	99.23	<250	<750	494	--	--	--	--	--	2.95
2/12/97		108.44	--	7.93	0.00	100.51	<250	<750	**1,600**	--	--	--	--	--	<2.0
4/22/97		108.44	--	7.71	0.00	100.73	291	<750	748	--	--	--	--	--	<2.0
8/5/97		108.44	--	9.37	0.00	99.07	<250	<750	**876**	--	--	--	--	--	<2.0
11/11/97		108.44	--	8.04	0.00	100.40	<250	<750	<50	--	--	--	--	--	<2.0
2/11/98		108.44	--	8.02	0.00	100.42	<250	<750	76.10	--	--	--	--	--	<2.0
5/28/98		108.44	--	8.31	0.00	100.13	<250	<750	116	--	--	--	--	--	6.26
8/20/98		108.44	--	10.48	0.00	97.96	<250	<750	235	--	--	--	--	--	<1.0
11/19/98		108.44	--	9.02	0.00	99.42	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		108.44	--	7.59	0.00	100.85	<250	<750	162	--	--	--	--	--	<1.0
5/25/99		108.44	--	8.83	0.00	99.61	<250	--	321	--	--	--	--	--	--
8/17/99		108.44	--	9.34	0.00	99.10	<250	<500	265	--	--	--	--	--	1.2
11/19/99		108.44	--	7.27	0.00	101.17	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		108.44	--	7.66	0.00	100.78	<250	<500	96.70	--	--	--	--	--	<1.0
6/13/00		108.44	--	8.29	0.00	100.15	<250	<500	154	--	--	--	--	--	<1.0
9/26/00		108.44	--	9.51	0.00	98.93	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		108.44	--	8.91	0.00	99.53	<250	**588**	<80	--	--	--	--	--	<1.0
2/28/01		108.44	--	8.60	0.00	99.84	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		108.44	--	8.14	0.00	100.30	<250	<500	<80	--	--	--	--	--	<1.0
10/30/02		108.44	--	9.85	0.00	98.59	<250	<500	<80	<0.500	<0.500	<0.500	<1.0	--	1.55
1/23/03		108.44	--	8.29	0.00	100.15	<250	<500	<80	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]
4/18/03		108.44	--	8.09	0.00	100.35	<250	<500	<50	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]
7/11/03		108.44	--	9.51	0.00	98.93	<250	<500	<50	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]
10/31/03		108.44	--	8.80	0.00	99.64	<250	<500	<50	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-113 (cont.)															
12/31/03		108.44	--	7.44	0.00	101.00	<50	<77	<97	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		108.44	--	9.14	0.00	99.30	<250	<500	<50	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]
7/20/04		108.44	--	9.58	0.00	98.86	<250	<500	<50	<0.500	<0.500	<0.500	<1.0	--	--
10/6/04		108.44	--	8.92	DRY	--	--	--	--	--	--	--	--	--	--
1/27/05		108.44	--	8.15	0.00	--	<84	<110	<48	--	--	--	--	--	--
4/12/05		108.44	--	7.76	0.00	--	<88	<110	<48	--	--	--	--	--	--
7/18/05		108.44	--	9.11	0.00	--	<79	<98	<48	--	--	--	--	--	--
10/26/05		108.44	--	9.10	0.00	--	<82	<100	<48	--	--	--	--	--	--
9/5/07		108.44	--	9.59	0.00	98.85	<82	<100	<50	--	--	--	--	--	0.32
9/5/07 (D)		108.44	--	9.59	0.00	98.85	<82	<100	<50	--	--	--	--	--	0.32
5/27-28/08	LFP	108.44	--	9.02	0.00	99.42	<82	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.16
8/27-29/08	LFP	108.44	--	9.10	0.00	99.34	<81	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.19
11/17-19/08	LFP	108.44	--	7.68	0.00	100.76	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	108.44	--	8.75	0.00	99.69	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.087
5/4-6/09	LFP	108.44	--	8.28	0.00	100.16	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	108.44	--	9.50	0.00	98.94	<31	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.14
11/18-20/09	LFP	108.44	--	6.39	0.00	102.05	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.16
2/8-10/10	LFP	108.44	--	8.15	0.00	100.29	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
5/12-13/10	LFP	108.44	--	8.60	0.00	99.84	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.093
08/12/10	LFP	108.44	--	9.29	0.00	99.15	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.077
11/3-4/10	LFP	108.44	--	7.65	0.00	100.79	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
2/3-4/11	LFP	108.44	--	8.26	0.00	100.18	<30	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
05/24/11	LFP	108.44	--	8.42	0.00	100.02	<30	330	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
8/23-24/11	LFP	108.44	--	9.32	0.00	99.12	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.096
11/7-9/11	LFP	108.44	--	9.20	0.00	99.24	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.12
2/6-8/12	LFP	108.44	--	7.95	0.00	100.49	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	108.44	--	8.00	0.00	100.44	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	108.44	--	9.30	0.00	99.14	<31	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.048
11/26-28/12	LFP	108.44	--	7.49	0.00	100.95	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	108.44	--	8.06	0.00	100.38	30	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	108.44	--	8.83	0.00	99.61	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	108.44	--	8.56	0.00	99.88	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.12
11/18-21/13	LFP	108.44	--	7.74	0.00	100.70	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
2/4-11/14	LFP	108.44	--	6.56	0.00	101.88	<29/<29	<69/<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
6/12-14/14	LFP	108.44	--	8.79	0.00	99.65	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
8/18-21/14	LFP	108.44	--	9.39	0.00	99.05	<30/<30	<71/<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.35

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-113 (cont.)															
11/19-20/14	LFP	108.44	--	8.59	0.00	99.85	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	108.44	--	8.01	0.00	100.43	<30/<30	<70/<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	108.44	--	9.08	0.00	99.36	<29/<29	<67/<67	75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
8/10-11/15	LFP	108.44	--	9.28	0.00	99.16	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.13
11/16-18/15	LFP	108.44	--	5.99	0.00	102.45	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.00019
5/13-14/16	LFP	108.44	--	8.95	0.00	99.49	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	--	<0.13
11/14/16	LFP	108.44	--	7.73	0.00	100.71	57	<66	<50	<0.5	<0.5	<0.5	<0.5	--	<0.090
MW-114															
8/22/95		106.89	--	7.47	0.00	99.42	<250	<750	<50	--	--	--	--	--	--
11/28/95		106.89	--	5.83	0.00	101.06	<250	<750	<50	--	--	--	--	--	<2.0
3/12/96		106.89	--	6.39	0.00	100.50	<250	<750	<50	--	--	--	--	--	<2.0
6/26/96		106.89	--	7.11	0.00	99.78	<250	<750	<50	--	--	--	--	--	<2.0
10/9/96		106.89	--	7.42	0.00	99.47	<250	<750	<50	--	--	--	--	--	<2.0
2/12/97		106.89	--	5.47	0.00	101.42	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		106.89	--	14.30	0.00	92.59	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		106.89	--	7.65	0.00	99.24	<250	**1,410**	<50	--	--	--	--	--	<2.0
11/11/97		106.89	--	6.45	0.00	100.44	<250	<750	<50	--	--	--	--	--	<2.0
2/11/98		106.89	--	6.23	0.00	100.66	<250	<750	<50	--	--	--	--	--	<2.0
5/28/98		106.89	--	6.44	0.00	100.45	<250	<750	<50	--	--	--	--	--	5.91
8/20/98		106.89	--	8.75	0.00	98.14	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		106.89	--	7.05	0.00	99.84	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		106.89	--	5.90	0.00	100.99	<250	<500	<80	--	--	--	--	--	<1.0
5/25/99		106.89	--	7.10	0.00	99.79	<250	--	<80	--	--	--	--	--	--
8/17/99		106.89	--	7.59	0.00	99.30	<250	**607**	<80	--	--	--	--	--	<1.0
11/19/99		106.89	--	5.59	0.00	101.30	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		106.89	--	5.98	0.00	100.91	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		106.89	--	6.04	0.00	100.85	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		106.89	--	7.81	0.00	99.08	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		106.89	--	7.06	0.00	99.83	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		106.89	--	6.79	0.00	100.10	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		106.89	--	8.84	0.00	98.05	<250	**1,880**	<80	--	--	--	--	--	<1.0
10/30/02		106.89	--	8.32	0.00	98.57	<250	**1,090**	115	<0.500	<0.500	1.17	5.18	--	1.01
1/23/03		106.89	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		106.89	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		106.89	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		106.89	--	6.61	0.00	100.28	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-114 (cont.)															
12/30/03		106.89	--	5.81	0.00	101.08	<50	480	**3,600**	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		106.89	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		106.89	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/6/04		106.89	--	6.98	0.00	99.91	<76	<95	<50	--	--	--	--	--	--
10/24/05		106.89	--	7.28	0.00	99.61	<79	<99	<48	--	--	--	--	--	--
9/5/07		106.89	--	7.87	0.00	99.02	94	**810**	<50	--	--	--	--	--	0.38
5/27-28/08	LFP	106.89	--	7.19	0.00	99.70	<1,600	**15,000**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.14
8/27-29/08	LFP	106.89	--	7.30	0.00	99.59	270	**2,200**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.25
11/17-19/08	LFP	106.89	--	6.01	0.00	100.88	330	**4,600**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.13
2/16-18/09	LFP	106.89	--	6.91	0.00	99.98	210	**1,900**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
5/4-6/09	LFP	106.89	--	6.42	0.00	100.47	180	**1,400**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.43
8/19-21/09	LFP	106.89	--	7.78	0.00	99.11	<30	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.79
11/18-20/09	LFP	106.89	--	5.10	0.00	101.79	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.34
2/8-10/10	LFP	106.89	--	6.38	0.00	100.51	110	**790**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.19
5/12-13/10	LFP	106.89	--	6.71	0.00	100.18	<30	80	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.23
08/11/10	LFP	106.89	--	7.45	0.00	99.44	<29	220	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
11/3-4/10	LFP	106.89	--	5.88	0.00	101.01	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.24
2/3-4/11	LFP	106.89	--	6.48	0.00	100.41	60	460	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
05/23/11	LFP	106.89	--	6.55	0.00	100.34	55	380	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.36
8/23-24/11	LFP	106.89	--	7.70	0.00	99.19	130	**1,500**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.41
11/7-9/11	LFP	106.89	--	7.35	0.00	99.54	120	**950**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.19
2/6-8/12	LFP	106.89	--	6.25	0.00	100.64	<29	180	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.088
5/2-4/12	LFP	106.89	--	5.95	0.00	100.94	<30	140	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.72
8/1-3/12	LFP	106.89	--	7.50	0.00	99.39	140	**910**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.084
11/26-28/12	LFP	106.89	--	5.88	0.00	101.01	<31	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.19
02/4-6/13	LFP	106.89	--	6.27	0.00	100.62	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.13
05/6-8/13	LFP	106.89	--	6.97	0.00	99.92	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.20
9/9-13/13	LFP	106.89	--	6.96	0.00	99.93	<29/60	<67/260	<50	<0.5	<0.5	<0.5	<0.5	<0.5	2.3
11/18-22/13	LFP	106.89	--	8.36	0.00	98.53	200/99	<68/340	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
02/4-11/14	LFP	106.89	--	6.56	0.00	100.33	<29/<29	<67/71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.12
6/12-14/14	LFP	106.89	--	6.96	0.00	99.93	38/94	340/**820**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.18
8/18-21/14	LFP	106.89	--	7.57	0.00	99.32	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
11/19-20/14	LFP	106.89	--	6.75	0.00	100.14	<28/<28	<66/140	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.20
2/17-20/15	LFP	106.89	--	6.31	0.00	100.58	<30/<30	<69/<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	106.89	--	6.89	0.00	100.00	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.55
8/10-11/15	LFP	106.89	--	8.03	0.00	98.86	<29/130	170/**570**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	**39.2**

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-114 (cont.)															
11/16-18/15	LFP	106.89	--	4.54	0.00	102.35	<29/49	<67/280	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.0145
5/13-14/16	LFP	106.89	--	7.97	0.00	98.92	35/67	260/490	<50	<0.5	<0.5	<0.5	<0.5	--	<0.13
11/14/16	LFP	106.89	--	5.40	0.00	101.49	36/220	280/**790**	<50	<0.5	<0.5	<0.5	<0.5	--	2.5000
MW-115															
8/22/95		107.94	--	8.79	0.00	99.15	<250	<750	**1,800**	--	--	--	--	--	--
11/28/95		107.94	--	7.05	0.00	100.89	<250	<750	460	--	--	--	--	--	<2.0
3/12/96		107.94	--	7.76	0.00	100.18	<250	<750	630	--	--	--	--	--	<2.0
6/26/96		107.94	--	8.45	0.00	99.49	<250	<750	706	--	--	--	--	--	<2.0
10/9/96		107.94	--	8.71	0.00	99.23	<250	<750	722	--	--	--	--	--	2.54
2/12/97		107.94	--	7.48	0.00	100.46	<250	<750	58	--	--	--	--	--	<2.0
4/22/97		107.94	--	7.25	0.00	100.69	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		107.94	--	8.77	0.00	99.17	<250	<750	611	--	--	--	--	--	2.0
11/11/97		107.94	--	7.71	0.00	100.23	<250	<750	57	--	--	--	--	--	<2.0
2/11/98		107.94	--	7.72	0.00	100.22	<250	<750	89.5	--	--	--	--	--	<2.0
5/28/98		107.94	--	7.92	0.00	100.02	<250	<750	<50	--	--	--	--	--	8.08
8/20/98		107.94	--	9.18	0.00	98.76	<250	<750	155	--	--	--	--	--	<1.0
11/19/98		107.94	--	8.58	0.00	99.36	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		107.94	--	7.12	0.00	100.82	<250	<750	<80	--	--	--	--	--	<1.0
5/25/99		107.94	--	8.33	0.00	99.61	<250	--	<80	--	--	--	--	--	--
8/17/99		107.94	--	8.87	0.00	99.07	<250	<500	163	--	--	--	--	--	1.4
11/19/99		107.94	--	6.82	0.00	101.12	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		107.94	--	7.20	0.00	100.74	<250	<500	103	--	--	--	--	--	<1.0
6/13/00		107.94	--	7.82	0.00	100.12	--	--	<80	--	--	--	--	--	<1.0
9/26/00		107.94	--	9.02	0.00	98.92	<250	<500	--	--	--	--	--	--	1.02
12/13/00		107.94	--	8.43	0.00	99.51	<250	<500	313	--	--	--	--	--	<1.0
2/28/01		107.94	--	8.13	0.00	99.81	<250	<500	177	--	--	--	--	--	<1.0
5/2/01		107.94	--	10.37	0.00	97.57	<250	<500	162	--	--	--	--	--	<1.0
10/30/02		107.94	--	9.33	0.00	98.61	<250	<500	175	<0.500	<0.500	<0.500	<1.0	--	4.36
1/23/03		107.94	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		107.94	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		107.94	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		107.94	--	8.30	0.00	99.64	<250	<500	78.9	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]
12/31/03		107.94	--	6.98	0.00	100.96	<50	<79	<99	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		107.94	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		107.94	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/6/04		107.94	--	8.43	0.00	99.51	<160	<200	<50	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-115 (cont.)															
10/21/05		107.94	--	8.67	0.00	99.27	<81	<100	<48	--	--	--	--	--	--
10/21/05(D)		107.94	--	8.67	0.00	99.27	<82	<100	<48	--	--	--	--	--	--
9/5/07		107.94	--	9.11	0.00	98.83	<76	<95	<50	--	--	--	--	--	0.37
5/27-28/08		107.94	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	107.94	--	8.63	0.00	99.31	<82	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.35
11/17-19/08	LFP	107.94	--	7.25	0.00	100.69	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.097
2/16-18/09	LFP	107.94	--	8.31	0.00	99.63	<31	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.17
5/4-6/09	LFP	107.94	--	7.66	0.00	100.28	42	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.36
8/19-21/09	LFP	107.94	--	9.04	0.00	98.90	320	**2,700**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.64
10/19/09	LFP	107.94	--	8.70	0.00	99.24	<29	<68	--	--	--	--	--	--	--
11/18-20/09	LFP	107.94	--	5.85	0.00	102.09	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.92
2/8-10/10	LFP	107.94	--	7.69	0.00	100.25	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.17
5/12-13/10	LFP	107.94	--	8.14	0.00	99.80	30	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.20
08/12/10	LFP	107.94	--	8.81	0.00	99.13	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.92
11/3-4/10	LFP	107.94	--	7.07	0.00	100.87	<30	<70	70	<0.5	<0.5	<0.5	<0.5	<0.5	0.83
2/3-4/11	LFP	107.94	--	7.81	0.00	100.13	33	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
05/24/11	LFP	107.94	--	7.95	0.00	99.99	42	220	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.53
8/23-24/11	LFP	107.94	--	9.05	0.00	98.89	68	74	73	<0.5	<0.5	<0.5	<0.5	<0.5	1.2
11/7-9/11	LFP	107.94	--	8.70	0.00	99.24	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.60
2/6-8/12	LFP	107.94	--	7.55	0.00	100.39	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	107.94	--	7.55	0.00	100.39	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	107.94	--	8.82	0.00	99.12	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.63
11/26-28/12	LFP	107.94	--	7.04	0.00	100.90	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.052
02/4-6/13	LFP	107.94	--	7.58	0.00	100.36	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	107.94	--	8.34	0.00	99.60	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.41
9/9-13/13	LFP	107.94	--	8.09	0.00	99.85	<28/31	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.89
11/18-21/13	LFP	107.94	--	7.45	0.00	100.49	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.45
2/4-11/14	LFP	107.94	--	8.05	0.00	99.89	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.43
6/12-14/14	LFP	107.94	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/18-21/14	LFP	107.94	--	8.88	0.00	99.06	<29/36	<68/<68	66	<0.5	<0.5	<0.5	<0.5	<0.5	0.82
11/19-20/14	LFP	107.94	--	8.07	0.00	99.87	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.28
2/17-20/15	LFP	107.94	--	7.57	0.00	100.37	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	107.94	--	8.33	0.00	99.61	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.60
8/10-11/15	LFP	107.94	--	9.28	0.00	98.66	<28/33	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.71
11/16-18/15	LFP	107.94	--	6.53	0.00	101.41	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.00
5/13-14/16	LFP	107.94	--	8.48	0.00	99.46	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-115 (cont.)															
11/14/16	LFP	107.94	--	7.35	0.00	100.59	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
MW-116															
8/22/95		107.56	--	8.82	0.00	98.74	<250	<750	<50	--	--	--	--	--	--
3/12/96		107.56	--	8.08	0.00	99.48	<250	<750	<50	--	--	--	--	--	<2.0
10/9/96		107.56	--	8.69	0.00	98.87	<250	<750	<50	--	--	--	--	--	<2.0
2/12/97		107.56	--	7.86	0.00	99.70	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		107.56	--	7.65	0.00	99.91	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		107.56	--	8.71	0.00	98.85	<250	<750	<50	--	--	--	--	--	<2.0
11/11/97		107.56	--	8.07	0.00	99.49	<250	<750	<50	--	--	--	--	--	<2.0
2/11/98		107.56	--	8.06	0.00	99.50	<250	<750	<50	--	--	--	--	--	<2.0
5/28/98		107.56	--	8.25	0.00	99.31	<250	<750	<50	--	--	--	--	--	4.66
8/20/98		107.56	--	9.05	0.00	98.51	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		107.56	--	9.16	0.00	98.40	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		107.56	--	7.64	0.00	99.92	<250	<750	<80	--	--	--	--	--	<1.0
5/25/99		107.56	--	8.40	0.00	99.16	<250	--	<80	--	--	--	--	--	--
8/17/99		107.56	--	8.78	0.00	98.78	<250	<500	<80	--	--	--	--	--	<1.0
11/19/99		107.56	--	7.60	0.00	99.96	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		107.56	--	7.70	0.00	99.86	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		107.56	--	8.37	0.00	99.19	--	--	<80	--	--	--	--	--	<1.0
9/26/00		107.56	--	8.88	0.00	98.68	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		107.56	--	8.52	0.00	99.04	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		107.56	--	8.25	0.00	99.31	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		107.56	--	10.84	0.00	96.72	<250	<500	<80	--	--	--	--	--	<1.0
10/30/02		107.56	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		107.56	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
4/18/03		107.56	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
7/11/03		107.56	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
10/31/03		107.56	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
12/30/03		107.56	--	7.54	0.00	100.02	<50	<79	<99	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		107.56	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
7/20/04		107.56	--	8.92	0.00	98.64	<284	<568	<50	<0.500	<0.500	<0.500	<1.00	--	--
10/7/04		107.56	--	7.54	0.00	100.02	<75	<94	<50	--	--	--	--	--	--
10/20/05		107.56	--	8.73	0.00	98.83	<81	<100	<48	--	--	--	--	--	--
9/6/07		107.56	--	9.00	0.00	98.56	<76	<95	<50	--	--	--	--	--	0.15
5/27-28/08		107.56	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	107.56	--	8.68	0.00	98.88	89	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-116 (cont.)															
11/17-19/08	LFP	107.56	--	7.93	0.00	99.63	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	107.56	--	8.45	0.00	99.11	**590**	350	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
5/4-6/09	LFP	107.56	--	8.20	0.00	99.36	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	107.56	--	8.91	0.00	98.65	34	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/18-20/09	LFP	107.56	--	6.85	0.00	100.71	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
2/8-10/10	LFP	107.56	--	8.07	0.00	99.49	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
08/12/10	LFP	107.56	--	8.78	0.00	98.78	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
11/3-4/10	LFP	107.56	--	8.04	0.00	99.52	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
2/3-4/11	LFP	107.56	--	8.16	0.00	99.40	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
05/24/11		107.56	UNABLE TO LOCATE				--	--	--	--	--	--	--	--	--
8/23-24/11	LFP	107.56	--	9.00	0.00	98.56	<31	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
11/7-9/11	LFP	107.56	--	8.75	0.00	98.81	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
2/6-8/12	LFP	107.56	--	8.05	0.00	99.51	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	107.56	--	8.10	0.00	99.46	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	107.56	--	8.80	0.00	98.76	<30	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.034
11/26-28/12	LFP	107.56	--	7.84	0.00	99.72	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	107.56	--	8.04	0.00	99.52	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	107.56	--	8.51	0.00	99.05	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	107.56	--	8.61	0.00	98.95	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
11/18-21/13	LFP	107.56	--	8.15	0.00	99.41	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
2/4-11/14	LFP	107.56	--	8.28	0.00	99.28	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
6/12-14/14	LFP	107.56	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/18-21/14	LFP	107.56	--	8.83	0.00	98.73	<29/38	<67/<67	68	<0.5	<0.5	<0.5	<0.5	<0.5	0.78
11/19-20/14	LFP	107.56	--	8.38	0.00	99.18	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	107.56	--	8.08	0.00	99.48	<30/<30	<69/<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.17
5/11-15/15	LFP	107.56	--	8.71	0.00	98.85	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
8/10-11/15	LFP	107.56	--	9.17	0.00	98.39	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.42
11/16-18/15	LFP	107.56	--	7.37	0.00	100.19	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.0062
5/13-14/16	LFP	107.56	--	8.59	0.00	98.97	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
11/14/16	LFP	107.56	--	8.06	0.00	99.50	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
MW-117															
8/22/95		106.57	--	7.45	0.00	99.12	<250	<750	<50	--	--	--	--	--	--
11/28/95		106.57	--	5.45	0.00	101.12	<250	<750	<50	--	--	--	--	--	<2.0
3/12/96		106.57	--	6.32	0.00	100.25	<250	<750	<50	--	--	--	--	--	<2.0
6/26/96		106.57	--	7.18	0.00	99.39	<250	<750	<50	--	--	--	--	--	<2.0
10/9/96		106.57	--	7.42	0.00	99.15	<250	<750	<50	--	--	--	--	--	7.1

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-117 (cont.)															
2/12/97		106.57	--	5.93	0.00	100.64	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		106.57	--	5.78	0.00	100.79	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		106.57	--	7.58	0.00	98.99	<250	<750	<50	--	--	--	--	--	<2.0
11/11/97		106.57	--	6.21	0.00	100.36	<250	<750	<50	--	--	--	--	--	<2.0
2/11/98		106.57	--	6.21	0.00	100.36	<250	<750	<50	--	--	--	--	--	<2.0
5/28/98		106.57	--	6.44	0.00	100.13	<250	<750	<50	--	--	--	--	--	2.68
8/20/98		106.57	--	7.90	0.00	98.67	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		106.57	--	7.18	0.00	99.39	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		106.57	--	5.51	0.00	101.06	<250	<500	<80	--	--	--	--	--	<1.0
5/25/99		106.57	--	7.00	0.00	99.57	<250	--	<80	--	--	--	--	--	--
8/17/99		106.57	--	7.56	0.00	99.01	<250	<500	<80	--	--	--	--	--	<1.0
11/19/99		106.57	--	5.11	0.00	101.46	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		106.57	--	5.65	0.00	100.92	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		106.57	--	6.25	0.00	100.32	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		106.57	--	7.70	0.00	98.87	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		106.57	--	7.11	0.00	99.46	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		106.57	--	6.78	0.00	99.79	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		106.57	--	8.90	0.00	97.67	<250	<500	<80	--	--	--	--	--	<1.0
10/30/02		106.57	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		106.57	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		106.57	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		106.57	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		106.57	UNABLE TO LOCATE - POSSIBLY PAVED OVER						--	--	--	--	--	--	--
12/30/03		106.57	--	5.46	0.00	101.11	<50	<80	<100	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		106.57	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		106.57	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/6/04		106.57	--	7.07	0.00	99.50	<79	<98	<50	--	--	--	--	--	--
10/21/05		106.57	--	7.33	0.00	99.24	<81	<100	<48	--	--	--	--	--	--
9/5/07		106.57	--	7.92	0.00	98.65	<82	<100	<50	--	--	--	--	--	0.22
5/27-28/08	LFP	106.57	--	7.42	0.00	99.15	<80	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.056
8/27-29/08	LFP	106.57	--	7.38	0.00	99.19	<82	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	106.57	--	5.90	0.00	100.67	55	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	106.57	--	7.06	0.00	99.51	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.095
5/4-6/09	LFP	106.57	--	6.51	0.00	100.06	38	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	106.57	--	7.82	0.00	98.75	40	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.073
11/18-20/09	LFP	106.57	--	3.85	0.00	102.72	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-117 (cont.)															
2/8-10/10	LFP	106.57	--	6.43	0.00	100.14	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
5/12-13/10	LFP	106.57	--	6.96	0.00	99.61	36	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
08/12/10	LFP	106.57	--	7.68	0.00	98.89	<29	210	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
11/3-4/10	LFP	106.57	--	5.97	0.00	100.60	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
2/3-4/11	LFP	106.57	--	6.5	0.00	100.07	<31	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
05/24/11	LFP	106.57	--	6.77	0.00	99.80	<30	150	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
8/23-24/11	LFP	106.57	--	7.85	0.00	98.72	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
11/7-9/11	LFP	106.57	--	7.55	0.00	99.02	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
2/6-8/12	LFP	106.57	--	6.20	0.00	100.37	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	106.57	--	6.00	0.00	100.57	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	106.57	--	7.66	0.00	98.91	<32	<75	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.034
11/26-28/12	LFP	106.57	--	5.60	0.00	100.97	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	106.57	--	6.29	0.00	100.28	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	106.57	--	7.18	0.00	99.39	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	106.57	--	8.11	0.00	98.46	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
11/18-21/13	LFP	106.57	--	5.99	0.00	100.58	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
2/4-11/14	LFP	106.57	--	6.85	0.00	99.72	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
6/12-14/14	LFP	106.57	--	7.11	0.00	99.46	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
8/18-21/14	LFP	106.57	--	7.71	0.00	98.86	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.37
11/19-20/14	LFP	106.57	--	6.91	0.00	99.66	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	106.57	--	6.26	0.00	100.31	<29/<29	<69/<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	106.57	--	6.91	0.00	99.66	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
8/10-11/15	LFP	106.57	--	8.10	0.00	98.47	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	1.10
11/16-18/15	LFP	106.57	--	3.89	0.00	102.68	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.0021
5/13-14/16	LFP	106.57	--	7.38	0.00	99.19	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
11/14/16	LFP	106.57	--	5.60	0.00	100.97	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
MW-118															
8/22/95		106.72	--	7.87	0.00	98.85	470	<750	<50	--	--	--	--	--	--
11/28/95		106.72	--	5.76	0.00	100.96	<250	<750	<50	--	--	--	--	--	<2.0
3/12/96		106.72	--	6.67	0.00	100.05	<250	<750	<50	--	--	--	--	--	<2.0
6/26/96		106.72	--	7.51	0.00	99.21	<250	<750	<50	--	--	--	--	--	<2.0
10/9/96		106.72	--	7.78	0.00	98.94	<250	<750	50.1	--	--	--	--	--	<2.0
2/12/97		106.72	--	6.35	0.00	100.37	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		106.72	--	5.98	0.00	100.74	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		106.72	--	7.85	0.00	98.87	<250	<750	<50	--	--	--	--	--	<2.0
11/11/97		106.72	--	6.52	0.00	100.20	<250	<750	<50	--	--	--	--	--	<2.0

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-118 (cont.)															
2/11/98		106.72	--	6.56	0.00	100.16	<250	<750	<50	--	--	--	--	--	<2.0
5/28/98		106.72	--	6.85	0.00	99.87	<250	<750	<50	--	--	--	--	--	2.84
8/20/98		106.72	--	7.26	0.00	99.46	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		106.72	--	7.70	0.00	99.02	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		106.72	--	5.81	0.00	100.91	<250	<750	<80	--	--	--	--	--	<1.0
5/25/99		106.72	--	7.39	0.00	99.33	<250	--	<80	--	--	--	--	--	--
8/17/99		106.72	--	7.95	0.00	98.77	<250	<500	<80	--	--	--	--	--	<1.0
11/19/99		106.72	--	5.53	0.00	101.19	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		106.72	--	5.99	0.00	100.73	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		106.72	--	7.08	0.00	99.64	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		106.72	--	8.07	0.00	98.65	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		106.72	--	7.53	0.00	99.19	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		106.72	--	7.17	0.00	99.55	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		106.72	--	6.81	0.00	99.91	<250	<500	<80	--	--	--	--	--	<1.0
10/30/02		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
4/18/03		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
7/11/03		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
10/31/03		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
12/30/03		106.72	--	5.71	0.00	101.01	<50	<400	<500	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
7/20/04		106.72	--	8.14	0.00	98.58	<250	<500	<50	<0.500	<0.500	<0.500	<1.00	--	--
10/7/04		106.72	--	7.55	0.00	99.17	<76	<96	<50	--	--	--	--	--	--
10/7/04(D)		106.72	--	7.55	0.00	99.17	<80	160	<50	--	--	--	--	--	--
10/20/05		106.72	--	7.78	0.00	98.94	<83	<100	<48	--	--	--	--	--	--
9/5/07		106.72	--	8.20	0.00	98.52	**980**	**710**	<50	--	--	--	--	--	0.13
5/27-28/08		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	106.72	--	7.64	0.00	99.08	260	230	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	106.72	--	6.20	0.00	100.52	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	106.72	--	7.29	0.00	99.43	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.068
5/4-6/09	LFP	106.72	--	6.70	0.00	100.02	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	106.72	--	8.04	0.00	98.68	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.23
11/18-20/09	LFP	106.72	--	4.45	0.00	102.27	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/8-10/10	LFP	106.72	--	6.65	0.00	100.07	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
5/12-13/10	LFP	106.72	--	7.21	0.00	99.51	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
08/12/10	LFP	106.72	--	7.90	0.00	98.82	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-118 (cont.)															
11/3-4/10	LFP	106.72	--	6.39	0.00	100.33	<29	160	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
2/3-4/11	LFP	106.72	--	6.77	0.00	99.95	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
05/24/11		106.72	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
8/23-24/11	LFP	106.72	--	8.15	0.00	98.57	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
11/7-9/11	LFP	106.72	--	7.80	0.00	98.92	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
2/6-8/12	LFP	106.72	--	6.50	0.00	100.22	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	106.72	--	5.85	0.00	100.87	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	106.72	--	7.87	0.00	98.85	97	230	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.042
11/26-28/12	LFP	106.72	--	5.84	0.00	100.88	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	106.72	--	6.57	0.00	100.15	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	106.72	--	7.47	0.00	99.25	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	106.72	--	7.28	0.00	99.44	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
11/18-21/13	LFP	106.72	--	6.57	0.00	100.15	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
2/4-11/14	LFP	106.72	--	7.02	0.00	99.70	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
6/12-14/14	LFP	106.72	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/18-21/14	LFP	106.72	--	7.92	0.00	98.80	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.41
11/19-20/14	LFP	106.72	--	7.15	0.00	99.57	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	106.72	--	6.54	0.00	100.18	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.083
5/11-15/15	LFP	106.72	--	8.93	0.00	97.79	75/69	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.170
8/10-11/15	LFP	106.72	--	8.27	0.00	98.45	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.13
11/16-18/15	LFP	106.72	--	4.69	0.00	102.03	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.00067
5/13-14/16	LFP	106.72	--	7.61	0.00	99.11	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
11/14/16	LFP	106.72	--	6.36	0.00	100.36	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
MW-119															
8/22/95		108.35	--	9.22	0.00	99.13	<250	<750	<50	--	--	--	--	--	--
11/28/95		108.35	--	7.54	0.00	100.81	<250	<750	100	--	--	--	--	--	<2.0
3/12/96		108.35	--	8.21	0.00	100.14	<250	<750	240	--	--	--	--	--	2.2
6/26/96		108.35	--	8.91	0.00	99.44	<250	<750	174	--	--	--	--	--	<2.0
10/9/96		108.35	--	9.14	0.00	99.21	<250	<750	78	--	--	--	--	--	2.16
2/12/97		108.35	--	7.84	0.00	100.51	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		108.35	--	7.67	0.00	100.68	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		108.35	--	9.15	0.00	99.20	<250	<750	53.6	--	--	--	--	--	<2.0
11/11/97		108.35	--	8.02	0.00	100.33	264	<750	<50	--	--	--	--	--	<2.0
2/11/98		108.35	--	8.02	0.00	100.33	<250	<750	<50	--	--	--	--	--	<2.0
5/28/98		108.35	--	8.20	0.00	100.15	<250	<750	102	--	--	--	--	--	3.33
8/20/98		108.35	--	10.40	0.00	97.95	<250	<750	<50	--	--	--	--	--	<1.0

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-119 (cont.)															
11/19/98		108.35	--	8.98	0.00	99.37	<250	<750	78.5	--	--	--	--	--	1.82
3/11/99		108.35	--	7.61	0.00	100.74	<250	<750	<80	--	--	--	--	--	<1.0
5/25/99		108.35	--	8.77	0.00	99.58	<250	--	<80	--	--	--	--	--	--
8/17/99		108.35	--	9.29	0.00	99.06	<250	<500	<80	--	--	--	--	--	<1.0
11/19/99		108.35	--	7.25	0.00	101.10	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		108.35	--	7.63	0.00	100.72	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		108.35	--	8.28	0.00	100.07	<250	<500	413	--	--	--	--	--	2.64
9/26/00		108.35	--	9.44	0.00	98.91	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		108.35	--	8.86	0.00	99.49	<250	<500	--	--	--	--	--	--	1.79
2/28/01		108.35	--	8.56	0.00	99.79	<250	<500	227	--	--	--	--	--	2.64
5/2/01		108.35	--	8.10	0.00	100.25	<250	<500	104	--	--	--	--	--	1.56
10/30/02		108.35	--	9.76	0.00	98.59	<250	<500	<80	<0.500	<0.500	<0.500	<1.00	--	4.2
1/23/03		108.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		108.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		108.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		108.35	--	8.62	0.00	99.73	<250	<500	<50	<0.500	<0.500	<0.500	<1.00	--	1.31[5]
12/30/03		108.35	--	7.40	0.00	100.95	<50	<77	<96	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		108.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		108.35	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/7/04		108.35	--	8.85	0.00	99.50	<79	<98	<50	--	--	--	--	--	--
10/20/05		108.35	--	9.08	0.00	99.27	<80	<100	<48	--	--	--	--	--	--
9/5/07		108.35	--	9.53	0.00	98.82	<800	<1,000	<50	--	--	--	--	--	0.57
5/27-28/08		108.35	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	108.35	--	9.05	0.00	99.30	<79	<99	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.52
11/17-19/08	LFP	108.35	--	7.65	0.00	100.70	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.29
2/16-18/09	LFP	108.35	--	8.70	0.00	99.65	45	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.44
5/4-6/09	LFP	108.35	--	8.06	0.00	100.29	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.74
8/19-21/09	LFP	108.35	--	9.45	0.00	98.90	36	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.25
11/18-20/09	LFP	108.35	--	6.41	0.00	101.94	32	<68	150	<0.5	<0.5	<0.5	<0.5	<0.5	1
2/8-10/10	LFP	108.35	--	8.11	0.00	100.24	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.33
5/12-13/10	LFP	108.35	--	8.56	0.00	99.79	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.69
08/12/10	LFP	108.35	--	9.22	0.00	99.13	<30	70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.36
11/3-4/10	LFP	108.35	--	7.52	0.00	100.83	38	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	1.3
2/3-4/11	LFP	108.35	--	8.22	0.00	100.13	30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.30
05/24/11	LFP	108.35	--	8.37	0.00	99.98	<30	210	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.49
8/23-24/11	LFP	108.35	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-119 (cont.)															
11/7-9/11	LFP	108.35	--	9.10	0.00	99.25	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.34
2/6-8/12	LFP	108.35	--	7.90	0.00	100.45	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	108.35	--	8.00	0.00	100.35	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.26
8/1-3/12	LFP	108.35	--	9.23	0.00	99.12	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.27
11/26-28/12	LFP	108.35	--	7.43	0.00	100.92	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
02/4-6/13	LFP	108.35	--	7.99	0.00	100.36	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.099
05/6-8/13	LFP	108.35	--	8.76	0.00	99.59	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
9/9-13/13	LFP	108.35	--	8.51	0.00	99.84	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.26
11/18-21/13	LFP	108.35	--	7.67	0.00	100.68	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.80
2/4-11/14	LFP	108.35	--	8.47	0.00	99.88	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.16
6/12-14/14	LFP	108.35	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/18-21/14	LFP	108.35	--	9.23	0.00	99.12	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.17
11/19-20/14	LFP	108.35	--	8.50	0.00	99.85	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.14
2/17-20/15	LFP	108.35	--	7.97	0.00	100.38	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.18
5/11-15/15	LFP	108.35	--	8.96	0.00	99.39	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.24
8/10-11/15	LFP	108.35	--	9.70	0.00	98.65	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.13
11/16-18/15	LFP	108.35	--	6.43	0.00	101.92	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.0041
5/13-14/16	LFP	108.35	--	8.39	0.00	99.96	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
11/14/16	LFP	108.35	--	7.70	0.00	100.65	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
MW-120															
11/7-9/11	LFP	107.11	--	8.00	0.00	99.11	220	160	740	<0.5	<0.5	<0.5	<0.5	<0.5	1.8
2/6-8/12	LFP	107.11	--	6.80	0.00	100.31	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
5/2-4/12	LFP	107.11	--	6.20	0.00	100.91	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	107.11	--	8.11	0.00	99.00	59	75	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.29
11/26-28/12	LFP	107.11	--	6.21	0.00	100.90	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	107.11	--	6.84	0.00	100.27	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	107.11	--	7.64	0.00	99.47	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	107.11	--	7.36	0.00	99.75	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
11/18-21/13	LFP	107.11	--	6.61	0.00	100.50	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.088
2/4-11/14	LFP	107.11	--	7.32	0.00	99.79	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
6/12-14/14	LFP	107.11	--	7.70	0.00	99.41	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
8/18-21/14	LFP	107.11	--	8.13	0.00	98.98	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.32
11/19-20/14	LFP	107.11	--	7.37	0.00	99.74	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	107.11	--	6.83	0.00	100.28	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
5/11-15/15	LFP	107.11	--	7.71	0.00	99.40	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
8/10-11/15	LFP	107.11	--	8.53	0.00	98.58	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.13

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-120 (cont.)															
11/16-18/15	LFP	107.11	--	4.94	0.00	102.17	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.0019
5/13-14/16	LFP	107.11	--	7.81	0.00	99.30	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
11/14/16	LFP	107.11	--	6.47	0.00	100.64	WELL REMOVED FROM SAMPLING PROGRAM - MONITORING ONLY								
B-1															
2/14/91		107.74	--	--	0.00	--	<250	--	**5,100**	--	--	--	--	--	--
2/14/92		107.74	--	6.90	0.00	100.84	--	--	--	--	--	--	--	--	--
2/18/92		107.74	--	6.72	0.00	101.02	--	--	--	--	--	--	--	--	--
3/13/92		107.74	--	6.93	0.00	100.81	--	--	<50	--	--	--	--	--	--
4/21/92		107.74	--	6.66	0.00	101.08	--	--	--	--	--	--	--	--	--
8/22/95		107.74	--	8.03	0.00	99.71	<250	<750	<50	--	--	--	--	--	--
11/28/95		107.74	--	6.13	0.00	101.61	<250	<750	<50	--	--	--	--	--	<2
3/11/96		107.74	--	6.99	0.00	100.75	<250	<750	<50	--	--	--	--	--	7.5
6/26/96		107.74	--	7.73	0.00	100.01	<250	<750	<50	--	--	--	--	--	<2
10/9/96		107.74	--	8.05	0.00	99.69	<250	<750	<50	--	--	--	--	--	<2
2/12/97		107.74	--	6.46	0.00	101.28	<250	<750	<50	--	--	--	--	--	<2
4/22/97		107.74	--	6.25	0.00	101.49	<250	<750	<50	--	--	--	--	--	<2
8/5/97		107.74	--	8.20	0.00	99.54	<250	<750	<50	--	--	--	--	--	<2
11/11/97		107.74	--	6.84	0.00	100.90	300	<750	<50	--	--	--	--	--	<2
2/11/98		107.74	--	6.70	0.00	101.04	<250	<750	<50	--	--	--	--	--	<2
5/28/98		107.74	--	6.85	0.00	100.89	<250	<750	<50	--	--	--	--	--	<1
8/20/98		107.74	--	9.42	0.00	98.32	<250	<750	<50	--	--	--	--	--	<1
11/19/98		107.74	--	7.43	0.00	100.31	<250	<750	<50	--	--	--	--	--	<1
3/11/99		107.74	--	6.34	0.00	101.40	<250	<750	<80	--	--	--	--	--	<1
5/25/99		107.74	--	7.60	0.00	100.14	<1,450	--	<80	--	--	--	--	--	--
8/17/99		107.74	--	8.28	0.00	99.46	<250	<500	<80	--	--	--	--	--	<1
11/19/99		107.74	--	5.90	0.00	101.84	<250	--	<80	--	--	--	--	--	<1
3/9/00		107.74	--	6.38	0.00	101.36	<250	<500	<80	--	--	--	--	--	<1
6/12/00		107.74	--	6.26	0.00	101.48	<250	<500	<80	--	--	--	--	--	<1
9/26/00		107.74	--	8.51	0.00	99.23	<250	<500	--	--	--	--	--	--	<1
12/13/00		107.74	--	7.69	0.00	100.05	<250	<500	--	--	--	--	--	--	<1
2/28/01		107.74	--	7.37	0.00	100.37	<250	<500	<80	--	--	--	--	--	<1
5/2/01		107.74	--	6.69	0.00	101.05	<250	<500	109	--	--	--	--	--	<1
10/30/02		107.74	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
1/23/03		107.74	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		107.74	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		107.74	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-1 (cont.)															
10/31/03		107.74	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
12/30/03		107.74	--	6.11	0.00	101.63	<50	<78	<98	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		107.74	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		107.74	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/6/04		107.74	--	8.87	0.00	98.87	81	100	<50	--	--	--	--	--	--
10/24/05		107.74	--	7.96	0.00	99.78	<81	<100	<48	--	--	--	--	--	--
9/5/07		107.74	--	8.60	0.00	99.14	<80	<100	<50	--	--	--	--	--	0.13
5/27-28/08	LFP	107.74	--	7.85	0.00	99.89	<75	<94	<50	<0.5	0.6	<0.5	<0.5	<0.5	<0.050
8/27-29/08	LFP	107.74	--	8.00	0.00	99.74	<82	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	107.74	--	6.39	0.00	101.35	83	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	107.74	--	7.55	0.00	100.19	300	**2,000**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.098
5/4-6/09	LFP	107.74	--	6.47	0.00	101.27	39	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	107.74	--	8.54	0.00	99.20	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/18-20/09	LFP	107.74	--	5.35	0.00	102.39	60	<69	66	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
2/8-10/10	LFP	107.74	--	6.89	0.00	100.85	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
5/12-13/10	LFP	107.74	--	7.34	0.00	100.40	70	82	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
08/11/10	LFP	107.74	--	8.16	0.00	99.58	<30	83	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
11/3-4/10	LFP	107.74	--	6.02	0.00	101.72	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
2/3-4/11	LFP	107.74	--	7.03	0.00	100.71	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
05/24/11	LFP	107.74	--	7.10	0.00	100.64	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
8/23-24/11	LFP	107.74	--	8.46	0.00	99.28	<30	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
11/7-9/11	LFP	107.74	--	8.10	0.00	99.64	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
2/6-8/12	LFP	107.74	--	6.75	0.00	100.99	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
5/2-4/12	LFP	107.74	--	6.45	0.00	101.29	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	107.74	--	8.23	0.00	99.51	<30	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.034
11/26-28/12	LFP	107.74	--	6.29	0.00	101.45	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	107.74	--	6.81	0.00	100.93	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	107.74	--	8.66	0.00	99.08	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	107.74	--	7.18	0.00	100.56	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
11/18-22/13	LFP	107.74	--	6.64	0.00	101.10	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
2/4-11/14	LFP	107.74	--	7.25	0.00	100.49	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
6/12-14/14	LFP	107.74	--	7.87	0.00	99.87	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
8/18-21/14	LFP	107.74	--	8.40	0.00	99.34	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
11/19-20/14	LFP	107.74	--	7.43	0.00	100.31	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	107.74	--	6.79	0.00	100.95	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	107.74	--	8.77	0.00	98.97	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-1 (cont.)															
8/10-11/15	LFP	107.74	--	8.80	0.00	98.94	<28/89	<66/74	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.13
11/16-18/15	LFP	107.74	--	4.69	0.00	103.05	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.00063
5/13-14/16	LFP	107.74	--	7.80	0.00	99.94	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	--	<0.13
11/14/16	LFP	107.74	--	6.15	0.00	101.59	51	<67	<50	<0.5	<0.5	<0.5	<0.5	--	<0.090
B-2															
2/14/91		108.99	--	--	0.00	--	<250	--	180	--	--	--	--	--	--
2/14/92		108.99	--	8.08	0.00	100.91	--	--	--	--	--	--	--	--	--
2/18/92		108.99	--	7.97	0.00	101.02	--	--	--	--	--	--	--	--	--
3/9/92		108.99	--	7.88	0.00	101.11	--	--	--	--	--	--	--	--	--
3/13/92		108.99	--	8.12	0.00	100.87	--	--	--	--	--	--	--	--	--
4/21/92		108.99	--	7.82	0.00	101.17	--	--	--	--	--	--	--	--	--
8/22/95		108.99	--	9.30	0.00	99.69	<250	<750	<50	--	--	--	--	--	--
11/27/95		108.99	--	7.33	0.00	101.66	<250	<750	<50	--	--	--	--	--	<2
3/12/96		108.99	--	8.20	0.00	100.79	<250	<750	<50	--	--	--	--	--	<2
6/27/96		108.99	--	8.95	0.00	100.04	<250	<750	<50	--	--	--	--	--	<2
10/10/96		108.99	--	9.28	0.00	99.71	<250	<750	<50	--	--	--	--	--	<2
2/12/97		108.99	--	7.73	0.00	101.26	<250	<750	<50	--	--	--	--	--	<2
4/22/97		108.99	--	7.41	0.00	101.58	<250	<750	<50	--	--	--	--	--	2
8/5/97		108.99	--	9.40	0.00	99.59	<250	<750	<50	--	--	--	--	--	<2
11/11/97		108.99	--	8.00	0.00	100.99	<250	<750	<50	--	--	--	--	--	<2
2/11/98		108.99	--	7.90	0.00	101.09	<250	<750	<50	--	--	--	--	--	<2
5/28/98		108.99	--	8.03	0.00	100.96	<250	<750	<50	--	--	--	--	--	<1
8/20/98		108.99	--	10.64	0.00	98.35	<250	<750	<50	--	--	--	--	--	<1
11/19/98		108.99	--	8.67	0.00	100.32	<250	<750	<50	--	--	--	--	--	<1
3/11/99		108.99	--	7.56	0.00	101.43	<250	<500	<80	--	--	--	--	--	<1
5/25/99		108.99	--	8.82	0.00	100.17	<250	<1,600	<80	--	--	--	--	--	--
8/17/99		108.99	--	9.51	0.00	99.48	<250	<500	<80	--	--	--	--	--	<1
11/19/99		108.99	--	7.08	0.00	101.91	<250	<500	<80	--	--	--	--	--	<1
3/9/00		108.99	--	7.59	0.00	101.40	<250	<500	<80	--	--	--	--	--	<1
6/12/00		108.99	--	8.00	0.00	100.99	<250	<500	<80	--	--	--	--	--	<1
9/26/00		108.99	--	9.74	0.00	99.25	<250	<500	--	--	--	--	--	--	<1
12/13/00		108.99	--	8.91	0.00	100.08	<250	<500	--	--	--	--	--	--	<1
2/28/01		108.99	--	8.59	0.00	100.40	<250	<500	<80	--	--	--	--	--	<1
5/2/01		108.99	--	7.89	0.00	101.10	<250	<500	<80	--	--	--	--	--	<1
10/30/02		108.99	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
1/23/03		108.99	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		108.99	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-2 (cont.)															
7/11/03		108.99	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		108.99	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
12/30/03		108.99	--	7.36	0.00	101.63	<50	--	--	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		108.99	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		108.99	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/6/04		108.99	--	7.65	0.00	101.34	<79	<99	<50	--	--	--	--	--	--
7/18/05		108.99	--	9.20	0.00	99.79	<77	<96	<48	--	--	--	--	--	--
10/21/05		108.99	--	9.17	0.00	99.82	<82	<100	<48	--	--	--	--	--	--
9/5/07		108.99	--	9.83	0.00	99.16	<81	<100	<50	--	--	--	--	--	0.1
5/27-28/08		108.99	UNABLE TO LOCATE				--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	108.99	--	9.28	0.00	99.71	<80	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	108.99	--	7.57	0.00	101.42	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	108.99	--	8.77	0.00	100.22	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.070
5/4-6/09	LFP	108.99	--	7.69	0.00	101.30	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	108.99	--	9.75	0.00	99.24	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/18-20/09	LFP	108.99	--	6.46	0.00	102.53	94	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15
2/8-10/10	LFP	108.99	--	8.10	0.00	100.89	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
5/12-13/10	LFP	108.99	--	8.55	0.00	100.44	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
08/11/10	LFP	108.99	--	9.38	0.00	99.61	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
11/3-4/10	LFP	108.99	--	7.20	0.00	101.79	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
2/3-4/11	LFP	108.99	--	8.25	0.00	100.74	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
05/24/11	LFP	108.99	--	8.33	0.00	100.66	<30	140	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052
8/23-24/11	LFP	108.99	--	9.70	0.00	99.29	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.26
11/7-9/11	LFP	108.99	--	9.30	0.00	99.69	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
2/6-8/12	LFP	108.99	--	7.95	0.00	101.04	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.10
5/2-4/12	LFP	108.99	--	7.40	0.00	101.59	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.080
8/1-3/12	LFP	108.99	--	8.20	0.00	100.79	<31	<72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.034
11/26-28/12	LFP	108.99	--	7.47	0.00	101.52	<37	<86	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047
02/4-6/13	LFP	108.99	--	8.04	0.00	100.95	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
05/6-8/13	LFP	108.99	--	8.89	0.00	100.10	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.073
9/9-13/13	LFP	108.99	--	8.41	0.00	100.58	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
11/18-22/13	LFP	108.99	--	7.77	0.00	101.22	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
2/4-11/14	LFP	108.99	--	8.47	0.00	100.52	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
6/12-14/14	LFP	108.99	--	8.91	0.00	100.08	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.085
8/18-21/14	LFP	108.99	--	9.53	0.00	99.46	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
11/19-20/14	LFP	108.99	--	8.54	0.00	100.45	<29/<29	<68/<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
2/17-20/15	LFP	108.99	--	7.93	0.00	101.06	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082
5/11-15/15	LFP	108.99	--	8.91	0.00	100.08	<28/<28	<66/<66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.082

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-2 (cont.)															
8/10-11/15	LFP	108.99	--	10.01	0.00	98.98	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	1.20
11/16-18/15	LFP	108.99	--	5.75	0.00	103.24	<29/<29	<67/<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.00060
5/13-14/16	LFP	108.99	--	9.02	0.00	99.97	37	<67	<50	<0.5	<0.5	<0.5	<0.5	--	<0.13
11/14/16	LFP	108.99	--	7.47	0.00	101.52	<28	<66	<50	<0.5	<0.5	<0.5	<0.5	--	<0.090
B-3															
2/14/91		108.46	--	--	0.00	--	<250	--	**98,000**	--	--	--	--	--	--
2/14/92		108.46	--	7.82	0.00	100.64	--	--	--	--	--	--	--	--	--
2/18/92		108.46	--	7.82	0.00	100.64	--	--	--	--	--	--	--	--	--
3/9/92		108.46	--	7.55	0.00	100.91	--	--	--	--	--	--	--	--	--
3/13/92		108.46	--	7.82	0.00	100.64	**31,000**	--	**28,000**	--	--	--	--	--	--
4/21/92		108.46	--	7.50	0.00	100.96	--	--	--	--	--	--	--	--	--
3/3/94		108.46	--	--	0.00	--	**3,940**	<750	**43,000**	--	--	--	--	--	--
8/23/95		108.46	--	8.93	0.00	99.53	**2,600**	<750	**46,000**	--	--	--	--	--	--
11/28/95		108.46	--	7.12	0.00	101.34	**1,500**	<750	**63,000**	--	--	--	--	--	--
3/12/96		108.46	--	7.85	0.00	100.61	**900**	<750	**42,000**	--	--	--	--	--	--
6/27/96		108.46	--	8.67	0.00	99.79	**1,510**	**1,080**	**37,900**	--	--	--	--	--	--
10/10/96		108.46	--	8.97	0.00	99.49	**729**	<750	**16,200**	--	--	--	--	--	--
2/12/97		108.46	--	7.55	0.00	100.91	**4,060**	**986**	**35,200**	--	--	--	--	--	--
4/22/97		108.46	--	7.30	0.00	101.16	**3,980**	**767**	**31,900**	--	--	--	--	--	--
8/2/97		108.46	--	9.05	0.00	99.41	**3,370**	**1,270**	**20,400**	--	--	--	--	--	--
11/11/97		108.46	--	6.76	0.00	101.70	**3,230**	**777**	**28,400**	--	--	--	--	--	--
2/11/98		108.46	--	7.54	0.00	100.92	**3,240**	**1,460**	**28,400**	--	--	--	--	--	--
5/28/98		108.46	--	7.76	0.00	100.70	**3,360**	<750	**34,600**	--	--	--	--	**29.5**	--
8/20/98		108.46	--	10.30	0.00	98.16	**2,150**	<750	**32,900**	--	--	--	--	<1.89	--
11/19/98		108.46	--	8.39	0.00	100.07	**6,650**	<3,750	**23,800**	--	--	--	--	--	--
3/11/99		108.46	--	7.15	0.00	101.31	**2,920**	<5,000	**17,000**	--	--	--	--	--	--
5/25/99		108.46	--	8.50	0.00	99.96	**1,850**	--	**30,500**	--	--	--	--	--	--
8/17/99		108.46	--	9.15	0.00	99.31	**2,570**	**711**	**29,600**	--	--	--	--	--	--
11/19/99		108.46	--	6.76	0.00	101.70	**7,880**	--	**30,700**	--	--	--	--	--	--
3/9/00		108.46	--	7.24	0.00	101.22	<250	<500	**10,400**	--	--	--	--	--	--
6/13/00		108.46	--	8.15	0.00	100.31	<250	<500	**23,000**	--	--	--	--	--	--
9/26/00		108.46	--	9.35	0.00	99.11	<250	<500	--	--	--	--	--	--	--
12/13/00		108.46	--	8.58	0.00	99.88	<250	<500	**21,600**	--	--	--	--	--	--
2/28/01		108.46	--	8.28	0.00	100.18	<250	<500	**25,700**	--	--	--	--	--	--
5/2/01		108.46	--	7.79	0.00	100.67	<250	<500	**17,200**	--	--	--	--	--	--
10/30/02		108.46	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-3 (cont.)															
1/23/03		108.46	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
4/18/03		108.46	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
7/11/03		108.46	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
10/31/03		108.46	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
12/30/03		108.46	--	7.04	0.00	101.42	**14,000**	**3,800**	<980	<5.0	1.9	130	61	--	**17.3**
5/3/04		108.46	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
7/20/04		108.46	--	9.31	0.00	99.15	**1,220**	<500	**13,200**	**12.5**	<10.0	874	204	--	**24.6**[5]
10/6/04		108.46	--	8.68	0.00	99.78	**1,200**	<500	**13,000**	--	--	--	--	--	--
1/27/05		108.46	--	7.70	0.00	100.76	**1,100**	<190	**6,200**	--	--	--	--	--	--
4/12/05		108.46	--	7.21	0.00	101.25	**1,200**	<100	**5,300**	--	--	--	--	--	--
7/18/05		108.46	--	8.83	0.00	99.63	**1,200**	<97	**6,400**	--	--	--	--	--	--
10/21/05		108.46	--	8.85	0.00	99.61	**2,400**	<510	**8,900**	--	--	--	--	--	--
9/4/07		108.46	--	9.41	0.00	99.05	**1,500**	<200	**10,000**	--	--	--	--	--	--
5/27-28/08	LFP	108.46	--	8.73	0.00	99.73	**2,400**	<540	**3,700**	2	2	98	3	<0.5	**20.2**
8/27-29/08	LFP	108.46	--	8.85	0.00	99.61	**2,400**	<98	**10,000**	**5**	2	230	17	<0.5	**21.5**
11/17-19/08	LFP	108.46	--	7.13	0.00	101.33	**1,700**	<690	**7,100**	<0.5	<0.5	57	2	<0.5	**20**
2/16-18/09	LFP	108.46	--	8.40	0.00	100.06	**1,900**	<340	**8,800**	**180**	130	130	21	<0.5	**19.5**
5/4-6/09	LFP	108.46	--	7.65	0.00	100.81	**2,400**	<340	**5,800**	**68**	15	120	7	<0.5	13.1
8/19-21/09	LFP	108.46	--	9.33	0.00	99.13	**2,900**	<360	**5,900**	**39**	10	170	16	<0.5	**19**
11/18-20/09	LFP	108.46	--	6.35	0.00	102.11	**2,200**	<340	**2,500**	1	<0.5	12	1	<0.5	**16.5**
2/8-10/10	LFP	108.46	--	7.73	0.00	100.73	**1,700**	140	**6,200**	2	<0.5	25	1	<0.5	9.9
5/12-13/10	LFP	108.46	--	8.18	0.00	100.28	**1,200**	<68	**8,200**	2	<0.5	47	2	<0.5	10.3
08/11/10	LFP	108.46	--	9.00	0.00	99.46	**2,700**	<340	**5,900**	**7**	1.0	270	20	<0.5	**19.3**
11/3-4/10	LFP	108.46	--	6.96	0.00	101.50	**2,500**	<350	**3,100**	0.60	<0.5	24	1	<0.5	13.3
2/3-4/11	LFP	108.46	--	6.70	0.00	101.76	**1,400**	<340	**4,900**	0.80	<0.5	53	2	<0.5	10.2
05/24/11	LFP	108.46	--	7.96	0.00	100.50	**1,200**	300	**1,800**	1	<0.5	76	3	<0.5	14
8/23-24/11	LFP	108.46	--	9.24	0.00	99.22	**960**	<72	**3,700**	**8**	2	160	8	<0.5	11.7
11/7-9/11	LFP	108.46	--	8.95	0.00	99.51	**1,500**	460	**5,800**	**7**	2	180	6	<0.5	12.3
2/6-8/12	LFP	108.46	--	7.40	0.00	101.06	<31	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	4.4
5/2-4/12	LFP	108.46	--	7.50	0.00	100.96	53	<72	**1,300**	<0.5	<0.5	19	<0.5	0.7	3.9
8/1-3/12	LFP	108.46	--	8.24	0.00	100.22	460	110	600	0.6	<0.5	1	<0.5	<0.5	8.0
11/26-28/12	LFP	108.46	--	6.98	0.00	101.48	73	<68	500	<0.5	<0.5	0.8	<0.5	<0.5	7.4
2/4-6/13	LFP	108.46	--	6.33	0.00	102.13	45	<66	120	<0.5	<0.5	<0.5	<0.5	<0.5	5.6
05/6-8/13	LFP	108.46	--	8.50	0.00	99.96	150	<67	**2,600**	<0.5	<0.5	73	3	<0.5	8.9
9/9-13/13	LFP	108.46	--	8.09	0.00	100.37	160/**2,700**	<66/72	**1,700**	0.6	<0.5	37	0.9	<0.5	**16.0**
11/18-22/13	LFP	108.46	--	6.45	0.00	102.01	42/**1,600**	<67/180	190	<0.5	<0.5	<0.5	<0.5	<0.5	11.2

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-3 (cont.)															
2/4-11/14	LFP	108.46	--	8.10	0.00	100.36	36/**730**	<67/<67	480	<0.5	<0.5	2	<0.5	<0.5	7.4
6/12-14/14	LFP	108.46	--	8.69	0.00	99.77	100/**780**	<66/100	260	<0.5	<0.5	1	<0.5	<0.5	8.3
8/18-21/14	LFP	108.46	--	9.23	0.00	99.23	180/**1,000**	<68/170	**1,000**	<0.5	<0.5	9	0.7	<0.5	8.9
11/19-20/14	LFP	108.46	--	8.17	0.00	100.29	130/**1,400**	<67/160	**900**	<0.5	<0.5	7	<0.5	<0.5	13.4
2/17-20/15	LFP	108.46	--	6.36	0.00	102.10	150/490	<66/180	650	<0.5	<0.5	<0.5	<0.5	<0.5	2.9
5/11-15/15	LFP	108.46	--	8.16	0.00	100.30	120/690	<66/<66	**1,400**	<0.5	<0.5	33	0.9	<0.5	0.0081
8/10-11/15	LFP	108.46	--	9.59	0.00	98.87	130/**2,000**	<67/**550**	660	<0.5	<0.5	5	0.5	<0.5	9.5
11/16-18/15	LFP	108.46	--	5.58	0.00	102.88	57/**1,200**	<67/180	**880**	<0.5	<0.5	2	<0.5	<0.5	0.0185
5/13-14/16	LFP	108.46	--	8.64	0.00	99.82	38/**650**	<67/220	400	<0.5	<0.5	1	<0.5	--	5.1
11/14/16	LFP	108.46	--	7.45	0.00	101.01	<29/380	<67/<67	560	<0.5	<0.5	1	<0.5	--	10.6
B-4															
2/14/91		107.68	--	--	0.00	--	<250	--	**33,000**	--	--	--	--	--	--
2/14/92		107.68	--	6.82	0.00	100.86	--	--	--	--	--	--	--	--	--
2/18/92		107.68	--	5.94	0.00	101.74	--	--	--	--	--	--	--	--	--
3/9/92		107.68	--	6.62	0.00	101.06	--	--	--	--	--	--	--	--	--
3/13/92		107.68	--	6.88	0.00	100.80	--	--	**21,000**	--	--	--	--	--	--
4/21/92		107.68	--	6.57	0.00	101.11	--	--	--	--	--	--	--	--	--
3/3/94		107.68	--	--	0.00	--	**1,040**	**1,250**	**15,800**	--	--	--	--	--	--
8/22/95		107.68	--	7.92	0.00	99.76	**840**	**820**	**22,000**	--	--	--	--	--	--
11/28/95		107.68	--	6.11	0.00	101.57	**1,900**	**990**	**22,000**	--	--	--	--	--	3.1
3/12/96		107.68	--	6.85	0.00	100.83	**3,200**	**2,500**	**11,000**	--	--	--	--	--	4.7
6/26/96		107.68	--	7.58	0.00	100.10	**757**	<750	**16,100**	--	--	--	--	--	2.83
10/9/96		107.68	--	7.90	0.00	99.78	**543**	<750	**10,200**	--	--	--	--	--	4.13
2/12/97		107.68	--	6.01	0.00	101.67	**4,710**	**4,830**	**12,200**	--	--	--	--	--	2.82
4/22/97		107.68	--	10.10	0.00	97.58	**5,840**	**1,191**	**15,500**	--	--	--	--	--	4.18
8/5/97		107.68	--	8.37	0.00	99.31	**2,560**	**3,160**	**15,800**	--	--	--	--	--	6.26
11/11/97		107.68	--	7.67	0.00	100.01	**2,080**	**1,040**	**31,100**	--	--	--	--	--	4.75
2/11/98		107.68	--	6.45	0.00	101.23	**1,340**	**1,630**	**3,750**	--	--	--	--	--	<2.0
5/28/98		107.68	--	7.25	0.00	100.43	**3,180**	**1,250**	**2,510**	--	--	--	--	--	4.69
8/20/98		107.68	--	9.12	0.00	98.56	**1,460**	**1,240**	**7,240**	--	--	--	--	--	1.17
11/19/98		107.68	--	7.22	0.00	100.46	**2,470**	**3,750**	**1,880**	--	--	--	--	--	<1.0
3/11/99		107.68	--	5.41	0.00	102.27	**1,130**	**585**	**11,900**	--	--	--	--	--	3.54
5/25/99		107.68	--	7.45	0.00	100.23	<1,450	--	**5,380**	--	--	--	--	--	--
8/17/99		107.68	--	8.06	0.00	99.62	**670**	**868**	**2,700**	--	--	--	--	--	2.3
11/19/99		107.68	--	5.75	0.00	101.93	**1,700**	--	**11,400**	--	--	--	--	--	**17.5**
3/9/00		107.68	--	6.34	0.00	101.34	<1,250	**2,830**	**105,000**	--	--	--	--	--	10.9

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-4 (cont.)															
6/13/00		107.68	--	6.80	0.00	100.88	<250	**943**	**8,810**	--	--	--	--	--	6.92
9/26/00		107.68	--	8.31	0.00	99.37	<250	0.565	--	--	--	--	--	--	5
12/13/00		107.68	--	7.54	0.00	100.14	**1,250**	<500	--	--	--	--	--	--	5.98
2/28/01		107.68	--	7.24	0.00	100.44	<250	<500	**12,100**	--	--	--	--	--	5.34
5/2/01		107.68	--	6.59	0.00	101.09	**15,700**	**757**	**12,300**	--	--	--	--	--	5.75
10/30/02		107.68	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
1/23/03		107.68	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
4/18/03		107.68	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
7/11/03		107.68	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
10/31/03		107.68	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
12/30/03		107.68	--	6.07	0.00	101.61	**17,000**	**2,000**	**1,700**	<10	<5.0	310	370	--	7.5
5/3/04		107.68	UNABLE TO LOCATE - PAVED OVER					--	--	--	--	--	--	--	--
7/20/04		107.68	--	8.23	0.00	99.45	<250	<500	**4,660**	**15.1**	1.3	42.3	10.1	--	--
10/6/04		107.68	--	7.45	0.00	100.23	390	180	**2,300**	--	--	--	--	--	--
1/27/05		107.68	--	6.72	0.00	100.96	200	<195	**2,800**	--	--	--	--	--	--
4/12/05		107.68	--	6.62	0.00	101.06	340	<100	**2,600**	--	--	--	--	--	--
7/18/05		107.68	--	6.62	0.00	101.06	**560**	<1,100	**1,600**	--	--	--	--	--	--
10/21/05		107.68	--	7.81	0.00	99.87	190	260	**1,800**	--	--	--	--	--	--
9/4/07		107.68	--	8.40	0.00	99.28	310	<100	**3,200**	--	--	--	--	--	1.8
9/4/07 (D)		107.68	--	8.40	0.00	99.28	340	140	**3,300**	--	--	--	--	--	1.7
5/27-28/08	LFP	107.68	--	7.52	0.00	100.16	310	330	**1,800**	3	3	25	7	<0.5	2.9
8/27-29/08	LFP	107.68	--	7.88	0.00	99.80	330	**1,100**	**3,100**	1	0.9	22	4	<0.5	1.6
11/17-19/08	LFP	107.68	--	6.26	0.00	101.42	**700**	**2,600**	**3,500**	1	0.7	27	3	<0.5	2.3
2/16-18/09	LFP	107.68	--	7.40	0.00	100.28	440	480	**2,000**	0.6	<0.5	11	2	<0.5	2
5/4-6/09	LFP	107.68	--	6.46	0.00	101.22	**590**	**1,300**	**2,100**	<0.5	<0.5	20	2	<0.5	1.6
8/19-21/09	LFP	107.68	--	8.35	0.00	99.33	**590**	**810**	**910**	1	<0.5	5	1	<0.5	1.2
11/18-20/09	LFP	107.68	--	5.30	0.00	102.38	490	450	**5,700**	3	0.7	36	3	<0.5	5.2
2/8-10/10	LFP	107.68	--	6.78	0.00	100.90	400	**1,400**	350	<0.5	<0.5	4	<0.5	<0.5	0.46
5/12-13/10	LFP	107.68	--	7.23	0.00	100.45	**940**	**7,100**	360	<0.5	<0.5	1	<0.5	<0.5	0.15
08/11/10	LFP	107.68	--	8.00	0.00	99.68	**600**	**2,000**	170	<0.5	<0.5	1	<0.5	<0.5	0.26
11/3-4/10	LFP	107.68	--	6.19	0.00	101.49	400	**1,500**	530	<0.5	<0.5	4	0.7	<0.5	1
2/3-4/11	LFP	107.68	--	7.15	0.00	100.53	**1,400**	**4,700**	**2,200**	0.9	0.7	11	1	<0.5	2.9
05/24/11	LFP	107.68	--	7.22	0.00	100.46	300	**680**	**840**	<0.5	<0.5	0.8	<0.5	<0.5	1.2
8/23-24/11	LFP	107.68	--	8.50	0.00	99.18	230	<68	**1,400**	<0.5	<0.5	1	0.6	<0.5	1.4
11/7-9/11	LFP	107.68	--	8.15	0.00	99.53	120	360	**950**	<0.5	<0.5	1	0.5	<0.5	0.57
2/6-8/12	LFP	107.68	--	6.80	0.00	100.88	64	120	320	<0.5	<0.5	2	<0.5	<0.5	1.6

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
B-4 (cont.)															
5/2-4/12	LFP	107.68	--	6.75	0.00	100.93	110	72	580	<0.5	<0.05	2	<0.5	<0.5	1.7
8/1-3/12	LFP	107.68	--	8.26	0.00	99.42	100	190	510	<0.5	<0.5	<0.5	<0.5	<0.5	0.83
11/26-28/12	LFP	107.68	--	6.34	0.00	101.34	320	210	**1,200**	<0.5	<0.5	8	0.7	<0.5	3.0
02/4-6/13	LFP	107.68	--	6.95	0.00	100.73	150	<69	**1,600**	<0.5	<0.5	4	<0.5	<0.5	2.5
05/6-8/13	LFP	107.68	--	7.53	0.00	100.15	140	<67	**2,400**	<0.5	<0.5	4	0.5	<0.5	2.4
9/9-13/13	LFP	107.68	--	7.30	0.00	100.38	130/250	<66/110	**1,200**	<0.5	<0.5	3	0.5	<0.5	1.6
11/18-22/13	LFP	107.68	--	6.76	0.00	100.92	120/150	<67/<67	**1,200**	<0.5	<0.5	3	<0.5	<0.5	1.9
2/4-11/14	LFP	107.68	--	7.36	0.00	100.32	140/170	<68/<68	**1,800**	<0.5	<0.5	3	<0.5	<0.5	2.4
6/12-14/14	LFP	107.68	--	7.94	0.00	99.74	120/260	<67/73	**1,200**	<0.5	<0.5	1	<0.5	<0.5	1.8
8/18-21/14	LFP	107.68	--	8.43	0.00	99.25	140/300	<67/88	**1,800**	<0.5	<0.5	1	0.5	<0.5	1.4
11/19-20/14	LFP	107.68	--	6.77	0.00	100.91	120/270	<66/<66	**1,300**	<0.5	<0.5	2	<0.5	<0.5	2.4
2/17-20/15	LFP	107.68	--	6.93	0.00	100.75	95/290	240/470	550	<0.5	<0.5	<0.5	<0.5	<0.5	0.73
5/11-15/15	LFP	107.68	--	7.91	0.00	99.77	130/210	<66/<66	**940**	<0.5	<0.5	1	<0.5	<0.5	0.0016
8/10-11/15	LFP	107.68	--	8.94	0.00	98.74	66/500	<66/340	600	<0.5	<0.5	<0.5	0.6	<0.5	0.89
11/16-18/15	LFP	107.68	--	4.73	0.00	102.95	130/**750**	270/**740**	**2,000**	<0.5	<0.5	4	<0.5	<0.5	0.0171
5/13-14/16	LFP	107.68	--	7.84	0.00	99.84	120/390	300/**550**	**2,100**	<0.5	<0.5	0.9	<0.5	--	0.81
11/14/16	LFP	107.68	--	6.30	0.00	101.38	400/**1,000**	**610/1,000**	**1,200**	<0.5	<0.5	<0.5	<0.5	--	1.00
MW-101															
2/14/92		99.51	--	6.94	--	92.57	**33,000**	--	**45,000**	--	--	--	--	--	--
2/18/92		99.51	--	6.88	--	92.63	--	--	--	--	--	--	--	--	--
3/9/92		99.51	--	6.76	--	92.75	--	--	--	--	--	--	--	--	--
3/13/92		99.51	--	7.02	--	92.49	--	--	--	--	--	--	--	--	--
4/21/92		99.51	--	7.73	--	91.78	--	--	--	--	--	--	--	--	--
3/3/94		99.51	--	--	--	--	**1,730**	<750	**73,000**	--	--	--	--	--	--
8/22/95		99.51	--	7.90	--	91.61	**1,300**	<750	**12,000**	--	--	--	--	--	--
11/28/95		99.51	--	6.12	--	93.39	**1,400**	<750	**49,000**	--	--	--	--	--	**24**
3/12/96		99.51	--	6.86	--	92.65	**760**	<750	**43,000**	--	--	--	--	--	9.3
6/26/96		99.51	--	7.59	--	91.92	**656**	<750	**22,000**	--	--	--	--	--	8.22
10/9/96		99.51	--	7.85	--	91.66	309	<750	**5,800**	--	--	--	--	--	4.24
2/12/97		99.51	--	6.55	--	92.96	**1,090**	<750	**33,900**	--	--	--	--	--	7.04
4/22/97		99.51	--	6.31	--	93.20	**1,870**	**977**	**21,500**	--	--	--	--	--	7.41
11/11/97		99.51	--	6.76	--	92.75	**952**	<750	**23,400**	--	--	--	--	--	11.3
2/11/98		99.51	--	6.78	--	92.73	**793**	<750	**28,400**	--	--	--	--	--	6.51
5/28/98		99.51	--	6.91	--	92.60	**798**	<750	**11,900**	--	--	--	--	--	4.71
8/20/98		99.51	--	8.30	--	91.21	414	<750	**4,400**	--	--	--	--	--	1.6
11/19/98		99.51	--	7.69	--	91.82	**714**	<750	**5,820**	--	--	--	--	--	1.7

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-101 (cont.)															
3/11/99		99.51	--	6.17	--	93.34	**1,200**	<500	**38,500**	--	--	--	--	--	6.82
5/25/99		99.51	--	100.97	--	-1.46	**1,450**	--	**18,000**	--	--	--	--	--	--
8/17/99		99.51	--	7.99	--	91.52	**810**	**750**	**2,940**	--	--	--	--	--	2.9
11/19/99		99.51	--	5.84	--	93.67	**1,010**	--	**16,300**	--	--	--	--	--	**15.4**
3/9/00		99.51	--	6.25	--	93.26	<250	<500	**15,800**	--	--	--	--	--	13
6/13/00		99.51	--	6.98	--	92.53	<250	<500	**4,870**	--	--	--	--	--	4.3
9/26/00		99.51	--	8.15	--	91.36	--	<250	<500	--	--	--	--	--	1.88
12/13/00		99.51	--	7.65	--	91.86	**988**	442	<500	--	--	--	--	--	1.13
2/28/01		99.51	--	7.25	--	92.26	<250	<500	**2,710**	--	--	--	--	--	2.45
5/2/01		99.51	--	9.55	--	89.96	<250	<500	**2,280**	--	--	--	--	--	2.6
10/30/02		99.54	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		99.54	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
4/18/03		99.54	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
7/11/03		99.54	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
10/31/03		99.54	UNABLE TO LOCATE - POSSIBLY PAVED OVER						--	--	--	--	--	--	--
12/30/03		99.54	--	6.04	0.00	93.50	**13,000**	**890**	<96	<5.0	0.6	260	290	--	**27.9**
5/3/04		99.54	UNABLE TO LOCATE - POSSIBLY PAVED OVER						--	--	--	--	--	--	--
7/20/04		99.54	--	8.18	0.00	91.36	<250	<500	**1,040**	3.01	<0.500	0.822	1.21	--	<1.0[5]
10/6/04		99.51	--	7.54	0.00	91.97	<81	<100	<260	--	--	--	--	--	--
1/27/05		99.51	--	6.78	0.00	92.73	190	<100	**2,900**	--	--	--	--	--	--
4/12/05		99.51	--	6.32	0.00	93.19	160	<100	**1,700**	--	--	--	--	--	--
7/18/05		99.51	--	7.78	0.00	91.73	93	<99	240	--	--	--	--	--	--
10/21/05		99.51	--	7.75	0.00	91.76	110	<100	470	--	--	--	--	--	--
9/5/07		99.51	--	8.22	0.00	91.29	110	140	200	--	--	--	--	--	1.2
5/27-28/08	LFP	99.51	--	7.71	0.00	91.80	<80	<99	410	<0.5	<0.5	0.5	<0.5	<0.5	1.2
8/27-29/08	LFP	99.51	--	7.75	0.00	91.76	<79	<99	450	<0.5	<0.5	<0.5	<0.5	<0.5	0.39
11/17-19/08	LFP	99.51	--	6.33	0.00	93.18	74	<68	520	<0.5	<0.5	1	<0.5	<0.5	1.1
2/16-18/09	LFP	99.51	--	7.43	0.00	92.08	68	<67	590	<0.5	<0.5	<0.5	<0.5	<0.5	0.96
5/4-6/09	LFP	99.51	--	6.93	0.00	92.58	66	<68	370	<0.5	<0.5	<0.5	<0.5	<0.5	0.39
8/19-21/09	LFP	99.51	--	8.16	0.00	91.35	65	<70	510	<0.5	<0.5	<0.5	<0.5	<0.5	0.22
11/18-20/09	LFP	99.51	--	4.97	0.00	94.54	42	<69	84	<0.5	<0.5	<0.5	<0.5	<0.5	1
2/8-10/10	LFP	99.51	--	6.82	0.00	92.69	130	190	**970**	<0.5	<0.5	1	<0.5	<0.5	2.1
5/12-13/10	LFP	99.51	--	7.32	0.00	92.19	64	<70	470	<0.5	<0.5	<0.5	<0.5	<0.5	0.65
08/12/10	LFP	99.51	--	7.96	0.00	91.55	52	<68	370	<0.5	<0.5	<0.5	<0.5	<0.5	0.24
MONITORING WELL DECOMMISSIONED/SAMPLING DISCONTINUED															

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-102															
2/14/92		--	--	6.94	0.00	--	--	--	--	--	--	--	--	--	--
2/18/92		--	--	6.88	0.00	--	--	--	--	--	--	--	--	--	--
3/9/92		--	--	6.76	0.00	--	--	--	--	--	--	--	--	--	--
3/13/92		--	--	7.02	0.00	--	--	--	150	--	--	--	--	--	--
4/21/92		--	--	7.72	0.00	--	--	--	--	--	--	--	--	--	--
NOT PART OF MONITORING/SAMPLING PROGRAM															
MW-104															
2/14/92		100.45	--	8.86	0.00	91.59	--	--	--	--	--	--	--	--	--
02/1892		100.45	--	8.84	0.00	91.61	--	--	--	--	--	--	--	--	--
3/9/92		100.45	--	8.73	0.00	91.72	--	--	--	--	--	--	--	--	--
3/13/92		100.45	--	8.84	0.00	91.61	--	--	<50	--	--	--	--	--	--
4/21/92		100.45	--	8.72	0.00	91.73	--	--	--	--	--	--	--	--	--
8/22/95		100.45	--	9.30	0.00	91.15	<250	<750	<50	--	--	--	--	--	--
11/27/95		100.45	--	8.39	0.00	92.06	--	--	--	--	--	--	--	--	--
3/12/96		100.45	--	8.78	0.00	91.67	--	--	--	--	--	--	--	--	--
6/27/96		100.45	--	9.00	0.00	91.45	--	--	--	--	--	--	--	--	--
10/10/96		100.45	--	9.18	0.00	91.27	--	--	--	--	--	--	--	--	--
2/12/97		100.45	--	8.65	0.00	91.80	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		100.45	--	8.50	0.00	91.95	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		100.45	--	9.20	0.00	91.25	<250	<750	<50	--	--	--	--	--	<2.0
11/11/97		100.45	--	8.81	0.00	91.64	<250	<750	<50	--	--	--	--	--	<2.0
2/11/98		100.45	--	8.83	0.00	91.62	<250	<750	<50	--	--	--	--	--	<2.0
5/28/98		100.45	--	8.97	0.00	91.48	<250	<750	<50	--	--	--	--	--	9.54
8/20/98		100.45	--	9.51	0.00	90.94	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		100.45	--	9.82	0.00	90.63	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		100.45	--	8.48	0.00	91.97	<250	<500	<80	--	--	--	--	--	<1.0
5/25/99		100.45	--	8.96	0.00	91.49	<250	--	<80	--	--	--	--	--	--
8/17/99		100.45	--	9.24	0.00	91.21	<250	<500	<80	--	--	--	--	--	<1.0
11/19/99		100.45	--	8.40	0.00	92.05	<250	--	<80	--	--	--	--	--	1.0
3/9/00		100.45	--	8.49	0.00	91.96	<250	<50	<80	--	--	--	--	--	<1.0
6/13/00		100.45	--	8.89	0.00	91.56	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		100.45	--	9.32	0.00	91.13	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		100.45	--	9.09	0.00	91.36	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		100.45	--	8.89	0.00	91.56	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		100.45	--	8.79	0.00	91.66	<250	<500	103	--	--	--	--	--	<1.0

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-104 (cont.)															
10/30/02		100.44	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		100.44	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		100.44	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		100.44	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		100.44	--	9.15	0.00	91.29	<250	<500	<50	<0.500	<0.500	<0.500	<1.00	--	<1.0[5]
12/30/03		100.44	--	8.39	0.00	92.05	<50	<77	<96	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		100.44	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		100.44	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/7/04		100.45	--	9.09	0.00	91.36	<83	<100	<50	--	--	--	--	--	--
10/20/05		100.45	--	9.19	0.00	91.26	<82	<100	<48	--	--	--	--	--	--
9/6/07		100.45	--	9.42	0.00	91.03	<79	<98	<50	--	--	--	--	--	0.087
5/27-28/08		100.45	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	100.45	--	9.23	0.00	91.22	<79	<99	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	100.46	--	8.75	0.00	91.71	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	100.46	--	9.01	0.00	91.45	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.1
5/4-6/09	LFP	100.46	--	8.88	0.00	91.58	38	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	100.46	--	9.32	0.00	91.14	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.057
11/18-20/09	LFP	100.46	--	8.08	0.00	92.38	<29	<68	98	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
2/8-10/10	LFP	100.46	--	8.76	0.00	91.70	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.053
MONITORING WELL DECOMMISSIONED/SAMPLING DISCONTINUED															
MW-105															
2/14/92		96.14	--	3.36	0.00	92.78	--	--	--	--	--	--	--	--	--
2/18/92		96.14	--	3.34	0.00	92.80	--	--	--	--	--	--	--	--	--
3/9/92		96.14	--	3.25	0.00	92.89	--	--	--	--	--	--	--	--	--
3/13/92		96.14	--	3.60	0.00	92.54	--	--	<50	--	--	--	--	--	--
4/21/92		96.14	--	3.40	0.00	92.74	--	--	--	--	--	--	--	--	--
8/22/95		96.14	--	5.08	0.00	91.06	<250	**900**	<50	--	--	--	--	--	--
11/28/95		96.14	--	2.53	0.00	93.61	--	--	--	--	--	--	--	--	--
3/12/96		96.14	--	3.37	0.00	92.77	--	--	--	--	--	--	--	--	--
6/26/96		96.14	--	4.74	0.00	91.40	--	--	--	--	--	--	--	--	--
10/9/96		96.14	--	4.93	0.00	91.21	--	--	--	--	--	--	--	--	--
2/12/97		96.14	--	3.19	0.00	92.95	<250	<750	<50	--	--	--	--	--	2
4/22/97		96.14	--	3.08	0.00	93.06	<250	<750	<50	--	--	--	--	--	2
8/5/97		96.14	--	4.85	0.00	91.29	<250	<750	<50	--	--	--	--	--	2
11/11/97		96.14	--	3.11	0.00	93.03	<250	<750	<50	--	--	--	--	--	2

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-105 (cont.)															
2/11/98		96.14	--	3.24	0.00	92.90	<250	<750	<50	--	--	--	--	--	2
5/28/98		96.14	--	3.91	0.00	92.23	<250	<750	<50	--	--	--	--	--	6.62
8/20/98		96.14	--	5.28	0.00	90.86	<250	<750	<50	--	--	--	--	--	<1.00
11/19/98		96.14	--	5.37	0.00	90.77	<250	<750	<50	--	--	--	--	--	<1.00
3/11/99		96.14	--	2.43	0.00	93.71	<250	<500	<80	--	--	--	--	--	<1.00
5/25/99		96.14	--	4.29	0.00	91.85	<250	--	<80	--	--	--	--	--	--
8/17/99		96.14	--	5.06	0.00	91.08	<250	<500	<80	--	--	--	--	--	<1.00
11/19/99		96.14	--	3.08	0.00	93.06	<250	--	<80	--	--	--	--	--	<1.00
3/9/00		96.14	--	2.75	0.00	93.39	<250	<500	<80	--	--	--	--	--	<1.00
6/13/00		96.14	--	4.45	0.00	91.69	<250	<500	<80	--	--	--	--	--	<1.00
9/26/00		96.14	--	5.20	0.00	90.94	<250	<500	--	--	--	--	--	--	<1.00
12/13/00		96.14	--	4.67	0.00	91.47	<250	<500	--	--	--	--	--	--	1.37
2/28/01		96.14	--	3.92	0.00	92.22	<250	<500	<80	--	--	--	--	--	<1.00
5/2/01		96.14	--	3.53	0.00	92.61	<250	<750	87	--	--	--	--	--	<1.00
10/30/02		96.15	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		96.15	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		96.15	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		96.15	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		96.15	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
12/31/03		96.15	--	2.45	0.00	93.70	<50	<400	<500	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		96.15	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		96.15	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/7/04		96.14	--	4.71	0.00	91.43	<160	<200	<50	--	--	--	--	--	--
10/20/05		96.14	--	5.16	0.00	90.98	<82	<100	<48	--	--	--	--	--	--
9/6/07		96.14	--	5.34	0.00	90.80	<100	<81	<50	--	--	--	--	--	0.47
5/27-28/08		96.14	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	96.14	--	5.16	0.00	90.98	<81	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	96.14	--	3.75	0.00	92.39	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	96.14	--	6.15	0.00	89.99	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.57
5/4-6/09	LFP	96.14	--	3.68	0.00	92.46	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	96.14	--	5.25	0.00	90.89	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.064
11/18-20/09	LFP	96.14	--	1.56	0.00	94.58	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.053
2/8-10/10	LFP	96.14	--	3.37	0.00	92.77	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.078
MONITORING WELL DECOMMISSIONED/SAMPLING DISCONTINUED															

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-106															
2/14/92		99.71	--	8.18	0.00	91.53	--	--	--	--	--	--	--	--	--
2/18/92		99.71	--	8.20	0.00	91.51	--	--	--	--	--	--	--	--	--
3/9/92		99.71	--	8.04	0.00	91.67	--	--	--	--	--	--	--	--	--
3/13/92		99.71	--	8.18	0.00	91.53	--	--	<50	--	--	--	--	--	--
4/21/92		99.71	--	8.02	0.00	91.69	--	--	--	--	--	--	--	--	--
8/22/95		99.71	--	8.79	0.00	90.92	<250	<750	<50	--	--	--	--	--	--
11/28/95		99.71	--	7.63	0.00	92.08	--	--	--	--	--	--	--	--	--
3/12/96		99.71	--	8.04	0.00	91.67	<250	<750	<50	--	--	--	--	--	<2.0
6/26/96		99.71	--	8.61	0.00	91.10	<250	<750	<50	--	--	--	--	--	<2.0
10/9/96		99.71	--	8.65	0.00	91.06	<250	<750	<50	--	--	--	--	--	2.16
2/12/97		99.71	--	7.95	0.00	91.76	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		99.71	--	7.73	0.00	91.98	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		99.71	--	8.68	0.00	91.03	<250	<750	<50	--	--	--	--	--	<2.0
11/11/97		99.71	--	8.07	0.00	91.64	<250	<750	<50	--	--	--	--	--	<2.0
2/11/98		99.71	--	8.12	0.00	91.59	<250	<750	<50	--	--	--	--	--	<2.0
5/28/98		99.71	--	8.35	0.00	91.36	<250	<750	<50	--	--	--	--	--	4.53
8/20/98		99.71	--	8.96	0.00	90.75	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		99.71	--	9.37	0.00	90.34	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		99.71	--	7.70	0.00	92.01	<250	<50	<80	--	--	--	--	--	1.1
5/25/99		99.71	--	8.32	0.00	91.39	<250	--	<80	--	--	--	--	--	--
8/17/99		99.71	--	8.70	0.00	91.01	<250	<500	<80	--	--	--	--	--	<1.0
11/19/99		99.71	--	7.88	0.00	91.83	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		99.71	--	7.74	0.00	91.97	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		99.71	--	8.39	0.00	91.32	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		99.71	--	8.79	0.00	90.92	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		99.71	--	8.51	0.00	91.20	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		99.71	--	8.18	0.00	91.53	<250	<500	<80	--	--	--	--	--	<2.0
5/2/01		99.71	--	8.17	0.00	91.54	<250	<500	88	--	--	--	--	--	<1.0
10/30/02		99.73	--	8.98	0.00	90.75	<250	<500	<80	<0.500	<0.500	<0.500	<1.00	--	<1.0
1/23/03		99.73	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		99.73	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		99.73	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		99.73	--	8.52	0.00	91.21	<250	<500	<50	<0.500	<0.500	<0.500	<1.00	--	<1.0[5]
12/31/03		99.73	--	7.54	0.00	92.19	<50	<78	<98	<0.5	<0.5	<0.5	<1.5	--	<1.2

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-106 (cont.)															
5/3/04		99.73	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		99.73	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/7/04		99.71	--	8.50	0.00	91.21	<78	<97	<50	--	--	--	--	--	--
10/20/05		99.71	--	8.70	0.00	91.01	<82	<100	<48	--	--	--	--	--	--
9/6/07		99.71	--	8.88	0.00	90.83	<80	<100	<50	--	--	--	--	--	0.13
5/27-28/08		99.71	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	99.71	--	8.72	0.00	90.99	<79	<99	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	99.71	--	8.18	0.00	91.53	30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	99.71	--	8.40	0.00	91.31	<29	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.072
5/4-6/09	LFP	99.71	--	8.30	0.00	91.41	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	99.71	--	8.65	0.00	91.06	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/18-20/09	LFP	99.71	--	7.40	0.00	92.31	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.11
2/8-10/10	LFP	99.71	--	8.05	0.00	91.66	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
MONITORING WELL DECOMMISSIONED/SAMPLING DISCONTINUED															
MW-107															
2/14/92		100.00	--	8.50	0.00	91.50	--	--	--	--	--	--	--	--	--
2/18/92		100.00	--	8.50	0.00	91.50	--	--	--	--	--	--	--	--	--
3/9/92		100.00	--	8.36	0.00	91.64	--	--	--	--	--	--	--	--	--
3/13/92		100.00	--	8.52	0.00	91.48	--	--	<50	--	--	--	--	--	--
4/21/92		100.00	--	8.36	0.00	91.64	--	--	--	--	--	--	--	--	--
8/22/95		100.00	--	9.06	0.00	90.94	<250	<750	<50	--	--	--	--	--	--
11/28/95		100.00	--	8.00	0.00	92.00	--	--	--	--	--	--	--	--	--
3/12/96		100.00	--	8.36	0.00	91.64	--	--	--	--	--	--	--	--	--
6/26/96		100.00	--	8.89	0.00	91.11	--	--	--	--	--	--	--	--	--
10/9/96		100.00	--	8.94	0.00	91.06	--	--	--	--	--	--	--	--	--
2/12/97		100.00	--	8.25	0.00	91.75	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		100.00	--	8.05	0.00	91.95	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		100.00	--	8.95	0.00	91.05	<250	<809	<50	--	--	--	--	--	<2.0
11/11/97		100.00	--	8.37	0.00	91.63	<250	**750**	<50	--	--	--	--	--	<2.0
2/11/98		100.00	--	8.44	0.00	91.56	351	**750**	<50	--	--	--	--	--	<2.0
5/28/98		100.00	--	8.73	0.00	91.27	<250	**754**	<50	--	--	--	--	--	--
8/20/98		100.00	--	9.24	0.00	90.76	<250	**750**	<50	--	--	--	--	--	1
11/19/98		100.00	--	9.65	0.00	90.35	<250	**750**	<50	--	--	--	--	--	<1.0
3/11/99		100.00	--	8.08	0.00	91.92	**539**	**750**	<80	--	--	--	--	--	<1.0
5/25/99		100.00	--	8.82	0.00	91.18	<250	<500	<80	--	--	--	--	--	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-107 (cont.)															
8/17/99		100.00	--	8.10	0.00	91.90	<250	--	<80	--	--	--	--	--	<1.0
11/19/99		100.00	--	8.21	0.00	91.79	<250	<500	<80	--	--	--	--	--	<1.0
3/9/00		100.00	--	8.08	0.00	91.92	<250	--	<80	--	--	--	--	--	<1.0
6/13/00		100.00	--	8.88	0.00	91.12	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		100.00	--	9.07	0.00	90.93	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		100.00	--	8.78	0.00	91.22	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		100.00	--	8.63	0.00	91.37	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		100.00	--	8.63	0.00	91.37	<250	<500	88	--	--	--	--	--	<1.0
10/30/02		100.00	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
1/23/03		100.00	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		100.00	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		100.00	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		100.00	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--	--
12/31/03		100.00	--	7.92	0.00	92.08	<50	85	150	<0.5	<0.5	<0.5	<1.5	--	<1.2
5/3/04		100.00	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		100.00	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/7/04		100.00	--	8.78	0.00	91.22	<80	<100	<50	--	--	--	--	--	--
10/20/05		100.00	--	8.97	0.00	91.03	<81	<100	<48	--	--	--	--	--	--
9/6/07		100.00	--	9.18	0.00	90.82	<78	<98	<50	--	--	--	--	--	0.07
5/27-28/08		100.00	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	100.00	--	8.98	0.00	91.02	<79	<99	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	100.00	--	8.46	0.00	91.54	38	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	100.00	--	8.62	0.00	91.38	35	70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.068
5/4-6/09	LFP	100.00	--	8.95	0.00	91.05	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	100.00	--	9.11	0.00	90.89	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.27
11/18-20/09	LFP	100.00	--	7.77	0.00	92.23	99	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/8-10/10	LFP	100.00	--	8.25	0.00	91.75	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
MONITORING WELL DECOMMISSIONED/SAMPLING DISCONTINUED															

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-108															
2/14/92		99.79	--	8.10	0.00	91.69	--	--	--	--	--	--	--	--	--
2/18/92		99.79	--	8.62	0.00	91.17	--	--	--	--	--	--	--	--	--
3/9/92		99.79	--	8.49	0.00	91.30	--	--	--	--	--	--	--	--	--
3/13/92		99.79	--	8.63	0.00	91.16	--	--	<50	--	--	--	--	--	--
4/21/92		99.79	--	8.47	0.00	91.32	--	--	--	--	--	--	--	--	--
8/22/95		99.79	--	9.04	0.00	90.75	<250	<750	<50	--	--	--	--	--	--
11/28/95		99.79	--	7.98	0.00	91.81	--	--	--	--	--	--	--	--	--
3/12/96		99.79	--	8.50	0.00	91.29	--	--	--	--	--	--	--	--	--
6/26/96		99.79	--	8.86	0.00	90.93	--	--	--	--	--	--	--	--	--
10/9/96		99.79	--	8.91	0.00	90.88	--	--	--	--	--	--	--	--	--
2/12/97		99.79	--	8.41	0.00	91.38	<250	<750	<50	--	--	--	--	--	<2.0
4/22/97		99.79	--	8.08	0.00	91.71	<250	<750	<50	--	--	--	--	--	<2.0
8/5/97		99.79	--	8.94	0.00	90.85	<250	**825**	<50	--	--	--	--	--	<2.0
11/11/97		99.79	--	8.53	0.00	91.26	<250	<750	<50	--	--	--	--	--	<2.0
2/11/98		99.79	--	8.59	0.00	91.20	<250	**873**	<50	--	--	--	--	--	<2.0
5/28/98		99.79	--	8.72	0.00	91.07	<250	<750	<50	--	--	--	--	--	4.27
8/20/98		99.79	--	9.20	0.00	90.59	<250	<750	<50	--	--	--	--	--	<1.0
11/19/98		99.79	--	9.60	0.00	90.19	<250	<750	<50	--	--	--	--	--	<1.0
3/11/99		99.79	--	8.16	0.00	91.63	<250	<500	<80	--	--	--	--	--	<1.0
5/25/99		99.79	--	8.69	0.00	91.10	<250	--	<80	--	--	--	--	--	--
8/17/99		99.79	--	8.96	0.00	90.83	<250	<500	<80	--	--	--	--	--	<1.0
11/19/99		99.79	--	8.08	0.00	91.71	<250	--	<80	--	--	--	--	--	<1.0
3/9/00		99.79	--	8.16	0.00	91.63	<250	<500	<80	--	--	--	--	--	<1.0
6/13/00		99.79	--	8.69	0.00	91.10	<250	<500	<80	--	--	--	--	--	<1.0
9/26/00		99.79	--	9.04	0.00	90.75	<250	<500	--	--	--	--	--	--	<1.0
12/13/00		99.79	--	8.81	0.00	90.98	<250	<500	--	--	--	--	--	--	<1.0
2/28/01		99.79	--	8.60	0.00	91.19	<250	<500	<80	--	--	--	--	--	<1.0
5/2/01		99.79	--	8.53	0.00	91.26	<250	<500	<80	--	--	--	--	--	<1.0
10/30/02		99.79	--	9.24	0.00	90.55	<250	<500	<80	<0.500	<0.500	<0.500	<1.0	--	<1.0
1/23/03		99.79	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
4/18/03		99.79	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/11/03		99.79	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/31/03		99.79	--	8.82	0.00	90.97	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.0	--	<1.0[5]
12/31/03		99.79	--	7.95	0.00	91.84	<50	<77	<97	<0.5	<0.5	<0.5	<1.5	--	<1.2

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
MW-108 (cont.)															
5/3/04		99.79	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
7/20/04		99.79	MONITORED/SAMPLED ANNUALLY					--	--	--	--	--	--	--	--
10/7/04		99.79	--	8.80	0.00	90.99	<80	<100	<50	--	--	--	--	--	--
10/20/05		99.79	--	8.89	0.00	90.90	<81	<100	<48	--	--	--	--	--	--
10/20/05(D)		99.79	--	8.89	0.00	90.90	<81	<100	<48	--	--	--	--	--	--
9/6/07		99.79	--	9.15	0.00	90.64	<80	<100	<50	--	--	--	--	--	0.12
5/27-28/08		99.79	INACCESSIBLE			--	--	--	--	--	--	--	--	--	--
8/27-29/08	LFP	99.79	--	9.00	0.00	90.79	<78	<98	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/17-19/08	LFP	99.79	--	8.48	0.00	91.31	<30	<70	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/16-18/09	LFP	99.79	--	8.74	0.00	91.05	**1,100**	230	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.070
5/4-6/09	LFP	99.79	--	8.62	0.00	91.17	<29	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
8/19-21/09	LFP	99.79	--	9.07	0.00	90.72	<30	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
11/18-20/09	LFP	99.79	--	7.64	0.00	92.15	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
2/8-10/10	LFP	99.79	--	8.50	0.00	91.29	<29	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050
MONITORING WELL DECOMMISSIONED/SAMPLING DISCONTINUED															
TRIP BLANK															
10/30/02		--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/23/03		--	--	--	--	--	--	--	<80	<0.500	<0.500	<0.500	<1.0	--	--
4/18/03		--	--	--	--	--	--	--	<50	<0.500	<0.500	<0.500	<1.0	--	--
QA															
7/11/03		--	--	--	--	--	--	--	<50	<0.500	<0.500	<0.500	<1.00	--	--
10/31/03		--	--	--	--	--	--	--	<50	<0.500	<0.500	<0.500	<1.00	--	--
12/31/03		--	--	--	--	--	<50	--	--	<0.5	<0.5	<0.5	<1.5	--	--
5/3/04[6]		--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/20/04		--	--	--	--	--	--	--	<50	<0.500	<0.500	<0.500	<1.00	--	--
5/27-28/08		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/27-29/08		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/17-19/08		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/16-18/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/4-6/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/19-21/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/18-20/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/8-10/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/12-13/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/11/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead
QA (cont.)															
11/3-4/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/3-4/11		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
05/23/11		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/23-24/11		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/7-9/11		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/6-8/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/2-4/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/1-3/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/26-28/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
02/4-6/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
05/6-8/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
9/9-13/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/18-22/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/4-11/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
6/12-14/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/18-21/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/19-20/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/17-20/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/11-15/15		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/10-11/15		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/16-18/15		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/13-14/16		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/14/16		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
Standard Laboratory Reporting Limits:							--	--	50	0.5	0.5	0.5	1.0	0.5	0.5
MTCA Method A Cleanup Levels:							500	500	800/1,000	5	1,000	700	1,000	20	15
Current Method:[7]							NWTPH-Dx Extended		NWTPH-Gx and USEPA 8260B						USEPA 6020

TABLE 2

SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA[1]
COWLITZ BP / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	LNAPLT (ft.)	GWE[3] (ft.)	TPH-DRO[4]	TPH-HRO[4]	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead

Abbreviations:

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
(D) = Duplicate
D. Lead = Dissolved Lead
DTP = Depth to Product
DTW = Depth to Water
(ft.) = Feet
GWE = Groundwater Elevation
LFP = Low Flow Purge
LNAPL = Light Non-Aqueous Phase Liquid
LNAPLT = LNAPL Thickness
(mg/L) = Milligrams per liter
MTBE = Methyl Tertiary Butyl Ether
MTCA = Model Toxics Control Act
QA = Quality Assurance/Trip Blank
T. Lead = Total Lead
TOC = Top of Casing
TPH = Total Petroleum Hydrocarbons
TPH-DRO = TPH as Diesel-Range Organics
TPH-GRO = TPH as Gasoline-Range Organics
TPH-HRO = TPH as Heavy Oil-Range Organics
USEPA = United States Environmental Protection Agency
µg/L = Micrograms per liter
-- = Not Measured/Not Analyzed

Notes:

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

2 TOC elevations have been surveyed in feet relative to the 1988 North American Vertical Datum.

3 When LNAPL is present, GWE has been corrected using the following formula: GWE = [(TOC - DTW) + (LNAPLT x 0.80)].

4 TPH-DRO and TPH-HRO results with multiple values are reported as follows: with silica gel cleanup/without silica gel cleanup. TPH-DRO and TPH-HRO analyses for monitoring completed between October 2004 and May 2013 was performed with silica gel cleanup. The use of silica gel cleanup for samples collected prior to October 2004 has not been confirmed.

5 Laboratory report indicates this sample was laboratory filtered.

6 Laboratory indicates they did not receive a QA sample. No results were provided.

7 Laboratory analytical methods for historical data may not be consistent with list of current analytical methods. When necessary, consult original laboratory reports to verify methods used.

8 Insufficient groundwater to collect sample.

TABLE 3
DISPROPORTIONATE COST ANALYSIS – CLEANUP ACTION ALTERNATIVES RANKING
COWLITZ BP SITE / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

Evaluation Criteria	Alternative 1 Air Sparge/SVE, MNA, and Institutional Controls	Alternative 2 Partial Excavation, MNA, and Institutional Controls	Alternative 3 Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls	Alternative 4 MNA, Institutional Controls, and Site-Wide Excavation in Conjunction with Redevelopment or Service Station Upgrades	Alternative 5 Site-Wide Excavation, MNA, and Institutional Controls
Protectiveness	Short term - existing risks would be reduced by partial source remediation by in-situ air sparge/SVE, and by managing potential exposure pathways using institutional controls. Long term – existing risks would be eliminated by achieving Site cleanup levels through MNA. Improvement of overall environmental quality is likely to be the same for each of the alternatives evaluated. The estimated restoration time frame to attain cleanup standards for the Site is approximately 10 - 15 years. This alternative is considered to be more protective than Alternative 4 due to reduction in short-term risks by active remediation. This alternative is considered to be similar to Alternative 2 in protectiveness. Protectiveness Rank = 2	Short term - existing risks would be reduced by partial source remediation by excavation, and by managing potential exposure pathways using institutional controls. Long term – existing risks would be eliminated by achieving Site cleanup levels through MNA. Improvement of overall environmental quality is likely to be the same for each of the alternatives evaluated. The estimated restoration time frame to attain cleanup standards for the Site is approximately 10 - 15 years. This alternative is considered to be more protective than Alternative 4 due to reduction in short-term risks by active remediation. This alternative is considered to be similar to Alternative 1 in protectiveness. Protectiveness Rank = 2	Short term - existing risks would be reduced by partial source remediation by excavation and air sparge/SVE, and by managing potential exposure pathways using institutional controls. Long term – existing risks would be eliminated by achieving Site cleanup levels through MNA. Improvement of overall environmental quality is likely to be the same for each of the alternatives evaluated. The estimated restoration time frame to attain cleanup standards for the Site is approximately 10 years. This alternative is considered to be more protective than Alternatives 1, 2, and 4 due to additional reduction in short-term risks by two phases of active remediation. Protectiveness Rank = 3	Short term - existing risks would be managed using institutional controls. Long term – existing risks would be eliminated by achieving Site cleanup levels through site-wide excavation and MNA. Improvement of overall environmental quality is likely to be the same for each of the alternatives evaluated. The estimated restoration time frame to attain cleanup standards for the Site is approximately 10 - 25 years. This alternative is considered the least protective because it has the potential to result in the longest restoration time frame. Protectiveness Rank = 1	Short term - existing risks would be reduced by source remediation through site-wide excavation, and by managing potential exposure pathways using institutional controls. Long term – existing risks would be eliminated by achieving Site cleanup levels through MNA. Improvement of overall environmental quality is likely to be the same for each of the alternatives evaluated. The estimated restoration time frame to attain cleanup standards for the Site is approximately 5 - 10 years. This alternative is considered the most protective because it is the most aggressive cleanup action and would likely result in the shortest restoration time frame. Protectiveness Rank = 4

TABLE 3
DISPROPORTIONATE COST ANALYSIS – CLEANUP ACTION ALTERNATIVES RANKING
COWLITZ BP SITE / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

Evaluation Criteria	Alternative 1 Air Sparge/SVE, MNA, and Institutional Controls	Alternative 2 Partial Excavation, MNA, and Institutional Controls	Alternative 3 Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls	Alternative 4 MNA, Institutional Controls, and Site-Wide Excavation in Conjunction with Redevelopment or Service Station Upgrades	Alternative 5 Site-Wide Excavation, MNA, and Institutional Controls
Permanence	Alternative 1 is considered to provide the least degree of permanence relative to the other alternatives because this alternative does not include an excavation phase that would physically remove a portion of the contaminated soil from the Site. Permanence Rank = 1	Alternatives 2 and 3 are considered to provide greater permanence than Alternative 1 because these alternatives would physically remove a portion of the contaminated soil from the Site. However, these alternatives are less permanent than Alternatives 4 and 5, which would physically remove a greater portion of contaminated soil. Permanence Rank = 2	Alternatives 2 and 3 are considered to provide greater permanence than Alternative 1 because these alternatives would physically remove a portion of the contaminated soil from the Site. However, these alternatives are less permanent than Alternatives 4 and 5, which would physically remove a greater portion of contaminated soil. Permanence Rank = 2	Alternatives 4 and 5 are considered to provide the greatest degree of permanence because these alternatives will physically remove the most mass of contaminated soil from the Site. Permanence Rank = 3	Alternatives 4 and 5 are considered to provide the greatest degree of permanence because these alternatives will physically remove the most mass of contaminated soil from the Site. Permanence Rank = 3
Long-Term Effectiveness	Alternative 1 is considered to provide the least certainty of long-term effectiveness because this alternative would rely on active in-situ remediation by technologies that have not been pilot tested or otherwise confirmed to be effective at the Site. Long-Term Effectiveness Rank = 1	Alternative 2 is considered to have more certainly of long-term effectiveness than Alternative 1 because this alternative would include physical removal of a portion of the contaminated soil mass at the Site. However, this alternative is considered to have less long-term effectiveness than Alternatives 3 (because it includes active in-situ remediation by air sparge/SVE) and Alternatives 4 and 5 (because they include removal of a greater mass of contaminated soil at the Site). Long-Term Effectiveness Rank = 2	Alternative 3 is considered to have less certainty of long-term effectiveness than Alternatives 4 and 5 because it partially relies on an air sparge/SVE system (with unknown effectiveness) to achieve the Site cleanup standards. However, the addition of the air sparge/SVE system to this alternative is considered to provide a higher certainty of long-term effectiveness than Alternative 2, which relies solely on the partial excavation, MNA, and institutional controls. Long-Term Effectiveness Rank = 3	Alternatives 4 and 5 are considered to have the highest certainty of long-term effectiveness because these alternatives would physically remove the most mass of contaminated soil from the Site. Long-Term Effectiveness Rank = 4	Alternatives 4 and 5 are considered to have the highest certainty of long-term effectiveness because these alternatives would physically remove the most mass of contaminated soil from the Site. Long-Term Effectiveness Rank = 4

TABLE 3
DISPROPORTIONATE COST ANALYSIS – CLEANUP ACTION ALTERNATIVES RANKING
COWLITZ BP SITE / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

Evaluation Criteria	Alternative 1 Air Sparge/SVE, MNA, and Institutional Controls	Alternative 2 Partial Excavation, MNA, and Institutional Controls	Alternative 3 Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls	Alternative 4 MNA, Institutional Controls, and Site-Wide Excavation in Conjunction with Redevelopment or Service Station Upgrades	Alternative 5 Site-Wide Excavation, MNA, and Institutional Controls
Management of Short-Term Risks	Short-term risks associated with Alternative 1 include: • Risks to workers and the public from physical hazards during well installation, trenching, and system construction activities. • Risks to workers and the public from exposure to hazardous substances during well installation and trenching activities. • Risks to workers from physical hazards and/or exposure to hazardous substances during system operation and site monitoring activities. This alternative is considered to have a greater degree of short-term risk than Alternative 2 because it includes a phase of system operation following construction of the air sparge/SVE system. Management of Short-Term Risks Rank = 3	Short-term risks associated with Alternative 2 include: • Risks to workers and the public from physical hazards during excavation and soil transportation activities. • Risks to workers and the public from exposure to hazardous substances during excavation and soil transportation activities. • Risks to workers from physical hazards and/or exposure to hazardous substances during site monitoring activities. This alternative is considered to have a greater degree of short-term risk than Alternative 4 because it would require an additional phase of soil excavation and offsite transportation beyond what would be expected to occur during future station upgrades or redevelopment of the active station property. Management of Short-Term Risks Rank = 3	Short-term risks associated with Alternative 3 include: • Risks to workers and the public from physical hazards during excavation activities. • Risks to workers and the public from exposure to hazardous substances during excavation activities. • Risks to workers and the public from physical hazards during well installation, trenching, and system construction activities. • Risks to workers and the public from exposure to hazardous substances during well installation and trenching activities. • Risks to workers from physical hazards and/or exposure to hazardous substances during system operation and site monitoring activities. This alternative is considered to have a greater degree of short-term risk than Alternative 1 because it includes two phases of construction. Management of Short-Term Risks Rank = 2	Short-term risks associated with Alternative 4 include: • Risks to workers from physical hazards and/or exposure to hazardous substances during site monitoring activities. This alternative would likely result in the least amount of incremental short-term risks because the active remediation phase would be performed in conjunction with future station upgrades or redevelopment of the active station property. Although the extent of site work associated with Alternative 4 would be greater than Alternatives 1, 2, and 3, this alternative would likely be implemented while the active service station was shut down. Therefore, short-term risks could be effectively reduced by fencing or similar physical barriers to control public access to the Site. Management of Short-Term Risks Rank = 3	Short-term risks associated with Alternative 5 include: • Risks to workers and the public from physical hazards during excavation and soil transportation activities. • Risks to workers and the public from exposure to hazardous substances during excavation and soil transportation activities. • Risks to workers from physical hazards and/or exposure to hazardous substances during site monitoring activities. This alternative is considered to have the greatest degree of short-term risks due to the magnitude of the associated demolition, excavation, and construction activities. Management of Short-Term Risks Rank = 1

TABLE 3
DISPROPORTIONATE COST ANALYSIS – CLEANUP ACTION ALTERNATIVES RANKING
COWLITZ BP SITE / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

Evaluation Criteria	Alternative 1 Air Sparge/SVE, MNA, and Institutional Controls	Alternative 2 Partial Excavation, MNA, and Institutional Controls	Alternative 3 Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls	Alternative 4 MNA, Institutional Controls, and Site-Wide Excavation in Conjunction with Redevelopment or Service Station Upgrades	Alternative 5 Site-Wide Excavation, MNA, and Institutional Controls
Technical and Administrative Implementability	This alternative is likely to be technically and administratively implementable; however, pilot testing of the air sparge/SVE system will likely be necessary to fully evaluate the appropriateness of this alternative. This alternative may also require an air discharge permit for the SVE system. Institutional controls needed for this alternative are similar to Alternatives 2 and 3. Implementation of this alternative is considered to be technically and administratively equivalent to Alternative 2. Technical and Administrative Implementability Rank = 4	This alternative is considered to be technically and administratively implementable. Institutional controls needed for this alternative are similar to Alternatives 1 and 3. Implementation of this alternative is considered to be technically and administratively equivalent to Alternative 1. Technical and Administrative Implementability Rank = 4	This alternative is likely to be technically and administratively implementable; however, pilot testing of the air sparge/SVE system will likely be necessary to fully evaluate the appropriateness of this alternative. This alternative may also require an air discharge permit for the SVE system. Institutional controls needed for this alternative are similar to Alternatives 1 and 2. Implementation of this alternative will be similar to Alternatives 1 and 2; however, it is considered more technically challenging because it combines two phases of active remediation. This alternative would potentially be less administratively challenging than Alternatives 1 and 2, due to the shorter anticipated restoration time frame. Technical and Administrative Implementability Rank = 2	This alternative is considered to be technically and administratively implementable. This alternative is likely to require additional institutional controls, beyond those required for Alternatives 1 through 3, in order to guarantee funding for cleanup implementation at the time of a future site redevelopment. Implementation of this alternative is likely to be technically equivalent to Alternative 2; however, this alternative is likely to be more administratively challenging due to the longer period of MNA and maintenance of institutional controls that would be required to complete cleanup of the Site. Technical and Administrative Implementability Rank = 3	Administratively, this would be the most difficult alternative to implement due to impacts to operations of the existing active station facility. This alternative would be the most logistically challenging to implement due to the need to remove and replace existing service station infrastructure. Technical and Administrative Implementability Rank = 1

TABLE 3
DISPROPORTIONATE COST ANALYSIS – CLEANUP ACTION ALTERNATIVES RANKING
COWLITZ BP SITE / COWLITZ FOOD AND FUEL / FORMER TEXACO SERVICE STATION NO. 211556
101 Mulford Road
Toledo, Washington

Evaluation Criteria	Alternative 1 Air Sparge/SVE, MNA, and Institutional Controls	Alternative 2 Partial Excavation, MNA, and Institutional Controls	Alternative 3 Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls	Alternative 4 MNA, Institutional Controls, and Site-Wide Excavation in Conjunction with Redevelopment or Service Station Upgrades	Alternative 5 Site-Wide Excavation, MNA, and Institutional Controls
Consideration of Public Concerns	Alternatives 1 and 2 are generally considered equivalent with regard to public concerns because both of these alternatives would actively remediate a portion of the remaining petroleum hydrocarbon contamination at the Site. However, Alternative 1 was assigned a higher rank than Alternative 2 because Alternative 1 would likely be considered a "greener" or more environmentally sustainable alternative. Although a detailed analysis of the environmental impact of these two alternatives has not been performed, Alternative 2 would likely have a greater carbon footprint due to the trucking of impacted soil from the Site. Consideration of Public Concerns Rank = 3	Alternatives 1 and 2 are generally considered equivalent with regard to public concerns because both of these alternatives would actively remediate a portion of the remaining petroleum hydrocarbon contamination at the Site. However, Alternative 1 was assigned a higher rank than Alternative 2 because Alternative 1 would likely be considered a "greener" or more environmentally sustainable alternative. Although a detailed analysis of the environmental impact of these two alternatives has not been performed, Alternative 2 would likely have a greater carbon footprint due to the trucking of impacted soil from the Site. Consideration of Public Concerns Rank = 2	Currently, there are no known public concerns regarding the completion of cleanup actions at this Site. However, Alternative 3 was assigned the highest rank under this evaluation criterion because it would likely achieve the Site cleanup standards within the shortest restoration timeframe, without requiring the complete demolition and rebuilding of the current active service station. Consideration of Public Concerns Rank = 4	Alternative 4 is considered to be equivalent to Alternative 2 with regard to public concerns. Although Alternative 4 would likely have a larger carbon footprint than Alternative 2, this Alternative would result in near complete physical removal of all contaminated soil at the Site and would be efficiently implemented by taking advantage of other earth work being performed at the Site. This alternative would also result in the least amount of disruption to the operators, employees and customers of the businesses at the Site. Consideration of Public Concerns Rank = 2	Alternative 5 was assigned the lowest rank under this evaluation criterion because this alternative would result in the greatest disruption to the operators, employees and customers of the businesses at the Site, and would result in the largest carbon footprint of all the alternatives considered. Consideration of Public Concerns Rank = 1
Cumulative Ranking[1]	**14**	**15**	**16**	**16**	**14**

Notes:
1. The alternative with the highest cumulative ranking is considered to provide the greatest degree of benefit, relative to the other alternatives. A description of the process used to assign ranks for each of the disproportionate cost analysis evaluation criteria is presented in Section 6.2.3.1 of the FS text.

Appendix A:
Soil Sampling Assessment Summary Report
(To Be Included in Draft Final FS - Not Included in April 2017 Agency Review Draft Version)

Appendix B:
Natural Attenuation Assessment for Groundwater

(To Be Included in Draft Final FS - Not Included in April 2017 Agency Review Draft Version)

Appendix C:
Alternative Cost Estimates for Disproportionate Cost Analysis

Summary of Alternative Costs Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)		
	Cost Components	**Cost**
Task 1	Air Sparge/SVE System Design and Permitting	$53,950
Task 2	Air Sparge/SVE System Equipment Procurement/Construction	$299,964
Task 3	Air Sparge/SVE Well Installation	$138,860
Task 4	Site Construction	$235,210
Task 5	System Startup	$38,740
Task 6	Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)	$177,560
Task 7	System Installation Documentation and OMM Manual Preparation	$23,760
Task 8	Monitoring of Natural Attenuation (10 Years)	$196,000
Task 9	Coordination/Management/Maintenance of Institutional Controls (15 Years)	$66,570
Task 10	Post-Remedy Confirmation Sampling and Closure Management	$55,240
Total + 25% for taxes and contingency		**$1,607,318**

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 1 Air Sparge/SVE System Design and Permitting

Includes:

- Air discharge permit application and coordination
- Construction permit and utility connection coordination
- Preparation of preliminary, pre-final, and final design drawings and specifications packages
- Preparation of equipment construction and site-work contractor bid packages
- Evaluation of bids and award of equipment construction and site-work subcontracts

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$51,200
Principal Level Eng/Geo/Sci		Hour	40	$130.00	$5,200
Senior Level Eng/Geo/Sci		Hour	200	$110.00	$22,000
Project Level Eng/Geo/Sci		Hour	200	$85.00	$17,000
Drafter		Hour	100	$70.00	$7,000
Consultant Equipment					$250
Field Vehicle		Day	2	$125.00	$250
Other Costs					$2,500
Air Discharge Permit Fee	Assumed project considered "Basic" by Ecology	Lump Sum	1	$1,500.00	$1,500
Misc. Permit Fees		Lump Sum	1	$1,000.00	$1,000
Total					**$53,950**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 2 Air Sparge/SVE System Equipment Procurement/Construction

Includes:

- Consultant subcontractor expenses for construction and shipping of container mounted air sparge/SVE system for 26 air sparge injection wells and 8 SVE wells
- Consultant labor associated with system build coordination and shop drawing review
- Consultant labor, travel, and expenses to attend final system testing and inspection at manufacturer's facility prior to shipment

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$13,480.00
Principal Level Eng/Geo/Sci		Hour	16	$130.00	$2,080.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Associate Level Eng/Geo/Sci		Hour	40	$65.00	$2,600.00
Consultant Travel					$1,484.00
Air Fare		Trip	1	$800.00	$800.00
Lodging		Night	2	$125.00	$250.00
Per Diem		Day	3	$40.00	$120.00
Car Rental		Day	2	$55.00	$110.00
Fuel for Rental Car		Gallon	30	$4.00	$120.00
Airport Parking		Day	3	$28.00	$84.00
Consultant Subcontractor Costs					$285,000.00
System Construction		Lump Sum	1	$275,000.00	$275,000.00
System Shipping		Lump Sum	1	$10,000.00	$10,000.00
Total					**$299,964.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 3 Air Sparge/SVE Well Installation

Includes:

- HASP and work plan preparation, pre-project planning, and subcontractor coordination
- Consultant labor, equipment, travel, and subcontractor costs to install approximately 26 air sparge injection wells and 8 SVE wells
- Boring log preparation, and data management and evaluation
- Laboratory analysis for soil samples
- Waste coordination, transport and disposal

Assumptions:

- Costs assume a 10-day field effort to install all wells, with continuous oversight by two consultant staff
- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$42,720.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Project Level Eng/Geo/Sci		Hour	240	$85.00	$20,400.00
Associate Level Eng/Geo/Sci		Hour	160	$65.00	$10,400.00
Consultant Travel					$3,540.00
Lodging	2x8 nights oversight crew + 4 nights supervisor	Night	20	$125.00	$2,500.00
Per Diem	2x10 days oversight crew + 6 days supervisor	Day	26	$40.00	$1,040.00
Consultant Equipment					$3,800.00
Field Vehicle		Day	6	$125.00	$750.00
Sampling Truck		Day	10	$230.00	$2,300.00
PID		Day	10	$75.00	$750.00
Consultant Subcontractor Costs					$69,800.00
Driller - Vac Truck Mobilization		Mile	300	$3.50	$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	10	$1,750.00	$17,500.00
Driller - HSA Drill Rig Mobilization		Mile	300	$5.50	$1,650.00
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	10	$3,250.00	$32,500.00
Driller - Start Cards		Each	32	$65.00	$2,080.00
Driller- 4" Well Materials	(8) 4"-diameter wells to 10 feet bgs	Foot	80	$18.00	$1,440.00
Driller- 2" Well Materials	(24) 2"-diameter wells to 15 feet bgs	Foot	360	$12.00	$4,320.00
Driller - Surface Hole Patch		Each	32	$50.00	$1,600.00
Construction Trailer Rental		Week	2	$500.00	$1,000.00
Surveyor		Lump Sum	1	$2,500.00	$2,500.00
Chevron Direct-Bill Subcontractor Costs					$19,000.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal		Drum	64	$100.00	$6,400.00
Laboratory Analytical Services		Sample	64	$150.00	$9,600.00
Total					**$138,860.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 4 Site Construction

Includes:

- Pre-project planning and subcontractor coordination
- Consultant labor, equipment, travel, and materials associated with field oversight of system construction
- Consultant subcontractor costs associated with site construction tasks, including;
  - Site clearing and grading
  - Trenching and piping installation
  - System pad and security fence installation
  - Unloading, placement and assembly of remediation system equipment containers
  - Electrical system installation

Assumptions:

- System installation assumed to occur over four 60-hour weeks

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$48,200.00
Senior Level Eng/Geo/Sci		Hour	120	$110.00	$13,200.00
Project Level Eng/Geo/Sci	80 hours planning + four 60-hour weeks in field	Hour	320	$85.00	$27,200.00
Associate Level Eng/Geo/Sci	Two 60-hour weeks in field	Hour	120	$65.00	$7,800.00
Consultant Travel					$5,020.00
Lodging		Night	28	$125.00	$3,500.00
Per Diem		Day	38	$40.00	$1,520.00
Consultant Equipment					$6,250.00
Field Vehicle		Day	38	$125.00	$4,750.00
PID		Day	20	$75.00	$1,500.00
Consultant Subcontractor Costs					$166,740.00
Project Manager		Hour	24	$105.00	$2,520.00
Health and Safety Manager		Hour	24	$85.00	$2,040.00
Foreman	4 weeks @ 60 hours per week	Hour	240	$90.00	$21,600.00
Operator	4 weeks @ 60 hours per week	Hour	240	$85.00	$20,400.00
Laborer	4 weeks @ 60 hours per week	Hour	240	$70.00	$16,800.00
Administrative Assistant		Hour	12	$65.00	$780.00
Per Diem - Meals		Day	60	$40.00	$2,400.00
Per Diem - Lodging		Night	48	$125.00	$6,000.00
Light Truck		Day	20	$200.00	$4,000.00
Service Truck		Day	20	$300.00	$6,000.00
Excavator - Mini		Day	15	$500.00	$7,500.00
Subcontractor - Crane		Lump Sum	1	$4,000.00	$4,000.00
Subcontractor - Electrical		Lump Sum	1	$15,000.00	$15,000.00
Temporary Fence		Linear Ft.	600	$3.00	$1,800.00
Portable Toilet and Hand Wash		Week	4	$100.00	$400.00
Materials - Piping		Lump Sum	1	$20,000.00	$20,000.00
Materials - Backfill		Lump Sum	1	$5,000.00	$5,000.00
Materials - Crushed Rock		Lump Sum	1	$5,000.00	$5,000.00
Materials - Concrete		Lump Sum	1	$7,500.00	$7,500.00
Materials - Well vaults		Each	32	$500.00	$16,000.00
Construction Trailer Rental		Week	4	$500.00	$2,000.00
Chevron Direct-Bill Subcontractor Costs					$9,000.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Cubic Yard	40	$100.00	$4,000.00
Laboratory Analytical Services	Waste characterization samples	Sample	8	$250.00	$2,000.00
Total					**$235,210.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 5 System Startup

Includes:

- Consultant labor, equipment, travel, and materials associated with remediation system startup
- Laboratory costs for vapor sample analysis

Assumptions:

- System startup is assumed to be a two week field effort

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$29,640.00
Senior Level Eng/Geo/Sci	24 hours planning + two 60-hour weeks in field	Hour	144	$110.00	$15,840.00
Project Level Eng/Geo/Sci	24 hours planning + two 60-hour weeks in field	Hour	144	$85.00	$12,240.00
Associate Level Eng/Geo/Sci	Office support of field activities	Hour	24	$65.00	$1,560.00
Drafter		Hour		$70.00	$0.00
Consultant Travel					$2,800.00
Lodging	8 nights lodging for 2 staff	Night	16	$125.00	$2,000.00
Per Diem	10 days per diem for 2 staff	Day	20	$40.00	$800.00
Consultant Equipment					$3,800.00
Sampling Truck		Day	10	$230.00	$2,300.00
PID		Day		$75.00	$0.00
FID		Day		$85.00	$0.00
4-Gas Meter		Day	10	$150.00	$1,500.00
Consultant Subcontractor Costs					$1,000.00
Equipment Supplier Field Support	Operator training and troubleshooting	Lump Sum	1	$5,500.00	$5,500.00
Construction Trailer Rental		Week	2	$500.00	$1,000.00
Chevron Direct-Bill Subcontractor Costs					$1,500.00
Laboratory Analytical Services	Air samples	Sample	10	$150.00	$1,500.00
Total					**$38,740.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 6 Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)

Includes:

- Consultant labor, equipment, and materials associated with operation, maintenance, and monitoring of the Air Sparge/SVE remediation system, including quarterly reporting for permit compliance

Item	Notes	Unit	Annual Quantity	# of Years	Unit Cost	Annual Total	Project Total
Consultant Labor						$49,600.00	$99,200.00
Principal Level Eng/Geo/Sci	Annual site visit	Hour	8	2	$130.00	$1,040.00	$2,080.00
Senior Level Eng/Geo/Sci	4 site visits (12 hrs. ea.) + 4 hrs/mo reporting	Hour	96	2	$110.00	$10,560.00	$21,120.00
Project Level Eng/Geo/Sci	6 site visits (12 hrs ea)	Hour	72	2	$85.00	$6,120.00	$12,240.00
Associate Level Eng/Geo/Sci	26 site visits (12 hrs ea) + 12 hrs/mo reporting	Hour	456	2	$65.00	$29,640.00	$59,280.00
Drafter	8 hours per quarter - reporting	Hour	32	2	$70.00	$2,240.00	$4,480.00
Consultant Equipment						$9,880.00	$19,760.00
Sampling Truck		Day	26	2	$230.00	$5,980.00	$11,960.00
4-Gas Meter		Day	26	2	$150.00	$3,900.00	$7,800.00
Consultant Material Costs						$1,000.00	$2,000.00
Misc. Materials		Lump Sum	1	2	$1,000.00	$1,000.00	$2,000.00
Consultant Subcontractor Costs						$5,000.00	$10,000.00
Specialty OMM visits		Event	1	2	$5,000.00	$5,000.00	$10,000.00
Other Costs						$6,700.00	$13,400.00
Utilities - Electric		KWH	100,000	2	$0.07	$6,700.00	$13,400.00
Chevron Direct-Bill Subcontractor Costs						$16,600.00	$33,200.00
Waste Disposal Coordination	Coordinate condensate disposal	Lump Sum	1	2	$3,000.00	$3,000.00	$6,000.00
Waste Transport and Disposal	Condensate disposal (once per quarter)	Event	4	2	$1,000.00	$4,000.00	$8,000.00
Lab - Groundwater Samples	10 quarterly samples	Sample	40	2	$150.00	$6,000.00	$12,000.00
Lab - Air Samples	Monthly air discharge samples	Sample	24	2	$150.00	$3,600.00	$7,200.00
Total						**$88,780.00**	**$177,560.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 7 System Installation Documentation and OMM Manual Preparation

Includes:

- Preparation of system installation summary report
- Preparation of OMM manual with system specific maintenance procedures
- Preparation of system as-built documentation

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$23,760.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	48	$110.00	$5,280.00
Project Level Eng/Geo/Sci		Hour	80	$85.00	$6,800.00
Associate Level Eng/Geo/Sci		Hour	80	$65.00	$5,200.00
Drafter		Hour	48	$70.00	$3,360.00
Total					**$23,760.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 8 Monitoring of Natural Attenuation (10 Years)

Includes:

- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes
- Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management

Assumptions:

Monitoring will be required for a period of 10 years

Item	Notes	Unit	Annual Quantity	# of Years	Unit Cost	Annual Total	Project Total
Consultant Labor						$9,600.00	$96,000.00
Principal Level Eng/Geo/Sci		Hour	8	10	$130.00	$1,040.00	$10,400.00
Senior Level Eng/Geo/Sci		Hour	24	10	$110.00	$2,640.00	$26,400.00
Project Level Eng/Geo/Sci		Hour	32	10	$85.00	$2,720.00	$27,200.00
Associate Level Eng/Geo/Sci		Hour	32	10	$65.00	$2,080.00	$20,800.00
Drafter		Hour	16	10	$70.00	$1,120.00	$11,200.00
Chevron Direct-Bill Subcontractor Costs						$10,000.00	$100,000.00
Groundwater Sampling Subcontractor		Event	2	10	$2,500.00	$5,000.00	$50,000.00
Lab - Groundwater Samples	10 semiannual samples	Sample	20	10	$250.00	$5,000.00	$50,000.00
Total						**$19,600.00**	**$196,000.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 9 Coordination/Management/Maintenance of Institutional Controls (15 Years)

Includes:

- Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property
- Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways

Assumptions:

- Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property
- Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 15 years

Item	Notes	Unit	Quantity	Unit Cost	Annual Total
Consultant Labor					$37,820.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	64	$110.00	$7,040.00
Project Level Eng/Geo/Sci		Hour	96	$85.00	$8,160.00
Associate Level Eng/Geo/Sci		Hour	300	$65.00	$19,500.00
Consultant Equipment					$3,750.00
Field Vehicle		Day	30	$125.00	$3,750.00
Consultant Subcontractor Costs					$25,000.00
Paving Subcontractor		Lump Sum	1	$25,000.00	$25,000.00
Total					**$66,570.00**

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)
Task 10 Post-Remedy Confirmation Sampling and Closure Management

Includes:

- Consultant labor, equipment, travel, and subcontractor costs to collect post remedy soil and soil-vapor confirmation samples
- HASP and work plan preparation, pre-project planning, and subcontractor coordination
- Data evaluation and summary report preparation
- Laboratory analysis for soil and soil-vapor samples
- Waste coordination, transport and disposal

Assumptions:

- Costs assume soil samples are collected during a 3-day field effort with continuous oversight by two consultant staff
- All soil boring locations cleared to 8 feet bgs using air-knife/vac-truck rig
- Soil-vapor samples to be collected at existing soil-vapor sampling probe locations (one-time event)

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$31,040.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Project Level Eng/Geo/Sci		Hour	120	$85.00	$10,200.00
Associate Level Eng/Geo/Sci		Hour	120	$65.00	$7,800.00
Drafter		Hour	16	$70.00	$1,120.00
Consultant Travel					$740.00
Lodging	2x8 nights oversight crew + 4 nights supervisor	Night	4	$125.00	$500.00
Per Diem	2x10 days oversight crew + 6 days supervisor	Day	6	$40.00	$240.00
Consultant Equipment					$1,670.00
Field Vehicle		Day	3	$125.00	$375.00
Sampling Truck		Day	4	$230.00	$920.00
PID		Day	3	$75.00	$225.00
Helium Meter		Day	1	$150.00	$150.00
Consultant Subcontractor Costs					$12,390.00
Driller - Vac Truck Mobilization		Mile	300	$3.50	$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	$1,750.00	$1,750.00
Driller - HSA Drill Rig Mobilization		Mile	300	$5.50	$1,650.00
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	2	$3,250.00	$6,500.00
Driller - Start Cards		Each	8	$65.00	$520.00
Driller - Surface Hole Patch		Each	8	$50.00	$400.00
Driller - Soil/Water Drums		Each	8	$65.00	$520.00
Chevron Direct-Bill Subcontractor Costs					$9,400.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal		Drum	8	$100.00	$800.00
Laboratory Analytical Services	Soil samples	Sample	24	$150.00	$3,600.00
Laboratory Analytical Services	4 Soil-vapor samples + 1 equipment blank	Sample	5	$400.00	$2,000.00
Total					**$55,240.00**

Summary of Alternative Costs Alternative 2 (Partial Excavation, MNA, and Institutional Controls)		
	Cost Components	**Cost**
Task 1	Excavation Planning and Permitting	$47,090
Task 2	Excavation Implementation	$511,885
Task 3	Reporting	$12,480
Task 4	Monitoring of Natural Attenuation (10 Years)	$196,000
Task 5	Coordination/Management/Maintenance of Institutional Controls (15 Years)	$63,820
Task 6	Post Remedy Confirmation Sampling and Closure Management	$55,240
Total + 25% for taxes and contingency		**$1,108,144**

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alternative 2 (Partial Excavation, MNA, and Institutional Controls)
Task 1 Excavation Planning and Permitting

Includes:

- Preparation of work plan, contractor specifications, and HASP
- Preparation of SEPA and soil/erosion control permits
- Subcontractor coordination and pre-project safety planning

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$45,840
Principal Level Eng/Geo/Sci		Hour	32	$130.00	$4,160
Senior Level Eng/Geo/Sci		Hour	120	$110.00	$13,200
Project Level Eng/Geo/Sci		Hour	160	$85.00	$13,600
Associate Level Eng/Geo/Sci		Hour	160	$65.00	$10,400
Drafter		Hour	64	$70.00	$4,480
Consultant Equipment					$250
Field Vehicle		Day	2	$125.00	$250
Other Costs					$1,000
Permit Fees		Lump Sum	1	$1,000.00	$1,000
Total					**$47,090**

Alternative 2 (Partial Excavation, MNA, and Institutional Controls)
Task 2 Excavation Implementation

Includes:

- Consultant labor, equipment, travel, and materials associated with field oversight of excavation activities
- Subcontractor costs associated with excavation tasks, including;
  - Mobilization and site setup costs
  - Excavation and loading of overburden and impacted soil to the extent practicable
  - Labor, equipment, materials and subcontractors to backfill, compact and restore site to pre-existing condition
  - Application of 2,000 pounds of ORC or equivalent product to be placed in excavation bottom
- Waste disposal coordination, transportation, and disposal by Chevron direct-bill subcontractors

Assumptions:

- Area to be excavated is approximately 7,500 square feet
- Clean overburden soils from ground surface to 5 feet bgs
- Petroleum contaminated soil from 5 feet bgs to maximum excavation depth (12 feet bgs)
- Assume 1.6 tons per cubic yard of soil (in place)
- Estimated excavation and disposal of 2,000 cy or 3,200 tons of petroleum contaminated soil
- Estimated excavation and disposal of 1,400 cy or 2,200 tons of clean overburden soil
- Excavation to be performed during (3) 5-day weeks in the field

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$49,580.00
Principal Level Eng/Geo/Sci		Hour	16	$130.00	$2,080.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Project Level Eng/Geo/Sci	Three 60-hour weeks in field	Hour	180	$85.00	$15,300.00
Associate Level Eng/Geo/Sci	Three 60-hour weeks in field for 2 staff	Hour	360	$65.00	$23,400.00
Drafter		Hour		$70.00	$0.00
Consultant Travel					$6,915.00
Lodging		Night	39	$125.00	$4,875.00
Per Diem		Day	51	$40.00	$2,040.00
Consultant Equipment					$7,200.00
Field Vehicle		Day	21	$125.00	$2,625.00
Sampling Truck		Day	15	$230.00	$3,450.00
PID		Day	15	$75.00	$1,125.00
Consultant Subcontractor Costs					$251,190.00
Project Manager		Hour	64	$105.00	$6,720.00
Health and Safety Manager		Hour	64	$85.00	$5,440.00
Foreman	3 weeks @ 60 hours per week + 20 hours planning	Hour	200	$90.00	$18,000.00
Operator	3 weeks @ 60 hours per week	Hour	180	$85.00	$15,300.00
Laborer	3 weeks @ 60 hours per week	Hour	180	$70.00	$12,600.00
Administrative Assistant		Hour	12	$65.00	$780.00
Per Diem - Meals		Day	45	$40.00	$1,800.00
Per Diem - Lodging		Night	36	$125.00	$4,500.00
Light Truck		Day	15	$200.00	$3,000.00
Service Truck		Day	15	$300.00	$4,500.00
Water Truck		Day	10	$375.00	$3,750.00
Excavator - 50,000 lb		Day	15	$1,250.00	$18,750.00
Excavator - 28,000 lb		Day	15	$850.00	$12,750.00
Compaction Plate Excavator		Day	5	$250.00	$1,250.00
Subcontractor - Compaction Testing		Lump Sum	1	$5,000.00	$5,000.00
Subcontractor - Paving		Sq. Foot	7,500	$1.50	$11,250.00
Temporary Fence		Linear Ft.	600	$3.00	$1,800.00
Portable Toilet and Hand Wash		Week	3	$100.00	$300.00
Materials - Structural Fill (Delivered)		Ton	3,400	$12.00	$40,800.00
Materials - Crushed Rock (Delivered)		Ton	2,000	$14.00	$28,000.00
Materials - ORC		Pound	2,000	$9.00	$18,000.00
Overburden Transport & Disposal		Ton	2,200	$7.00	$15,400.00
Construction Trailer Rental		Week	3	$500.00	$1,500.00
Mobile Laboratory		Day	10	$2,000.00	$20,000.00
Chevron Direct-Bill Subcontractor Costs					$197,000.00
Waste Disposal Coordination		Lump Sum	1	$5,000.00	$5,000.00
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Ton	3,200	$60.00	$192,000.00
Total					**$511,885.00**

Alternative 2 (Partial Excavation, MNA, and Institutional Controls)
Task 3 Reporting

Includes:

- Preparation of excavation summary report

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$12,480.00
Principal Level Eng/Geo/Sci		Hour	8	$130.00	$1,040.00
Senior Level Eng/Geo/Sci		Hour	24	$110.00	$2,640.00
Project Level Eng/Geo/Sci		Hour	40	$85.00	$3,400.00
Associate Level Eng/Geo/Sci		Hour	40	$65.00	$2,600.00
Drafter		Hour	40	$70.00	$2,800.00
Total					**$12,480.00**

Alternative 2 (Partial Excavation, MNA, and Institutional Controls)
Task 4 Monitoring of Natural Attenuation (10 Years)

Includes:

- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes
- Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management

Assumptions:

Monitoring will be required for a period of 10 years

Item	Notes	Unit	Annual Quantity	# of Years	Unit Cost	Annual Total	Project Total
Consultant Labor						$9,600.00	$96,000.00
Principal Level Eng/Geo/Sci		Hour	8	10	$130.00	$1,040.00	$10,400.00
Senior Level Eng/Geo/Sci		Hour	24	10	$110.00	$2,640.00	$26,400.00
Project Level Eng/Geo/Sci		Hour	32	10	$85.00	$2,720.00	$27,200.00
Associate Level Eng/Geo/Sci		Hour	32	10	$65.00	$2,080.00	$20,800.00
Drafter		Hour	16	10	$70.00	$1,120.00	$11,200.00
Chevron Direct-Bill Subcontractor Costs						$10,000.00	$100,000.00
Groundwater Sampling Subcontractor		Event	2	10	$2,500.00	$5,000.00	$50,000.00
Lab - Groundwater Samples	10 semiannual samples	Sample	20	10	$250.00	$5,000.00	$50,000.00
Total						**$19,600.00**	**$196,000.00**

Alternative 2 (Partial Excavation, MNA, and Institutional Controls)
Task 5 Coordination/Management/Maintenance of Institutional Controls (15 Years)

Includes:

- Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property
- Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways

Assumptions:

- Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property
- Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 15 years

Item	Notes	Unit	Quantity	Unit Cost	Annual Total
Consultant Labor					$37,820.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	64	$110.00	$7,040.00
Project Level Eng/Geo/Sci		Hour	96	$85.00	$8,160.00
Associate Level Eng/Geo/Sci		Hour	300	$65.00	$19,500.00
Consultant Equipment					$1,000.00
Field Vehicle		Day	8	$125.00	$1,000.00
Consultant Subcontractor Costs					$25,000.00
Paving Subcontractor		Lump Sum	1	$25,000.00	$25,000.00
					$0.00
Total					**$63,820.00**

Alternative 2 (Partial Excavation, MNA, and Institutional Controls)
Task 6 Post Remedy Confirmation Sampling and Closure Management

Includes:

- Consultant labor, equipment, travel, and subcontractor costs to collect post remedy soil and soil-vapor confirmation samples
- HASP and work plan preparation, pre-project planning, and subcontractor coordination
- Data evaluation and summary report preparation
- Laboratory analysis for soil and soil-vapor samples
- Waste coordination, transport and disposal

Assumptions:

- Costs assume soil samples are collected during a 3-day field effort with continuous oversight by two consultant staff
- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig
- Soil-vapor samples to be collected at existing soil-vapor sampling probe locations (one-time event)

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$31,040.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Project Level Eng/Geo/Sci		Hour	120	$85.00	$10,200.00
Associate Level Eng/Geo/Sci		Hour	120	$65.00	$7,800.00
Drafter		Hour	16	$70.00	$1,120.00
Consultant Travel					$740.00
Lodging	2x8 nights oversight crew + 4 nights supervisor	Night	4	$125.00	$500.00
Per Diem	2x10 days oversight crew + 6 days supervisor	Day	6	$40.00	$240.00
Consultant Equipment					$1,670.00
Field Vehicle		Day	3	$125.00	$375.00
Sampling Truck		Day	4	$230.00	$920.00
PID		Day	3	$75.00	$225.00
Helium Meter		Day	1	$150.00	$150.00
Consultant Subcontractor Costs					$12,390.00
Driller - Vac Truck Mobilization		Mile	300	$3.50	$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	$1,750.00	$1,750.00
Driller - HSA Drill Rig Mobilization		Mile	300	$5.50	$1,650.00
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	2	$3,250.00	$6,500.00
Driller - Start Cards		Each	8	$65.00	$520.00
Driller - Surface Hole Patch		Each	8	$50.00	$400.00
Driller - Soil/Water Drums		Each	8	$65.00	$520.00
Chevron Direct-Bill Subcontractor Costs					$9,400.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal		Drum	8	$100.00	$800.00
Laboratory Analytical Services	Soil samples	Sample	24	$150.00	$3,600.00
Laboratory Analytical Services	4 Soil-vapor samples + 1 equipment blank	Sample	5	$400.00	$2,000.00
Total					**$55,240.00**

Summary of Alternative Costs Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)		
Cost Components		**Cost**
Task 1	Excavation Planning and Permitting	$41,770
Task 2	Excavation Implementation	$511,885
Task 3	Air Sparge/SVE System Design and Permitting	$53,950
Task 4	Air Sparge/SVE System Equipment Procurement/Construction	$250,464
Task 5	Air Sparge/SVE Well Installation	$80,140
Task 6	Site Construction	$174,605
Task 7	System Startup	$38,740
Task 8	Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)	$177,560
Task 9	System Installation Documentation and OMM Manual Preparation	$23,760
Task 10	Monitoring of Natural Attenuation (5 Years)	$98,000
Task 11	Coordination/Management/Maintenance of Institutional Controls (10 Years)	$55,560
Task 12	Post Remedy Confirmation Sampling and Closure Management	$55,240
Total + 25% for taxes and contingency		**$1,952,093**

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 1 Excavation Planning and Permitting

Includes:

- Preparation of work plan, contractor specifications, and HASP
- Preparation of SEPA and soil/erosion control permits
- Subcontractor coordination and pre-project safety planning

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$40,520
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120
Senior Level Eng/Geo/Sci		Hour	120	$110.00	$13,200
Project Level Eng/Geo/Sci		Hour	160	$85.00	$13,600
Associate Level Eng/Geo/Sci		Hour	120	$65.00	$7,800
Drafter		Hour	40	$70.00	$2,800
Consultant Equipment					$250
Field Vehicle		Day	2	$125.00	$250
Other Costs					$1,000
Permit Fees		Lump Sum	1	$1,000.00	$1,000
Total					**$41,770**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 2 Excavation Implementation

Includes:

- Consultant labor, equipment, travel, and materials associated with field oversight of excavation activities
- Subcontractor costs associated with excavation tasks, including;
  - Mobilization and site setup costs
  - Excavation and loading of overburden and impacted soil to the extent practicable
  - Labor, equipment, materials and subcontractors to backfill, compact and restore site to pre-existing condition
  - Application of 2,000 pounds of ORC or equivalent product to be placed in excavation bottom
- Waste disposal coordination, transportation, and disposal by Chevron direct-bill subcontractors

Assumptions:

- Area to be excavated is approximately 7,500 square feet
- Clean overburden soils from ground surface to 5 feet bgs
- Petroleum contaminated soil from 5 feet bgs to maximum excavation depth (12 feet bgs)
- Assume 1.6 tons per cubic yard of soil (in place)
- Estimated excavation and disposal of 2,000 cy or 3,200 tons of petroleum contaminated soil
- Estimated excavation and disposal of 1,400 cy or 2,200 tons of clean overburden soil
- Excavation to be performed during (3) 5-day weeks in the field

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$49,580.00
Principal Level Eng/Geo/Sci		Hour	16	$130.00	$2,080.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Project Level Eng/Geo/Sci	Three 60-hour weeks in field	Hour	180	$85.00	$15,300.00
Associate Level Eng/Geo/Sci	Three 60-hour weeks in field for 2 staff	Hour	360	$65.00	$23,400.00
Drafter		Hour		$70.00	$0.00
Consultant Travel					$6,915.00
Lodging		Night	39	$125.00	$4,875.00
Per Diem		Day	51	$40.00	$2,040.00
Consultant Equipment					$7,200.00
Field Vehicle		Day	21	$125.00	$2,625.00
Sampling Truck		Day	15	$230.00	$3,450.00
PID		Day	15	$75.00	$1,125.00
Consultant Subcontractor Costs					$251,190.00
Project Manager		Hour	64	$105.00	$6,720.00
Health and Safety Manager		Hour	64	$85.00	$5,440.00
Foreman	3 weeks @ 60 hours per week + 20 hours planning	Hour	200	$90.00	$18,000.00
Operator	3 weeks @ 60 hours per week	Hour	180	$85.00	$15,300.00
Laborer	3 weeks @ 60 hours per week	Hour	180	$70.00	$12,600.00
Administrative Assistant		Hour	12	$65.00	$780.00
Per Diem - Meals		Day	45	$40.00	$1,800.00
Per Diem - Lodging		Night	36	$125.00	$4,500.00
Light Truck		Day	15	$200.00	$3,000.00
Service Truck		Day	15	$300.00	$4,500.00
Water Truck		Day	10	$375.00	$3,750.00
Excavator - 50,000 lb		Day	15	$1,250.00	$18,750.00
Excavator - 28,000 lb		Day	15	$850.00	$12,750.00
Compaction Plate Excavator		Day	5	$250.00	$1,250.00
Subcontractor - Compaction Testing		Lump Sum	1	$5,000.00	$5,000.00
Subcontractor - Paving		Sq. Foot	7,500	$1.50	$11,250.00
Temporary Fence		Linear Ft.	600	$3.00	$1,800.00
Portable Toilet and Hand Wash		Week	3	$100.00	$300.00
Materials - Structural Fill (Delivered)		Ton	3,400	$12.00	$40,800.00
Materials - Crushed Rock (Delivered)		Ton	2,000	$14.00	$28,000.00
Materials - ORC		Pound	2,000	$9.00	$18,000.00
Overburden Transport & Disposal		Ton	2,200	$7.00	$15,400.00
Construction Trailer Rental		Week	3	$500.00	$1,500.00
Mobile Laboratory		Day	10	$2,000.00	$20,000.00
Chevron Direct-Bill Subcontractor Costs					$197,000.00
Waste Disposal Coordination		Lump Sum	1	$5,000.00	$5,000.00
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Ton	3,200	$60.00	$192,000.00
Total					**$511,885.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 3 Air Sparge/SVE System Design and Permitting

Includes:

- Air discharge permit application and coordination
- Construction permit and utility connection coordination
- Preparation of preliminary, pre-final, and final design drawings and specifications packages
- Preparation of equipment construction and site-work contractor bid packages
- Evaluation of bids and award of equipment construction and site-work subcontracts

Assumptions:

System design and permitting costs are assumed to be essentially the same as for Alternative 1

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$51,200
Principal Level Eng/Geo/Sci		Hour	40	$130.00	$5,200
Senior Level Eng/Geo/Sci		Hour	200	$110.00	$22,000
Project Level Eng/Geo/Sci		Hour	200	$85.00	$17,000
Drafter		Hour	100	$70.00	$7,000
Consultant Equipment					$250
Field Vehicle		Day	2	$125.00	$250
Other Costs					$2,500
Air Discharge Permit Fee	Assumed project considered "Basic" by Ecology	Lump Sum	1	$1,500.00	$1,500
Misc. Permit Fees		Lump Sum	1	$1,000.00	$1,000
Total					**$53,950**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 4 Air Sparge/SVE System Equipment Procurement/Construction

Includes:

- Consultant subcontractor expenses for construction and shipping of container mounted air sparge/SVE system for 12 air sparge injection wells and 4 SVE wells
- Consultant labor associated with system build coordination and shop drawing review
- Consultant labor, travel, and expenses to attend final system testing and inspection at manufacturer's facility prior to shipment

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$13,480.00
Principal Level Eng/Geo/Sci		Hour	16	$130.00	$2,080.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Associate Level Eng/Geo/Sci		Hour	40	$65.00	$2,600.00
Consultant Travel					$1,484.00
Air Fare		Trip	1	$800.00	$800.00
Lodging		Night	2	$125.00	$250.00
Per Diem		Day	3	$40.00	$120.00
Car Rental		Day	2	$55.00	$110.00
Fuel for Rental Car		Gallon	30	$4.00	$120.00
Airport Parking		Day	3	$28.00	$84.00
Consultant Subcontractor Costs					$235,500.00
System Construction		Lump Sum	1	$225,000.00	$225,000.00
System Shipping		Lump Sum	1	$10,000.00	$10,500.00
Total					**$250,464.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 5 Air Sparge/SVE Well Installation

Includes:

- HASP and work plan preparation, pre-project planning, and subcontractor coordination
- Consultant labor, equipment, travel, and subcontractor costs to install approximately 12 air sparge injection wells and 4 SVE wells
- Boring log preparation, and data management and evaluation
- Laboratory analysis for soil samples
- Waste coordination, transport and disposal

Assumptions:

- Costs assume a 5-day field effort to install all wells, with continuous oversight by two consultant staff
- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$28,760.00
Principal Level Eng/Geo/Sci		Hour	16	$130.00	$2,080.00
Senior Level Eng/Geo/Sci		Hour	48	$110.00	$5,280.00
Project Level Eng/Geo/Sci		Hour	160	$85.00	$13,600.00
Associate Level Eng/Geo/Sci		Hour	120	$65.00	$7,800.00
Consultant Travel					$1,605.00
Lodging	2x4 nights oversight crew + 1 night supervisor	Night	9	$125.00	$1,125.00
Per Diem	2x5 days oversight crew + 2 days supervisor	Day	12	$40.00	$480.00
Consultant Equipment					$1,775.00
Field Vehicle		Day	2	$125.00	$250.00
Sampling Truck		Day	5	$230.00	$1,150.00
PID		Day	5	$75.00	$375.00
Consultant Subcontractor Costs					$37,000.00
Driller - Vac Truck Mobilization		Mile	300	$3.50	$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	5	$1,750.00	$8,750.00
Driller - HSA Drill Rig Mobilization		Mile	300	$5.50	$1,650.00
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	5	$3,250.00	$16,250.00
Driller - Start Cards		Each	16	$65.00	$1,040.00
Driller- 4" Well Materials	(4) 4"-diameter wells to 10 feet bgs	Foot	40	$18.00	$720.00
Driller- 2" Well Materials	(12) 2"-diameter wells to 15 feet bgs	Foot	180	$12.00	$2,160.00
Driller - Surface Hole Patch		Each	16	$50.00	$800.00
Driller - Soil/Water Drums	2 soil drums per well	Each	32	$65.00	$2,080.00
Surveyor		Lump Sum	1	$2,500.00	$2,500.00
Chevron Direct-Bill Subcontractor Costs					$11,000.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal		Drum	32	$100.00	$3,200.00
Laboratory Analytical Services		Sample	32	$150.00	$4,800.00
Total					**$80,140.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 6 Site Construction

Includes:

- Pre-project planning and subcontractor coordination
- Consultant labor, equipment, travel, and materials associated with field oversight of system construction
- Consultant subcontractor costs associated with site construction tasks, including;
  - Site clearing and grading
  - Trenching and piping installation
  - System pad and security fence installation
  - Unloading, placement and assembly of remediation system equipment containers
  - Electrical system installation

Assumptions:

- System installation assumed to occur over three 60-hour weeks

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$40,900.00
Senior Level Eng/Geo/Sci		Hour	100	$110.00	$11,000.00
Project Level Eng/Geo/Sci	80 hours planning + three 60-hour weeks in field	Hour	260	$85.00	$22,100.00
Associate Level Eng/Geo/Sci	Two 60-hour weeks in field	Hour	120	$65.00	$7,800.00
Consultant Travel					$4,115.00
Lodging		Night	23	$125.00	$2,875.00
Per Diem		Day	31	$40.00	$1,240.00
Consultant Equipment					$5,000.00
Field Vehicle		Day	31	$125.00	$3,875.00
PID		Day	15	$75.00	$1,125.00
Consultant Subcontractor Costs					$117,590.00
Project Manager		Hour	24	$105.00	$2,520.00
Health and Safety Manager		Hour	24	$85.00	$2,040.00
Foreman	3 weeks @ 60 hours per week	Hour	180	$90.00	$16,200.00
Operator	3 weeks @ 60 hours per week	Hour	180	$85.00	$15,300.00
Laborer	3 weeks @ 60 hours per week	Hour	180	$70.00	$12,600.00
Administrative Assistant		Hour	12	$65.00	$780.00
Per Diem - Meals		Day	45	$40.00	$1,800.00
Per Diem - Lodging		Night	36	$125.00	$4,500.00
Light Truck		Day	15	$200.00	$3,000.00
Service Truck		Day	15	$300.00	$4,500.00
Excavator - Mini		Day	10	$500.00	$5,000.00
Subcontractor - Crane		Lump Sum	1	$4,000.00	$4,000.00
Subcontractor - Electrical		Lump Sum	1	$15,000.00	$15,000.00
Temporary Fence		Linear Ft.	600	$3.00	$1,800.00
Portable Toilet and Hand Wash		Week	3	$100.00	$300.00
Materials - Piping		Lump Sum	1	$10,000.00	$10,000.00
Materials - Backfill		Lump Sum	1	$2,500.00	$2,500.00
Materials - Crushed Rock		Lump Sum	1	$2,500.00	$2,500.00
Materials - Concrete		Lump Sum	1	$3,750.00	$3,750.00
Materials - Well vaults		Each	16	$500.00	$8,000.00
Construction Trailer Rental		Week	3	$500.00	$1,500.00
Chevron Direct-Bill Subcontractor Costs					$7,000.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Cubic Yard	20	$100.00	$2,000.00
Laboratory Analytical Services	Waste characterization samples	Sample	8	$250.00	$2,000.00
Total					**$174,605.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 7 System Startup

Includes:

- Consultant labor, equipment, travel, and materials associated with remediation system startup
- Laboratory costs for vapor sample analysis

Assumptions:

- System startup is assumed to be a two week field effort

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$29,640.00
Senior Level Eng/Geo/Sci	24 hours planning + two 60-hour weeks in field	Hour	144	$110.00	$15,840.00
Project Level Eng/Geo/Sci	24 hours planning + two 60-hour weeks in field	Hour	144	$85.00	$12,240.00
Associate Level Eng/Geo/Sci	Office support of field activities	Hour	24	$65.00	$1,560.00
Consultant Travel					$2,800.00
Lodging	8 nights lodging for 2 staff	Night	16	$125.00	$2,000.00
Per Diem	10 days per diem for 2 staff	Day	20	$40.00	$800.00
Consultant Equipment					$3,800.00
Sampling Truck		Day	10	$230.00	$2,300.00
4-Gas Meter		Day	10	$150.00	$1,500.00
Consultant Subcontractor Costs					$1,000.00
Equipment Supplier Field Support	Operating training and troubleshooting	Lump Sum	1	$5,500.00	$5,500.00
Construction Trailer Rental		Week	2	$500.00	$1,000.00
Chevron Direct-Bill Subcontractor Costs					$1,500.00
Laboratory Analytical Services	Air samples	Sample	10	$150.00	$1,500.00
Total					**$38,740.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 8 Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)

Includes:

- Consultant labor, equipment, and materials associated with operation, maintenance, and monitoring of the Air Sparge/SVE remediation system, including quarterly reporting for permit compliance

Item	Notes	Unit	Annual Quantity	# of Years	Unit Cost	Annual Total	Project Total
Consultant Labor						$49,600.00	$99,200.00
Principal Level Eng/Geo/Sci	Annual site visit	Hour	8	2	$130.00	$1,040.00	$2,080.00
Senior Level Eng/Geo/Sci	4 site visits (12 hrs ea) + 4 hrs/mo reporting	Hour	96	2	$110.00	$10,560.00	$21,120.00
Project Level Eng/Geo/Sci	6 site visits (12 hrs ea)	Hour	72	2	$85.00	$6,120.00	$12,240.00
Associate Level Eng/Geo/Sci	26 site visits (12 hrs ea) + 12 hrs/mo reporting	Hour	456	2	$65.00	$29,640.00	$59,280.00
Drafter	8 hours per quarter - reporting	Hour	32	2	$70.00	$2,240.00	$4,480.00
Consultant Equipment						$9,880.00	$19,760.00
Sampling Truck		Day	26	2	$230.00	$5,980.00	$11,960.00
4-Gas Meter		Day	26	2	$150.00	$3,900.00	$7,800.00
Consultant Material Costs						$1,000.00	$2,000.00
Misc. Materials		Lump Sum	1	2	$1,000.00	$1,000.00	$2,000.00
Consultant Subcontractor Costs						$5,000.00	$10,000.00
Specialty OMM visits		Event	1	2	$5,000.00	$5,000.00	$10,000.00
Other Costs						$6,700.00	$13,400.00
Utilities - Electric		KWH	100,000	2	$0.07	$6,700.00	$13,400.00
Chevron Direct-Bill Subcontractor Costs						$16,600.00	$33,200.00
Waste Disposal Coordination	Coordinate condensate disposal	Lump Sum	1	2	$3,000.00	$3,000.00	$6,000.00
Waste Transport and Disposal	Condensate disposal (once per quarter)	Event	4	2	$1,000.00	$4,000.00	$8,000.00
Lab - Groundwater Samples	10 quarterly samples	Sample	40	2	$150.00	$6,000.00	$12,000.00
Lab - Air Samples	Monthly air discharge samples	Sample	24	2	$150.00	$3,600.00	$7,200.00
Total						**$88,780.00**	**$177,560.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 9 System Installation Documentation and OMM Manual Preparation

Includes:

- Preparation of system installation summary report
- Preparation of OMM manual with system specific maintenance procedures
- Preparation of system as-built documentation

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$23,760.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	48	$110.00	$5,280.00
Project Level Eng/Geo/Sci		Hour	80	$85.00	$6,800.00
Associate Level Eng/Geo/Sci		Hour	80	$65.00	$5,200.00
Drafter		Hour	48	$70.00	$3,360.00
Total					**$23,760.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 10 Monitoring of Natural Attenuation (5 Years)

Includes:

- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes
- Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management

Assumptions:

Monitoring will be required for a period of 5 years

Item	Notes	Unit	Annual Quantity	# of Years	Unit Cost	Annual Total	Project Total
Consultant Labor						$9,600.00	$48,000.00
Principal Level Eng/Geo/Sci		Hour	8	5	$130.00	$1,040.00	$5,200.00
Senior Level Eng/Geo/Sci		Hour	24	5	$110.00	$2,640.00	$13,200.00
Project Level Eng/Geo/Sci		Hour	32	5	$85.00	$2,720.00	$13,600.00
Associate Level Eng/Geo/Sci		Hour	32	5	$65.00	$2,080.00	$10,400.00
Drafter		Hour	16	5	$70.00	$1,120.00	$5,600.00
Chevron Direct-Bill Subcontractor Costs						$10,000.00	$50,000.00
Groundwater Sampling Subcontractor		Event	2	5	$2,500.00	$5,000.00	$25,000.00
Lab - Groundwater Samples	10 semiannual samples	Sample	20	5	$250.00	$5,000.00	$25,000.00
Total						**$19,600.00**	**$98,000.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 11 Coordination/Management/Maintenance of Institutional Controls (10 Years)

Includes:

- Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property
- Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways

Assumptions:

- Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property
- Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 10 years

Item	Notes	Unit	Quantity	Unit Cost	Annual Total
Consultant Labor					$29,560.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	48	$110.00	$5,280.00
Project Level Eng/Geo/Sci		Hour	96	$85.00	$8,160.00
Associate Level Eng/Geo/Sci		Hour	200	$65.00	$13,000.00
Consultant Equipment					$1,000.00
Field Vehicle		Day	8	$125.00	$1,000.00
Consultant Subcontractor Costs					$25,000.00
Paving Subcontractor		Lump Sum	1	$25,000.00	$25,000.00
Total					**$55,560.00**

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)
Task 12 Post Remedy Confirmation Sampling and Closure Management

Includes:

- Consultant labor, equipment, travel, and subcontractor costs to collect post remedy soil and soil-vapor confirmation samples
- HASP and work plan preparation, pre-project planning, and subcontractor coordination
- Consultant labor, equipment, travel, and subcontractor costs to collect post remedy soil confirmation samples
- Data evaluation and summary report preparation
- Laboratory analysis for soil and soil-vapor samples
- Waste coordination, transport and disposal

Assumptions:

- Costs assume soil samples are collected during a 3-day field effort with continuous oversight by two consultant staff
- All soil boring locations cleared to 8 feet bgs using air-knife/vac-truck rig
- Soil-vapor samples to be collected at existing soil-vapor sampling probe locations (one-time event)

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					$31,040.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Project Level Eng/Geo/Sci		Hour	120	$85.00	$10,200.00
Associate Level Eng/Geo/Sci		Hour	120	$65.00	$7,800.00
Drafter		Hour	16	$70.00	$1,120.00
Consultant Travel					$740.00
Lodging	2x8 nights oversight crew + 4 nights supervisor	Night	4	$125.00	$500.00
Per Diem	2x10 days oversight crew + 6 days supervisor	Day	6	$40.00	$240.00
Consultant Equipment					$1,670.00
Field Vehicle		Day	3	$125.00	$375.00
Sampling Truck		Day	4	$230.00	$920.00
PID		Day	3	$75.00	$225.00
Helium Meter		Day	1	$150.00	$150.00
Consultant Subcontractor Costs					$12,390.00
Driller - Vac Truck Mobilization		Mile	300	$3.50	$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	$1,750.00	$1,750.00
Driller - HSA Drill Rig Mobilization		Mile	300	$5.50	$1,650.00
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	2	$3,250.00	$6,500.00
Driller - Start Cards		Each	8	$65.00	$520.00
Driller - Surface Hole Patch		Each	8	$50.00	$400.00
Driller - Soil/Water Drums		Each	8	$65.00	$520.00
Chevron Direct-Bill Subcontractor Costs					$9,400.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal		Drum	8	$100.00	$800.00
Laboratory Analytical Services	Soil samples	Sample	24	$150.00	$3,600.00
Laboratory Analytical Services	4 Soil-vapor samples + 1 equipment blank	Sample	5	$400.00	$2,000.00
Total					**$55,240.00**

Summary of Alternative Costs Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment)		
	Cost Components	**Cost**
Task 1	Coordination/Management/Maintenance of Institutional Controls (20 Years)	$72,080
Task 2	Monitoring of Natural Attenuation (20 Years)	$392,000
Task 3	Excavation Planning and Permitting	$55,650
Task 4	Excavation Implementation	$817,435
Task 5	Reporting	$12,480
Task 6	Post Remedy Groundwater Confirmation Sampling and Closure Management	$69,080
Total + 25% for taxes and contingency		**$1,773,406**

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment)
Task 1 Coordination/Management/Maintenance of Institutional Controls (20 Years)

Includes:

- Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property
- Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways
- Coordination financial assurance for future excavation

Assumptions:

- Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property
- Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 20 years

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Annual Total
Consultant Labor					$46,080.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	80	$110.00	$8,800.00
Project Level Eng/Geo/Sci		Hour	96	$85.00	$8,160.00
Associate Level Eng/Geo/Sci		Hour	400	$65.00	$26,000.00
Consultant Equipment					$1,000.00
Field Vehicle		Day	8	$125.00	$1,000.00
Consultant Subcontractor Costs					$25,000.00
Paving Subcontractor		Lump Sum	1	$25,000.00	$25,000.00
Total					**$72,080.00**

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment)

Task 2 Monitoring of Natural Attenuation (20 Years)

Includes:

- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes
- Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management

Assumptions:

Monitoring will be required for a period of 20 years prior to site redevelopment

Item	Description / Assumptions	Unit	Annual Quantity	# of Years	Unit Cost	Annual Total	Project Total
Consultant Labor						$9,600.00	$192,000.00
Principal Level Eng/Geo/Sci		Hour	8	20	$130.00	$1,040.00	$20,800.00
Senior Level Eng/Geo/Sci		Hour	24	20	$110.00	$2,640.00	$52,800.00
Project Level Eng/Geo/Sci		Hour	32	20	$85.00	$2,720.00	$54,400.00
Associate Level Eng/Geo/Sci		Hour	32	20	$65.00	$2,080.00	$41,600.00
Drafter		Hour	16	20	$70.00	$1,120.00	$22,400.00
Chevron Direct-Bill Subcontractor Costs						$10,000.00	$200,000.00
Groundwater Sampling Subcontractor		Event	2	20	$2,500.00	$5,000.00	$100,000.00
Lab - Groundwater Samples	10 semiannual samples	Sample	20	20	$250.00	$5,000.00	$100,000.00
Total						**$19,600.00**	**$392,000.00**

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment)

Task 3 Excavation Planning and Permitting

Includes:

- Preparation of work plan, contractor specifications, and HASP
- Preparation of SEPA and soil/erosion control permits
- Subcontractor coordination and pre-project safety planning

Assumptions:

- Level of effort for excavation planning and permitting is assumed to be greater than for alternatives 2 and 3 because it will require additional coordination with the redeveloper

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$54,400
Principal Level Eng/Geo/Sci		Hour	64	$130.00	$8,320
Senior Level Eng/Geo/Sci		Hour	160	$110.00	$17,600
Project Level Eng/Geo/Sci		Hour	160	$85.00	$13,600
Associate Level Eng/Geo/Sci		Hour	160	$65.00	$10,400
Drafter		Hour	64	$70.00	$4,480
Consultant Equipment					$250
Field Vehicle		Day	2	$125.00	$250
Other Costs					$1,000
Permit Fees		Lump Sum	1	$1,000.00	$1,000
Total					**$55,650**

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment
Task 4 Excavation Implementation

Includes:

- Consultant labor, equipment, travel, and materials associated with field oversight of excavation activities
- Subcontractor costs associated with excavation tasks, including;
  - Mobilization and site setup costs
  - Excavation and loading of overburden and impacted soil
  - Application of 4,000 pounds of ORC or equivalent product to be placed in excavation bottom
  - Labor, equipment, materials and subcontractors to backfill and compact excavation area
- Waste disposal coordination, transportation, and disposal by Chevron direct-bill subcontractors

Assumptions:

- Area to be excavated is approximately 13, 500 square feet
- Clean overburden soils from ground surface to 5 feet bgs
- Petroleum contaminated soil from 5 feet bgs to maximum excavation depth (12 feet bgs)
- Assume 1.6 tons per cubic yard of soil (in place)
- Estimated excavation and disposal of 3,500 cy or 5,600 tons of petroleum contaminated soil
- Estimated excavation and disposal of 2,500 cy or 4,000 tons of clean overburden soil
- Excavation to be performed during (5) 5-day weeks in the field

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$77,580.00
Principal Level Eng/Geo/Sci		Hour	16	$130.00	$2,080.00
Senior Level Eng/Geo/Sci		Hour	100	$110.00	$11,000.00
Project Level Eng/Geo/Sci	Five 60-hour weeks in field	Hour	300	$85.00	$25,500.00
Associate Level Eng/Geo/Sci	Five 60-hour weeks in field for two staff	Hour	600	$65.00	$39,000.00
Consultant Travel					$11,525.00
Lodging		Night	65	$125.00	$8,125.00
Per Diem		Day	85	$40.00	$3,400.00
Consultant Equipment					$12,000.00
Field Vehicle		Day	35	$125.00	$4,375.00
Sampling Truck		Day	25	$230.00	$5,750.00
PID		Day	25	$75.00	$1,875.00
Consultant Subcontractor Costs					$375,330.00
Project Manager		Hour	80	$105.00	$8,400.00
Health and Safety Manager		Hour	80	$85.00	$6,800.00
Foreman	5 weeks @ 60 hours per week + 20 hours planning	Hour	320	$90.00	$28,800.00
Operator	5 weeks @ 60 hours per week	Hour	300	$85.00	$25,500.00
Laborer	5 weeks @ 60 hours per week	Hour	300	$70.00	$21,000.00
Administrative Assistant		Hour	12	$65.00	$780.00
Per Diem - Meals		Day	75	$40.00	$3,000.00
Per Diem - Lodging		Night	60	$125.00	$7,500.00
Light Truck		Day	25	$200.00	$5,000.00
Service Truck		Day	25	$300.00	$7,500.00
Water Truck		Day	20	$375.00	$7,500.00
Excavator - 50,000 lb		Day	25	$1,250.00	$31,250.00
Excavator - 28,000 lb		Day	25	$850.00	$21,250.00
Compaction Plate Excavator		Day	15	$250.00	$3,750.00
Subcontractor - Compaction Testing		Lump Sum	1	$7,500.00	$7,500.00
Temporary Fence		Linear Ft.	600	$3.00	$1,800.00
Portable Toilet and Hand Wash		Week	5	$100.00	$500.00
Materials - Structural Fill (Delivered)		Ton	3,500	$12.00	$42,000.00
Materials - Crushed Rock (Delivered)		Ton	3,500	$14.00	$49,000.00
Materials - ORC		Pound	4,000	$9.00	$36,000.00
Construction Trailer Rental		Week	5	$500.00	$2,500.00
Overburden Transport & Disposal		Ton	4,000	$7.00	$28,000.00
Mobile Laboratory		Day	15	$2,000.00	$30,000.00
Chevron Direct-Bill Subcontractor Costs					$341,000.00
Waste Disposal Coordination		Lump Sum	1	$5,000.00	$5,000.00
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Ton	5,600	$60.00	$336,000.00
Total					**$817,435.00**

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment)

Task 5 Reporting

Includes:

- Preparation of excavation summary report

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$12,480.00
Principal Level Eng/Geo/Sci		Hour	8	$130.00	$1,040.00
Senior Level Eng/Geo/Sci		Hour	24	$110.00	$2,640.00
Project Level Eng/Geo/Sci		Hour	40	$85.00	$3,400.00
Associate Level Eng/Geo/Sci		Hour	40	$65.00	$2,600.00
Drafter		Hour	40	$70.00	$2,800.00
Total					**$12,480.00**

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment
Task 6 Post Remedy Groundwater Confirmation Sampling and Closure Management

Includes:

- Installation of four new monitoring wells on the active station property, and performance of four quarters of post excavation groundwater monitoring to demonstrate compliance with groundwater cleanup levels
- HASP and work plan preparation, pre-project planning, and subcontractor coordination

- Consultant labor, equipment, travel, and subcontractor costs to install monitoring wells and collect post remedy soil confirmation samples
- Laboratory analysis of soil and groundwater samples
- Waste coordination, transport and disposal
- Data evaluation, summary report preparation, and site closure management

Assumptions:

- Costs assume a 3-day field effort for new well installation, with continuous oversight by two consultant staff
- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$26,240.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	60	$110.00	$6,600.00
Project Level Eng/Geo/Sci		Hour	120	$85.00	$10,200.00
Associate Level Eng/Geo/Sci		Hour	80	$65.00	$5,200.00
Drafter		Hour	16	$70.00	$1,120.00
Consultant Travel					$740.00
Lodging		Night	4	$125.00	$500.00
Per Diem		Day	6	$40.00	$240.00
Consultant Equipment					$1,290.00
Field Vehicle		Day	3	$125.00	$375.00
Sampling Truck		Day	3	$230.00	$690.00
PID		Day	3	$75.00	$225.00
Consultant Subcontractor Costs					$15,810.00
Driller - Vac Truck Mobilization		Mile	300	$3.50	$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	$1,750.00	$1,750.00
Driller - HSA Drill Rig Mobilization		Mile	300	$5.50	$1,650.00
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	2	$3,250.00	$6,500.00
Driller - Start Cards		Each	4	$65.00	$260.00
Driller- 2" Well Materials	(4) 2"-diameter wells to 20 feet bgs	Foot	80	$12.00	$960.00
Driller - Flush Mount Well Box		Each	4	$155.00	$620.00
Driller - Soil/Water Drums		Each	8	$65.00	$520.00
Surveyor		Lump Sum	1	$2,500.00	$2,500.00
Chevron Direct-Bill Subcontractor Costs					$25,000.00
Groundwater Sampling Subcontractor		Event	4	$2,500.00	$10,000.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal		Drum	8	$100.00	$800.00
Laboratory Analytical Services	Groundwater samples (4 quarters)	Sample	40	$250.00	$10,000.00
Laboratory Analytical Services	Soil samples	Sample	8	$150.00	$1,200.00
Total					**$69,080.00**

Summary of Alternative Costs Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)		
	Cost Components	**Cost**
Task 1	Excavation Planning and Permitting	$41,770
Task 2	Service Station Demolition and Excavation Implementation	$892,000
Task 3	Service Station Reconstruction	$1,000,000
Task 4	Reporting	$12,480
Task 5	Monitoring of Natural Attenuation (5 Years)	$98,000
Task 6	Coordination/Management/Maintenance of Institutional Controls (10 Years)	$55,560
Task 7	Post Remedy Groundwater Confirmation Sampling and Closure Management	$69,080
Total + 25% for taxes and contingency		**$2,711,113**

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)
Task 1 Excavation Planning and Permitting

Includes:

- Preparation of work plan, contractor specifications, and HASP
- Preparation of SEPA and soil/erosion control permits
- Subcontractor coordination and pre-project safety planning

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$40,520
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120
Senior Level Eng/Geo/Sci		Hour	120	$110.00	$13,200
Project Level Eng/Geo/Sci		Hour	160	$85.00	$13,600
Associate Level Eng/Geo/Sci		Hour	120	$65.00	$7,800
Drafter		Hour	40	$70.00	$2,800
Consultant Equipment					$250
Field Vehicle		Day	2	$125.00	$250
Other Costs					$1,000
Permit Fees		Lump Sum	1	$1,000.00	$1,000
Total					**$41,770**

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)
Task 2 Service Station Demolition and Excavation Implementation

Includes:

- Consultant labor, equipment, travel, and materials associated with field oversight of excavation activities
- Subcontractor costs associated with excavation tasks, including;
  - Mobilization and site setup costs
  - Demolition and disposal of service station infrastructure
  - Excavation and loading of overburden and impacted soil
  - Application of 4,000 pounds of ORC or equivalent product to be placed in excavation bottom
  - Labor, equipment, materials and subcontractors to backfill and compact excavation area
- Waste disposal coordination, transportation, and disposal by Chevron direct-bill subcontractors

Assumptions:

- Area to be excavated is approximately 13, 500 square feet
- Clean overburden soils from ground surface to 5 feet bgs
- Petroleum contaminated soil from 5 feet bgs to maximum excavation depth (12 feet bgs)
- Assume 1.6 tons per cubic yard of soil (in place)
- Estimated excavation and disposal of 3,500 cy or 5,600 tons of petroleum contaminated soil
- Estimated excavation and disposal of 2,500 cy or 4,000 tons of clean overburden soil
- Demolition and excavation to be performed during (6) 5-day weeks in the field

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$93,720.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	120	$110.00	$13,200.00
Project Level Eng/Geo/Sci	Six 60-hour weeks in field	Hour	360	$85.00	$30,600.00
Associate Level Eng/Geo/Sci	Six 60-hour weeks in field for 2 staff	Hour	720	$65.00	$46,800.00
Drafter		Hour		$70.00	$0.00
Consultant Travel					$13,830.00
Lodging		Night	78	$125.00	$9,750.00
Per Diem		Day	102	$40.00	$4,080.00
Consultant Equipment					$14,400.00
Field Vehicle		Day	42	$125.00	$5,250.00
Sampling Truck		Day	30	$230.00	$6,900.00
PID		Day	30	$75.00	$2,250.00
Consultant Subcontractor Costs					$429,050.00
Project Manager		Hour	88	$105.00	$9,240.00
Health and Safety Manager		Hour	88	$85.00	$7,480.00
Foreman	6 weeks @ 60 hours per week + 40 hours planning	Hour	400	$90.00	$36,000.00
Operator	6 weeks @ 60 hours per week	Hour	360	$85.00	$30,600.00
Laborer	6 weeks @ 60 hours per week	Hour	360	$70.00	$25,200.00
Administrative Assistant		Hour	12	$65.00	$780.00
Per Diem - Meals		Day	90	$40.00	$3,600.00
Per Diem - Lodging		Night	72	$125.00	$9,000.00
Light Truck		Day	30	$200.00	$6,000.00
Service Truck		Day	30	$300.00	$9,000.00
Water Truck		Day	20	$375.00	$7,500.00
Excavator - 50,000 lb		Day	30	$1,250.00	$37,500.00
Excavator - 28,000 lb		Day	30	$850.00	$25,500.00
Compaction Plate Excavator		Day	15	$250.00	$3,750.00
Subcontractor - Compaction Testing		Lump Sum	1	$7,500.00	$7,500.00
Temporary Fence		Linear Ft.	600	$3.00	$1,800.00
Portable Toilet and Hand Wash		Week	6	$100.00	$600.00
Materials - Structural Fill (Delivered)		Ton	3,500	$12.00	$42,000.00
Materials - Crushed Rock (Delivered)		Ton	3,500	$14.00	$49,000.00
Materials - ORC		Pound	4,000	$9.00	$36,000.00
Construction Trailer Rental		Week	6	$500.00	$3,000.00
Overburden Transport & Disposal		Ton	4,000	$7.00	$28,000.00
Demolition Debris Transport & Disposal		Lump Sum	1	$20,000.00	$20,000.00
Mobile Laboratory		Day	15	$2,000.00	$30,000.00
Chevron Direct-Bill Subcontractor Costs					$341,000.00
Waste Disposal Coordination		Lump Sum	1	$5,000.00	$5,000.00
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Ton	5,600	$60.00	$336,000.00
Total					**$892,000.00**

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)
Task 3 Service Station Reconstruction

Includes:

- Chevron reimbursement to Tri-Tex for station reconstruction costs
- Installation of new USTs, dispensers, and construction of new station building

Assumptions:

Reimbursement valued based on service and gas station construction cost estimates for Washington State from Reed Construction Data (www.reedconstructiondata.com)

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Other Costs					$1,000,000
Station Reconstruction Cost		Lump Sum	1	$1,000,000.00	$1,000,000
Total					**$1,000,000**

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)
Task 4 Reporting

Includes:

- Preparation of excavation summary report

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$12,480.00
Principal Level Eng/Geo/Sci		Hour	8	$130.00	$1,040.00
Senior Level Eng/Geo/Sci		Hour	24	$110.00	$2,640.00
Project Level Eng/Geo/Sci		Hour	40	$85.00	$3,400.00
Associate Level Eng/Geo/Sci		Hour	40	$65.00	$2,600.00
Drafter		Hour	40	$70.00	$2,800.00
Total					**$12,480.00**

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)
Task 5 Monitoring of Natural Attenuation (5 Years)

Includes:

- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes
- Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management

Assumptions:

Monitoring will be required for a period of 5 years

Item	Notes	Unit	Annual Quantity	# of Years	Unit Cost	Annual Total	Project Total
Consultant Labor						$9,600.00	$48,000.00
Principal Level Eng/Geo/Sci		Hour	8	5	$130.00	$1,040.00	$5,200.00
Senior Level Eng/Geo/Sci		Hour	24	5	$110.00	$2,640.00	$13,200.00
Project Level Eng/Geo/Sci		Hour	32	5	$85.00	$2,720.00	$13,600.00
Associate Level Eng/Geo/Sci		Hour	32	5	$65.00	$2,080.00	$10,400.00
Drafter		Hour	16	5	$70.00	$1,120.00	$5,600.00
Chevron Direct-Bill Subcontractor Costs						$10,000.00	$50,000.00
Groundwater Sampling Subcontractor		Event	2	5	$2,500.00	$5,000.00	$25,000.00
Lab - Groundwater Samples	10 semiannual samples	Sample	20	5	$250.00	$5,000.00	$25,000.00
Total						**$19,600.00**	**$98,000.00**

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)
Task 6 Coordination/Management/Maintenance of Institutional Controls (10 Years)

Includes:

- Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property
- Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways

Assumptions:

- Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property
- Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 10 years

Item	Notes	Unit	Quantity	Unit Cost	Annual Total
Consultant Labor					$29,560.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	48	$110.00	$5,280.00
Project Level Eng/Geo/Sci		Hour	96	$85.00	$8,160.00
Associate Level Eng/Geo/Sci		Hour	200	$65.00	$13,000.00
Consultant Equipment					$1,000.00
Field Vehicle		Day	8	$125.00	$1,000.00
Consultant Subcontractor Costs					$25,000.00
Paving Subcontractor		Lump Sum	1	$25,000.00	$25,000.00
Total					**$55,560.00**

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)
Task 7 Post Remedy Groundwater Confirmation Sampling and Closure Management

Includes:

- Installation of four new monitoring wells on the active station property, and performance of four quarters of post excavation groundwater monitoring to demonstrate compliance with groundwater cleanup levels
- HASP and work plan preparation, pre-project planning, and subcontractor coordination

- Consultant labor, equipment, travel, and subcontractor costs to install monitoring wells and collect post remedy soil confirmation samples
- Laboratory analysis of soil and groundwater samples
- Waste coordination, transport and disposal
- Data evaluation, summary report preparation, and site closure management

Assumptions:

- Costs assume a 3-day field effort for new well installation, with continuous oversight by two consultant staff
- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					$26,240.00
Principal Level Eng/Geo/Sci		Hour	24	$130.00	$3,120.00
Senior Level Eng/Geo/Sci		Hour	60	$110.00	$6,600.00
Project Level Eng/Geo/Sci		Hour	120	$85.00	$10,200.00
Associate Level Eng/Geo/Sci		Hour	80	$65.00	$5,200.00
Drafter		Hour	16	$70.00	$1,120.00
Consultant Travel					$740.00
Lodging		Night	4	$125.00	$500.00
Per Diem		Day	6	$40.00	$240.00
Consultant Equipment					$1,290.00
Field Vehicle		Day	3	$125.00	$375.00
Sampling Truck		Day	3	$230.00	$690.00
PID		Day	3	$75.00	$225.00
Consultant Subcontractor Costs					$15,810.00
Driller - Vac Truck Mobilization		Mile	300	$3.50	$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	$1,750.00	$1,750.00
Driller - HSA Drill Rig Mobilization		Mile	300	$5.50	$1,650.00
Driller - HSA Drill Rig Daily Rate		Day	2	$3,250.00	$6,500.00
Driller - Start Cards		Each	4	$65.00	$260.00
Driller- 2" Well Materials	(4) 2"-diameter wells to 20 feet bgs	Foot	80	$12.00	$960.00
Driller - Flush Mount Well Box		Each	4	$155.00	$620.00
Driller - Soil/Water Drums		Each	8	$65.00	$520.00
Surveyor		Lump Sum	1	$2,500.00	$2,500.00
Chevron Direct-Bill Subcontractor Costs					$25,000.00
Groundwater Sampling Subcontractor		Event	4	$2,500.00	$10,000.00
Waste Disposal Coordination		Lump Sum	1	$3,000.00	$3,000.00
Waste Transport and Disposal		Drum	8	$100.00	$800.00
Laboratory Analytical Services	Groundwater samples (4 quarters)	Sample	40	$250.00	$10,000.00
Laboratory Analytical Services	Soil samples	Sample	8	$150.00	$1,200.00
Total					**$69,080.00**