APPENDIX A

Historical Report by Pinnacle

Historical Site Development Analysis
North Marina Ameron/Hulbert Site
Everett, Washington

prepared for:

The North Marina Ameron/Hulbert Site PLP Group

May 11, 2010

Pinnacle GeoSciences

HISTORICAL SITE DEVELOPMENT ANALYSIS
NORTH MARINA AMERON/HULBERT SITE
EVERETT, WASHINGTON

FOR

THE NORTH MARINA AMERON/HULBERT SITE PLP GROUP

MAY 11, 2010

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1.0 INTRODUCTION

This report summarizes Pinnacle GeoSciences' historical site development analysis of the North Marina Ameron/Hulbert site in Everett, Washington. The upland portion of the site consists entirely of fill soils placed over the past century. The site was originally occupied by a sawmill, a shingle mill, and a casket manufacturing business. Its use has changed over the years and it is now occupied by industrial and commercial businesses. The site has undergone several episodes of significant fill placement and a number of episodes of localized fill placement events. Not all historic site development is well documented so evidence of many past activities is inferred from interpretation of aerial photographs.

The purpose of this study is to assist the PLP Group (the Port of Everett, Ameron and Hulbert), and their respective consultants, the PLP Consultants (Landau Associates, Aspect Consulting and Pacific Groundwater Group) in understanding the history and progressive development of the site, particularly as it may relate to contamination concerns.

The site is presently under an Agreed Order with Ecology and further site evaluation is planned. The Agreed Order defines the currently estimated limits of the site although the site boundary will ultimately be determined based on where hazardous substances have come to be located.

2.0 SCOPE OF SERVICES

2.1 PURPOSE

The purpose of this study is to assist the PLP Group (The North Marina Ameron/Hulbert Site PLP Group) in understanding the site development history and past activities that may have contributed to contamination issues documented at the site. The PLP Group consists of The Port of Everett, Ameron Corporation and the Hulbert Trust. These three entities are represented by their respective consultants Landau Associates, Aspect Consulting, and Pacific Groundwater Group which are collectively referred to as the PLP Consultants. This study does not address or examine evidence of contamination directly (such as analytical data) but rather is intended to identify past practices and activities that may have contributed to the presence of contaminants at the site.

2.2 SCOPE

The scope of services for this study is clearly set forth in our contract and is repeated below with one correction referencing a portion of Area G. Our scope of services completed includes:

> *The purpose of this historical analysis is to define the Site development history with emphasis on potential sources of contamination and Site filling history. The work will be used by a group of Site potentially liable parties (PLPs) and is to be conducted in an unbiased manner. We anticipate that the historical review will consist of reviewing available aerial photographs, historical fire insurance maps, topographic maps, city or county maps and street directories, U.S. Army Corps of Engineers (ACOE) records, and other historical documents and records to assess past uses of, and the history of fill activities at, the Site and on adjacent properties, from current conditions back to the Site's first developed use. Selected areas of interest to the PLPs include:*
>
> ***Site Filling History**: Identify time periods when Site filling and earth moving activities occurred including an assessment of the potential sources of fill. In addition to general Site filling history, Site filling within the following time periods is of particular interest:*
>
> - *Prior to construction of the concrete products manufacturing facility in the northeast portion of the Site (circa 1972)*
> - *Between 1972 and 1988*
> - *Between 1991 and 2006.*
>
> ***Summary of Site Uses and Potential Releases**: Identify and summarize past operators on the Site including the following information about each: name, location on the Site, nature of operations, time period on the Site, and manner through which it ceased operations on the Site (i.e., closed, changed or sold business). Identify any activities, structures, or other features that may have resulted in the release of hazardous substances at the Site (e.g., fuel tanks, boilers, transformers, stained soil, ponds, drums, fuel pumps, wood treating, other manufacturing, etc.)*

Areas of Known Contamination: *Identify activities (including history of any filling) in specific areas where the PLPs have identified contamination. The area designations (i.e., Areas G, I, J, and M) are provided in Exhibit A to the Agreed Order. The specific items of interest include:*

- *When the fence separating Areas I and G was constructed*
- *When fill was placed in Area I and the ~~northeast~~ northwest corner of Area G that resulted in the ground surface in these areas increasing to elevations significantly greater than adjacent grades to the east.*
- *When the landfarming area in the northeast corner of Area I was created, when it was decommissioned, and where the treated soil was placed (if discernable from aerial photographs).*
- *When construction debris was placed as fill in Area J-3 and the source and nature of the buried structures found in western portion of Area J*
- *Activities or structures along the north boundary of Area G that could have caused the petroleum hydrocarbon and polychlorinated biphenyls (PCB) contamination identified in this area (See 2005 Landau Associates document below)*
- *Whether the operations in Areas G or I extended across the Site boundary to the north at any time during the Site operational history and, vice versa, whether operations to the north extended onto Areas G or I and may have impacted these areas*
- *Whether operations in Areas J, I, or M extended across the Site boundaries to the south or southwest at any time during the Site operational history and, vice versa, whether the operations to the south or southwest of Areas J, I, or M extended across the Site boundaries and impacted these areas.*

This report is organized consistent with the structure of the Scope of Services cited above.

2.3 COMMENTS ABOUT DATA COLLECTION

A number of documents were provided to us at the onset of this study by the PLP Consultants. As our review progressed we identified several additional studies referenced in the documents provided and we requested those documents. Aerial photographs were provided to us in paper and digital form by Landau Associates and Pacific Groundwater Group. All paper aerial photographs have been scanned and digitized and are included in Appendix A – Aerial Photographs.

Shortly after we began our review we were provided the opportunity to review and request copies from a considerable repository of pertinent information (title and lease records, photographs, aerial photography and engineering drawings) at Nadler's offices (The Nadler Law Group, PLLC). We understand that Nadler also provided copies of all information we requested to the PLP Consultants.

Part of our scope of services was to obtain additional aerial photography. We obtained a considerable number of additional aerial photographs including photographs to complete stereo pairs with photographs already in the collection. When we first discussed this project with the PLP Group we contacted various aerial photograph providers to confirm costs and responsiveness. We were informed (in December 2009) that WSDOT (Washington State Department of Transportation) was the repository for DNR (Washington Department of Natural Resources) photographs and that requests for photographs from both agencies could be made through the WSDOT. Our requests for aerial photographs were delayed because of the considerable amount of supplemental aerial photography and other pertinent documents from Nadler that we needed to review before finalizing our requests. Once we did request photography, we initially found WSDOT to be non-responsive. When they finally did respond they informed us that as of the end of 2009 the custody of the DNR photography reverted back to DNR. DNR informed us that they didn't have the resources to respond to our request for photographs. We informed the PLP Group of this as it occurred. Fortunately, through the combined resources of AeroMetric (formerly Walker & Associates) and the Corps of Engineers we were able to obtain most of the aerial photography coverage we had previously identified as being useful to support this project.

We reviewed the aerial photography in digital format. This allowed us to adjust contrast and other image settings to enhance features not readily visible in the original image. We did not apply modifications to any images that would alter or change the image content.

The combined sets of aerial photographs provided extensive stereo coverage of the site. We prepared over 25 stereo image sets spanning 1947 through 2006 and numerous additional stereo pair enlargements of specific areas. Some people find it difficult to view stereo pairs so viewing of the stereo pairs may not be accessible to all reviewers of this report. Because of this we have not included stereo imagery in any of the report figures. The stereo image PDFs are included in Appendix A – Aerial Photography.

2.4 COMMENTS ABOUT FIGURES

Nearly all figures in this report employ aerial photography for the underlying image. Because of the photographic process, there is parallax in all images which can cause distortion of scale, particularly when the area viewed is at the edge of the image. Because of this inherent distortion, all locations shown should be considered to be approximate. Furthermore, the site plans provided in various reports do not always precisely agree with respect to the boundary of the site subject to the Agreed Order or the boundaries of the "Areas" within it. When an overlay showing boundaries is included as part of a graphic, it is based on the site definition as presented in Exhibit A – Figure 8 of the Agreed Order. Figure 1 shows a reduced copy of this exhibit which formed the basis for our reference to areas of the site.

All of the figures employ the use of color to convey information. Only figures viewed in color (on paper or digitally) should be relied upon when using this report.

2.5 REFERENCES TO FEATURES

This report refers to site features using their most recent or current names. For example the "Collins Building" refers to that structure even though in the past it may have been referred to otherwise. Likewise, the "Ameron Building" refers to the large building constructed by Centrecon beginning in 1972.

3.0 SITE FILLING AND PAVING HISTORY

3.1 LARGE-SCALE FILLING

This section discusses large-scale filling events at the site which can be documented or supported by aerial photograph interpretation or other records. Small-scale filling and temporary stockpiling is discussed to a lesser extent in this section, and in greater detail in the "Areas of Known Contamination" section of this report.

3.1.1 Original Shoreline

The earliest photographic documentation of the site reviewed showed that the initial shoreline in the vicinity of the site was immediately west of the current rail alignment to the east of the site. The entire site is constructed on tidelands. Photographs from the 1920s clearly show that the high water line was immediately west of the mainline rail alignment at the foot of the bluff, and that the road that was the predecessor of Marine View Drive and all buildings and facilities west of the road were constructed on pilings. The body of historic aerial photographs for the site and vicinity show that the intertidal zone extended west to what is currently the western end of the piers at the north and south of the site.

An undated photograph, circa the mid-1930s or later, shows that little or no large-scale filling had occurred at those portions of the site occupied by the shingle mill, the southern lumber sheds, and the planing mill through at least the 1930s.

3.1.2 Pre-1947 Filling

The earliest document we reviewed showing development on the site is the 1914 Sanborn Map. The site was first occupied by the Fred K. Baker Company's Shingle Mill which later became the William Hulbert Mill Company's Saw, Planing and Shingle Mill. William Hulbert was the son-in-law of Fred Baker. The mill grew in size through additions, until the 1960s when it was demolished. The early filling of the site was related to its use in lumber milling. Figure 2 shows the locations of mill structures interpreted from Sanborn Maps and Figure 3 shows those locations with respect to current site features.

A photograph from the mid 1930s (shown in part in Figure 11) shows small-scale, non-systematic filling around the bases of the smokestack and refuse burner with several different materials, including a very dark, comparatively fine-grained material, and a lighter-colored rubble material with pieces visible up to 1 or 2 feet in diameter. A square feature is visible at the base of the water tower with a smooth upper surface about 8 feet below dock level, probably a concrete pile cap. Four smaller concrete footings are visible on top of this structure, each supporting one leg of the water tower (Figure 11).

The November 28, 2001 Phase I ESA prepared by Landau Associates cites the Port of Everett, 1995 with the following: "In 1944, 40 acres of the 14th Street Pier were filled in by the Port." We did not observe evidence of this large scale of filling in the 1947 aerial photographs, and believe that the 1944 date is erroneous and should have read "In 1947," as discussed in the next section. Fill is visible in the 1947 aerial photographs along the eastern boundary of the site extending about 330 feet west of the main rail alignment, about to the east wall of the Collins Building. This westward extension of fill into the intertidal zone also corresponds to the alignment of a rail spur that enters the property from the north and extends onto the subject property. This filled area covers the eastern portion of Area M and a small portion on the east side of Area G. The western boundary of this fill area is shown in Figure 4. We found no information as to when the pre-1947 fill was placed other than that it occurred after the photograph dated to the mid 1930s discussed above, nor any information as to whether the fill was placed in a single filling event or multiple events.

A 1944 Corps of Engineers photomosaic map we reviewed is based upon a July 1941 aerial photograph. Because of the scale of the map, the resolution at the subject site is poor. Despite the poor resolution, it seems to show that the easternmost fill is in place at the time of the 1941 photograph. The information we reviewed suggests it is likely that this fill was primarily of dredge fill rather than imported upland fill or debris generated on site, but this could not be confirmed. This interpretation is supported by our observation that there was no nearby source of upland fill evident in the general area of the site and that the one boring log from this area that we reviewed (Earth Consultants: ECI-MW-3) identifies the deeper soils as dredge material covered by four feet of non-dredge fill. A Landau Associates site plan shows additional explorations in this area which may provide further information about fill conditions, these are exploration numbers M-1, M-2, M-2B, M-2C and M-GC-1. Boring logs for these explorations were not included in the information we reviewed.

Review of the 1947 stereo pair of aerial photographs suggests that the upper several feet of fill (thickness based on boring log ECI-MW-3) was placed after the 1947 photograph, at a significantly later date than the dredge fill.

A small, irregularly shaped area of debris and granular fill is visible around the bases of the Hulbert Mill smokestack, the refuse burner and the water tower in the 1947 photographs. A very similar accumulation of fill is evident in the same photograph at the base of the refuse burner at the mill to the north of the subject site. This fill is also clearly visible in the photograph from the mid 1930s (see Figure 11). This fill may be comprised, in part, by bottom ash from the refuse burner. Refuse burners were primarily used for burning sawdust, bark, edgings and other wood debris associated with milling operations.

3.1.3 1947 to 1955 Filling Events

Two significant filling events occurred during this time period – the 1947-1953 dredge filling of the North Marina Peninsula area and the structural fill encompassing parts of Areas J, M and G placed in 1955.

Dredge Filling of the North Marina Peninsula Area. Hart Crowser stated that "in 1947, a sheetpile wall was constructed to form the fill area south of the mill." This sheetpile wall is visible in the 1947 aerial photographs. It encompasses the area of the North Marina

Peninsula as shown in Figure 1. The calculated area enclosed by the sheetpile wall is approximately 40 acres, and in our opinion corresponds to Landau's reference to filling in 1944 mentioned in the previous section. The completed fill can be seen distinctly in two 1953 oblique aerial photographs. We discovered no other information that indicated more precisely when the fill occurred. The filled area encompassed the remainder of Area M, the southern portion of Area G, the southern majority of Area J, and the remainder of the North Marina Peninsula which is not within the site boundaries, as shown in Figure 4.

Additional 1953 and 1954 oblique aerial photographs show the North Marina Peninsula fill area and also show that the majority of the mill facilities and the Collins Building are still supported on pilings and that filling is not completed to final (present) grade. The photographs suggest that the surface elevation of the North Marina Peninsula dredge fill at this time was about 3 to 5 feet below floor grades of the Collins Building and the decking surrounding the mill structures. The extent of the 1947 to 1953 fill area is readily visible in the 1955 aerial photograph.

Dredge fill drains, dewaters and consolidates after it is placed. This consolidation or settling can take place over several years. Dredge fill can be placed under pile-supported buildings and docks using hydraulic placement methods, but voids tend to form beneath the structures as the hydraulic fill consolidates and settles. We would expect that there would always be a void beneath the pile-supported structures after placement of fill.

Two oblique 1953 photographs both show 13th Street completed on the fill area, but it appears as if the majority of the 1947 to 1953 fill area may be several feet lower than the 13th Street grade. This is likely because of consolidation of the fill. The fill has some minor vegetation on it.

Structural Fill Encompassing Parts of Areas J, M and G. By 1953 an area immediately west of the Collins Building, comprising small portions of Areas M and G, and most of Area J, appears to be graded differently than other parts of the 1947 to 1953 dredge fill. In 1953 aerial photographs a non-dredge fill soil importing operation is also evident at the end of the North Marina Peninsula, at the end of 13th street. It consisted of barges loaded with soil, a conveyor system for unloading the barges, and facilities for loading fill into trucks.

By 1955, the area west of the Collins Building has been filled and graded. This area, identified as the "Structural Fill" in the 1955 aerial photograph in Figure 4 encompasses an area that is slightly larger than the area visible in the 1953 oblique aerial photographs, and marks are visible that suggest that active filling and grading may still be ongoing (Figure 4). The west side of this fill area is formed by a sharp line on the 1955 aerial photographs which may be a wall several feet high. Later aerial photographs, such as the 1989 oblique air photo, show this wall. Exhibit A – Figure 7 of the Agreed Order identifies this newly filled area west of the Collins Building as a "Sawdust/Wood Chip Pile." Based on our review of a stereo pair of aerial photographs and other aerial photography we believe this feature is inconsistent with the sawdust pile interpretation, and interpret this feature to be a structural fill. The walls bounding this fill establish the final grade.

Exploration logs from six soil borings in the 1947 to 1953 fill area (Earth Consultants: ECI-MW-1; Hart Crowser: HC-MW-1 & HC-MW-4; and Landau Associates P10, J-1 & J-2) indicate non-dredge fill extending from near the current surface to depths of 2 to 5 feet, and dredge fill extending from the base of the non-dredge fill to the maximum depth explored of 16 feet. Both the upper non-dredge fill unit and the deeper dredge fill unit were fairly consistent in nature between borings. This tends to indicate large-scale filling events rather than multiple small-scale events.

Other Fill (1947-1955). A 1953 oblique photograph shows limited filling between the saw mill and the shingle mill, and possibly beneath these structures, but the fill was significantly below final grade. This fill area is shown in Figure 4. We could not identify the source of this fill material. The 1953 oblique photograph also shows continued filling with waste materials southwest of the smokestack and refuse burner.

3.1.4 1955 to 1965 Filling

The 1961 aerial photograph shows most of Area G has been filled by this period, as shown in Figure 4. No other aerial photographs show this area in the intervening period between 1955 and 1961 at useful resolution. The aerial photograph did not provide any insight into whether this fill was placed in a large-scale filling event or several smaller-scale events. In the 1955 air photo, most of Area G was covered by mill buildings or docks which were originally supported on pilings. These buildings were still visible in the 1956 air photo, although not at a useful resolution. The 1961 aerial photograph is the first photograph with the buildings and docks removed, and showing fill at their location. The fill visible in the 1961 aerial photographs could have been placed after the buildings and docks were removed, or it could have been hydraulically placed beneath the pile-supported buildings and docks while they were still in existence. The additional area identified as being filled during this period includes the area that burned in a mill fire in 1956. The fire encompassed the lumber docks, lumber sheds, two planing mills and part of the kiln. The actual sawmill and shingle mill were not destroyed by the fire. Close examination of the 1961 aerial photograph suggests that the fire consumed nearly all the structural elements where it occurred, possibly even including the decking on the docks. This area appears to be filled in the 1961 photograph, although not up to the final grade, and it is not clear how close to the west end of the lumber storage docks the fill extended. Photographs from the 1920s and 1930s show that this filling did not occur before the mill was constructed. It is unknown whether this fill was placed hydraulically under the docks while they existed, or if it was placed after the fire. The 1953 oblique photographs show that there is no fill visible under the western end of the lumber storage docks. There are no records of the placement of this fill. Our review of exploration logs in the area of the mill fire did not identify evidence of a burn or ash layer.

The 1961 aerial photograph shows a bulkhead on the north side of Area G, the north side of the eastern third of Area I, and along the west side of the former dock frontage. The bulkhead generally follows the alignment of the lumber storage docks that burned in 1956. The 1961 aerial photograph shows the bulkhead piles extend into the air at varying lengths. This is typical for an area where piling may have been recently driven and not yet cut off to a finished level. A rough count of the piling suggests that there were about twice the number of piling along the western face of the bulkhead as there were for the prior dock structure. A 1992 test pit next to the bulkhead reported the presence of 12"x12" treated wood which we interpret as lagging that was used to construct the bulkhead. This information suggests that the bulkhead and subsequent fill was likely constructed some time after the mill fire and before 1961.

The fill behind the bulkhead extends westward approximately to the western boundary of Area G. It is not clear in the 1961 aerial photograph whether the surface visible between the western boundary of Area G and the western bulkhead is dock or fill.

Two 1965 aerial photographs show that all of the lumber docks have definitely been removed, and the filled area has extended westward across almost all of Area G, into the northeast portion of Area I, and slightly further in the north end of Area J as shown in Figure 4. It is not clear in the 1961 photograph whether all of this area was filled by that time. The bulkhead discussed in the second paragraph of this section is more distinctly visible in these photographs. The sawmill, shingle mill and remaining kilns have been demolished since the 1961 aerial photograph. The portion of Area G beneath the east end of the recently demolished sawmill building is only partially filled; the surface of the fill is not up to the grade behind the bulkhead.

Exploration logs from test pits and borings in this area (Earth Consultants ECI-MW-2, ECI-K-1, ECI-J-1, ECI-J-2 and ECI-TP-1 through ECI-TP-8) apparently indicate a fairly homogenous non-dredge fill unit in these explorations extending to a depth of about 11 feet below current surface, and dredge fill beneath the upper non-dredge fill unit. The upper non-dredge fill unit contained significant wood and concrete debris in localized areas. Localized inconsistencies in soil type were present in several of the test pits. One exploration near the northern boundary of Area G (Earth Consultants ECI-TP-6) exposed a vertical wall of treated 12-inch by 12-inch timber extending to the base of the test pit at 8 feet below current grade. This wall may be the bulkhead behind which the fill was placed, as visible in the 1961 aerial photograph. In our experience, timbers and pilings of the time period when the wall was constructed were oftentimes untreated cedar, although frequently mistaken as treated.

3.1.5 1973 Filling Events

Two large filling events affecting the subject site occurred in 1973. A large, engineered dredge spoil fill encompassed most of Area I, parts of Areas J and G, and extended onto the property to the north. A separate filling event over a large part of the North Marina Peninsula extended onto the western part of Area J.

Three 1973 aerial photographs show a large-scale filling event occurring over the entirety of Area I, small portions of Areas G and J, and onto the adjacent property to the north of the site, as shown in Figure 4. Two of the photographs show fill being hydraulically placed on Area I and the northern portion of Area J. Records indicate that this dredge fill was spoils from the "12th Street Channel" dredging project, authorized by the Army Corps of Engineers in February 1972. Design drawings for the fill show the filled area to be identical to the filled area visible in the 1973 aerial photograph as discussed above. The source of the material was approximately 176,000 cubic yards of dredge spoils generated by dredging a channel westward from the southern portion of Area I and the northern portion of Area J. The design drawings indicate that the dredge fill was held behind a shore dike which was constructed along the west side of the fill. A berm was constructed around the north, east and south sides of the area to be filled. A drawing dated January 2, 1973 and stamped "As Built" indicates that the top of the dike was about 14 to 16 feet above MLLW (Mean Lower Low Water), the top of the dredge fill was about 19 feet above MLLW, and the bottom of the dredged channel was 20 feet below MLLW. The January 2, 1973 drawing shows an "exist. timber bulkhead" corresponding to the wall visible in the 1965 aerial photographs discussed above. The January 2, 1973 drawing labels the area behind the "exist. timber bulkhead" (within Area I) as "borrow area for north dike," and states that the northern half of the shore dike is constructed from this soil, while the southern half of the shore dike is constructed of "imported quarry waste." The northern dike extends onto the property to the north. The January 2, 1973 drawing also shows that the surface elevation of the 1973 fill was as much as 5 to 7 feet higher than the ground surface of Area G to the east, probably to allow for substantial dewatering and settlement of the dredge fill.

The September 1973 aerial photographs show that the 1973 dredge fill in Area I was hydraulically placed. The surface of the fill is higher in the northern portion of Area I, and lower in the southern portion of Area I where ponded water is visible.

A 1974 stereo pair of photographs shows the hydraulically placed portion of the 1973 fill dewatering and apparently consolidating, with the dewatering water causing visible sedimentation in the 12^{th} Street channel at the approximate location of the current barge dock.

The 1973 as-built drawing does not show an engineered dike on the eastern side of the dredge fill. Aerial photographs show a significant berm on the east side of the fill with a maximum elevation exceeding the height of the fill. This berm extends onto Area G. We could not ascertain the source of the fill used to construct this berm.

A photograph from 1973 or early 1974 shows fill on the north half of the North Marina Peninsula to the southwest of the site and a small portion of Area J placed by end dump truck, and small localized areas of end dump piles are visible elsewhere in the hydraulically filled area.

Exploration logs for numerous test pits and borings in the area filled in 1973 (Earth Consultants ECI-Q-1 through ECI-Q-8, Hart Crowser HC-MW-3 and Landau Associates P11 & P12) indicate that the soils observed in the explorations consisted of an upper unit extending from the current surface to a depth of 1.5 to 3 feet below grade consisting of fill with wood, brick and shells, with an underlying unit of dredge fill extending from the base of the upper fill unit to at least 16 feet, the maximum depth explored. The upper unit was not homogenous. We interpret that this lower dredge fill unit is the 1973 dredge fill and that the upper unit was placed later as generally described in the next section of this report.

3.1.6 1974 to 1982 Filling

The berm around the eastern portion of the 1973 fill remains readily visible in all photographs through a 1981 aerial photograph. The dredge fill has consolidated and settled, leaving the berm as an elevated soil structure separating the active Centrecon facility from the log sorting operations to the west.

A 1976 stereo pair of photographs also show that the southern 120 feet of Area I, adjacent to the barge wharf, has been graded and paved. We do not have documentation of this feature being constructed so it is unclear whether a structural fill underlies the pavement.

This pavement is the extension of the fill and final grading of the eastern part of the North Marina Peninsula and appears to be constructed for the use of tenants southwest of the subject site. A trench is visible excavated on the east and north sides of this paved area, with trench spoils stockpiled along its length. The trench appears to be a drainage ditch which slopes to and discharges to a point at the northern edge of the dock structure. This trench and associated stockpiles are visible in aerial photographs until 1981, and then have been filled by 1982. This feature acts as a barrier to most vehicular traffic between the paved area east of the dock and Area I until it is filled and graded in 1982 with one exception. There appears to be a lightly used unpaved roadway along the top of the former berm, providing access between the site to the southwest and the Centrecon site. This roadway is most clearly seen in the 1977 oblique photograph.

The majority of the 1973 fill area continues to be occupied by log storage in the 1976, 1977 and 1978 photographs. Accumulation of wood debris appears to be developing.

1979 aerial photographs show that the majority of the logs in the 1973 fill area of Area I have been removed. However, a log pile at the northeastern corner of Area I remains. A network of roads that were originally used to access the log piles remain and the locations formerly occupied by log piles appear to contain some slash, debris and vegetation. The major road access to Area I at this time appears to be from across the northern property line, although a possible road access may be present from Area G to Area I. At this time, any previous access from the southwest to Area I is blocked. Bright white soil patches are evident in three parts of Area I, two in the south central portion and one in the northeast part of Area I. The northeastern white soil patch was first visible in the 1978 aerial photograph.

Two 1980 aerial photographs show significant active regrading and some possible filling occurring in the northern part of Area J. It appears that Area I and the northern part of Area J is being regraded for a change in use. There are piles of slash that have been consolidated and most of area I shows evidence of recent grading but not necessarily the placement of additional fill. A pile of metal pipes is present at the northeastern corner of Area I, at the location of a former log pile and miscellaneous equipment and debris remain at the northwestern edge of Area I in a location that has not been graded.

A large area of the previously described bright white-colored material is visible near the middle of Area I, and several smaller areas of light-colored material are visible on the west side of Area G, west of Centrecon's polishing building. The patch of light-colored material on Area I appears to have been pushed into a 125 by 50 foot stockpile with earth moving equipment. This pile is several feet high. There are features suggesting that this white-colored material may emerge from a westward draining pipe from the Centrecon polishing building. Road access to the fill area on Area I appears to be predominantly from across the northern property line of Area I, but a possible minor road access also is visible from Area G to Area I west of the Centrecon building.

Significant filling along the north side of Area G with what appears to be concrete debris is visible in the photographs. This is discussed in greater detail in Section 5.5 of this report.

Very similar conditions are visible in the 1981 aerial photograph except that the road access between Area I and the property to the north has been eliminated with the construction of a barrier along the entire northern property line of Area I. The resolution of the 1981 aerial photograph is not adequate to see whether active grading is occurring on Area I.

Two 1982 aerial photographs show that Area I has been graded flat and appears to be at roughly similar grade as Area J and about two feet higher than the paved portion of Area G. The ground surface is covered with a uniform, light colored fill. Exploration logs show the fill to be a gravel fill which is generally 0.5 to 1.0 feet in thickness. No signs remain of the eastern berm around the 1973 fill except for a remnant mound on the northwest corner of Area G (Area G-1). A settling pond has been constructed on this berm remnant. This is discussed in more detail in section 5.2.3.

3.1.7 Post-1982 Fill

After 1982 there was no wide-spread filling on the subject property.We reviewed three survey drawings of Areas G and I that provided elevation data. These drawings were dated 1985, 1987 and 2004. We compared surface elevations in these three drawings, which suggest that the ground surface topography in Areas G and I has not changed significantly from 1985 to 2004. Furthermore, based on aerial photographs, it appears that the surface elevation in Area I illustrated in the 1985 and 1987 surveys is very similar to the final elevation of Area I in 1982 as discussed above.

Absolute comparison of elevations was not possible since the 2004 drawing represented elevations with contours and the others showed spot elevations. Generally, all three of these drawings show the ground surface of Area I to be about 1 to 2 feet higher in elevation than the paved ground surface in Area G on the west side of the Ameron Building. The 1985 and 1987 survey drawings do not document the presence of the one or more small stockpiles which the 2004 survey drawing documents in Area I. The 1985 survey shows the small mound and associated pond on Area G-1 which is mentioned in the previous section and discussed in more detail in Section 5.2.3 of this report

The 1985 and 2004 surveys appear to use similar datums, while the 1987 survey appears to use a datum that is approximately 6 feet lower. The 2004 and 1987 surveys are shown on Figure 5. The 1987 elevations in the figure have been adjusted by adding 6.0 feet to the mapped value shown in parenthesis so they can be generally compared to the 2004 survey. The 1985 survey is not shown on Figure 5 because its results are very similar those shown in the 1987 survey except for the small mound in Area G-1.

3.2 OFF-SITE FILLING

The property to the north of the site was filled independently of the subject site with the exception of the 1973 dredge fill which extended well on to the property to the north. An area of the property to the north of the site was filled extending approximately 400 feet west of the mainline rail alignment at some time between the early 1930s and 1947, similar to the first fill described on the subject site.

In the mid-1960s the area to the north was partially filled. The fill supported an access road that started just north of the northeastern corner of Area G and headed W-NW toward the refuse burner at the mill. The irregular shape, color and texture of this fill suggests an irregular surface created by multiple small-scale filling events. The zone just north of the property line was not filled and remained an incised drainage between the properties.

When the large dredge fill was constructed in 1973 it appears that its northern margin was excavated to augment drainage of the fill. One 1973 aerial photograph shows standing water (at high tide) in the drainage along the north side of Areas I and G. The open water in this drainage extends nearly to the northeastern corner of Area G.

The off-site area northwest of Area I was filled in the late 1970s. A 1976 aerial photograph shows the intertidal area currently occupied by the boat launch to the north of the site surrounded by a bulkhead or sheetpile wall. A 1977 oblique aerial photograph shows the area enclosed by the wall to be completely filled.

Various photographs from 2005 and 2006 show structural fill being placed along the south side of the 10th Street boat launch property to the northwest of the site, in association with the 12th Street Yacht Basin project.

3.3 PAVING

We evaluated the progression of pavement and building construction at the site by interpreting air photos and where possible confirming with information from site surveys and other engineering drawings. For the purpose of this evaluation, we defined "pavement" as any surface which is low permeability and provides a physical barrier to mixing of materials with underlying soil. Practically, this is limited to either asphalt or Portland cement concrete surfaces. Our understanding of the progression of paving at the site is interpretive, and should not be considered definitive. Our understanding of the progression of paving is shown in Figures 6 and 7. For ease of presentation, we have divided it into four periods, 1947 through 1974, 1974 through 1982, 1982 through 1991, and 1991 through 2005. Figures 6 and 7 also show the year of the aerial photograph in which each building is first evident.

4.0 SUMMARY OF SITE USES AND POTENTIAL RELEASES

4.1 PROPERTY OWNERSHIP

We reviewed property ownership records obtained by Nadler Law Offices, Snohomish County records provided by Pacific Ground Water Group, information from technical reports provided to us, Sanborn maps, and our own research of Snohomish County records and on-line business records. For the purposes of this report, we have noted ownership and occupant information only until 2006, just after redevelopment of the subject site began to take place and buildings and businesses were beginning to be demolished or relocated. Many of the business concerns listed as being present up to the 2006 date currently remain on site.

4.1.1 William Hulbert Mill Co.

William Hulbert Mill Co. purchased the existing shingle and lumber mills on site in 1923. The Limits of the Hulbert Mill Co. holdings are shown in Figure 8. The William Hulbert Mill Co. liquidated and dissolved in 1986, and transferred its assets to the William

Hulbert Mill Company Limited Partnership. In 1990, part of the 30 acre property was transferred to the William G. Hulbert, Jr. and Clare Mumford Hulbert Revocable Living Trust; William Hulbert, III; Tanauan Hulbert Martin and David Francis Hulbert; who all owned the property as Tenants in Common. The Hulbert Mill Company Limited Partnership retained the remaining part of the property. In 1991, the entire 30 acre parcel was sold to the Port of Everett. During the period from 1923 to 1991, the various Hulbert-related ownership interests leased portions of the property to various commercial and industrial tenants.

4.1.2 The Port of Everett

The Port of Everett owned the portion of Area M adjacent to the former Northern Pacific right-of-way and the current Marine View Drive from 11th Street to 13th Street, and a small portion of Area G, since at least 1940. Our research was unable to determine the initial ownership of that property. The limits of the Port of Everett holding are shown in Figure 8.

The Port of Everett has owned the entire subject site since acquisition of the Hulbert property in 1991.

In addition to lease agreements with others on the site, the Port of Everett also had its own activities on the property.

4.2 MAJOR TENANTS

Tenant information was derived from leases and subleases obtained from Snohomish County records, records from the Nadler Law Group offices, technical reports, Polks Directories and Sanborn maps. Figure 8 shows the areas occupied by primary tenants at different times in the history of the site.

4.2.1 Tenants on Hulbert Property

4.2.1.1 Collins Casket Company

Collins Casket Co., originally North Coast Casket, leased a portion of Area M and a small portion of Area G from the Hulbert Mill Company from 1926 to 1991. The Collins Casket Co. lease holding is shown in Figure 8. Collins Casket Company leased its property from Hulbert until the Port purchased the property in 1991, and continued as a casket business owned by Keys International leasing from the Port of Everett until 1996. The company remained in the original building throughout its existence. The operation included a boiler house with related oil house, a “smoke shack” employee area and storage area, and an open-sided storage building.

A concrete warehouse building was built for the casket company operation in 1961 adjacent to the east of the main building. The concrete building was on leased land from the Port of Everett. In the late 1970s the original boiler was replaced by a new boiler and diesel AST located on the east side of the Collins Building, between the Collins Building and Building A (Figure 8). The original boiler house was demolished in about 1984.

Subtenants of Collins Casket Company:

RL Enterprises: 1989-1991. RL Enterprises leased the second and third floors of the Collins building for construction of cabinetry.

Michael's Woodcraft: ca.1990-1991. Michael's Woodcraft leased the second floor of the Collins building for furniture making.

4.2.1.2 Centrecon / Utility Vault (now Oldcastle Precast Company)

Centrecon initially leased property from Hulbert in 1972. The lease area included all of the Hulbert property less the area occupied by the Collins Casket lease, including an extended area westward to the tidelands after the filling of 1973-74. The Centrecon lease holding is shown in Figure 8. The lease holding of Centrecon was reduced to Area G only in 1991, as shown in Figure 8. The Port of Everett assumed the Centrecon lease and its sublease agreements when it purchased the Hulbert property in 1991.

Over the period from 1986 to 1994 Centrecon ownership names changed from Centrecon to Utility Vault Company to Oldcastle Precast Company. Centrecon is the name of reference used in this report through 1988. After 1988, Ameron purchased the assets of Centrecon from Utility Vault as discussed below.

Subtenants of Centrecon / Utility Vault:

Washington Stone Corporation: 1979-1982? On May 1, 1979 Centrecon entered into a ten-year lease with Washington Stone Corporation allowing then to import and process aggregate and similar products in parts of Areas I, J and M. The lease agreement included references to improvements to be made to the site by Centrecon for Washington Stone Corporation. In 1982 the same property was leased to Jenson Reynolds Construction (below). Our review of aerial photography found no evidence that the agreed to improvements were ever constructed or any evidence that the lease area was ever occupied by a business involved with aggregate handling. The area of the lease is shown in Figure 8. A termination of lease document dated December 19, 1989 verifies that the lease had previously been terminated although a specific termination date was not cited.

Jensen Reynolds Construction: 1982-1990. Jensen Reynolds Construction subleased the majority of Areas I and J and a small portion of Area M from Centrecon. Their sublease holding is shown in Figure 8. Jensen Reynolds made pre-fabricated metal waterfront buildings. They constructed three permanent buildings on the property — an open shed/warehouse/fabrication building, an equipment repair shop, and an office. These features are shown in Figure 8. Other improvements included security fencing and a fueling area with three underground storage tanks and fuel dispensers.

Ameron: 1988-2006. In 1988 Ameron bought the assets of Centrecon and subleased Area G and a small portion of Area M from Utility Vault for the purpose of utility pole manufacturing. Ameron subleased from Utility Vault until 2005 when the Port of Everett purchased the lease from Utility Vault. The name Ameron is used in this report to reference activities on Area G after 1988.

4.2.1.3 Commercial Steel Fabricators

Commercial Steel Fabricators leased the western half of Area I from Hulbert in 1991. The Commercial Steel Fabricators lease holding is shown in Figure 8. Commercial Steel Fabricators used the property for the purpose of fabrication and assembly of metal modules, storage and warehousing for shipment. No permanent buildings were constructed. The original lease was for 2 acres with a first right of refusal option for 2 more acres. Whether the option to lease the additional 2 acres was ever exercised is unverified. The lease from Hulbert commenced in January of 1991 and extended through the beginning of March. The Port of Everett assumed the lease after it purchased the property from Hulbert in March of 1991, and the lease continued through the end of 1991.

4.2.2 Tenants on Port of Everett Property Through 2006

The Port of Everett initially owned the narrow section of Area M adjacent to Marine View Drive, and purchased the 30 acre Hulbert property in 1991. The leases of existing Hulbert tenants assumed by the Port in 1991 are shown below with dates of tenancy beginning in 1991. The relationship of owner, tenants and subtenants becomes complicated. In this section all tenants and subtenants of the Port of Everett are simply referred to as "occupants" except as noted. Occupants of Port of Everett-owned portions of the site are described below. Only occupants before 2006 are addressed, we did not investigate leases after 2006. Their locations-of-occupation are shown in Figure 8. For convenience, the buildings and structures on the eastern portion of the site owned by the Port of Everett before 1991 are referred to as the "Northern Building" and the "Other Buildings/Structures" -- "A," "B" "C", "D" and "E" as shown in Figure 8. Port of Everett occupants are as follows.

<u>Hulbert Mill Company:</u> 1962-1991. Hulbert Mill Company leased the eastern-most portion of the site owned by the Port of Everett during this period, including the buildings in Area M as shown in Figure 8. Building E was used as the mill office and then later used by Hulbert in the early 1960sfor the log brokering business after the closure of the mill. The remaining buildings (the northern building and buildings "A", "B" and "C" were leased by Hulbert to various subtenants.

The northern building was built in 1979 by Hulbert and subleased to Centrecon.

Building A was constructed in 1961 by Hulbert and leased to the Collins Casket Company who used it for fabrication of metal caskets and casket interiors. The building was later leased to Nalleys for use in warehousing foods.

Building B was constructed in 1974.

Building C was constructed in 1972 for Hulbert and subleased to Washington Belt as described below.

<u>Collins Casket Company:</u> 1991-1996. Collins Casket Company's lease with Hulbert Mill Company was assumed by the Port of Everett.

<u>Ameron:</u> 1991-2006. Ameron's lease of Area G and sublease of the northern portion of Area M, including the Northern Building, were assumed by the Port of Everett in 1991.

Marine Spill Response Company: 1994(?)-2006. MSRC leased portions of Areas J and M, and replaced Jensen Reynolds' warehouse with a new facility to store supplies.

Commercial Steel Fabricators: 1991. Commercial Steel Fabricators' lease and right of first refusal in Area I was assumed from Hulbert by the Port of Everett through 12/31/91.

Veco: 1991. Veco occupied a portion of Jensen Reynolds Construction's former warehouse to store construction and welding supplies and containers.

Snohomish County Public Utility District: 1954-1969. Snohomish County PUD operated an electrical substation in the southeast corner of Area M.

Nalley's: ca. 1990s. Nalley's occupied or partially occupied Southern Building A, using it for warehousing and distribution of food products.

Shaugnessey Company: Shaugnessey Company stored industrial moving equipment and containers on Area I after 1991.

RL Enterprises: 1991-1994. RL Enterprises continued their occupation of portions of the Collins Building through 1994.

Michael's Woodcraft: 1991. Michael's Woodcraft continued their occupation of portions of the Collins Building through 1991.

Tri-Coatings, Inc: 1981-1991. Tri-Coatings occupied a portion of the Northern Building, and provided commercial paints and stripping services. Tri-Coatings expanded into two buildings on adjacent property to the north, and became TC Systems.

Sunset Body Works: 1980-2006. Sunset Body Works occupied a portion of the Northern Building, and provided vehicle auto body repair. Sunset Body Works is now North Central Collision.

Dunlap Wire Rope (aka Dunlap Industrial Hardware): 1980-2006. Dunlap Wire Rope occupies a portion of the Northern Building, and manufactures wire rope, rigging, hydraulic assemblies and other hardware supplies.

Performance Marine: 1981-1985. Performance Marine occupies a portion of the Northern Building, and provides boat repair and service.

BESCO: 1981-1988. BESCO occupied a portion of the Northern Building, and provided wholesale and retail vehicle and machine parts, along with some minor vehicle maintenance.

Churchill Bros. Marine/Churchill Bros. Sail Loft: 1981-2006 Churchill Bros. occupy a portion of the Northern Building, and fabricate boat covers and canvasses.

Sandy's Boat House: 1990-2006. Sandy's Boat House occupied a Southern Building B, and provided boat sales and repair.

Washington Belt and Drive: 1972-2006. Washington Belt and Drive occupies Southern Building C, and provides retail rubber belt sales and services.

Railmakers NW: ca. 1975-87: Railmakers NW occupied a portion of Southern Building B, and fabricated rails for marine vessels.

Sound Propeller: 1972-1976. Sound Propeller occupied a portion of Southern Building B, and provided propeller sales and repair

Prop Shop Propeller Repair: ca. 1982. Prop Shop Propeller Repair occupied a portion of Southern Building B, and provided propeller repair.

Excel Transportation: 1990 at 1200 Marine View Drive. Possibly only an office, but the location and nature of other operations or activities is unknown.

Weathermaster Insulated Glass Manufacturers: 1982-1984 at 1200 Marine View Drive. Possibly only an office, but the location and nature of other operations or activities is unknown.

Hyman-Michael's Scrap Salvage: ca. 1960s. The location and nature of operations is unknown.

Christian Construction: 1968. Barge construction. The precise location and nature of their operations is unknown. They appear to have occupied an area within the northeastern part of the North Marina Peninsula which could have extended onto the western part of Area J.

Tidewater Plywood: 1965 (one year only). Plywood mill, log rafting and storage. Tidewater Plywood most recently occupied the area later occupied by Mid-Mountain Contractors and ABW. The extent of their lease area is unknown but could have extended onto the western part of Area J.

Columbia Hardboard: Prior to 1965. Columbia Hardboard occupied an area within the northeastern part of the North Marina Peninsula, including the former ABW Building southwest of the site. Based on Sanborn maps from 1957 and 1968 buried concrete structures on the western part of Area J may be attributed to Columbia Hardboard.

American Tow Boat: 1961. Log rafting. The precise location and nature of their operations is unknown.

Mid-Mountain Contractors: 1975- 1983. Mid-Mountain leased the northeastern part of the North Marina Peninsula for their operations related to shipping of oil drilling pipe to North Slope Alaska destinations. The western part of Area J was used to store and stage pipe for loading at the 12th Street dock. Mid-Mountain also had an agreement for use of the former ABW building (west of the subject site) for machining and sandblasting of pipe for a 45 day period in 1980. Notation on the rental agreement shows the building was occupied for only 30 days.

4.3 SITE USES THAT COULD RESULT IN RELEASES

Table 1 provides a summary of historic operators on the site and features of concern associated with their operations that might result in environmental contamination concerns. The table is organized by operator, i.e. the entity that was using an area of the site at the time a structure, feature or activity of concern was present. The table provides a brief description of structures or features of concern, separating them based on whether they were identified in reports, lease information, or historical documents observations. Concerns in the "From Reports" column are identified by other consultants as described in the body of reports provided to Pinnacle GeoSciences. Concerns in the "From Leases" column are formally included in the lease and sublease documents which we have obtained. Concerns in the "From Observations" column are ones which we observed on air photos, Sanborn maps, other historical maps, or other documents.

5.0 AREAS OF KNOWN CONTAMINATION

5.1 FENCE BETWEEN AREAS I AND G

The specific item of interest is: "*When the fence separating Areas I and G was constructed.*"

The fence referred to extends from the northern site boundary southward for about 480 feet and then has a short section extending about 25 feet to the east. These measurements are approximate. Aerial photography suggests that the fence is likely a chain-link fence.

The absence and presence of the fence is best documented by aerial photographs as discussed below. However, lease documents also help place a contextual time frame for the construction of the fence. A 1988 Trustee's Deed between Jensen Reynolds and SeaFirst Bank cites improvements on the land including chain-link security fencing. It cites a lease date of March 1, 1982 between Centrecon and Jensen Reynolds Construction and details the improvements made by Jensen Reynolds during the occupancy of the property. The implication is that fence (an improvement by Jenson & Reynolds) that would have been placed at some time after the effective date of their lease which was March 1, 1982.

The northern part of the area occupied by the fence originally appeared to contain surficial fill and/or vegetation that spanned across the future location of the fence. The fence appears to be a chain-link fence which makes its visibility in aerial photographs problematic unless the lighting is ideal and the resolution is sufficient. The most recent aerial photograph in which the fence is clearly not present is dated 2/27/1981. The 6/16/1982 aerial photograph shows Area I as being recently filled and graded, likely in preparation for site use as discussed in Section 3.1.6. Examination of the photography in stereo shows the fence to be present at that date. The northern part of the fence passes through a small wedge of vegetation that spans Areas G and I and that lineation feature through the vegetation could not be readily attributed to any feature other than the fence. The southern-most short section of the fence toward the east is also evident in that photograph as is the continued extension of the fence to the south after the jog to the east.

A 5/22/1983 aerial photograph is inconclusive and could appear to be contradictory regarding the presence of the fence. However, in our opinion it does not lend evidence either way because of the high sun angle (and subsequent lack of shadows) and the poor resolution of that photograph.

Our conclusion is that the fence was constructed no earlier than February 27, 1981 and that it was present on June 16, 1982. Furthermore, lease documents suggest it was constructed sometime after March 1, 1982 by Jensen Reynolds. Figure 9 shows the aerial photography supporting this conclusion.

5.2 FILL IN AREA I AND THE NORTHWEST PART OF AREA G

The specific item of interest is: *"When fill was placed in Area I and the ~~northeast~~ northwest corner of Area G that resulted in the ground surface in these areas increasing to elevations significantly greater than adjacent grades to the east."*

The northeastern part of Area I and the northwestern part of area G (also referred to as Area G-1 have both been areas of episodic fill accumulation. The areas were non-differentiated before the construction of the fence in the early 1980s which is discussed above. After the fence was constructed, filling or stockpiling activities occurred independently on both sides of the fence. In 2006 the fence was removed and excavation activities included the removal of fill or stockpiles from both sides of the fence. The original fill extending above surrounding grade in this area was from the construction of a berm prior to the placement of the dredge spoil fill in 1973.

5.2.1 Aerial Photograph Review

The sequential history of these areas, based upon review of stereo aerial photography, is described below. Figure 10 shows the sequence of filling illustrated on eight aerial photographs in the date range of 1973 to 1999. Aerial photograph dates that are underlined in the table below are shown in Figure 10. We do not have a specific flight date for those aerial photographs identified by year only.

Date	Area I	Area G (and G-1)
1966-70	No fill above grade to the east.	No fill above grade to the east.
6/2/1970	Same as above.	Same as above.
9/13/1973	Area I is bermed and filled with dredge fill.	Berm supporting dredge fill extends onto Area G. Berm height appears consistent with the height indicated on drawing of 8 feet. Area between building a berm is unused.
6/11/1974	Same as above.	Same as above except that area between the building and berm is used for storage. Some vegetation is emerging on the berm.

Date	Area I	Area G (and G-1)
1976	Dredge fill has consolidated and has been graded. The area is being used for log sorting. The southern part of Area I, directly east of the newly constructed barge dock, has been graded smooth and paved. A drainage ditch or trench has been excavated along the north and east side of this graded area and the excavation spoils are piled alongside the trench.	Minor fill in Area G-1, several feet maximum. Possible berm remnant in Area G-1 and small fill piles are evident on top of the former berm. The northern margin of Area G and the bordering property to the north as well as the northern part of the fence between Areas G-1 and I contain dark colored, dense vegetation which is best discerned in oblique photographs.
9/12/1977	Area I is being used for log sorting, no fill. There has possibly been some minor grading of the eastern dredge fill berm to make it a roadway.	Fill in Area G-1 is heavily vegetated and extends eastward along the northern property line of Area G.
1978	Same as above. A small area of white material is visible in the northeast quadrant Area I.	Same as above.
7/19/1979	Significant large log piles. Three areas of white material are visible in the eastern part of Area I. They appear to be in low areas rather than stockpiles.	Minimal fill. Vegetation present that may mask fill

Date	Area I	Area G (and G-1)
4/11/1980	Log piles gone. Small slash and debris piles are present. A pile of steel pipe is present near the northeast corner of Area I. White material noted in the 1979 aerial photograph is now limited to the southeast quadrant of Area I. A pipe or hose is visible running along the ground surface from the west side of the Centrecon pole polishing building westward. The pipe/hose appears to go underneath the berm and then discharges at the west side of the berm into a low area characterized by the white coloration. At the outfall the white material appears to spread into low areas and eventually enter the trench/drainage ditch on the north side of the paved area east of the barge dock. Some grading appears to be occurring, apparently pushing the white material into a stockpile west of the discharge point. The stockpile measures approximately 125 by 50 feet in plan dimension.	Vegetation is still present on the eastern part of Area G-1. Clearing and grading on Area I has encroached into the western part of Area G-1 where vegetation has been removed.
6/16/1982	Area I is cleared and graded flat – no fill piles. The fence is now present separating Areas G and I. There is no longer evidence of the white material. The trench/drainage ditch along the margin of the pavement east of the dock has been filled.	Most of the fill has been removed. Only a few feet of fill extending up to 50 feet from the fence line remain. A settling pond is present – it is oval and approximately 40 by 80 feet. The northern-most 50 feet of Area G has been cleared, graded and paved; no fill is present in this portion of Area G.
6/17/1987	No significant fill on Area I, minimal vegetation is growing next to the fence bordering Area G.	Minimal fill on northwestern Area G. The pond is still present. Much of the area is being used for equipment storage.
7/3/1991	Minimal fill or vegetation accumulation along the northern property line next to fence bordering Area G.	Part of Area G-1 is used for pole storage. The pond is gone. Minimal fill is present. A small pile of additional fill is present at the location of the former pond.

Date	Area I	Area G (and G-1)
8/19/1991	Vegetation increasing along the fence bordering Area G. Small piers are set in a grid pattern over much of Area I – possibly used to hold items being sandblasted. Pier areas have black material around them.	Minimal fill still present. Small pile of additional fill present at fenceline.
8/10/1992	Area I is graded again. The landfarm is present at the northeastern corner of Area I. No fill is present next to the fence adjoining Area G.	Pole storage is gone. The quantity of fill may be less. A vestige of the former pond is evident.
9/9/1993	Area I is used intensely for log storage. Most of the logs are blackened on one end. They could either be treated poles with a creosote butt treatment or salvaged piling with the embedded end stained black by mud and reducing conditions. There are also piles of what appear to be smaller pieces of salvaged wood which suggests the latter (pile salvaging) is the source of the stockpiled timber. Vegetation is increasing along the eastern and northern border. A possible fill pile is present near the northern fence about 40 feet west of the fence bordering Area G.	The southern fence that "defines Area G-1 is now present. It extends about 50-60 feet to the east from the fence separating Areas G and I. The volume of fill present in G-1 has increased significantly. The fill is several feet deep and extends to 50 feet from the fence. The volume of fill is likely in excess of 500 CY. Vegetation is gone from the fill indicating recent accumulation or movement of soil. There is no pole or equipment storage.
1995	Area I is largely unused. Minor accumulation at the northeastern corner that may be equipment or fill surrounded by vegetation.	A significant volume of fill is still present in Area G-1. The area is also used for pole storage again.
9/22/1999	A significant volume of fill has been placed next to the fence separating Areas G and I. The fill piles are 5 or more feet high.	Fill is still present in Area G-1. Some fill has been excavated near the northern end of the fill pile, next to the northern property line.
2000	Significant accumulations of fill are still present on the northeastern corner of Area I. Some vegetation is present on the fill.	Same as above.

Date	Area I	Area G (and G-1)
7/21/2002	Same as above. The fill is covered with vegetation.	More fill has been placed at the northern end of Area G-1. Vegetation is gone from the surface of parts of the fill in Area G-1 suggesting that it has been reworked or partially removed.
2006	Area I is cleared and possible filled again. A pond is present on the south central part of Area I.	All fill has been removed and the area leveled. Some equipment is stored in Area G-1. A small pond borders the fence.

5.2.2 Summary of Filling on Area I

Area I was originally filled in 1973 as part of the 12th Street Channel dredging project. In preparation for the fill placement, a dike was constructed along the west side of Area I and a berm constructed on the north, east and south sides to contain the dredge fill. Figure 15 shows the location of the dike and berm. The portion of the engineering drawing reproduced on Figure 15 also shows that the northeastern corner of Area I served as a borrow source for construction of the northwestern part of the dike. The engineering drawing does not specify the source or character of the fill used to construct the berm on the north, east and south sides of the fill.

It appears to have taken over one year for the fill to settle and consolidate enough for the site to be graded and used. The eastern berm did not settle and remained higher than the surrounding areas to the east and west. By 1976, most of Area I had been graded and was being used for log sorting. By 1982 the area had been graded and a fence erected between Areas I and G as described in Section 5.1 of this report. With the exception of the engineered landfarm observed in the August 10, 1992 photograph (described in Section 5.3) there was no evidence of significant accumulation of fill in the northeastern corner of Area I until after 1995. The 1999 aerial photograph shows a significant accumulation of fill placed on Area I near the fence separating Areas G and I (Area I-1). This fill is still present in 2000, 2002 and 2006. By mid-2006 it has been removed. The 1999 aerial photograph also shows a smaller pile of fill at the northeastern corner of Area I, abutting the northern and eastern fences. The 2004 survey indicates that there was no fill against the fence separating Areas I and G-1 at that time.

5.2.3 Summary of Filling on Area G (G-1)

Area G-1 occupies the northwestern corner of Area G, bordering Area I, and is the location of two extended periods of fill accumulation. Area G-1 was first filled by the construction of the berm to contain the 12th Street Channel dredge material in 1973. Engineering drawings indicate that the berm was about eight feet above the Centrecon yard grade in this area. Sometime between 1974 and 1976 Area I was graded but the remaining berm in Areas I and G-1 area was not removed although it was apparently lowered. The remnant of the dredge berm remained and was probably only several feet high. Aerial photographs from 1976 through 1979 show vegetation emerging on top of the berm remnant. The 1980 aerial photograph shows that the eastern side of the fill retained the vegetation seen in prior years and western side of the fill on Area G-1 was cleared and graded.

A fence was constructed between Areas G-1 and I sometime between March and June of 1982 as described in Section 5.1. After this fence was constructed there was no direct access between Areas G-1 and I and all subsequent fill placement and/or movement activities within Area G-1 would have been by access from the east.

By 1982 most of the fill (the portion of the former berm that was above site grade to the east) had been removed from Area G-1, only 1 to 2 feet of fill remained and it extended from just west of the newly constructed fence to about 50 feet east of the fence, covering about 40 percent of Area G-1 and several feet of the adjoining part of Area I. The northern 50 feet of Area G-1 had been cleared of fill by 1982. A large pond is evident on G-1 in the 1982 photograph. The pond is constructed on top of the fill and is roughly 40 by 80 feet in size. The pond and surrounding fill in Area G-1 is shown in the 1985 survey map discussed in Section 3.1.6. The pond is still present in 1987 and the amount of fill present is about the same. By July, 1991 the pond is gone. A photograph from 1992 suggests that the quantity of fill might be slightly less.

In 1993 the volume of fill present in Area G-1 has increased. The fill is several feet deep and extends up to 50 feet eastward from the fence, covering about 60 percent of Area G-1. The volume of fill likely exceeds 500 cubic yards. This fill remains until sometime after 2002. Several photographs show the fill was moved around at times but the volume remained approximately the same. The fill was removed in early 2006.

5.2.4 Continuous Fill Across Areas I and G

Aerial photography showed that filling spanning the boundary between Areas G and I took place primarily by construction of the berm to contain the 1973 dredge fill. By 1976 we see the fill area being used for log sorting. It is likely that once the dredge fill dewatered and consolidated, the entire area was regraded to create a level surface for the log sorting activities we see in the 1976 aerial photograph. Most of the activity across the boundary between Areas I and G-1 between 1973 and 1982 appears to consist of regrading of the berm material. Minor amounts of dark material apparently originating from the Centrecon sandblasting area are evident crossing the boundary in the 1977 and 1980 aerial photographs, however the visible evidence of this dark fill suggests it extended only slightly onto Area I.

By 1982 the fence had been established between the two areas and after that, cross boundary filling was not feasible.

5.3 LANDFARM ON AREA I

The specific item of interest is: *"When the landfarming area in the northeast corner of Area I was created, when it was decommissioned, and where the treated soil was placed (if discernable from aerial photographs)."*

The landfarm was clearly evident in the aerial photograph dated August 10, 1992. ECI (Earth Consultants, Inc.) sampled the location of the landfarm in September-October 1991 and did not mention or show a landfarm. AGI (Applied GeoTechnology, Inc.) visited the site on 6/30/1992 and observed the landfarm (they had intended to sample the soil in that area and were not aware of the presence of the landfarm). The next aerial photograph available, chronologically, was August 1, 1993 and the landfarm was not present in this photograph. Based on this information, the landfarm was constructed sometime between October 1991 and June 30, 1992 and was removed some time between August 10, 1992 and August 1, 1993.

The only mention of a landfarm in the literature is included in reports by Landau Associates that refer to a landfarm of soils from the removal of three tanks from 1100 – 13th Street in 1991. The Landau Phase I ESA refers to 50 CY (cubic yards) of soil being "placed in a bermed area and aerated". The description goes on to state that the soil was then placed on Port property to the north. The specific location of the soil placement was not noted. This description is included in a letter received by Ecology in August 1991. The Landau Data Gaps Investigation for the subject site corrects the information in the Phase I ESA and states that the tank removal was from Area M, on the north side of 13th Street, not the south side as previously reported.

We considered the likelihood of the landfarm in the 1992 photograph being the landfarm cited by Landau even though the dates differ. The Landau report describing the landfarming activity seems to be clear that the date associated with that landfarm is in the summer of 1991. We have confirmed that the date of the aerial photograph showing the landfarm on Area I is indeed August 10, 1992 which conflicts with the dates reported by Landau. The landfarm in the photograph is approximately 80 by 90 feet. This landfarm is significantly larger than a landfarm needed to treat 50 CY of soil. Fifty CY would be spread to a thickness of two to three inches in a landfarm of this size. Notwithstanding, we reviewed aerial photography for July 2, 1991 and found no evidence of landfarming activities in the general area of the subject site or properties to the south.

The 1993 aerial photograph shows Area I being heavily used for log sorting. There is a possible fill pile located near the northern fence of Area I about 40 to 50 feet from the fence bordering Area G. This pile could be the consolidated landfarm material but we found no information to further support or refute that possibility.

While we can bracket the dates of the presence of the landfarm on Area I we cannot resolve any information about the source, character or final destination of this soil. The anecdotal information about the treatment of soil from a tank removal from Area M reportedly one year earlier could match this feature if the dates reported were incorrect and if additional soil was landfilled as well. Any further conclusions would be speculative given the information we have reviewed.

5.4 CONSTRUCTION DEBRIS AND BURIED STRUCTURES IN AREA J

The specific item of interest is: *"When construction debris was placed as fill in Area J-3 and the source and nature of the buried structures found in western portion of Area J."*

5.4.1 Area J-3 Fill

Area J-3 encompasses the part of the former Hulbert Mill that contained what were likely the most permanent structures associates with the mill operation. Those structures are the boiler house and associated boiler stack, the refuse burner (an 85 foot tall cylindrical iron structure), and the water tower. The 1950 Sanborn map describes these facilities as a "concrete chimney," an "iron refuse burner – 85 feet high" and a "steel water tank on steel trestle – El. 85' – 75,000 gallons." All of these structures would have required substantial foundations which were likely concrete pile caps since all of these structures were constructed over the intertidal area. These three structures were also the last removed after demolition of the mills. The mills were reportedly removed in the early 1960s and the last photograph showing the mill buildings is dated 1961. The 1970 deposition of Mr. William Hulbert, Jr. (father of William G. Hulbert, III) cited the removal of the mill and associated structures as having occurred in 1962. By 1965 all of the mill structures and buildings had been removed except the boiler stack, the refuse burner, and the water tower. By 1967 the refuse burner had been removed and by 1976 the remaining two structures had been removed.

A photograph of the operating mills from the 1930s and subsequent photographs through the 1960s show that debris and granular material was dumped in the area of Area J-3. Based on the proximity, it is possible that bottom ash from the refuse burner was also dumped at this location. The area south of these three structures was gradually filled up until the early 1970s when the large, engineered dredge fill of Area I and parts of Area J was completed.

The extent of structures demolished in 1962 was significant. Historical accounts describe the sawmill fire in 1956 which left it inoperable. Many of the accounts refer to the sawmill "burning down." Aerial photographs show the sawmill structure still present in 1961, five years after the fire. Review of aerial photography shows that the fire actually consumed the lumber storage docks, lumber sheds, one stream dry kiln and two planing mills – all features located north and east of the sawmill.

All mill activities ceased in the early 1960s and all of the mill structures were removed except for the three tall structures. We would expect that a large amount of non-salvageable materials were burned in the refuse burner as the two mills were demolished. This could have included painted wood and possibly treated wood. Residues from these burned materials would accumulate in bottom ash.

Significant changes occurred at the site between two sets of photographs we have of the site - 1956 and 1961. The 1956 photographs show the entire mill in operation and the 1961 shows the area after the mill fire. As discussed in the filling section, it appears that significant filling occurred in this intervening period. A bulkhead is evident surrounding the west and north sides of the burned area in 1961 that was not present in 1953. One test pit on the north side of the property encountered this bulkhead and reported that the lagging was 12"x12" treated wood. The type of treatment was not noted. In our experience, timber and piling of the time period when the wall was constructed were oftentimes untreated cedar, although frequently mistaken as treated. The 1961 photograph show that the piling supporting this bulkhead extend at different lengths above grade. Construction of this bulkhead would have likely generated significant amounts of cutoffs, both from the piling and lagging. These cutoffs could have been burned in the refuse burner as well. If so, the bottom ash from the refuse burner could also contain residues from the wood treatment.

After cessation of all mill activities Hulbert continued to use the intertidal area for storage of log rafts and it appears that some log handling continued. The excavated log pond remained in use and the area immediately to the south and east of it remained near its original intertidal elevation. This is the area to the south of the three structures described above and within Area J. By 1973 this entire area was filled.

The locations of the smokestack, the refuse burner and the water tower structures relative to Area J and J-3 and historical photographs are shown in Figure 11. Since the pile cap foundations for these structures would have been at least ten feet below the filled grade it is unlikely that they were removed. The foundation for the refuse burner would have encroached upon the northwestern corner of area J-3.

The buried "construction debris" which reportedly extends to a significant depth in Area J-3 may also include debris and wastes from past operations. There is no evidence of significant filling in this area after 1976.

5.4.2 Buried Structures in the Western Part of Area J

The Landau Interim Action Report (2009) discusses two buried concrete structures located on or near the western part of Area J. One of these structures which we'll refer to as the "irregular vault", was removed by Kleinfelder in October, 1993. The other structure is portrayed as a "square vault" on Figure 8 of the 2009 Landau report. We understand that both structures were removed from the site. We have identified the origin and actual location of both of these structures. The identification was complicated by errors in the Kleinfelder report that resulted in their reporting of an incorrect location of the irregular vault in their site plan and the same error in subsequent site plans that relied upon the original Kleinfelder plan.

The 1959 Sanborn map identifies a west to east oriented metal overhead conveyor structure which terminates at a square concrete vault at its eastern end. The labeling of the concrete structure is "CONC. PIT" and the pit is partially overlain by a feature that appears to be labeled "SOIL SHED" except that the word "soil" is difficult to read and has been partially inferred. Nearby to the southeast of this structure is an irregular shaped vault, similar to the shape of the vault documented by Kleinfelder. This irregular vault is titled "CONC. PIT" and "LOG DUMP." The 1967 Sanborn map only shows the irregular vault which is labeled as "CONC.PIT" and "WASTE BURNER DUMP." Both of these features are faintly visible in photographs dating from 1961 to 1967. They are not visible in the 1955 aerial photograph which shows the 12th Street Pier fill shortly after its initial construction, nor are they visible in the 1974 aerial photograph taken after the second fill of this portion of the 12th Street Pier fill was completed. It is likely that both of these structures were buried by the second fill.

A 1974 engineering drawing shows a square feature at the location of the square foundation structure identified in the Landau figure. That engineering drawing, which was prepared by Reid Middleton Associates for the 12th Street Channel Barge Terminal, identifies this feature, along with other features as "Old concrete foundations to be removed." This drawing places that feature at the same location of the irregular vault shown in the Sanborn map and in the aerial photography. Figure 12 provides an overlay of these locations on the pertinent part of Figure 8 from the Landau 2009 report.

The final confirmation of the mistaken location of the irregular vault by Kleinfelder comes from their own report. Photo Plate 1 in the Kleinfelder report shows several photographs taken during the removal of the vault. One photograph, taken looking to the southeast, shows the MSRC building in the background. Features on the side of the building (a bay door and windows) confirm that the irregular vault was actually located approximately 150 feet north of the location shown in their report.

The actual locations of both of these concrete structures is shown in Figure 12. Both features lie within Area J. The source of the waste materials buried within the irregular vault was not identified but they were likely placed in the vault prior to it being covered over in late 1973 to early 1974. Section 5.7 of this report documents that activities in this part of Area J were largely related to and under the control of business to the west of Area J at that time.

Pertinent portions of the aerial photographs and documents cited in this discussion are shown in Figure 12.

5.5 NORTHERN BOUNDARY OF AREA G

The specific item of interest is: *"Activities or structures along the north boundary of Area G that could have caused the petroleum hydrocarbon and polychlorinated biphenyls (PCB) contamination identified in this area (See 2005 Landau Associates document)."*

5.5.1 Background

The northern boundary of Area G is presently occupied by an underground storm sewer line. In late 2004 a repair was made to a storm drain line and evidence of contamination was noted in excavated soils. The location of this repair is shown in Figure 13. Analytical testing of the soil stockpile from the excavation showed low concentrations of mid-range to heavy-range petroleum hydrocarbons, several PCB aroclors and cPAHs. Furthermore, the soils encountered included concrete fragments and mixed fill suggesting that this area was used for disposal of demolition debris. Follow up testing by Landau Associates shortly after the repair (early 2005) encountered the mixed fill and found the contamination to be localized to the general area of the repair excavation. Samples tested by Landau found evidence of PCBs, PAHs and low concentration petroleum contamination. PCBs and PAHs were found in a soil sample from the initial excavation stockpile. Relatively high concentrations of volatile organic compounds were found in a sample obtained from a depth at or near the top of the storm drain line, close to the repair area. The suite of analyses performed was not consistent from sample to sample so it is difficult to identify patterns between different samples evaluated.

Although the requested scope of this task is to identify possible sources of petroleum hydrocarbons and PCBs in the fill it is important to consider all contaminants detected as indicators of a source area, including contaminants at concentrations well below action levels. Other contaminants observed in the fill stockpile and soil samples collected and analyzed by

Landau include chlorinated solvents (methylene chloride, 1,1,1-trichloroethane and tetrachloroethene) and methyl ethyl ketone (2-butanone). The petroleum distillate volatile organic hydrocarbons in one sample were suggestive of a kerosene or kerosene/gasoline type mix. These solvents and volatile petroleum products are not uncommon to encounter in automotive or truck shop/repair facilities. The PCB aroclors suggest two sources. Aroclors 1254 and 1260 are commonly associated with electrical equipment, specifically transformers. Aroclor 1248 is commonly associated with hydraulic oils. The metals identified are found at many locations across the subject site and as such may not be useful for considering a specific source of the organic chemicals identified in the fill. Based on the chemistry, the likely sources include shop wastes and releases from electrical equipment.

The area of concern lies between the Ameron Building and the northern property line. Figure 13 shows the succession of change in the area of concern between 1967 and 2005. This area was originally tide land and the first construction there was a pile supported dock used for storage. We do not know specifically when this area was initially filled, but by the 1960s the former mill dock structures appeared to be largely underlain by fill, including this area. Until mid-1977, the northern property line along most of Area G is clearly identified by the piling at the edge of the former dock and the much lower grade on the adjacent property to the north. Although the property to the north had been partially filled, a drainage ditch remained along its southern margin – just north of Area G. By mid-1978 the property to the north was filled to approximately the same grade as area G, including this drainage ditch. The storm line, which was likely installed in about 1981-1982, lies several feet south of the northern property line and discharges at the northwestern corner of Area I. The catchment for the portion of the drain line upgradient of the release location encompasses the building east of the Ameron Building and the eastern-most building on the property to the north. The basis for our estimate of the 1981-1982 date range for the installation of the storm sewer system is based on a combination of site development factors evident in aerial photographs including the presence and subsequent removal of substantial fill along the northern margin of Area G and the paving of areas where the storm sewer is now present.

5.5.2 Contaminant Source Scenarios

Four possible scenarios could have led to the presence of soil contamination in the vicinity of the storm line break, these are: 1. Contaminants were already contained within the fill soil surrounding the storm line at the time of placement, 2. The fill soil became contaminated from local releases to the ground surface, 3. Contaminants originated from stormwater leaking from the damaged storm line, and 4. Contaminants migrated to their present location from the property to the north. Each of these scenarios requires a different approach to evaluate. A brief discussion of each scenario is needed to focus on the potential source areas.

Contaminants Contained Within Backfill or Originating from a Surficial Release

The area between the north side of the Ameron Building and the Property line is approximately 80 feet wide. The 30 feet closest to the building is presently paved and the remaining northerly 50 feet has historically been used for storage of fill and equipment storage. As previously mentioned, the original filling of this area appears to have been complete sometime prior to the mid-1960s. Prior to then the area had been a pile supported dock used for the storage of lumber. This area was largely unused until the area was graded for construction of the large manufacturing building in 1972. Through the 1970s and early 1980s the fifty-foot zone next to the property line was at times occupied by piles of fill material. Based on our aerial photograph review it appears that there was no substantial post-sawmill fill placement on the subject area. We observed no evidence that the occupants of the property to the north used the subject property for fill disposition. It is likely that any fill or equipment storage in this area was under the control of the occupants of the manufacturing building. We have not been fully briefed on the historical industrial activities that occurred in and around the manufacturing building but we would expect that the activities could have generated shop wastes and waste hydraulic oil. We would also expect that electrical demand could have necessitated on-site electrical infrastructure. There is other evidence of electrical equipment on the subject property. A small substation occupied the southeastern corner of the entire property (the southeastern corner of Area M) between 1954 and 1969. Aerial photography from 1980 shows pole-mounted transformers on a utility pole at the northeastern corner of Area G. Furthermore, one oblique photograph from 1977 shows a feature that was possibly a small substation and/or electrical switching facility at the northeastern corner of Area M, however, the quality of the photograph prevented confirmation of this observation and there is no other account of such a feature.

Through the sequence of fill and debris accumulation, excavation and placement of the storm drain line, and periodic regrading and reorganization of the area north of the Ameron Building, the conditions observed in the excavation (buried concrete debris and mixed fill), could have accumulated in this area. We cannot, however, rule out the possibility that the debris and mixed fill in this area is comprised of debris from the former sawmill which could have been used as fill behind the bulkhead. Close examination of the debris would likely allow the distinction of the relative age of the concrete material.

Since contaminant sources consistent with the contaminants found in the soils in the northern part of Area G are likely present in Areas G and M, the source of the contaminants in the soil could have been from the subject site.

Contaminants Originating from the Property to the North

The area north of the large manufacturing building was always separate from the adjoining property to the north. It was filled in the 1960s or earlier. This area was subsequently used for the storage of materials and what appear to be soil and/or debris piles. The progression of site development activity suggests that the storm sewer system was installed in 1982. This would have required excavation and filling. The potential for cross-over activities from the property to the north were minimal prior to mid-1977 because of the significant grade difference – the northern property line was characterized by a vertical wall corresponding to the northern edge of the bulkhead structure. The property to the north was finally filled to the approximate grade of the property to the south between mid-1977 and mid-1978. A fence may have been constructed between the two properties as early as 1978 but it is not visible in aerial photographs until the 1990s. Even though the fence may not be visible in earlier photographs, the land use on the two adjoining properties since 1978 is consistent with a fence being present. We observed no evidence of filling activities in this area that may have crossed the property boundary.

After filling in 1978, the land use on the southern margin of the property to the north in the general vicinity of the storm line repair was associated with vehicle parking, boat parking/storage, and container storage. It is possible that drums were stored here but we saw no evidence of drum storage along the fence in the photographs evaluated. Structures on the property to the north are set back approximately 80-100 feet from the property line, consistent with the set back of the manufacturing building from the northern property line. This area was paved as early as 1979. The aerial photographs provide no evidence of specific on-going activities along the property margin that might have resulted in a localized release. However, aerial photograph review is not likely to identify a small release, intentional or unintentional, that might have occurred at the property line.

Contaminants Originating from a Break in the Storm Sewer Line

The portion of the sewer line upgradient to the contaminated area of the northern part of Area G collects storm water from portions of Areas M and G and from the east and west side of the eastern-most building on the property to the north. Figure 14 shows the drainage system configuration in this area.

The area drained on the property to the north is occupied by TC Systems (1032 West Marine Drive). The two eastern-most buildings and likely the third are all occupied by TC Systems. In 2009 Ecology (The Washington State Department of Ecology) fined TC Systems for multiple hazardous waste violations. The fines applied to violations found in 2007 and 2008, most of which were repeat violations found in prior inspections dating back to 1997. Ecology cited spilled compressor oil entering a storm drain, paint solvents set out to evaporate and numerous other housekeeping and procedural issues. Aerial photography from 1995 to 2005 shows that the area between the two eastern-most buildings was heavily used for equipment, materials and possibly waste material storage. This photograph is shown in Figure 14. This photograph coincides with the time frame for the discovery of the contaminated soil in the area of the sewer line break. The full scope of possible contaminants from this facility is unknown but the Ecology documentation identifies possible contaminants consistent with some of those observed in the soil.

As mentioned in the previous section, there are also likely sources for these contaminants on the subject property (Areas G and M) which also drain into the storm drain system. In addition to active business operations areas, the 1995 photograph shown in Figure 14 shows that the northeastern corners of both Areas M and G were used for storage of equipment and waste accumulation (note the blue dumpster).

In October, 1992 ECI sampled and analyzed sediment from the storm sewer outfall at the northwestern corner of Area I. The sample was analyzed for petroleum, selected metals and organochlorine pesticides and PCBs. Petroleum hydrocarbons were present (undifferentiated) and PCBs were not detected although matrix interference resulted in an elevated reporting limit such that the data are of limited use in comparison to Landau's finding at the subject area.

It is possible that the source of some of the organic contaminants observed in the fill soil are from the break in the storm sewer line. This could be further evaluated by additional analysis of residue in the storm drain line and at the outfall. However, it is unlikely that metals contamination noted in the soil is related to the break in the storm sewer line. There is insufficient information to indicate a relationship between the metals contamination and the organic chemical contamination.

5.6 ACTIVITIES CROSSING THE NORTHERN PROPERTY BOUNDARY

The specific item of interest is: *"Whether the operations in Areas G or I extended across the Site boundary to the north at any time during the Site operational history and, vice versa, whether operations to the north extended onto Areas G or I and may have impacted these areas."*

The boundary between Area G and the property to the north has always been a physical barrier preventing physical movement across the property line. Until the property to the north was filled, the northern margin of Area G was the northern edge of a former sawmill dock structure which was ten of more feet higher than the adjoining property. The intertidal zone beneath the dock structure appeared to have filled by the 1960s and a bulkhead replaced the dock structure.

The northern property line between Area G and the property to the north was an incised drainage until the eastern part of the property to the north was filled to its present grade. In 1973 when the large dredge fill was placed, an intertidal drainage channel extended nearly to Marine View Drive.

The boundary between Area I and the property to the north was also partially characterized by the same dock structure. The western-most part, however, was common intertidal land until a major dredge fill placement in 1973. This engineered dredge fill placed in 1973 spanned the subject property, including parts of Areas J, I and G. Figure 15 shows the engineered fill placed in 1973. As as-built drawing by Reid Middleton Associates shows the dike and berm structures that were constructed on Areas J, I and G and extended onto the property to the north, as did the dredge spoil fill. The dike was constructed, at least in-part, from soils excavated from the northeastern corner of Area I and described in the 1973 engineering drawing. Furthermore, log and timber debris from the fill project was stockpiled north of the fill on the property to the north. This is also shown on the engineering drawing.

In 1976 a dike structure was built on the property to the north in preparation for its filling. The eastern-most extension of that dike structure was approximately even with the boundary between areas G and I. This dike structure prevented movement across the property line between Area I and the property to the north.

Once the property to the north was filled, the boundary between Area I and the property to the north was not distinguishable. By 1977 there was evidence of cross-over between the properties as is evidenced by a dirt road. Between 1977 and 1982 when Area I was filled and graded there was opportunity to move across the property line. During this period Area I was used for log storage and there are there are multiple examples of movement across the property line visible in aerial photographs as dirt roads and vehicle tracks. However, use of the property to the north for storage of logs or soil appeared to be minimal and also appeared to just straddle the property line.

With the filling of Area I in 1982 the boundary between Area I and the property to the north was established and no cross-over occurred until 2005 when construction, presumably by the Port of Everett, spanned the two properties.

5.7 ACTIVITIES CROSSING THE SOUTHERN AND SOUTHWESTERN PROPERTY BOUNDARY

The specific item of interest is: *"Whether operations in Areas J, I, or M extended across the Site boundaries to the south or southwest at any time during the Site operational history and, vice versa, whether the operations to the south or southwest of Areas J, I, or M extended across the Site boundaries and impacted these areas."*

In about 1955 a large non-dredge fill was placed that encompassed much of Area J. This fill was incorrectly interpreted to be a sawdust pile in Exhibit A – Figure 7 of the Final Agreed Order. This fill was bounded on the west by a low wall structure, possibly a constructed soil berm. This structure is clearly visible in early aerial photographs of the fill. Another, less obvious berm was constructed near the eastern margin of the fill and a wedge of fill was placed east of this berm, likely intended to merge the new grade into the site grade east of the Collins Building. The newly filled area had its own access road from 13th Street as did the area just west of the wall.

The west wall of this fill formed a natural division of the site which then continued to propagate through future uses of this part of the site. The 1957 and 1968 Sanborn maps describe an eight foot high wire fence at the western margin of this wall (see Figure 12). Land use of the area west of this wall was tied to the activities of businesses west of Area J and west of the Agreed Order site. The area immediately next to the west side of this wall became a parking and equipment laydown area apparently associated with the business activities to the west. The two areas, east and west of the boundary had their own separate access roads from 13th Street. Traffic flow patterns and visual evidence of site access suggests that activities in Area I and the filled part of Area J did not encroach on the part of Area J west of the wall and fence.

When the 12th Street pier received additional fill in late 1973 to early 1974 the newly filled site grade may have then approximated the grade at the top of the wall. Despite this, the division of site use appears to have persisted with the division formed by the fence, vegetation and use of this area for storage. With the completion of site development associated with the construction of the MSRC Building in 1993 a drainage swale was constructed at the alignment of the former berm and fence.

After construction of the 12 Street Barge Wharf in the mid-1970s the road access between the area west of the boundary opened up to allow access to the wharf. To accommodate this, parts of Area J and I were graded and paved. From this date forward, Area I was generally accessible from this route. From 1982 to about 1993 the part of Area J east of the boundary was also accessible by this route but only by passing through Area I. With the construction of the MSRC Building in 1993 Area J became even more limited from Area I.

Business activities on Area I appeared to use the area west of the wall for access purposes starting in about 1982. It appears that this area was used for through truck access but there did not seem to be evidence of industrial activity associated with this site use.

There is no evidence of active industrial features on the western part of Area J, west of the fill constructed in 1955 except for the concrete structures discussed in Section 5.4.2 of this report. This area was used for traffic, parking and equipment storage and laydown which, for the most part, was associated with businesses to the west of the Agreed Order area. The use of the area for equipment storage and laydown could have resulted in localized contaminant release events. The land use in this area, spanning 55 years, is shown in the series of 21 aerial photographs shown in Figure 16.

6.0 THE REFERENCES USED

We relied upon references provided to us by the PLP Consultants, documents provided by The Nadler Group and documents found through our own research and inquiries. The attached list of references differentiates between documents provided to us by the PLP Group and documents we obtained through the Nadler Group and our own research. A considerable number of aerial photographs were provided to us in both paper and digital form. We obtained additional aerial photographs including photographs to create stereo pairs with individual photographs provided to us. Appendix A includes an inventory of aerial photography collected and reviewed for this study. The attached DVD includes digital copies of all aerial photographs including PDFs of stereo pairs arranged for viewing.

7.0 LIMITATIONS

Pinnacle GeoSciences, Inc. prepared this report for use by (the PLP Group). This report may be made available to regulatory agencies and to other parties authorized by (the PLP Group). The report is not intended for use by others and the information contained herein is not applicable to other sites.

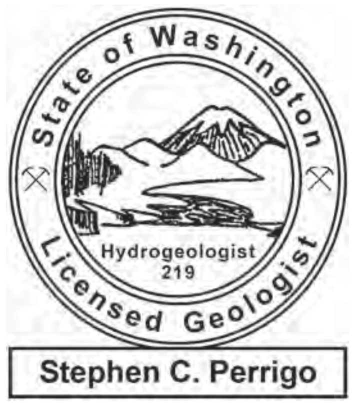
Pinnacle GeoSciences has relied upon information provided by others in our description of historical conditions and prior studies. The available data does not provide definitive information with regard to all past uses, operations, incidents or conditions at the site and the vicinity of the site. Our interpretations of site conditions are based solely on review of reports and historical documents. We have not visited the site.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices for environmental services of this type in Washington at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

8.0 CLOSING

Pinnacle GeoSciences appreciates the opportunity to provide environmental consulting services to the PLP Consultants. Please contact us if you have any questions concerning this report.

Sincerely,
Pinnacle GeoSciences, Inc.



Stephen C. Perrigo, LHG, LG
Principal

List of References

Note: *Sources* are identified in parenthesis after citations. The document number refers to the document number as it is identified in the project digital file.)

Nadler Law Group, : (Nadler 0000xxx.pdf),

(Nadler) : source of technical drawings not scanned to digital file

Pacific Groundwater Group (PGG): (xxxxxxx), and (oprxxxxx.pdf)

Landau Associates: All technical reports

Pinnacle GeoSciences: all other documents

Photographs:

A detailed summary of all photographs and sources is included in Appendix A of the report.

Maps and Technical Drawings: (listed chronologically)

General Land Office Plat Map Cadastral Survey 29-5e-A Township 29 North, Range 5 East, Willamette Meridian, WA, T29, R5, February 18, 1884

Plat Map, Section 18, Township 29 Route 5, n.d. (ca. 1890s) (Nadler)

USGS Topographic Map, Adjoining Quad, Seattle, 1897

USGS Topographic Map, Mt. Vernon Quad, 1911

USGS Topographic Map, Marysville Quad, 1947, 1956, 1968, 1973

USGS Topographic Map, Adjoining Quad, Everett, WA 1944, 1947, 1953, 1968, 1973

Sanborn Insurance Maps, 1914, 1950, 1968 (Landau)

Sanborn Insurance Map, 1957 (Seattle Public Library)

Plat of Everett Division "R", Snohomish County, WA, 1906 (opr111342-1-1.pdf)

Map showing boundaries of Everett, Washington, December 7, 1915 (opr216733-1-1.pdf)

Anderson, Bjornstad, Kane, Jacobs conceptual industrial development drawing, n/d (Nadler 000304.pdf)

Hulbert/Port of Everett easement area drawing and legal description , n/d. (Nadler 000028.pdf)

Great Northern Railroad Everett Section, Everett #7, Snohomish, Washington, Section 7 & 18, May 1960 (Nadler)

Reid, Middleton & Associates, *Proposed Channel Dredging, RipRap and Hydraulic Fill areas,* dwg no. 7.76.D, March 1971 (Nadler 000368.pdf)

Record of Survey for Port of Everett, Sec 18/29/5, September 28, 1973 (opr21315537-1-1.pdf))

Reid, Middleton & Associates, *Port of Everett 12th Street Channel Diking & Landfill*, January 2, 1973 (Nadler)

Engineering drawing of Proposed Concrete Pier and Bulkhead, 12th Street Channel, Everett, WA prepared by Reid, Middleton & Associates, July 11, 1974 (Nadler 00009.pdf)

List of References (continued)

Engineering drawing of proposed concrete wharf and fill at 12th Street Channel, Everett, WA prepared by Reid, Middleton, August 27, 1974 (Nadler 00004.pdf)

Reid, Middleton & Associates *Partial Topographic Survey Vicinity East Endof 12th Street Channel with Proposed Grading of Stockpile,* for Port of Everett, August 30, 1974 (Nadler 000371.pdf)

___, *Port of Everett 12th Street Channel Barge Terminal Site Preparation Sub-Grade Plan and Details,* December 27, 1974 (Nadler)

___, *Port of Everett 12th Street Barge Terminal Storm Sewer Plan and Details,* December 27, 1974 (Nadler)

___, *Port of Everett 12th Street Barge Terminal Final Grading Plan and Details,* December 27, 1974 (Nadler)

___, *Port of Everett 12th Street Channel Barge Terminal Concrete Pier Approach Fill and Location Map,* January 6, 1975 (Nadler)

U.S. Army Corps of Engineers Maintenance Dredging of Everett Harbor and Snohomish River, February 13, 1976 (Nadler)

___, Everett Harbor and Snohomish River Condition, March & April 1979 E-2-8-179 (Nadler)

___, Everett Harbor and Snohomish River Condition, March & April 1979 General Layout (Nadler)

___, Everett Harbor and Snohomish River Condition March 1979 (Nadler)

Lease area map of Centrecon property by Reid, Middleton & Associates drawn 11/19/1982 (Nadler 00007.pdf)

Survey of 1028 Norton Avenue, Everett, March 12, 1984 (8403125019)

Survey of 1028 Norton Avenue, March 12, 1984 (opr8403125019-1-2.pdf)

Plat of Survey for Port of Everett, SW1/4 SE ¼ 18/29/5, March 13, 1985 (opr8504155001-1-1)

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Bill of Sale, Utility Vault Co., and Ameron, September 30, 1988 (Nadler 000132.pdf)
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Industrial Lease, Hulbert Trust and Sandy's Boat House, November 1, 1990 (Nadler 000158.pdf)
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Aerial Photograph Inventory - North Marina Ameron / Hulbert Site

February 16, 2010

Year	Pair?	File Name (without year prefix)	Image Source	Acquired by:	Photo Date	Oblique?	Color?	Comment
1920c		Everett Waterfront.jpg	www.Historylink.org	PGS-online	estimated	X		
1920s		Collins Casket - Historylink.org	www.Historylink.org	PGS-online	estimated	X		
1925		Mill and Casket Co - Historylink.jpg	www.Historylink.org	PGS-online	1925	X		
1928		1928 - Everett Library Digital Collection.jpg	Everett Library Digital Collection	PGS-online	1928	X		
1928		1928-2 - Everett Library Digital Collection.jpg	Everett Library Digital Collection	PGS-online	1928	X		
1930s		1930s - Sawmill.jpg	"Morrison Photo" in ink	Nadler	estimated	X		date estimated from cars (newest: 1935 Ford)
1947	Pair	D47-294.jpg	AeroMetric	L-H	1947			
1947		Hulbert_aerial_1947.tif	AeroMetric	PGWG-D	1947			Pair with other 1947 pic, this is D47-293
1953		1953 - Sawmill Oblique	unknown	Nadler	1953	X		year noted on back
1953c		1953c - Clark's Aerial		Nadler	estimated	X		Clarks Aerial Broadcasting & Photography
1953		1953-08-18 - Western Ways	Western Ways	Nadler	8/18/1953	X		Western Ways Inc. - stamped on back
1954		1954-10-01 - Western Ways.jpg	Western Ways	Nadler	10/1/1954	X		Western Ways Inc. stamped on back
1955	Pair	D55-9N-34.jpg	AeroMetric	L-H	1955			
		D55-9N-35.jpg						
1955		Hulbert_aerial_1955.tif	AeroMetric	PGWG-D	1955			
1956		EDR Aerial Photo 1956.jpg	EDR	L-EDR	4/9/1956			
1960		1960 - Oblique - Everett Reynolds.jpg	Everett Reynolds	Nadler	early 1960 in pencil	X		Everett Reynolds
1961		8-11-1961-crop2.jpg			8/11/1961			
1965		K-SN-65 15B-32.jpg	WDNR	L-H	7/6/1965			
	Pair	K-SN-65 15B-34.jpg						
		K-SN-B 15B-33.jpg						
1966	Pair	7-29-66_1-5-2-22_north 400dpi.jpg	Unknown	L-D				
		7-29-66_1-5-2-20_south 400dpi.jpg						
1967	Pair	Hulbert_aerial_1967.tif	AeroMetric	PGWG-D	1967			SN-C
		SNC-1967, 6-25	AeroMetric	PGS-AM				
1968		EDR Aerial Photo 1968.jpg	EDR	L-EDR	9/2/1968			
1969		1969-08-02 - Pete Kinch - 422-1-69.jpg	Pete Kinch	Nadler	8/2/1969	X		
1969		1969-08-02 - Pete Kinch - 422-1-70.jpg	Pete Kinch	Nadler	8/2/1969	X		
1969		1969-08-02 - Pete Kinch - 422-2-69.jpg	Pete Kinch	Nadler	8/2/1969	X		annotated with fill location
1970	Pair	NW-69 235 48A-31.jpg	WDNR	L-H	6/2/1970			
		NW-69 235 48A-32.jpg						
1971		EDR Aerial Photo 1971.jpg	EDR	L-EDR	9/18/1971			False Color
1973	Pair	S73027-6-4	Army Corps of Engineers	PGS-AC	9/13/1973			digital enlargement
		S73027-6-5						
1974	Pair	S74047-56-3	Army Corps of Engineers	PGS-AC	6/11/1974			digital enlargement
		S74047-56-4						
1976	Pair	Hulbert_aerial_1976.tif	AeroMetric	PGWG-D	1976			76-4011 SNC 5-26
		SNC-1976, 5-27	AeroMetric	PGS-AM				
1977		1977_SNO0677_105.jpg	Ecology Coastal Atlas	PGWG-D	6/17/1977	X	C	
		1977_SNO0677_120.jpg				X		

Aerial Photograph Inventory - North Marina Ameron / Hulbert Site

February 16, 2010

Year	Pair?	File Name (without year prefix)	Image Source	Acquired by:	Photo Date	Oblique?	Color?	Comment
		~~1977_SNO0677_108.jpg~~				X		does not include site
1977	Pair	S77025-56-4 S77025-56-5	Army Corps of Engineers	PGS-AC	9/12/1977			digital enlargement
1978		NW-78 61A-144.jpg	WDNR	L-H	6/2/1978			
	Pair	NW-78 61A-143.jpg NW-78 61A-145.jpg						
1978	Pair	S78044-56-3 S78044-56-4	Army Corps of Engineers	PGS-AC	7/22/1978			digital enlargement
1979		Block 32-854.jpg		L-H	6/26/1979			
1979	Pair	S79004-56-3 19 Jul 79.jpg S79004-56-4 19 Jul 79.jpg	Army Corps of Engineers	PGS-AC	7/19/1979			digital enlargement
1980		1980 - Kelly O'Neil.jpg	Kelly O'Neil	Nadler	1980	X		pencil on back: "Photo by Kelly O'Neil 80"
1980		1980-04-11 - Walker-a and -b.jpb	AeroMetric	Nadler	4/11/1980			Two copies - one is cropped
1980	Pair	80-5511(1-3) 80-5511(1-4)	AeroMetric	PGS-AM	4/11/1980			digital enlargement
1981		Hulbert_aerial_1981.tif	AeroMetric	PGWG-D	2/27/1981			SS1-81 16B-22
1981		EDR Aerial Photo 1981.jpg	EDR	L-EDR	7/26/1981			False Color
1982		Hulbert_aerial_1982.tif	AeroMetric	PGWG-D	6/16/1982			KS8-42
1982	Pair	KS-1982,8-42 KS-1982,8-43	AeroMetric	PGS-AM	6/16/1982			digital enlargement
1983c		1983c - Source Unknown	unknown	Nadler	1983			post-it with "83?" on back
1983		NW C83 11 48-283.jpg	WDNR	L-H	5/22/1983		C	
1983		S83020-56-2	Army Corps of Engineers	PGS-AC	7/17/1983			
1985		8-14-85-crop.tif		L-D	8/14/1985			
1987	Pair	12300 12 NW87 1 48-60.jpg 12300 12 NW87 1 48-61.jpg	WDNR	L-H	6/17/1987			
1988		7-20-88-crop1.tif		L-D	7/20/1988			
1989		PS-89 18600 ASL Z6 15 11.jpg	AeroMetric	L-H	9/19/1989		C	Low res of site
1990		EDR Aerial Photo 1990.jpg	EDR	L-EDR	7/10/1990			
1990	Pairs	1990-08-28 - NEIS Mapping - 1-1.jpg 1990-08-28 - NEIS Mapping - 1-2.jpg 1990-08-28 - NEIS Mapping - 1-3.jpg 1990-08-28 - NEIS Mapping - 1-4.jpg 1990-08-28 - NEIS Mapping - 2-3.jpg 1990-08-28 - NEIS Mapping - 2-4.jpg	NEIS Mapping Group Inc.	Nadler	8/28/1990			
1991		S91003-56-13.jpg S91003-56-14.jpg	Army Corps of Engineers	L-H	1991		C	
	Pair	S91003-56-13.x10.jpg S91003-56-14.x10.jpg						
1991		EDR Aerial Photo 1991.jpg	EDR	L-EDR	2/28/1991			

Aerial Photograph Inventory - North Marina Ameron / Hulbert Site

February 16, 2010

Year	Pair?	File Name (without year prefix)	Image Source	Acquired by:	Photo Date	Oblique?	Color?	Comment
1991		1991-07-02 - Northwest Air Photos.jpg	Northwest Air Photos	Nadler	7/2/1991	X	C	
1991		12400 12 NW91 14 48-110.jpg	WDNR	L-H	7/3/1991			
	Pair	12400' 12 NW91 14 48-111.jpg						
		12400' 12 NW91 14 48-112.jpg						
1992		8-10-92-crop1.tif	Army Corps of Engineers	L-D	8/10/1992			date fits features
1992	Pair	S92006-56-12 10 Aug 92.jpg	Army Corps of Engineers	PGS-AC	8/10/1992			digital enlargement
		S92006-56-13 10 Aug 92.jpg						
1993		1993_SNO0168_mr.jpg	Ecology Coastal Atlas	PGWG-D	1993			Low resolution
		1993_SNO0199_mr.jpg				X	C	Small image
1993		1000 HI-SPEED RAIL 32-348.jpg		L-H	8/1/1993		C	
1993		KIS-93 1''=2000' 17 19.jpg	AeroMetric	L-H	9/9/1993		C	small part of southern part of site.
1993	Pair	KIS-93, 17-17	AeroMetric	PGS-AM	9/9/1993			digital enlargement
		KIS-93, 17-18						
1995		S95006-56-4.jpg	Army Corps of Engineers	L-H	1995		C	
		S95006-56-5.pg.jpg						
	Pair	S95006-56-4.x10.jpg						
		S95006-56-5.x10.jpg						
1999	Pair	S99016-241-74	Army Corps of Engineers	PGS-AC	9/22/1999			digital enlargement
		S99016-241-75						
2000		S00007-241-75.jpg	Army Corps of Engineers	L-H	2000		C	
		S00007-241-76.jpg						
	Pair	S00007-241-75.x10.jpg						
		S00007-241-76.x10.jpg						
2000?		2000_000925_114918_lg.jpg	Ecology Coastal Atlas	PGWG-D	2000	X	C	
		2000_000925_122320_lg.jpg				X		
		2000_000925_122332_lg.jpg				X		
2002	Pair	S02008-241-74	Army Corps of Engineers	PGS-AC	7/21/2002			digital enlargement
		S02008-241-75						
2004		Hulbert_aerial_2004.tif		PGWG-D	6/4/2004		C	SND-04 6-23
2005		11-25-05.JPG		L-D	11/25/2005	X	C	
		11-25-05A.JPG				X	C	
		11-25-05B.JPG				X	C	
2006		EDR Aerial Photo 2006.jpg	EDR	L-EDR			C	
2006		2-7-06.JPG		L-D		X	C	
2006		3-3-06.JPG		L-D	3/3/2006	X	C	
2006		4-29-06.JPG		L-D	4/29/2006	X	C	
2006		2006_060627_03687.jpg	Ecology Coastal Atlas	PGWG-D	6/27/2006	X	C	
2006		9-24-06.JPG		L-D	9/24/2006	X	C	
2006	Pair	12-02-06.JPG		L-D	12/2/2006			
		12-02-06A.JPG						

Aerial Photograph Inventory - North Marina Ameron / Hulbert Site

February 16, 2010

Year	Pair?	File Name (without year prefix)	Image Source	Acquired by:	Photo Date	Oblique?	Color?	Comment

Unusable - either site is not shown or resolution makes it of no value

Year	Pair?	File Name (without year prefix)	Image Source	Acquired by:	Photo Date	Oblique?	Color?	Comment
1971		~~NW-H-71 343-11A-32.jpg~~	WDNR	L-H	7/3/1971			Very high flight - marginal use
2002		~~2002_000925_122326_lg.jpg~~	Ecology Coastal Atlas	PGWG-D	2002	X		
1940s		~~1940s_15-25.jpg~~	Ecology Coastal Atlas	PGWG-D				
1983		~~NW-C83-11 48-281.jpg~~	WDNR	L-H	5/22/1983		C	

Photos within Report Figures

Year	Pair?	File Name (without year prefix)	Image Source	Acquired by:	Photo Date	Oblique?	Color?	Comment
1884		t29nr05e_a.tif		PGWG-D	02/28/1884			1884 Plat Map
		t29nr05e_a_clip.tif		PGWG-D				
1947		1947_aerial.pdf	AeroMetric	PGWG-D	1947			
1955		1955_aerial.pdf	AeroMetric	PGWG-D	1955			
1967		1967_aerial.pdf	AeroMetric	PGWG-D	1967			
1976		1976_aerial.pdf	AeroMetric	PGWG-D	1976			
1981		1981_aerial.pdf	AeroMetric	PGWG-D	1981			
1982		1982_aerial.pdf	AeroMetric	PGWG-D	1982			
		ExhibitA_02_Fig02.tif						
1990		1990_Ortho.jpg		PGWG-D	1990			
2002		2002_Ortho.jpg	?Terraserver	PGWG-D	2002			
		2002_Ortho_zoom.jpg		PGWG-D				
2003		2003_Ortho.jpg	PGE - Snohomish County	PGWG-D	2003			
2004		2004_Aerial.jpg	AeroMetric	PGWG-D	2004			
2006		2006_Ortho.jpg	PGE - No Source Cited	PGWG-D	2006			
2007		2007_ortho.jpg	PGE - No Source Cited	PGWG-D				
		2007_Ortho_zoom.jpg	PGE - No Source Cited	PGWG-D	2007			
		July2008Parcels.jpg						

Key to "Acquired By:

L-H	Hardcopy received from Landau Associates. Scanned at 600 dpi.
L-D	Digital image received from Landau Associates.
L-EDR	Digital image from EDR report provided by Landau, images embedded in a PDF.
PGWG-D	Digital image received from Pacific Grounwater Group (via Landau).
Nadler	Provided by the Nadler Law Group PLLC as digital copies embedded in a PDF
PGS-AC	Army Corps of Engineers digital image purchased by Pinnacle GeoSciences.
PGS-AM	AeroMetric hardcopy purchased by Pinnacle GeoSciences and scanned at 600 dpi, original provided to Landau.
PGS-online	Acquired from on-line sources

Table 1 - Historic Operators and Features of Concern
North Marina Ameron/Hulbert Site
Everett, Washington

						Structure or Feature of Concern		
Operator	Feature	Area	Period	How Operations Ceased	General Activity	From Reports (references cited are listed below)	From Leases	From Observations
Hulbert Mill		G, M, I, J	1920s through 1962	Terminated operations and demolished above-grade structures.	Saw, shingle and planing mills			Steam turbine generator, blacksmith shop, boiler house, oil house, refuse burner, boiler stack, possible oil/PCB-containing electrical devices associated with electrical power generation and use. (Sanborn maps). Mixed, unusually colored fill and debris around burner and stack (air photos). Potential contaminants from mill fire.
Centrecon/Utility Vault/Oldcastle Precast	Plant Building	G	1972 - Sept. 1988	Purchased by Ameron	Concrete pole production, finishing and storage.	Dust collection system. (7) Drum storage inside and outside building, with drums in poor condition and visible soil staining. Three lined settling ponds. Outside sumps and catch basins. Sand blasting area with sand blasting grit accumulations on west side of building. Compressor room with oil staining on floor, and sump inside building. Unsafely stored flammables inside building. (6)		Settling ponds, sand blasting area with visible blasting sand accumulations on west side of building (air photos). Outside catch basins (engineering drawings). Fill area north of building (air photos).
Ameron			Sept. 1988 - present	Ongoing		Dust collection system. (7) Drum storage inside and outside building, with drums in poor condition and visible soil staining. Three lined settling ponds. Outside sumps and catch basins. Sand blasting area with sand blasting grit accumulations on west side of building. Compressor room with oil staining on floor, and sump inside building. Unsafely stored flammables inside building. (6) 350-gallon hydraulic oil AST. Exact location not identified. (1) Broken storm drain repaired in 2005. Concrete debris, discolored soil, and soil with petroleum odor observed. (5)	Same facilities as Centrecon	Settling ponds, sand blasting area with visible blasting sand accumulations on west side of building (air photos). Outside catch basins (engineering drawings). Fill area north of building (air photos).
Centrecon/Utility Vault/Oldcastle Precast	Lab/Storage Building	G	1986 - Sept. 1988	Purchased by Ameron	Lab, storage	12,000-gallon diesel UST. (7)		
Ameron			Sept. 1988 - present	Ongoing		12,000-gallon diesel UST, removed December 1988. (7)		
Centrecon/Utility Vault/Oldcastle Precast	Pole Polishing Building	G	1979 - Sept. 1988	Purchased by Ameron	Sandblasting, polishing, storage	Unlined holding pond [removed by 1991 (6)], three lined settling ponds. Discharge from lined settling ponds to storm drain system from about 1979 to at least early 1989. (7) Settling ponds were filled at the time that they were taken out of service. Two were filled with soil, one was filled with concrete dust and sand blasting grit. (8) Drum storage inside and outside building. Visible evidence of sand blasting. Air pollution control equipment outside building. (6)		Holding pond [removed by 1989 (air photo)] and settling ponds. Possible discharge of white slurry material to Area I 1978 to 1981 (air photos).
Ameron		G	Sept. 1988 - present	Ongoing		Unlined holding pond, three lined settling ponds. Discharge from lined settling ponds to storm drain system from about 1979 to at least early 1989. (7) Drum storage inside and outside building. Visible evidence of sand blasting. Air pollution control equipment outside building. (6)		Holding pond and settling ponds (air photos).
Centrecon/Utility Vault/Oldcastle Precast	Warehouse and Spray Booth Building	G	1979 - Sept. 1988	Purchased by Ameron	Concrete sealant spraying	Improper flammables storage, application of spray sealant on west side of building, evidence of sand blasting grit. (6)		
Ameron		G	Sept. 1988 - present	Ongoing		Improper flammables storage, application of spray sealant on west side of building, evidence of sand blasting grit. (6)		
Centrecon/Utility Vault/Oldcastle Precast	Laydown Area	J, M	1972 - 1982	Subleased area	Pole storage	No areas of concern documented.		
Collins Casket/Keys International	Main Building	M	1926-1996	Business closed	Casket fabrication	Boiler, and diesel AST with secondary containment. Waste paint containers and soil staining visible in vicinity of "smoke shack." (6)		Collins Casket boilers (2) and AST (Sanborn maps and air photos).
Collins Casket	Warehouse	M	1961 - ?	unknown	Casket warehouse	No references in reports.		Metal fabrication, spray painting (Sanborn maps).
Dunlap Towing		I	1987		Storage	Crane and metal scrap in far northwest corner of Area I, owned by Dunlap Towing and stored with Jensen Reynolds' permission. (9)		Metal scrap (air photos).

Table 1 - Historic Operators and Features of Concern
North Marina Ameron/Hulbert Site
Everett, Washington

Operator	Feature	Area	Period	How Operations Ceased	General Activity	Structure or Feature of Concern: From Reports (references cited are listed below)	Structure or Feature of Concern: From Leases	Structure or Feature of Concern: From Observations
Nalley's		M	? - 2005	unknown	Food warehouse and distribution.	No areas of concern documented.		
Michael's Woodcraft		M	1990-91	unknown	Furniture fabrication	Spray booth, flammable liquids storage room, on second floor of Collins Building. (6)		
Marine Spill Response Co.		J	1994 - 2005		Spill equipment storage	No areas of concern documented.		
RL Enterprises		M	1989-94	unknown	Cabinetry construction	Spray booth on third floor of Collins Building. (6)	Manufacturing and light commercial construction.	
Jensen Reynolds Construction		J, M, I	1982-1990	Foreclosure	Metal building fabrication	Unprotected drum storage in multiple locations, with observed leakage onto pavement and onto bare ground. Spent sand blasting grit deposits on bare ground. Fuel AST inside warehouse, with visible spillage to floor. Visible petroleum spillage to ground surface. Storage of large quantities of scrap metal. Pile of "painted metal chips" in yard, with discolored soil beneath. Deposits of foam pipe insulation in yard. (3) Three fuel USTs (gasoline and diesel fuel, estimated volume two at 2,500 gallons and one at 1,000 gallons) and three dispensers. (reference 6 citing 1987 ECI report) RCRA LQG. (6) Crane and metal scrap in far northwest corner of Area I, owned by Dunlap Towing and stored with Jensen Reynolds' permission. "Large" diesel AST southwest of USTs. (9)	Gasoline and diesel USTs and dispensers.	Metal fabrication, scrap and debris, dismantling of truss bridge and remaining debris, USTs and fueling (air photos).
Commercial Steel Fabricators		I	1991	One year lease only	Metal module fabrication; welding, sandblasting	Drum storage of diesel and gasoline, with soil staining observed; sand blast grit. (6)	Metal fabrication and materials storage.	
Snohomish Co. PUD Substation		M	1954-1969	Removed	Electrical infrastructure	No references in reports.		
Railmakers NW		M	Ca. 1975-87	Relocated	Fabricated rails for marine use			
Sound Propeller		M	1972-76	Relocated	Propeller sales/repair			
Sandy's Boat House		M	1990-present	Ongoing	Boat repair	Minor solvent and waste oil use and storage. (6) Waste oil AST. (1)	Boat sales and service.	
Tri-Coatings		M	1979-91	Relocated to adjacent property north as TC Systems	Commercial paints & stripping	RCRA LQG. Floor sump for stripping coatings, stripping machine, two degreasers, hazardous materials and hazardous waste storage. (6)		
Sunset Body Works		M	1988 - present	Now North Central Collision	Vehicle body repair	RCRA SQG. Paint booths, solvent still, flammables storage areas. (6)		
Port of Everett Maintenance Shop		M	Early 1990s	Facility demolished 2007	Maintenance area	Vehicle maintenance in maintenance shop building. Catch basins inside maintenance shop building possibly plumbed to storm drain system. Unprotected storage of drums and small AST containing petroleum and unknown products, with leakage to ground observed. Sand blasting grit on ground surface. (2) Storm drains inside building may, alternatively, be plumbed to sanitary sewer system. (8)		
Port of Everett Storage		J	1991	Temporary location at Jensen Reynolds building	Warehouse building	Unprotected storage of drums and small tank containing petroleum and unknown products, with leakage to ground observed. Sand blasting grit on ground surface. (2)		
Unknown operator		J, I	Ca 1991		Open yard area	Sludge-like material on ground surface. (2)		
Veco		J	Ca 1991	unknown	Storage of welding, construction supplies and containers	Sumps in building. (reference 6 citing 1987 ECI report) Three fuel USTs (two gasoline and one diesel) and a dispenser island southwest of building, removed in June 1991. Drum storage inside building, and staining around catch basin. (6) Catch basin may be plumbed to sanitary sewer system. (8).		

Table 1 - Historic Operators and Features of Concern
North Marina Ameron/Hulbert Site
Everett, Washington

Operator	Feature	Area	Period	How Operations Ceased	General Activity	Structure or Feature of Concern: From Reports (references cited are listed below)	Structure or Feature of Concern: From Leases	Structure or Feature of Concern: From Observations
Mid Mountain Contractors		I , J ?	1974 - 1983		"Unloading, sand blasting, painting, loading" (per lease agreement)		A short-term lease for an off-site building cites "unloading, sandblasting, painting, loading" as allowed activities. No lease information was identified for portion of Mid Mountain lease that overlaps the subject site (Area J).	The portion of Mid Mountain's activities occurring on Area J appears to be limited primarily to pipe storage, with storage of other unidentified materials visible in some air photos. (air photos)
Columbia Hardboard Company/Tidewater Plywood Company	Log Dump/Waste Burner Dump/Conveyor System	J	pre-1957 - post 1965			Abandoned underground concrete structure filled with wood waste, soil, and drums apparently containing oil. (4)		Underground concrete structures shown on Sanborn map and visible in air photos. (Sanborn Maps, air photo)
Unknown operator		I	1991			Unprotected storage of drums containing petroleum and unknown products at fenceline with Ameron. (2)		
Unknown operator	Log storage/sorting	I	1976 - 1978					Unclear from air photos whether stacked timbers are unmilled logs, poles, or piles. Simultaneous storage of log rafts in the adjacent 12th Street Channel is evident throughout this period. (air photo)
Unknown operator	Log storage/sorting	I	1993					Stockpiles of of wood poles or piling with dark colored ends (air photos). The poles/piling are either treated poles or are salvaged piling. In the latter case they could also be treated wood.

Notes:

1. "Structures or Feature of Concern" provides a summary from three sources -- Reports, Leases and Observations. Observations include features visible in aerial photographs and features shown in engineering drawings or Sanborn maps. These comments do not include opinions based on our experience at similar sites or with similar industries.

References cited in this table:

1. Landau Associates. Phase I ESA North Marina Redevelopment Project. Port of Everett, WA for Maritime Trust. November 28, 1001.
2. Hart Crowser. Environmental Engineering Services - Proposed MSRC Facility. For the Port of Everett. November 26, 1991.
3. Earth Consultants, Inc. Supplemental Site Investigation, Jensen Reynolds Property. For the Hulbert Mill Company. December 6, 1988.
4. Kleinfelder. Independent Action Report - Area West of MSRC Warehouse Building. For the Port of Everett. December 7, 1993.
5. Landau Associates. Ameron International Leasehold Environmental Investigation of Oil Affected Area. Memo to the Port of Everett. June 20, 2005.
6. Kleinfelder. Phase I ESA, Phase I Envionmental Audit, Business on 30 acres NW Corner of 13th Street & Marine View Drive. May 29, 1991.
7. PSM International. Report on Investigation conducted at Ameron (Centrecon) Plant in Everett, WA, January 9-13 & February 7-10, 1989. March 1989.
8. Earth Consultants, Inc. Phase II ESA, Hulbert Mill Property. For the Hulbert Mill Company. February 7, 1992.
9. Earth Consultants, Inc. Preliminary Environmental Audit, Jensen Reynolds Property. For the Hulbert Mill Company. July 14, 1987.

APPENDIX B

Emergency Cleanup Action Plan

TECHNICAL MEMORANDUM

TO: Andy Kallus, Washington State Department of Ecology

FROM: Larry Beard, P.E., L.G.
Kathryn Hartley

DATE: November 7, 2011

**RE: EMERGENCY ACTION CLEANUP
CRAFTSMAN DISTRICT BOATYARD EXPANSION AREA
NORTH MARINA AMERON/HULBERT SITE
EVERETT, WASHINGTON**

This technical memorandum presents the results of the emergency cleanup action conducted at the Port of Everett (Port) North Marina Ameron/Hulbert site (Site) to address petroleum hydrocarbon soil contamination in a portion of the Site that is being redeveloped by the Port as an expansion of the Port's existing Craftsman District boatyard. A remedial investigation/feasibility study (RI/FS) is currently underway for the Site under Agreed Order No. 6677 between the Port, Ameron International, and the Hulberts [the potentially liable parties (PLPs)], and the Washington State Department of Ecology (Ecology).

The boatyard expansion is being constructed over the next few months on an expedited schedule within the area shown on Figure 1. Ecology determined that, based on factors including the schedule for construction of the boatyard expansion, an emergency action for partial cleanup of the boatyard expansion area was needed to adequately protect human health and the environment in advance of the cleanup action to be completed following the RI/FS. The emergency cleanup action was conducted in accordance with the Emergency Action Cleanup Plan dated May 3, 2011, and approved by Ecology in May 5, 2011 letter directing the PLPs to implement an emergency action consistent with the May 3, 2011 plan.

This technical memorandum provides a brief summary of the boatyard expansion area investigation results, emergency action activities, and the results of post-excavation compliance monitoring. These data will also be incorporated into the RI report, which will be prepared following completion of the supplement RI sampling.

BOATYARD EXPANSION AREA INVESTIGATION RESULTS

Based on the results of the initial RI, diesel- and oil-range petroleum hydrocarbons were present in shallow soil at concentrations greater than the Site preliminary screening levels (PSLs) in two areas within the boatyard expansion: 1) an approximately 20-ft by 30-ft area in the western portion of the boatyard expansion area (West Area), and 2) an approximately 15-ft by 20-ft area in the eastern portion of the boatyard expansion area (East Area).

West Area soil contamination consisted of a surficial layer of black, petroleum hydrocarbon-cemented sand and woodchips extending to a depth of approximately 0.5 ft below ground surface (BGS) and soil immediately below the surficial material to a depth of about 1.5 ft BGS that exceeded the diesel- and heavy oil-range petroleum hydrocarbons PSLs. East Area soil contamination consisted of petroleum hydrocarbons in shallow soil directly beneath a concrete pad and a layer of crushed rock that had been placed during the field investigation to provide access for sampling in an area of ponded water.

EMERGENCY ACTION ACTIVITIES

Excavation activities were completed on August 22, 2011. Based on visual observation compliance monitoring (discussed in the next section), the West Area excavation extended to 2 to 3 ft BGS within the visually affected area. The total volume of soil removed from this area was approximately 44 cubic yards.

Prior to East Area excavation, clean overburden material (crushed rock) was removed and stockpiled for reuse as excavation backfill. Additionally, a concrete slab located on top of the affected material was demolished and transported to an offsite recycling facility. Petroleum hydrocarbon soil contamination in the East Area was initially excavated to a depth of about 1.5 ft BGS. However, because petroleum hydrocarbons were observed during field screening and sheen was observed in water that collected at the base of the excavation, the excavation was continued to a depth of about 2.5 ft BGS, at which point field screening no longer indicated the presence of petroleum hydrocarbons and sheen was no longer observed to be present. Compliance monitoring (discussed in t he next section) confirmed that concentrations of petroleum hydrocarbons were below the Site PSLs. The total volume of soil removed from this area was about 35 cubic yards.

The impacted soil from these areas was excavated and directly loaded into trucks for transport to Cemex in Everett, Washington for treatment using thermal desorption. Prior to backfilling the West Area excavation, a second concrete pad was demolished and transported to an offsite recycling facility. The excavations were backfilled with a combination of quarry spalls, clean overburden soil removed from the East Area, and imported select borrow fill material that had been previously tested for metals (arsenic, cadmium, chromium, copper, lead, mercury, and zinc) to confirm that the import fill met Site PSLs.

COMPLIANCE MONITORING

Compliance monitoring in the West Area consisted of collecting one soil sample from the approximate center of each of the excavation sidewalls and one soil sample from the center of the base of the excavation (Figure 1). The samples were analyzed for diesel- and heavy oil-range petroleum hydrocarbons by Method NWTPH-Dx. Petroleum hydrocarbons were not detected in any of the compliance monitoring samples in the West Area at concentrations greater than the laboratory reporting limits. Results of compliance monitoring sampling in the West Area are presented in Table 1.

Compliance monitoring in the East Area was originally planned to consist of collection of one soil sample from the center of the base of the excavation (lateral extent of contamination was bound by characterization soil borings); however, field screening identified localized areas of petroleum hydrocarbon-impacted soil during the excavation, mainly in the western portion of the East Area. The excavation was extended to a depth of 2.5 ft and field screening no longer indicated the presence of petroleum hydrocarbons. Ecology then requested the collection of four compliance monitoring samples, one from each corner of the base of the excavation, rather than the originally planned single sample. East Area confirmation sample locations are shown on Figure 1. The confirmation samples were analyzed for diesel- and heavy oil-range petroleum hydrocarbons by Method NWTPH-Dx. Petroleum hydrocarbons were not detected at concentrations greater than the laboratory reporting limits in any of the compliance monitoring samples in the East Area. Results of compliance monitoring sampling in the East Area are presented in Table 1.

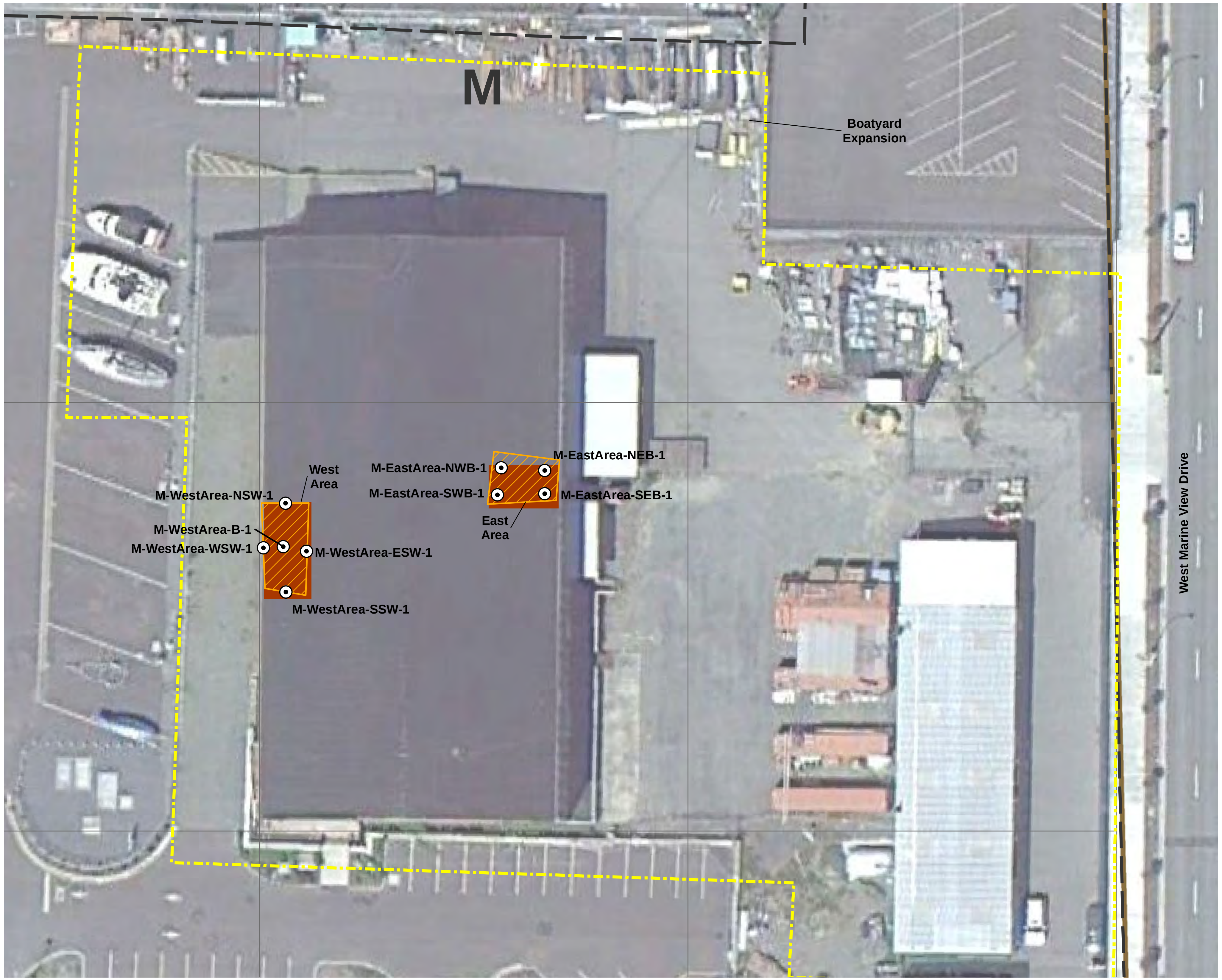
SUMMARY

An emergency action cleanup was conducted to address petroleum hydrocarbon contamination in shallow soil in two areas (East Area and West Area) within the Port's Craftsman District boatyard expansion area. Approximately 79 cubic yards of soil were removed from the two areas and transported off-site for treatment. Diesel-range and heavy oil-range petroleum hydrocarbons were not detected in any of the compliance monitoring samples at concentrations greater than the laboratory reporting limits, demonstrating that the emergency action achieved the Site PSLs. The compliance monitoring results from the emergency action will be used to represent current conditions in the boatyard expansion area in the RI/FS report.

LIMITATIONS

This document was prepared for the exclusive use of the Port of Everett for specific application to the Craftsman District Boatyard Expansion Emergency Action. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of the Port and Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by the Port and Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

Attachments: Figure 1: Emergency Action Cleanup Areas and Sample Locations
Table 1: Soil Analytical Results



Legend

- Excavation Soil Sample Location
- Cleanup Areas
- Planned Cleanup Areas
- Boatyard Expansion
- Approximate Ameron/Hulbert Site Boundary
- M - Area Designation

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Google Earth Pro (2011 Image)

0 40 80
Scale in Feet

Y:\Projects\147029\Mapdocs\Boatyard Expansion Emergency Act\Fig1 EmergencyActionAreas.mxd 11/7/2011 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Landau Associates

North Marina Ameron/Hulbert Site
Boatyard Expansion
Emergency Action
Port of Everett, Washington

Emergency Action Cleanup Areas and Compliance Monitoring Sample Locations

Figure 1

TABLE 1
SOIL ANALYTICAL RESULTS
COMPLIANCE MONITORING SAMPLES
PORT OF EVERETT - AMERON HULBERT

			TOTAL PETROLEUM HYDROCARBONS Method NWTPH-Dx (mg/kg)	
Location	Sample ID	Date Collected	Diesel	Oil
M-East Area-NWB-1	1108095-01	08/22/2011	25 U	50 U
M-East Area-SWB-1	1108095-02	08/22/2011	25 U	50 U
M-East Area-NEB-1	1108095-03	08/22/2011	25 U	50 U
M-East Area-SEB-1	1108095-04	08/22/2011	25 U	50 U
M-West Area-ESW-1	1108095-05	08/22/2011	25 U	50 U
M-West Area-B-1	1108095-06	08/22/2011	25 U	50 U
M-West Area-SSW-1	1108095-07	08/22/2011	25 U	50 U
M-West Area-NSW-1	1108095-08	08/22/2011	25 U	50 U
M-West Area-WSW-1	1108095-09	08/22/2011	25 U	50 U
Preliminary Screening Level			2,000	2,000

U = Indicates the compound was not detected at the reported concentration.

DRAFT

APPENDIX C

Summary of Previous Environmental Investigations and Documents

SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS AND DOCUMENTS

This following is a list of documents previously prepared for the North Marina Area or the Site and submitted to Ecology.

AGI. 1992. *Additional Site Observations and Testing, Hulbert Mill Property, 13th Street and West Marine View Drive.* Prepared for Mr.William Hulbert. August 19.

ECI. 1992. *Phase 2 ESA, Hulbert Mill Property, Everett, WA.* Prepared for Mr.William Hulbert. February 7.

ECI. 1990. *Supplemental Environmental Review, Hulbert Mill Company Property, 1105 13th Street, Everett, WA.* Prepared for Mr. William Hulbert. Earth Consultants, Inc. January 17.

ECI. 1988. *Supplemental Site Investigation, Jensen Reynolds Property, 1105 13th Street, Everett, Washington (Re-addressed to William Hulbert January 5, 1990).* Conducted for The Hulbert Mill Company. Earth Consultants, Inc. December 6.

ECI. 1987. *Preliminary Environmental Audit, Jensen Reynolds Property, 1105 13th Street, Everett, Washington (Re-addressed to William Hulbert January 5, 1990).* Conducted for The Hulbert Mill Company. Earth Consultants, Inc. July 14.

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Kleinfelder. 1991. *Phase I ESA and Phase I Environmental Audit, Business on Thirty Acres, Northwest Corner of 13th Street and Marine View Drive, Everett, Washington.* Prepared for Anderson Hunter (representing the Port of Everett). May 29.

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Landau Associates. 2006c. *Ecology Review Draft Report, Supplemental Data Gaps Investigation, North Marina Redevelopment Site, Everett, Washington*. February 28.

Landau Associates. 2005a. Ecology Review Draft, Data Gaps Investigation, North Marina Redevelopment Site, Everett, Washington. Prepared for the Port of Everett. May 13.

Landau Associates. 2005b. *Sampling and Analysis Plan, Comprehensive Investigation of Affected Soil for Offsite Disposal, North Marina Redevelopment Area, Port of Everett, Washington.* Prepared for The Port of Everett. November 10

Landau Associates. 2005c. *Final Work Plan, Data Gaps Investigation, North Marina Redevelopment Area, Port of Everett, Washington*. Prepared for Port of Everett. January 5.

Landau Associates. 2005d. *Draft Compliance Monitoring Plan, 12th Street Marina Project, North Marina Area, Everett, Washington*. Prepared for the Port of Everett. October 4.

Landau Associates. 2004. *Phase II Environmental Site Assessment Report, North Marina Area, Port of Everett, Everett, Washington.* April 13.

Landau Associates. 2001. *Phase I Environmental Site Assessment Report, North Marina Redevelopment Project, Port of Everett, Everett, Washington.* November 28.

Layton & Sell. 1988. Letter Report to Jim Thornton, Washington State Department of Ecology and John Malek, U.S. Environmental Protection Agency, re: *Hulbert Mill Company, Everett, Washington, Dredged Sediments Sampling and Analysis Program*. February 15.

Pentec. 2001. *Puget Sound Dredged Disposal Analysis, Full Characterization for the 12th Street Marina.* Prepared for the Port of Everett. Pentec Environmental. February 1.

PSM. 1989. *Environmental Audit Report. Report on Investigations Conducted at the Ameron (Centrecon) Plant in Everett, Washington January 9-13 and February 7-10-89.* Prepared for Mr. William Hulbert. February.

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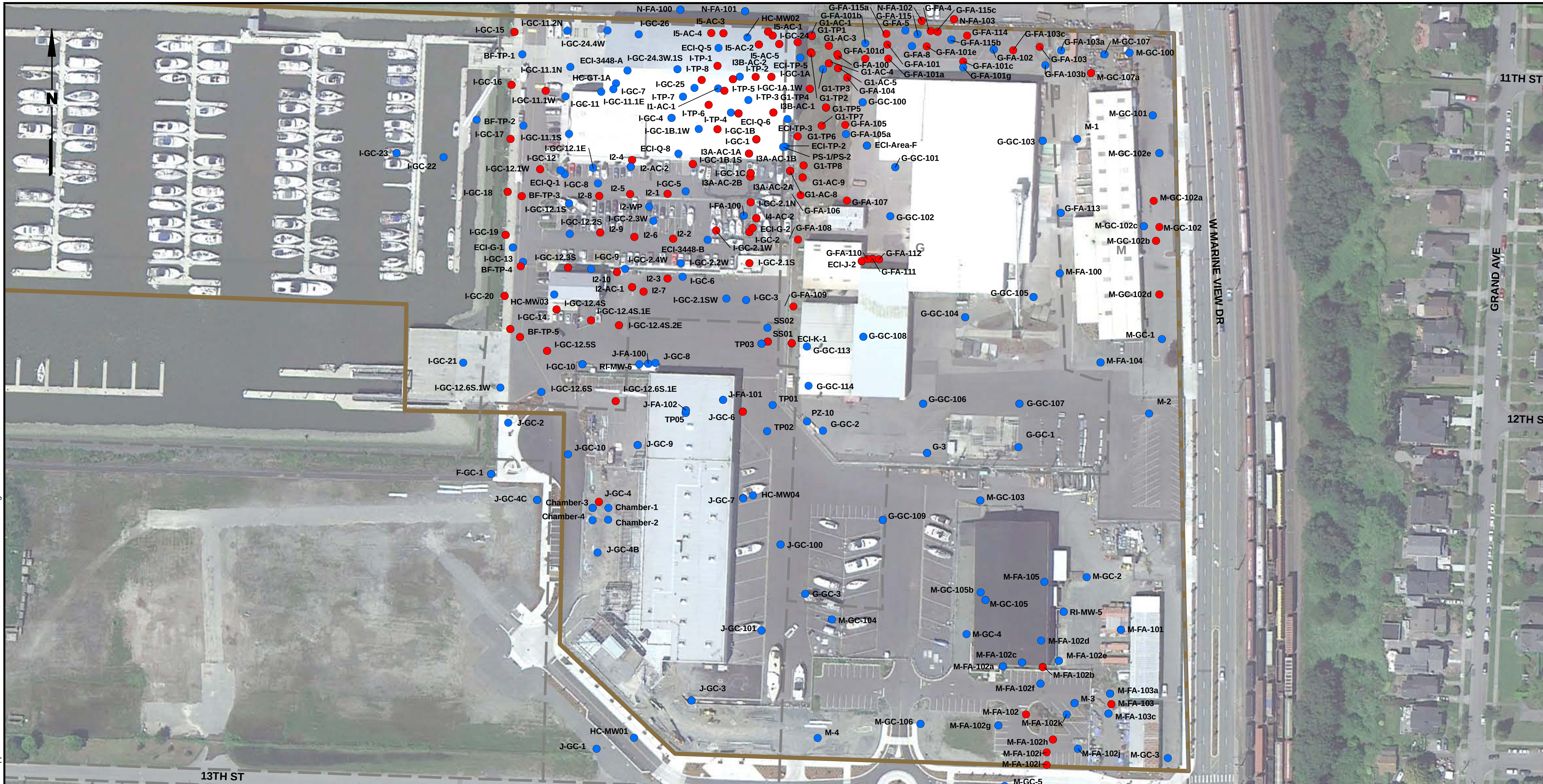

G:\Projects\147\029\500\640\2012 RIFS Report\Appendix C\C-1 Soil Metals.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Soil Sample Exceeds Cleanup Screening Level for Metals
- Soil Sample Locations Analyzed for Metals
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

0 140 280

Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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North Marina Ameron/Hulbert Site RI/FS Work Plan Everett, Washington	**Soil Characterization Sample Locations Analyzed for Metals**	Figure C-1

Legend

- Soil Sample Exceeds Cleanup Screening Level for cPAH's
- Soil Sample Locations Analyzed for cPAH's
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

0 140 280

Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Soil Characterization Sample Locations Analyzed for cPAH's**	Figure C-2

LANDAU ASSOCIATES

G:\Projects\1470\029\500\640\2012 RIFS Report\Appendix C\C-2 SoilcPAHs.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

Soil Sample Analyzed for SVOCs

G - Area Designation

Approximate North Marina Ameron/Hulbert Site Boundary

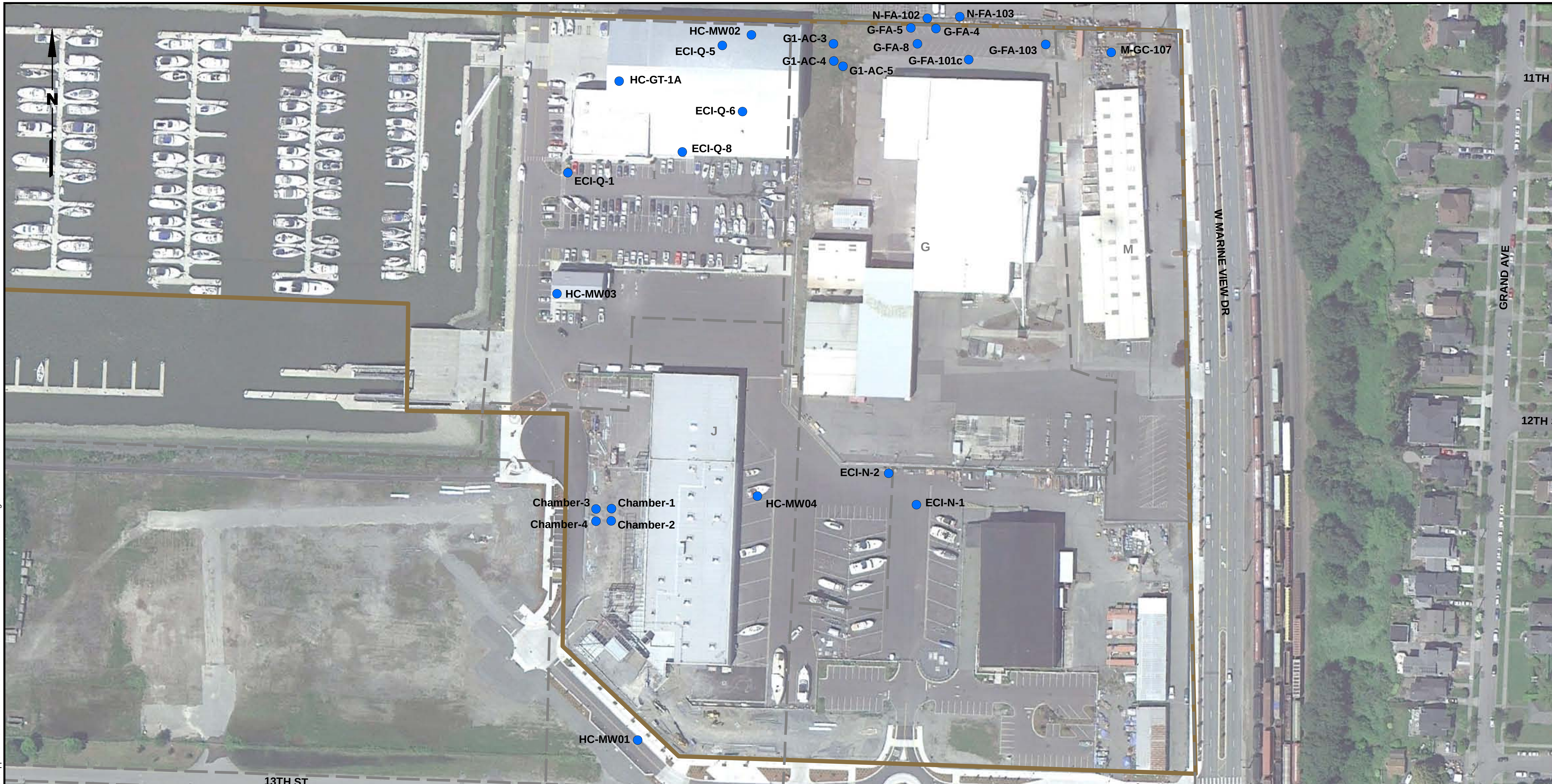
0 140 280
Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Soil Characterization Sample Locations Analyzed for SVOCs**	Figure C-3

LANDAU ASSOCIATES



G:\Projects\1147\029\500\640\2012 RIFS Report\Appendix C\C-4 SoilVOCs.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Soil Sample Locations Analyzed for VOCs
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

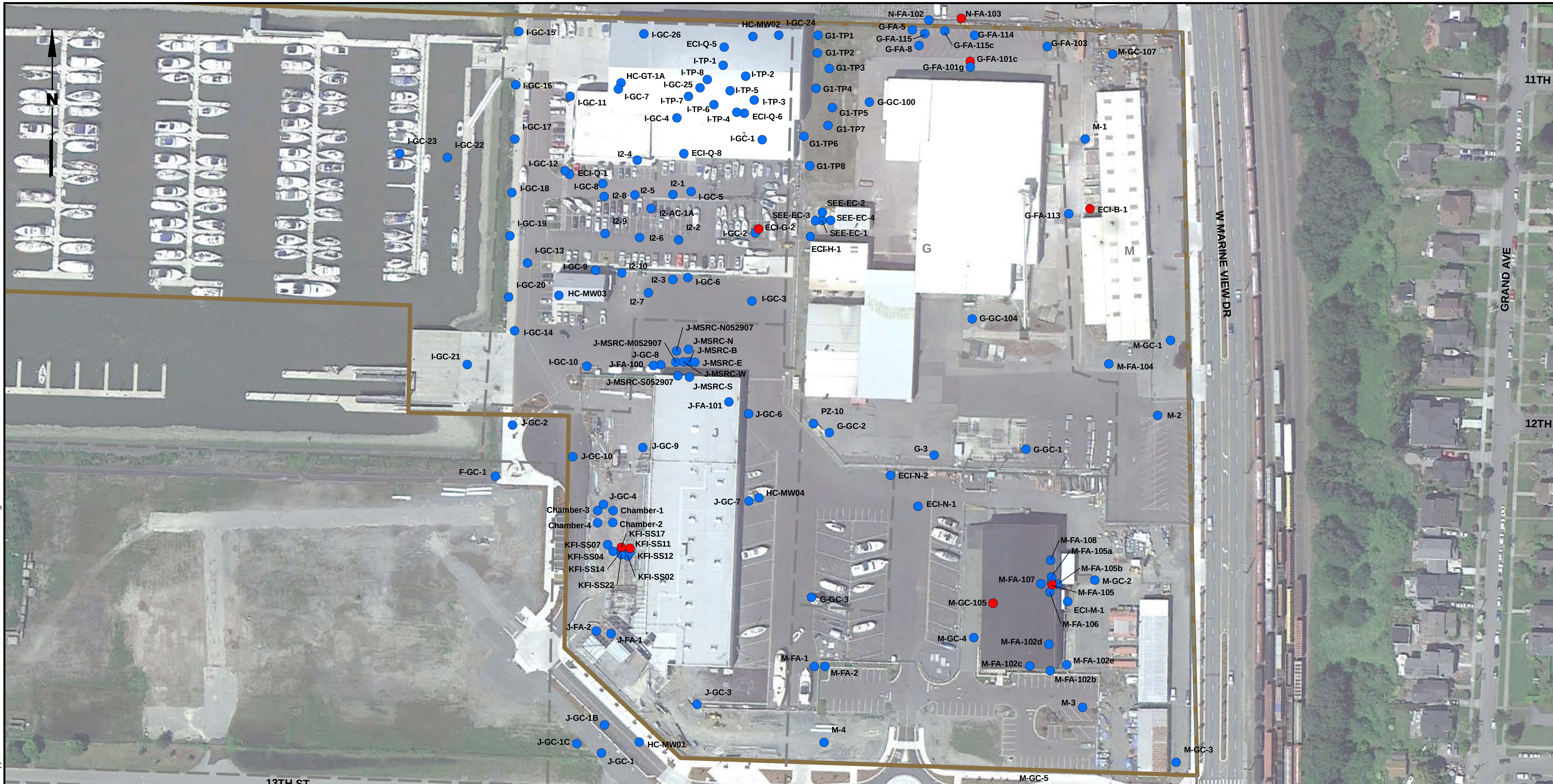
0 140 280
Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Landau Associates

North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Soil Characterization Sample Locations Analyzed for VOCs**	Figure C-4



G:\Projects\1470\029\150\064\020\2012 RIFS Report\Appendix C\C-5 SoilTPHs.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Soil Sample Exceeds Cleanup Screening Level for TPH
- Soil Sample Locations Analyzed for TPH
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 140 280
Scale in Feet

Data Source: Google Earth Pro (2011 Image)

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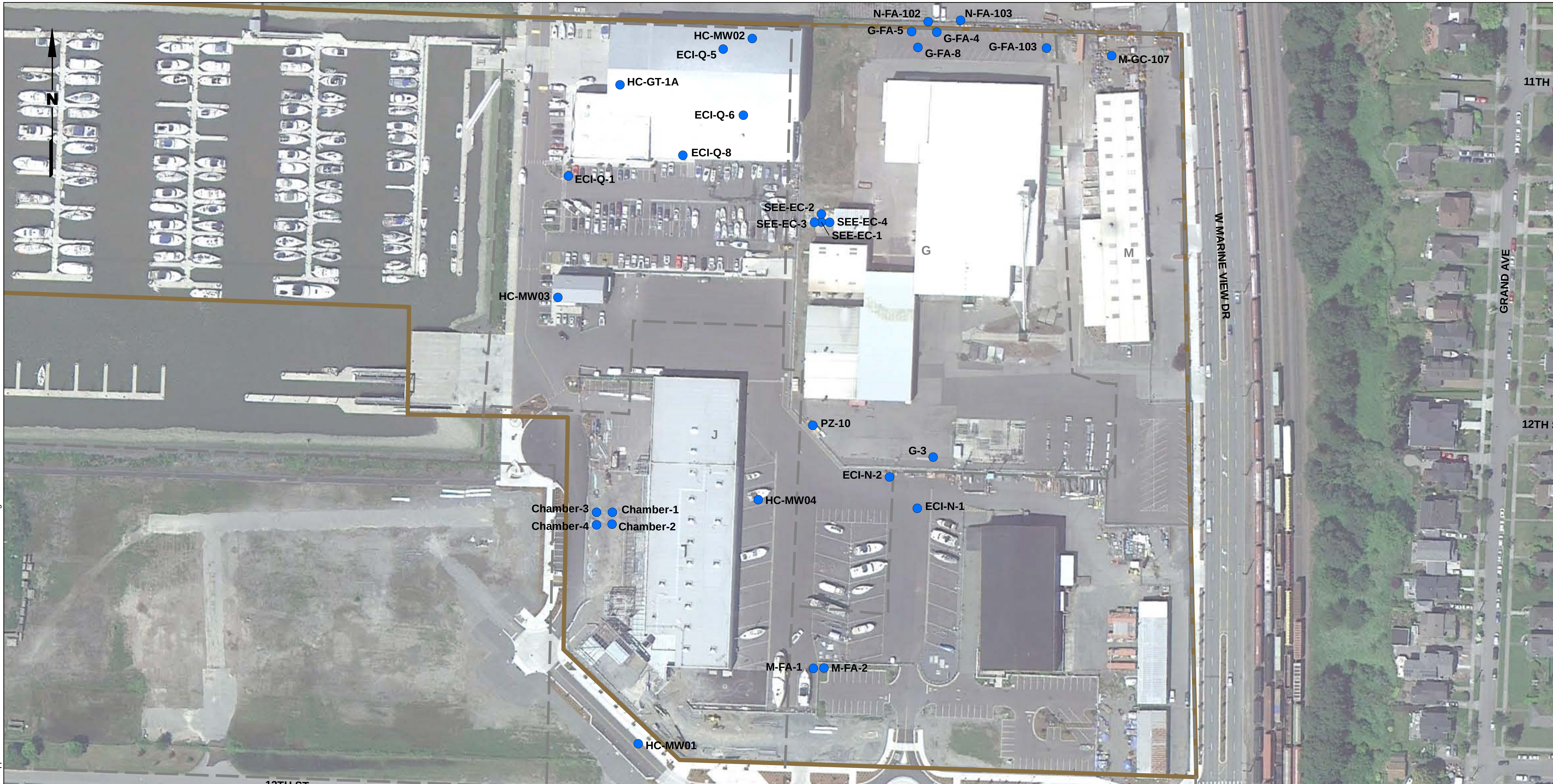
North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Soil Characterization Sample Locations Analyzed for TPH**	Figure C-5



G:\Projects\147\029\500\640\2012 RIFS Report\Appendix C\C-6 SoilBTEX.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Soil Sample Locations Analyzed for BTEX
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Google Earth Pro (2011 Image)

0 140 280

Scale in Feet

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North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Soil Characterization Sample Locations Analyzed for BTEX**	Figure C-6

Legend

- Soil Sample Exceeds Cleanup Screening Level for PCBs
- Soil Sample Locations Analyzed for PCBs
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

0 140 280
Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Soil Characterization Sample Locations Analyzed for PCBs**	Figure C-7

G:\Projects\1470\029\500\640\2012 RIFS Report\Appendix C\C-7 SoilPCBs.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

G:\Projects\1470\29\500\640\2012 RIFS Report\Appendix C\C-8 GWMetals.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Groundwater Sample Exceeds Cleanup Screening Level for Metals
- Groundwater Sample Locations Analyzed for Metals
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

0 140 280

Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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North Marina Ameron/Hulbert Site
RI/FS Report
Everett, Washington

Groundwater Characterization Sample Locations Analyzed for Metals

Figure C-8

G:\Projects\1470291500\640\2012 RIFS Report\Appendix C\C-9 GWcPAHs.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Groundwater Sample Locations Analyzed for cPAH's
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

0 140 280

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Google Earth Pro (2011 Image)

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North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Groundwater Characterization Sample Locations Analyzed for cPAH's**	Figure C-9

Legend

- (red dot) Groundwater Sample Exceeds Cleanup Screening Level for SVOCs
- (blue dot) Groundwater Sample Locations Analyzed for SVOCs
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 140 280
Scale in Feet

Data Source: Google Earth Pro (2011 Image)

North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Groundwater Characterization Sample Locations Analyzed for SVOCs**	Figure C-10

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G:\Projects\1470\029\500\640\2012 RIFS Report\Appendix C\C-10 GWSVOCs.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Groundwater Sample Exceeds Cleanup Screening Level for VOCs
- Groundwater Sample Locations Analyzed for VOCs
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Google Earth Pro (2011 Image)

0 140 280
Scale in Feet

G:\Projects\1470\029\500\640\2012 RIFS Report\Appendix C\C-11 GWVOCs.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

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North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Groundwater Characterization Sample Locations Analyzed for VOCs**	Figure C-11

G:\Projects\1470\029\500\640\2012 RIFS Report\Appendix C\C-12 GWTPH.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Groundwater Sample Exceeds Cleanup Screening Level for TPH
- Groundwater Sample Locations Analyzed for TPH
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

0 140 280

Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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North Marina Ameron/Hulbert Site
RI/FS Report
Everett, Washington

Groundwater Characterization Sample Locations Analyzed for TPH

Figure
C-12

Legend

- Groundwater Sample Locations Analyzed for BTEX
- G - Area Designation
- Approximate North Marina Ameron/Hulbert Site Boundary

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Google Earth Pro (2011 Image)

0 140 280
Scale in Feet

G:\Projects\1470\29\500\640\2012 RIFS Report\Appendix C\C-13 GWBTEX.mxd 1/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

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North Marina Ameron/Hulbert Site RI/FS Report Everett, Washington	**Groundwater Characterization Sample Locations Analyzed for BTEX**	Figure C-13

TABLE C-1
METALS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name	Depth Range	Date Collected	Area ID (b)	Sample Type	Metals (mg/kg) SW6000-7000 Series Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
				Cleanup Screening Levels (a)	32	20	1650	160	80	120000	36/3000	250	24	1600	400	400	5.9	24000
F-GC-1	(0-0.5)	1/14/2005	F	Boring		12			0.2 U		83.3 J	14	0.04 U					105 J
J-GC-4C	(0-0.5)	7/14/2005	F	Boring		19			0.2 U		56.8	18	0.05 U					181
ECI-Area-F		10/7/1991	G	Blasting Sand	10 U	7		1 U	1 U	1210	37	20 U	0.2 U	940	1 U	2	1 U	172
ECI-J-2	(3-3)	10/7/1991	G	Test Pit	100 U	40		10 U	12 U	377	514	200 U	0.2 U	281	1 U	20 U	1 U	722
ECI-K-1	(4-4)	10/7/1991	G	Test Pit	106	144		1 U	3	481	398	304	20 U	1120	1 U	2	1 U	1180
ECI-TP-2	(5-5)	10/7/1991	G	Test Pit	10 U	5 U		1 U	1 U	26	18	20 U	0.2 U	27	1 U	2 U	1 U	36
ECI-TP-3	(7-7)	10/7/1991	G	Test Pit	10 U	5 U		1 U	1 U	35	26	20 U	0.2 U	35	1 U	2 U	1 U	48
ECI-TP-5	(9-9)	10/7/1991	G	Test Pit	10 U	5 U		1 U	1 U	28	28	20 U	0.2 U	22	1 U	2 U	1 U	36
G1A-100507-AC-1		10/5/2007	G	Stock Pile		5 U			0.2 U	677	8.8	2	0.05 U					37
G1A-100907-STK-1		10/9/2007	G	Stock Pile		1750 J	117		1 U	61		1400	0.04 U		30 U	3		
G1A-101607-STK-2		10/16/2007	G	Stock Pile		840	182		1 U	44		1040	0.04 U		30 U	2		
G1-AC-1		6/22/2006	G	Surface Soil		20	73.9		0.6 U	133		11	0.06 U		10 U	0.9 U		
G1-AC-2		6/22/2006	G	Surface Soil		70	97		1 U	107	48	50	0.09		20 U	1 U		167
G1-AC-3		6/22/2006	G	Surface Soil		80	151		1 U	97		70	0.09 U		30 U	2 U		
G1-AC-4		6/22/2006	G	Surface Soil		90	159		1 U	221		70	0.1 U		30 U	2 U		
G1-AC-5		6/22/2006	G	Surface Soil		120	147		1 U	97	215 J	100	0.1 U		30 U	2 U		962 J
G1-AC-6		6/26/2006	G	Surface Soil		80	88		0.8 U	74		64	0.06 U		20 U	1 U		
G1-AC-7		6/27/2006	G	Surface Soil		280	60		1 U	427	263 J	180	0.04 U		20 U	1 U		695 J
G1-AC-8		6/27/2006	G	Surface Soil		720	315		3	38		1940	0.04 U		50 U	4		
G1-AC-9		6/23/2006	G	Surface Soil		6650			8	135	3010	4150	0.04 U					15400
G1-TP1	(0-4)	4/25/2006	G	Test Pit		103	67.5		0.3 U	54.8		73	0.11		7 U	0.4 U		
G1-TP2	(0-6)	4/25/2006	G	Test Pit		28	57.8		0.2 U	83.2		35	0.07		6 U	0.3 U		
G1-TP3	(0-5)	4/25/2006	G	Test Pit		14	32.1		0.2 U	34.4		10	0.05 U		6 U	0.4 U		
G1-TP4	(0-6)	4/25/2006	G	Test Pit		353	49		0.4	64.3		196	0.04 U		6 U	0.4 U		
G1-TP5	(0-5)	4/25/2006	G	Test Pit		1540	81.6		2.6	82		1060	0.04		10 U	1.9		
G1-TP6	(0-4)	4/25/2006	G	Test Pit		86	65.6		0.2 U	43.2		98	0.05 U		5 U	0.3 U		
G1-TP7	(0-5)	4/25/2006	G	Test Pit		37	35.1		0.3 U	39.7		23	0.05 U		6 U	0.4 U		
G1-TP8	(0-5)	4/25/2006	G	Test Pit		30	54.5		0.2 U	27.4		19	0.05 U		6 U	0.4 U		
G-3	(3-3)	2/11/2004	G	Boring		10.2			25.2	63.6	60.0	49	0.37			0.4 U		130
G-FA-4	(2-2.5)	1/20/2005	G	Boring		80			2 U		47	50	0.08 U					157
G-FA-5	(8-8.5)	1/20/2005	G	Boring		13			0.3 U		37.1	19	0.06 U					85
G-FA-8	(4-4.5)	1/20/2005	G	Boring		15			0.2 U		32.8	13	0.05 U					61.2
G-GC-1	(1.5-2)	3/2/2005	G	Boring		6			0.2 U		24	10	0.05 U					46.6
G-GC-2	(1.4-1.9)	3/2/2005	G	Boring		6			0.2 U		17.8	5	0.04 U					39.9
G-GC-3	(1-1.5)	3/2/2005	G	Boring		6			0.2		18.3	6	0.05 U					39
PS-1/PS-2		1/25/1989	G	Pond Sample	5 U	2.4	47.4	0.1 U	0.1 U	8.9	13	1.1	0.05 U	13	0.05 U	0.2 U	1 U	35.7
PZ-10 (c)	(3-3)	2/11/2004	G	Boring		6.3			0.2 U	31.3	22.1	8	0.07			0.3 U		52.1
STOCKPILE		11/12/2004	G	Stock Pile		13.9					119	97.5						199
ECI-3448-A		11/7/1988	I	Surface Soil		0.1 U	0.6		0.1 U	0.1 U	0.6	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U		1.1
ECI-3448-B		11/7/1988	I	Surface Soil		4.8				47.6		57						
ECI-G-1 (d)	(0-0.5)	7/9/1987	I	Surface Soil			145			1 U	111	6		1 U		1 U		289
ECI-G-2	(0-0.5)	7/9/1987	I	Surface Soil		3000						1300						
ECI-Q-1	(1-2)	10/7/1991	I	Test Pit	10 U	5		1 U	1 U	27	20	20 U	0.2 U	33	1 U	2 U	1 U	50
ECI-Q-5	(1-2)	10/7/1991	I	Test Pit	10 U	5 U		1 U	1 U	22	12	20 U	0.2 U	29	1 U	2 U	1 U	33
ECI-Q-6	(0-1)	10/7/1991	I	Test Pit	58	5 U		1 U	3	7	1410	1350	0.2 U	10 U	2	7	1 U	4520
ECI-Q-8	(5-5)	10/7/1991	I	Test Pit	10 U	5 U		1 U	1 U	29	20	20 U	0.2 U	30	1 U	2 U	1 U	40
HC-GT-1A		11/7/1991	I	Boring					1.0 U	14	20	5.0 U		15				26

TABLE C-1
METALS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name	Depth Range	Date Collected	Area ID (b)	Sample Type	Metals (mg/kg) SW6000-7000 Series Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
				Cleanup Screening Levels (a)	32	20	1650	160	80	120000	36/3000	250	24	1600	400	400	5.9	24000
HC-MW02 (e)	(2.5-4)	11/6/1991	I	Boring					1.0 U	9	16	5.0 U		12				31
HC-MW02 (e,f)	(12.5-14)	11/6/1991	I	Boring	10 U	12 U			1.0 U	71	24 J	13	10 U	36	5 U	10 U		52
HC-MW03 (e,f)	(5-6.5)	11/7/1991	I	Boring	10 U	12 U			1.0 U	83	22	6 U	10 U	19	5 U	10 U		30
HC-MW03 (e)	(10-11.5)	11/7/1991	I	Boring					1.0 U	15	19	5 U		13				24
I1-AC-1		6/21/2006	I	Surface Soil		16	56.1		0.2 U	35.3		57	0.37		5 U	0.3 U		
I2-AC-1		7/13/2006	I	Excavation		240	79		2 U	46	212	130	0.07 U		40 U	2 U		475
I2-AC-2		7/13/2006	I	Excavation		20	73		0.8 U	36	67.6	28	0.08 U		20 U	1 U		129
I2-1	(1-1.5)	5/8/2006	I	Boring		197	59.2		0.3	32.6		141	0.04 U		6 U	0.4 U		
I2-2	(1-2.25)	5/8/2006	I	Boring		130	79		0.7 U	42		56	0.07 U		20 U	1 U		
I2-3	(0.5-2.5)	5/8/2006	I	Boring		180	111		2 U	52		100	0.07 U		40 U	3 U		
I2-4	(1.4-2.4)	5/8/2006	I	Boring		70	69		0.8 U	37		47	0.06 U		20 U	1 U		
I2-5	(1.3-2.5)	5/8/2006	I	Boring		90	88		0.8 U	41		58	0.06 U		20 U	1 U		
I2-6	(1.5-2.2)	5/8/2006	I	Boring		130	112		0.8 U	40		71	0.06 U		20 U	1 U		
I2-7	(1.7-2.8)	5/8/2006	I	Boring		120	121		2 U	44		60	0.18		40 U	3 U		
I2-8	(1.5-3.3)	5/8/2006	I	Boring		100	101		0.7 U	61		70	0.08		20 U	1 U		
I2-9	(1.7-3.3)	5/8/2006	I	Boring		90	81		0.7 U	38		55	0.07 U		20 U	1 U		
I2-10	(1.5-2.5)	5/8/2006	I	Boring		44	54.8		0.2 U	33.6		32	0.05 U		6 U	0.3 U		
I-3		2/12/2004	I	Boring		6.2			0.2 U	32.7	21.1	6	0.06			0.4 U		44.3
I3A-AC-1A		6/29/2006	I	Surface Soil		4290	299		7	78		3230	0.04 U		50 U	6		
I3A-AC-1B		6/29/2006	I	Surface Soil		11	26.4		0.2 U	28.9		6	0.05		5 U	0.3 U		
I3A-AC-2A		6/30/2006	I	Surface Soil		5060			9	73	2920	3550	0.04 U					10600
I3A-AC-2B		6/30/2006	I	Surface Soil		7			0.2 U	22.6	8.7	2 U	0.05 U					31.2
I3B-AC-1		7/7/2006	I	Surface Soil		380	390		3	25	1890	1890	0.04 U		50 U	3		6600
I3B-AC-2		7/7/2006	I	Surface Soil		1800	166		3	54	1400	1450	0.04 U		20 U	4		4210
I4-AC-2		7/12/2006	I	Surface Soil		2080	418		5	73	2700	2830	0.04 U		50 U	5		8800
I5-AC-1		6/27/2006	I	Surface Soil		400	89.5		1.1	41	498	407	0.05 U		20 U	1.6		1100
I5-AC-2		6/28/2006	I	Surface Soil		1970	103		7	64	3170 J	2270	0.05 U		30 U	15		5810 J
I5-AC-3		6/28/2006	I	Surface Soil		1780	90		6	58		2090	0.05 U		30 U	8		
I5-AC-4		6/28/2006	I	Surface Soil		90	104		1.2	36		68	0.07 U		20 U	1 U		
I5-AC-5		7/14/2006	I	Surface Soil		2210	94		7	74	3430	2390	0.04 U		20 U	9		5820
I-GC-1	(0-0.5)	7/14/2005	I	Boring		1440			2.1		954	1070	0.05 U					3100
I-GC-1	(1-2)	7/14/2005	I	Boring		3690			7		2790	2560	0.04 U					7030
I-GC-1	(2-3)	7/14/2005	I	Boring		11			0.2 U		26	4	0.05 UJ					46.9
I-GC-1A	(0-0.5)	10/19/2005	I	Boring		640			1.5		447	459	0.05 U					1410
I-GC-1A	(1-2)	10/18/2005	I	Boring		9			0.2 U		25	7	0.05 U					45.5
I-GC-1A.1W		4/25/2006	I	Surface Soil		50												
I-GC-1B	(0-0.5)	10/19/2005	I	Boring		130			0.5 U		112	91	0.04 U					295
I-GC-1B	(1-2)	10/18/2005	I	Boring		8			0.2 U		14.3	4	0.05 U					37.4
I-GC-1B.1S	(0-0.5)	3/1/2006	I	Surface Soil		53												
I-GC-1B.1W	(0-0.5)	3/1/2006	I	Surface Soil		10												
I-GC-1C	(0-0.5)	10/19/2005	I	Boring		1640			4		1140	1310	0.05 U					3650
I-GC-1C	(1-2)	10/18/2005	I	Boring		380			1.2		410	360	0.06 U					923
I-GC-1C	(2-3)	10/18/2005	I	Boring		10			0.2		17.5	5	0.06 U					53.9
I-GC-2	(0-0.5)	7/14/2005	I	Boring		130			0.5 U		193	94	0.05 U					252
I-GC-2	(1-2)	7/14/2005	I	Boring		9			0.2 U		27	10	0.05 U					44.4
I-GC-2.1N	(0-0.5)	3/1/2006	I	Surface Soil		90												
I-GC-2.1S	(0-0.5)	3/1/2006	I	Surface Soil		21												
I-GC-2.1SW	(0-0.5)	3/27/2006	I	Surface Soil		8												

TABLE C-1
METALS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					Metals (mg/kg) SW6000-7000 Series													
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
				Cleanup Screening Levels (a)	**32**	**20**	**1650**	**160**	**80**	**120000**	**36/3000**	**250**	**24**	**1600**	**400**	**400**	**5.9**	**24000**
Sample Name	Depth Range	Date Collected	Area ID (b)	Sample Type														
I-GC-2.1W	(0-0.5)	3/1/2006	I	Surface Soil		30												
I-GC-2.2W	(0-0.5)	3/29/2006	I	Surface Soil		12												
I-GC-2.3W	(0-0.5)	3/29/2006	I	Surface Soil		7												
I-GC-2.4W	(0-0.5)	3/29/2006	I	Surface Soil		14												
I-GC-3	(0-0.5)	7/14/2005	I	Boring		6			0.2 U		27.1	18	0.05					56.8
I-GC-4	(0-0.5)	7/14/2005	I	Boring		7			0.2 U		39.5	15	0.05					65.6
I-GC-5	(3-3.5)	7/14/2005	I	Boring		6			0.2 U		29.2	7	0.09					52.4
I-GC-6	(3.5-4)	7/14/2005	I	Boring		7			0.2 U		26.9	4	0.05 U					43.9
I-GC-7	(0-0.5)	7/14/2005	I	Boring		5 U			0.2 U		27	11	0.05 U					54.6
I-GC-8	(3.5-4)	7/14/2005	I	Boring		9			0.2 U		29	5	0.06 U					52
I-GC-9	(3.5-4)	7/14/2005	I	Boring		10			0.2 U		33.8	6	0.07					56
I-GC-10	(0-0.5)	7/14/2005	I	Boring		19			0.2 U		46.9	32	0.06					149
I-GC-11	(0-0.5)	7/14/2005	I	Boring		11			0.2 U		26.9	10	0.04 U					55.3
I-GC-11.1E	(0-0.5)	3/1/2006	I	Surface Soil		6												
I-GC-11.1N	(0-0.5)	3/1/2006	I	Surface Soil		9												
I-GC-11.1S	(0.75-1.25)	3/1/2006	I	Surface Soil		10												
I-GC-11.1W	(0-0.5)	3/1/2006	I	Surface Soil		50												
I-GC-11.2N	(0-0.5)	3/1/2006	I	Surface Soil		16												
I-GC-12	(0-0.5)	7/14/2005	I	Boring		10			0.2 U		23.9	32	0.04 U					127
I-GC-12.1E	(0-0.5)	3/1/2006	I	Surface Soil		10												
I-GC-12.1S	(0.75-1.25)	3/1/2006	I	Hand Auger		14												
I-GC-12.1W	(0-0.5)	3/1/2006	I	Surface Soil		48												
I-GC-12.2S	(0.25-0.75)	3/1/2006	I	Surface Soil		17												
I-GC-12.3S	(0-0.5)	3/1/2006	I	Surface Soil		41												
I-GC-12.4S	(0.25-0.75)	3/1/2006	I	Surface Soil		40												
I-GC-12.4S.1E	(0-0.5)	3/27/2006	I	Surface Soil		30												
I-GC-12.4S.2E	(0-0.5)	3/27/2006	I	Surface Soil		27												
I-GC-12.5S	(0.5-1)	3/1/2006	I	Surface Soil		29												
I-GC-12.6S	(0-0.5)	3/27/2006	I	Surface Soil		5												
I-GC-12.6S.1E	(0-0.5)	3/27/2006	I	Surface Soil		34												
I-GC-12.6S.1W	(0-0.5)	3/27/2006	I	Surface Soil		15												
I-GC-13	(0-0.5)	7/14/2005	I	Boring		15			0.2 U		22.2	12	0.04 U					55
I-GC-14	(0-0.5)	7/14/2005	I	Boring		50			0.5 U		167 J	45	0.05 U					354
I-GC-14	(1-2)	7/14/2005	I	Boring		5 U			0.2 U		15.6	2	0.05 U					30.6
I-GC-15	(0-0.5)	8/22/2005	I	Hand Auger		40			0.5 U		26	9	0.05 U					76
I-GC-15	(1-2)	8/22/2005	I	Hand Auger		32			0.4		50.3	29	0.06 U					360
I-GC-15	(2-3)	8/22/2005	I	Hand Auger		11			0.3 U		33.3	21	0.07					76.3
I-GC-16	(0-0.5)	8/22/2005	I	Hand Auger		50			0.5 U		65.5	17	0.04 U					433
I-GC-16	(1-2)	8/22/2005	I	Hand Auger		7			0.2 U		16.8	3	0.05 U					39.8
I-GC-17	(0-0.5)	8/22/2005	I	Hand Auger		34			0.2 U		20	15	0.04					81.5
I-GC-17	(1-2)	8/22/2005	I	Hand Auger		10			0.2 U		21.6	4	0.05 U					42.3
I-GC-18	(0-0.5)	8/22/2005	I	Hand Auger		35			0.2 U		26.3	16	0.04 U					148
I-GC-18	(1-2)	8/22/2005	I	Hand Auger		45			0.2 U		38.4	33	0.05 U					96.1
I-GC-18	(2-3)	8/22/2005	I	Hand Auger		9			0.2 U		15.9	3	0.05					36.6
I-GC-19	(0-0.5)	8/22/2005	I	Hand Auger		31			0.2 U		37.6	18	0.12					700
I-GC-19	(1-2)	8/22/2005	I	Hand Auger		18			0.2 U		53.2	11	0.11					121
I-GC-20	(0-0.5)	8/22/2005	I	Hand Auger		38			0.2 U		40.6	13	0.06					128
I-GC-20	(1-2)	8/22/2005	I	Hand Auger		8			0.2 U		26.2	4	0.04 U					44.3

TABLE C-1
METALS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
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					Metals (mg/kg) SW6000-7000 Series													
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
				Cleanup Screening Levels (a)	32	20	1650	160	80	120000	36/3000	250	24	1600	400	400	5.9	24000
Sample Name	Depth Range	Date Collected	Area ID (b)	Sample Type														
I-GC-21	(0-0.5)	8/22/2005	I	Hand Auger		10			0.2 U		34.9	29	0.05					96.9
I-GC-22	(0-0.5)	8/22/2005	I	Hand Auger		9			0.2 U		25.4	9	0.07					49.6
I-GC-23	(0-0.5)	8/22/2005	I	Hand Auger		10			0.4		43.5	12	0.1					53.8
I-GC-24	(1.2-6)	10/19/2005	I	Boring		105			1		166	61	0.08 U					537
I-GC-24	(6.5-7.5)	10/19/2005	I	Boring		20			0.2		33.2	9	0.06 U					43.7
I-GC-24	(7.5-8)	10/18/2005	I	Boring		11			0.2 U		22	7	0.11					42.4
I-GC-24.3W.1S	(0-0.5)	3/1/2006	I	Surface Soil		6												
I-GC-24.4W	(0-0.5)	3/1/2006	I	Surface Soil		10												
I-GC-25	(0.5-1)	10/19/2005	I	Boring		9			0.2		19.9	6	0.05 U					35.4
I-GC-26	(0-0.5)	10/19/2005	I	Boring		13			0.2		31.2	9	0.05 U					50.6
I-TP-1	(0-3)	4/25/2006	I	Test Pit		22	71.8		0.2 U	28.1		14	0.05 U		5 U	0.3 U		
I-TP-2	(0-2.5)	4/25/2006	I	Test Pit		18	45.5		0.2 U	39		27	0.06		6 U	0.4 U		
I-TP-3	(0-4)	4/25/2006	I	Test Pit		13	42		0.2 U	31.8		16	0.14		5 U	0.3 U		
I-TP-4	(0-3)	4/25/2006	I	Test Pit		10	26.9		0.2 U	30.8		7	0.05		6 U	0.3 U		
I-TP-5	(0-5)	4/25/2006	I	Test Pit		122	25.4		0.2 U	28.3		76	0.05		6 U	0.4 U		
I-TP-6	(0-4)	4/25/2006	I	Test Pit		24	42		0.2 U	29.4		48	0.2		5 U	0.3 U		
I-TP-7	(0-4)	4/25/2006	I	Test Pit		15	45.1		0.2 U	30		30	0.3		5 U	0.3 U		
I-TP-8	(0-4)	4/25/2006	I	Test Pit		30	28.1		0.2 U	29.6		50	0.06		6 U	0.3 U		
IW-11		1/5/2006	I	Surface Soil		28												
IW-13		3/1/2006	I	Surface Soil		39												
IW-14		3/1/2006	I	Surface Soil		20												
I-X		2/12/2004	I	Boring		60	76.1		0.4	41.4		41	0.07 U		9 U	0.5 U		
I-Y		2/12/2004	I	Boring		5.3	71.6		0.2 U	33.2		6	0.05		6 U	0.3 U		
I-Z		2/12/2004	I	Surface Soil		240			0.7	56	868	280	0.83			0.8 U		863
Chamber-1		8/11/2006	J	Excavation		5			0.2 U	26.4	15.6	4	0.05 U					39.6
Chamber-2		8/11/2006	J	Excavation		6 U			0.2 U	30	15.3	4	0.05 U					38.4
Chamber-3		8/11/2006	J	Excavation		8 U			2	40.6	38.7	54	22.8					288
Chamber-4		8/11/2006	J	Excavation		7 U			0.5	22.8	24.5	25	11.9					235
HC-MW01 (e,f)	(5-6.5)	11/6/1991	J	Boring	10 U	12 U			4 U	78	14	5.0 U	10 U	22	5 U	10 U		25
HC-MW01 (e)	(7.5-9)	11/6/1991	J	Boring					1 U	8	11	5.0 U		10				16
HC-MW04 (e)	(5-6.5)	11/7/1991	J	Boring					1 U	10	15	5.0 U		12				22
HC-MW04 (e)	(20-21.5)	11/7/1991	J	Boring					1 U	13	21	5.0 U		18				27
J-GC-1	(0.5-1)	1/14/2005	J	Boring		8			0.2 U		19.7	6	0.05 U					69.6
J-GC-2	(0-0.5)	3/2/2005	J	Boring		5 U			0.2 U		18.2	4	0.04 U					34
J-GC-3	(0-0.5)	3/2/2005	J	Boring		14			0.3		287	23	0.05 U					339
J-GC-4	(1.5-2)	3/3/2005	J	Boring		30			0.5 U		31.8	42	0.08					77
J-GC-4	(2.5-3.5)	3/3/2005	J	Boring		7												
J-GC-4	(3.5-4.5)	3/3/2005	J	Boring		8												
J-GC-4B	(0-0.5)	7/14/2005	J	Boring		5 U			0.2 U		16.6	4	0.05 U					34.7
J-GC-6	(1.1-1.6)	7/15/2005	J	Boring		27			0.2 U		43.8	56	0.06					104
J-GC-6	(2.1-3.1)	7/15/2005	J	Boring		20 U			0.6 U		80.7	42	0.06 U					76
J-GC-6	(2-2.7)	7/15/2005	J	Boring		20 U			0.6 U		80.2	55	0.05 U					69
J-GC-6f	(0.7-1.1)	2/6/2006	J	Boring		9			0.2 U		26.2	9	0.11					51.3
J-GC-6g	(1-1.5)	2/6/2006	J	Boring		11			0.2 U		41.9	30	0.1					75.4
J-GC-6h	(1-1.5)	2/6/2006	J	Boring		34			0.2 U		48.7	31	0.07					90.1
J-GC-6i	(1-1.5)	2/6/2006	J	Boring		9			0.2 U		29.4	46	0.05 U					70.7
J-GC-6i	(3.2-4)	2/6/2006	J	Boring		20 U			0.6 U		99.4	142	0.05 U					109
J-GC-7	(0.7-1.2)	7/15/2005	J	Boring		12			0.2 U		36.3	40	0.07					70.1

TABLE C-1
METALS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
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					Metals (mg/kg) SW6000-7000 Series													
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
				Cleanup Screening Levels (a)	**32**	**20**	**1650**	**160**	**80**	**120000**	**36/3000**	**250**	**24**	**1600**	**400**	**400**	**5.9**	**24000**
Sample Name	Depth Range	Date Collected	Area ID (b)	Sample Type														
J-GC-8	(2.1-2.6)	7/15/2005	J	Boring		9			0.2 U		32	5	0.06 U					53.2
J-GC-9	(1.4-1.9)	7/15/2005	J	Boring		12			0.2 U		37.6	16	0.09					84.5
J-GC-10	(0-0.5)	7/14/2005	J	Boring		12			0.2 U		33.7	13	0.05 U					89
SS01	(0.5-0.5)	5/20/1993	J	Surface Soil	580	1600		0.45	1.5 U	84	1800	1400	0.11 U	48	0.89	0.3 U	0.45	6200
SS02	(0.5-0.5)	5/20/1993	J	Surface Soil	2.8 U	11		0.28 U	1.4 U	25	30	11	0.11 U	28	0.29 U	1.4 U	0.29 U	130
TP01	(1-1)	5/20/1993	J	Test Pit	2.7 U	14		0.27 U	1.3 U	20	24	150	0.1 U	24	0.27 U	1.3 U	0.27 U	62
TP01	(3-3)	5/20/1993	J	Test Pit	3.1 U	6.9		0.31 U	1.5 U	19	22	22	0.12 U	23	0.32 U	1.5 U	0.32 U	57
TP02	(2-2)	5/20/1993	J	Test Pit	2.9 U	4		0.29 U	1.4 U	20	9.5	2.6	0.11 U	26	0.3 U	1.4 U	0.3 U	30
TP03	(0.5-0.5)	5/20/1993	J	Test Pit	8.2	13		0.26 U	1.3 U	25	55	42	0.11 U	23	0.27 U	1.3 U	0.27 U	110
TP05	(0.5-0.5)	5/20/1993	J	Test Pit	8.5	20		0.26 U	2.6 U	1200	65	150	0.1 U	560	0.26 U	6.5 U	0.26 U	910
TP05	(1-1)	5/20/1993	J	Test Pit	2.8 U	5.3		0.28 U	1.4 U	25	15	2.7	0.11 U	23	0.27 U	1.4 U	0.27 U	36
M-1	(0.3-0.8)	1/18/2005	M	Boring		5 U			0.2 U		14.1	7	0.04 U					32.5
M-2	(1.5-2)	1/18/2005	M	Boring		5 U			0.3		23.2	47	0.05 U					118
M-3	(0-0.5)	1/18/2005	M	Boring		14			0.2 U		85.3	184	0.05 U					106
M-4	(0.8-1.3)	1/17/2005	M	Boring		6			0.2 U		16.4	6	0.05 U					36.2
M-GC-1	(1.6-2.1)	3/3/2005	M	Boring		5 U			0.2 U		17.6	28	0.06					60.8
M-GC-2	(1.5-2)	3/2/2005	M	Boring		5			0.3		18.7	5	0.04 U					33.6
M-GC-3	(1-1.5)	3/3/2005	M	Boring		5 U			0.2 U		10.7	2	0.05 U					20.4
M-GC-4	(1.5-2)	3/2/2005	M	Boring		8			0.2 U		23.2	28	0.05 U					78.5
M-GC-5	(1-1.5)	3/2/2005	M	Boring		5 U			0.2 U		15.4	3	0.05 U					33.3

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded cells indicate an exceedance of the lowest site cleanup level.

(a) Development of the cleanup levels is presented in Table 9 of the work plan.
(b) Refers to the Investigation Area.
(c) PZ-10 is located at P-10. PZ-10 was taken during the drilling for the P-10 monitoring well.
(d) Sample was also analyzed for aluminum, boron, calcium, iron, magnesium, silicon, sodium, and tin. Results were below the detection limit for magnesium, and tin. Results were not reported because they are not considered a concern for the Site.
(e) Analysis of the sample were performed using X-Ray Florescence Spectrometry (XRF) or Flame Atomic Absorption (FAA). Quantitations are estimates, compound identifications are tentative.
(f) Samples were also analyzed for Aluminum, Iron, Manganese, and Sulfur. Results are not reported because these metals are not considered a concern for the Site. See Hart Crowser 1991, Appendix C for full results. Both XRF and FAA were used for this sample, the highest result for detects is reported. If the constituent was not detected using either method, the lowest detection limit is reported.

TABLE C-2
PETROLEUM HYDROCARBONS AND BTEX IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
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					NWTPH-Dx (mg/kg)			NWTPH-G (mg/kg)	BTEX (mg/kg) Method 8020/8015/8021/8260						NWTPH-HCID / Hydrocarbon Scan (mg/kg)					
					Diesel-Range Organics	Lube Oil	Mineral Oil	Gasoline-Range Organics	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene	Xylenes, Total	Diesel	Lube Oil	Gasoline-Range Organics	Jet Fuel	Kerosene	Mineral Spirits
				Cleanup Screening Levels (a)	2000	2000	4000	100 / 30 (d)	0.29	110	18	15	150	15	2000	2000	100 / 30 (e)			
Sample Name	Depth Range	Date Collected	Area ID	Sample Type																
F-GC-1	(0-0.5)	1/14/2005	F	Boring	53 U	110 U											21 U			
ECI-H-1		10/7/1991	G	Surface Soil	1400															
ECI-N-2		10/7/1991	G	Surface Soil	61				0.005 U	0.005 U	0.005 U			0.005 U						
G1-TP1	(0-4)	4/25/2006	G	Test Pit	180	110														
G1-TP2	(0-6)	4/25/2006	G	Test Pit	92	97														
G1-TP3	(0-5)	4/25/2006	G	Test Pit	98	15														
G1-TP4	(0-6)	4/25/2006	G	Test Pit	17	45														
G1-TP5	(0-5)	4/25/2006	G	Test Pit	12	21														
G1-TP6	(0-4)	4/25/2006	G	Test Pit	5.5 U	16														
G1-TP7	(0-5)	4/25/2006	G	Test Pit	7.6	18														
G1-TP8	(0-5)	4/25/2006	G	Test Pit	32	91														
G-3	(3-3)	2/11/2004	G	Boring	13	62		6.7 UJ	0.033 U	0.033 U	0.033 U	0.067 U	0.033 U	0.130 U						
G-FA-4	(2-2.5)	1/20/2005	G	Boring					0.0012 U	0.18	0.41 ES	1.3 ES	0.94 ES							
G-FA-5	(8-8.5)	1/20/2005	G	Boring	120	57			0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U							
G-FA-8	(4-4.5)	1/20/2005	G	Boring	5 U	10 U			0.0008 U	0.0008 U	0.0008 U	0.0011	0.0008 U							
G-GC-1	(1.5-2)	3/2/2005	G	Boring											50 U	100 U	20 U			
G-GC-2	(1.4-1.9)	3/2/2005	G	Boring											50 U	100 U	20 U			
G-GC-3	(1-1.5)	3/2/2005	G	Boring											50 U	100 U	20 U			
PZ-10 (b)	(3-3)	2/11/2008	G	Boring	5.0 U	10 U		6.6 UJ	0.033 U	0.033 U	0.033 U	0.066 U	0.033 U	0.130 U						
SEE-EC-1	(1-1.5)	1/11/1989	G	Boring	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-1	(3-4.5)	1/11/1989	G	Boring	19				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-1	(5-6.5)	1/11/1989	G	Boring	86				0.005 U	0.01 U	0.01 U			0.028						
SEE-EC-1	(7.5-9)	1/11/1989	G	Boring	22				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-2	(1-2.5)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-2	(12-13.5)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-2	(3-4.5)	1/11/1989	G	Monitoring Well	39				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-2	(5-6.5)	1/11/1989	G	Monitoring Well	22				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-2	(7.5-9)	1/11/1989	G	Monitoring Well	43				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-3	(10-11.5)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-3	(12.5-14)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-3	(2-3.5)	1/11/1989	G	Monitoring Well	27				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-3	(5-6.5)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-3	(7.5-9)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-4	(10-11.5)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-4	(12.5-14)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-4	(2-3.5)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-4	(5-6.5)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
SEE-EC-4	(7.5-9)	1/11/1989	G	Monitoring Well	10 U				0.005 U	0.01 U	0.01 U			0.01 U						
STOCKPILE		11/12/2004	G	Stock Pile	110 J	190 J									70 J	140 J	28 UJ			
ECI-G-2	(0-0.5)	7/9/1987	I	Surface Soil		17700														
ECI-Q-1	(1-2)	10/7/1991	I	Test Pit	10 U	230		10 U	0.005 U	0.005 U	0.005 U			0.005 U			10 U	10 U	10 U	10 U
ECI-Q-5	(1-2)	10/7/1991	I	Test Pit	10 U	50		10 U	0.005 U	0.005 U	0.005 U			0.005 U			10 U	10 U	10 U	10 U
ECI-Q-6	(0-1)	10/7/1991	I	Test Pit	20	60		10 U	0.005 U	0.005 U	0.005 U			0.005 U			10 U	10 U	10 U	10 U
ECI-Q-8	(5-5)	10/7/1991	I	Test Pit	10 U	100		10 U	0.005 U	0.005 U	0.005 U			0.005 U			10 U	10 U	10 U	10 U
HC-GT-1A (c)		11/7/1991	I	Boring					0.05 U	0.05 U	0.05 U			0.05 U	10 U	10 U	10 U	10 U	10 U	10 U
HC-MW02 (c)	(2.5-4)	11/6/1991	I	Boring					0.29	0.62	0.055			0.29	23	10 U	10 U		10 U	10 U
HC-MW02 (c)	(12.5-14)	11/6/1991	I	Boring					0.05 U	0.05 U	0.05 U			0.05 U	10 U	40	10 U		10 U	10 U
HC-MW03 (c)	(5-6.5)	11/7/1991	I	Boring					0.05 U	0.05 U	0.05 U			0.05 U	10 U	10 U	10 U		10 U	10 U
HC-MW03 (c)	(10-11.5)	11/7/1991	I	Boring					0.05 U	0.05 U	0.05 U			0.05 U	10 U	10 U	10 U		10 U	10 U
I2-AC-1A		7/12/2006	I	Excavation	52	74														
I2-1	(1-1.5)	5/8/2006	I	Boring	85	1000									58	120	23 U			
I2-2	(1-2.25)	5/8/2006	I	Boring	1200	220									76	150	30 U			
I2-3	(0.5-2.5)	5/8/2006	I	Boring	1800	300									80	160 U	32 U			
I2-4	(1.4-2.4)	5/8/2006	I	Boring	1100	200									73	150 U	29 U			
I2-5	(1.3-2.5)	5/8/2006	I	Boring	1300	220									70	140 U	28 U			
I2-6	(1.5-2.2)	5/8/2006	I	Boring	1700	270									79	160 U	31 U			
I2-7	(1.7-2.8)	5/8/2006	I	Boring	1800	570									87	180	35 U			
I2-8	(1.5-3.3)	5/8/2006	I	Boring	1100	240									70	140	28 U			
I2-9	(1.7-3.3)	5/8/2006	I	Boring	1300	200									77	150	31 U			
I2-10	(1.5-2.5)	5/8/2006	I	Boring	260	77									60	120 U	24 U			
I-3		2/12/2004	I	Boring	19	34														
I-GC-1	(0-0.5)	7/14/2005	I	Boring											50 U	100 U	20 U			

TABLE C-2
PETROLEUM HYDROCARBONS AND BTEX IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					NWTPH-Dx (mg/kg)			NWTPH-G (mg/kg)	BTEX (mg/kg) Method 8020/8015/8021/8260						NWTPH-HCID / Hydrocarbon Scan (mg/kg)					
					Diesel-Range Organics	Lube Oil	Mineral Oil	Gasoline-Range Organics	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene	Xylenes, Total	Diesel	Lube Oil	Gasoline-Range Organics	Jet Fuel	Kerosene	Mineral Spirits
				Cleanup Screening Levels (a)	**2000**	**2000**	**4000**	**100 / 30 (d)**	**0.29**	**110**	**18**	**15**	**150**	**15**	**2000**	**2000**	**100 / 30 (e)**			
Sample Name	Depth Range	Date Collected	Area ID	Sample Type																
I-GC-2	(0-0.5)	7/14/2005	I	Boring	17	69	59								50 U	100	20 U			
I-GC-3	(0-0.5)	7/14/2005	I	Boring											50 U	100 U	20 U			
I-GC-4	(0-0.5)	7/14/2005	I	Boring	9.5	63	53								50 U	100	20 U			
I-GC-5	(3-3.5)	7/14/2005	I	Boring											50 U	100 U	20 U			
I-GC-6	(3.5-4)	7/14/2005	I	Boring	13	130	110								50 U	100	20 U			
I-GC-7	(0-0.5)	7/14/2005	I	Boring											50 U	100 U	20 U			
I-GC-8	(3.5-4)	7/14/2005	I	Boring											50 U	100 U	20 U			
I-GC-9	(3.5-4)	7/14/2005	I	Boring											50 U	100 U	20 U			
I-GC-10	(0-0.5)	7/14/2005	I	Boring	23	120	100								50 U	100	20 U			
I-GC-11	(0-0.5)	7/14/2005	I	Boring											50 U	100 U	20 U			
I-GC-12	(0-0.5)	7/14/2005	I	Boring	52	280	240								50	100	20 U			
I-GC-13	(0-0.5)	7/14/2005	I	Boring	17	110	91								50 U	100	20 U			
I-GC-14	(0-0.5)	7/14/2005	I	Boring	17	72	61								50 U	100	20 U			
I-GC-15	(0-0.5)	8/22/2005	I	Hand Auger											50 U	100 U	20 U			
I-GC-16	(0-0.5)	8/22/2005	I	Hand Auger	250	630									50	100	20 U			
I-GC-17	(0-0.5)	8/22/2005	I	Hand Auger											50 U	100 U	20 U			
I-GC-18	(0-0.5)	8/22/2005	I	Hand Auger	110	210									50	100	20 U			
I-GC-19	(0-0.5)	8/22/2005	I	Hand Auger											50 U	100 U	20 U			
I-GC-20	(0-0.5)	8/22/2005	I	Hand Auger	24	79									50 U	100	20 U			
I-GC-21	(0-0.5)	8/22/2005	I	Hand Auger	60	160									50	100	20 U			
I-GC-22	(0-0.5)	8/22/2005	I	Hand Auger											50 U	100 U	20 U			
I-GC-23	(0-0.5)	8/22/2005	I	Hand Auger	24	58									50	100	20 U			
I-GC-24	(1.2-6)	10/19/2005	I	Boring	1200	960									52	100	21			
I-GC-24	(6.5-7.5)	10/19/2005	I	Boring											50 U	100 U	20 U			
I-GC-25	(0.5-1)	10/19/2005	I	Boring											50 U	100 U	20 U			
I-GC-26	(0-0.5)	10/19/2005	I	Boring											50 U	100 U	20 U			
I-TP-1	(0-3)	4/25/2006	I	Test Pit	13	110														
I-TP-2	(0-2.5)	4/25/2006	I	Test Pit	11	38														
I-TP-3	(0-4)	4/25/2006	I	Test Pit	8.2	44														
I-TP-4	(0-3)	4/25/2006	I	Test Pit	5.9 U	15														
I-TP-5	(0-5)	4/25/2006	I	Test Pit	10	24														
I-TP-6	(0-4)	4/25/2006	I	Test Pit	12	58														
I-TP-7	(0-4)	4/25/2006	I	Test Pit	11	55														
I-TP-8	(0-4)	4/25/2006	I	Test Pit	14	56														
IW-11		1/5/2006	I	Surface Soil	34	81														
IW-13		3/1/2006	I	Surface Soil	37 J	100 J														
IW-14		3/1/2006	I	Surface Soil	45 J	63 J														
I-X		2/12/2004	I	Boring	0.94	150														
I-Y		2/12/2004	I	Boring	7	10 U														
I-Z		2/12/2004	I	Surface Soil	5 U	14														
Chamber-1		8/11/2006	J	Excavation	5.5 U	11 U			0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U							
Chamber-2		8/11/2006	J	Excavation	5.6 U	11 U			0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U							
Chamber-3		8/11/2006	J	Excavation	190	1100			0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U							
Chamber-4		8/11/2006	J	Excavation	180	720			0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U							
HC-MW01 (c)	(5-6.5)	11/6/1991	J	Boring					0.05 U	0.05 U	0.05 U			0.05 U	10 U	10 U	10 U		10 U	10 U
HC-MW01 (c)	(7.5-9)	11/6/1991	J	Boring					0.05 U	0.05 U	0.05 U			0.05 U	10 U	10 U	10 U		10 U	10 U
HC-MW04 (c)	(5-6.5)	11/7/1991	J	Boring					0.05 U	0.05 U	0.05 U			0.05 U	10 U	10 U	10 U		10 U	10 U
HC-MW04 (c)	(20-21.5)	11/7/1991	J	Boring					0.05 U	0.097	0.15			0.26	10 U	10 U	10 U		10 U	10 U
J-FA-1	(4-5)	1/17/2005	J	Boring											60 U	120 U	24 U			
J-FA-2	(4-5)	1/17/2005	J	Boring	46 J	540									56	110	22 U			
J-GC-1	(0.5-1)	1/14/2005	J	Boring	310	3.7									52	100	21 U			
J-GC-1	(1.5-2.5)	1/14/2005	J	Boring	5 UJ	10 UJ														
J-GC-1B	(0.9-1.4)	7/14/2005	J	Boring	5.3 U	11 U														
J-GC-1C	(0.7-1.2)	7/14/2005	J	Boring	5.3 U	11 U														
J-GC-2	(0-0.5)	3/2/2005	J	Boring											50 U	100 U	20 U			
J-GC-3	(0-0.5)	3/2/2005	J	Boring											50 U	100 U	20 U			
J-GC-4	(1.5-2)	3/3/2005	J	Boring											50 U	100 U	20 U			
J-GC-6	(1.1-1.6)	7/15/2005	J	Boring	82	130									50 U	100	20 U			
J-GC-7	(0.7-1.2)	7/15/2005	J	Boring											50 U	100 U	20 U			
J-GC-8	(2.1-2.6)	7/15/2005	J	Boring											50 U	100 U	20 U			
J-GC-9	(1.4-1.9)	7/15/2005	J	Boring	26	140									50 U	100	20 U			
J-GC-10	(0-0.5)	7/14/2005	J	Boring											50 U	100 U	20 U			

TABLE C-2
PETROLEUM HYDROCARBONS AND BTEX IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					NWTPH-Dx (mg/kg)			NWTPH-G (mg/kg)	BTEX (mg/kg) Method 8020/8015/8021/8260						NWTPH-HCID / Hydrocarbon Scan (mg/kg)					
					Diesel-Range Organics	Lube Oil	Mineral Oil	Gasoline-Range Organics	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene	Xylenes, Total	Diesel	Lube Oil	Gasoline-Range Organics	Jet Fuel	Kerosene	Mineral Spirits
				Cleanup Screening Levels (a)	2000	2000	4000	100 / 30 (d)	0.29	110	18	15	150	15	2000	2000	100 / 30 (e)			
Sample Name	Depth Range	Date Collected	Area ID	Sample Type																
J-MSRC		5/23/2007	J	Excavation	390000	410000									500	1000	200 U			
J-MSRC-B		5/24/2007	J	Excavation	690	770									50	100	20 U			
J-MSRC-E		5/24/2007	J	Excavation	25 U	50 U									50 U	100 U	20 U			
J-MSRC-M052907		5/29/2007	J	Excavation	25 U	50 U									50	100	20 U			
J-MSRC-N		5/24/2007	J	Excavation	190	200									50	100	20 U			
J-MSRC-N052907		5/29/2007	J	Excavation	440	460									50	100	20 U			
J-MSRC-S		5/24/2007	J	Excavation	60	110									50	100	20 U			
J-MSRC-S052907		5/29/2007	J	Excavation	25 U	50 U									50	100	20 U			
J-MSRC-SP1		5/24/2007	J	Excavation	580	720									50	100	20 U			
J-MSRC-SP2		5/24/2007	J	Excavation	140	190									50	100	20 U			
J-MSRC-SP3		5/24/2007	J	Excavation	190	200									50	100	20 U			
J-MSRC-W		5/24/2007	J	Excavation	450	480									50	100	20 U			
KFI-SS02	(8-8)	10/1/1993	J	Excavation	73	870														
KFI-SS04	(6-6)	10/1/1993	J	Excavation	470	400														
KFI-SS07	(7-7)	10/1/1993	J	Excavation	230	1700														
KFI-SS11	(4-4)	10/20/1993	J	Excavation		52000														
KFI-SS12	(8-8)	10/20/1993	J	Excavation	145	460														
KFI-SS14	(14-14)	10/20/1993	J	Excavation	216	1660														
KFI-SS17	(14-14)	10/20/1993	J	Excavation		10060														
KFI-SS22	(19-19)	10/20/1993	J	Excavation	10 U	435														
KFI-WP01		9/30/1993	J	Stock Pile	6000															
KFI-WP02		9/30/1993	J	Stock Pile	14000															
KFI-WP03		9/30/1993	J	Stock Pile	15000															
KFI-WP04		9/30/1993	J	Stock Pile	13000															
KFI-WP-A		10/1/1993	J	Stock Pile	570	1300														
KFI-WP-B		10/1/1993	J	Stock Pile	390	770														
KFI-WP-C		10/1/1993	J	Stock Pile	130	280														
KFI-WP-Comp		9/30/1993	J	Stock Pile	3700				0.07 U	0.07 U	0.2			2.3						
KFI-WP-D		10/1/1993	J	Stock Pile	480	1500														
ECI-B-1		10/7/1991	M	Surface Soil	7160															
ECI-M-1		9/24/1991	M	Surface Soil	10 U	79		10 U									10 U			
ECI-N-1		10/7/1991	M	Surface Soil	310				0.005 U	0.005 U	0.005 U			0.005 U						
M-1	(0.3-0.8)	1/18/2005	M	Boring	53 U	110 U											21 U			
M-2	(1.5-2)	1/18/2005	M	Boring	58 U	120 U											23 U			
M-3	(0-0.5)	1/18/2005	M	Boring	58 U	120 U											23 U			
M-4	(0.8-1.3)	1/17/2005	M	Boring	53 UJ	110 UJ											21 UJ			
M-FA-1	(3.5-4)	1/17/2005	M	Boring	5 U	10 U		2.7 U	0.0068 U	0.014 U	0.014 U	0.027 U	0.014 U	0.054 U						
M-FA-2	(3.5-4)	1/17/2005	M	Boring	5 U	10 U		3.4 U	0.0085 U	0.017 U	0.017 U	0.034 U	0.017 U	0.068 U						
M-GC-1	(1.6-2.1)	3/3/2005	M	Boring	50 U	100 U											20 U			
M-GC-2	(1.5-2)	3/2/2005	M	Boring	50 U	100 U											20 U			
M-GC-3	(1-1.5)	3/3/2005	M	Boring	50 U	100 U											20 U			
M-GC-4	(1.5-2)	3/2/2005	M	Boring	50 U	100 U											20 U			
M-GC-5	(1-1.5)	3/2/2005	M	Boring	50 U	100 U											20 U			
CSP-1		10/20/1993		Stock Pile	10 U	67														
CSP-2		10/20/1993		Stock Pile	1050	1960														
CSP-3		10/20/1993		Stock Pile	1060	1990														
CSP-4		10/20/1993		Stock Pile	90	60														

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
ES = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) Development of the cleanup levels is presented in Table 9 of the work plan.
(b) PZ-10 is located at P-10. PZ-10 was taken during the drilling for the P-10 monitoring well.
(c) Analysis of the sample were performed using screening techniques. Quantitations are estimates, compound identifications are tentative.
(d) Cleanup Level is 30 if benzene is present.

TABLE C-3
PETROLEUM HYDROCARBONS AND BTEX IN CHARACTERIZATION WATER SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					NWTPH-Dx (µg/L)		NWTPH-G (µg/L)	BTEX (µg/L) EPA 8020/8021/8240/8260						NWTPH-HCID/ Hydrocarbon Scan					
					Diesel-Range Organics	Lube Oil	Gasoline-Range Organics	Benzene	Ethylbenzene	Toluene	m, p-Xylene	o-Xylene	Xylenes, Total	Diesel-Range Organics	Lube Oil	Gasoline-Range Organics	Jet Fuel	Kerosene	Mineral Spirits
				Cleanup Screening Levels (a)	**500**	**500**	**800**	**51**	**2100**	**15000**	**1600**	**16000**	**1600**	**500**	**500**	**800**			
Sample Name	Depth Range	Date Collected	Area ID	Sample Type															
ECI-AGI-D-1		6/23/1992	G	Concrete Settling Basin Sump				1 U	1 U	1 U			1 U						
ECI-D-1		10/7/1991	G	Concrete Settling Basin Sump				1 U	1 U	1 U			1 U						
ECI-MW-2		10/7/1991	G	Monitoring Well				1 U	1 U	1 U			1 U						
G-1		12/22/2003	G	Boring	250 U	500 U	250 U	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U							
G-2		12/22/2003	G	Boring	250 U	500 U	250 U	0.2 U	0.2 U	0.4	0.4 U	0.2 U							
G-3		2/11/2004	G	Boring				0.2 U	0.2 U	0.2 U	0.4 U	0.2 U							
G-FA-4		1/20/2005	G	Boring	250 U	500 U		1 U	4.3	1.1	17	4.1							
G-FA-7		1/20/2005	G	Boring	250 U	500 U		1 U	1 U	1 U	1 U	1 U							
SEE-EC-2	(2-12)	1/12/1989	G	Monitoring Well	10 U			0.5 U	0.5 U	9.1			3.1						
SEE-EC-3	(2-12)	1/12/1989	G	Monitoring Well	10 U			0.5 U	0.5 U	0.6			2.3						
SEE-EC-4	(2-12)	1/12/1989	G	Monitoring Well	10 U			0.5 U	0.5 U	0.67			0.72						
HC-MW02	(7-16)	7/10/1992	I	Monitoring Well				1 U	1 U	1 U			1 U						
HC-MW03	(5-15)	7/10/1992	I	Monitoring Well				1 U	1 U	1 U			1 U						
P11		2/19/2004	I	Monitoring Well	250 U	500 U	250 U	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U							
P12		2/19/2004	I	Monitoring Well	250 U	500 U	250 U	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U							
HC-MW01	(5-15)	7/10/1992	J	Monitoring Well				1 U	1 U	1 U			1 U						
HC-MW04	(5-15)	7/10/1992	J	Monitoring Well				1 U	1 U	1 U			1 U						
J-1		2/12/2004	J	Boring	250 U	500 U	250 U	0.2 U	0.2 U	1.6	0.4 U	0.2 U							
J-2		2/12/2004	J	Boring	250 U	500 U	250 U	0.2 U	0.2 U	2.3	0.4 U	0.2 U							
J-FA-1		1/17/2005	J	Boring										630 U	630 U	250 U			
J-FA-2		1/17/2005	J	Boring										630 U	630 U	250 U			
ECI-MW-1		10/7/1991	M	Monitoring Well			500 U	5 U	10 U	10 U			10 U	50 U	50 U	50 U	50 U	50 U	50 U
ECI-MW-3		10/7/1991	M	Monitoring Well				1 U	1 U	1 U			1 U						
M-1		1/18/2005	M	Boring				1 U	1 U	1 U	1 U	1 U		630 U	630 U	250 U			
M-2		1/18/2005	M	Boring				1 U	1 U	1 U	1 U	1 U		630 U	630 U	250 U			
M-3		1/18/2005	M	Boring				6.4	1 U	1 U	1 U	1 U		630 U	630 U	250 U			
M-4		1/17/2005	M	Boring				1 U	1 U	1 U	1 U	1 U		630 U	630 U	250 U			
M-FA-1		1/17/2005	M	Boring	250 U	500 U	250 U	1 U	1 U	1 U	1 U	1 U	2 U						
M-FA-2		1/17/2005	M	Boring	250 U	500 U	250 U	1 U	1 U	1 U	1 U	1 U	2 U						

U = the analyte was not detected in the sample at the given reporting limit.

(a) Development of the cleanup levels is presented in Table 8 of the work plan.

TABLE C-4
METALS IN CHARACTERIZATION WATER SAMPLES
AMERON HULBERT SITE PORT OF EVERETT, WASHINGTON

	Area ID:	G	G	G	G	G	G	G	G	G	I	I	I
	Sample Name:	AGI-MW-2	ECI-Area-D	ECI-D-1	G-3	G-FA-4	G-FA-7	P10	PS-1/2	PS-3	HC-MW02	HC-MW03	P11
	Depth Range:										(7-16)	(5-15)	
	Date Collected:	6/30/1992	10/9/1991	10/7/1991	2/11/2004	1/20/2005	1/20/2005	2/18/2004	1/19/1989	1/19/1989	7/10/1992	7/10/1992	2/19/2004
	Sample Type:	Monitoring Well	Concrete Settling Basin Sump	Concrete Settling Basin Sump	Boring	Boring	Boring	Monitoring Well	Pond Sample	Pond Sample	Monitoring Well	Monitoring Well	Monitoring Well
	Cleanup Screening Levels (a)												
DISSOLVED METALS (µg/L)													
SW6000-7000 Series													
Antimony	640	5 U	50 U						500 U		10 U	10 U	
Arsenic	5	7.5	5 U		1 U	8	10	4	10 U		10 U	10 U	1 U
Beryllium	273	5 U	5 U						10 U		10 U	10 U	
Cadmium	8.8	0.2 U	3 U		2 U	0.2 U	0.2 U	2 U	1 U		0.4 U	0.4 U	2 U
Chromium	240000	10 U	7		5 U			5 U	11		20 U	20 U	5 U
Cobalt									10 U				
Copper	2.4	10 U	10 U		2 U	0.6	0.5 U	2 U	10		12	38	2 U
Lead	8.1	3 U	2 U		1 U	1 U	1 U	1 U	5 U		6.6	6 U	1 U
Mercury	0.1	0.2 U	0.5 U		0.1 U	0.1 U	0.1 U	0.1 U	1 U		0.2 U	0.2 U	0.1 U
Molybdenum									500 U				
Nickel	50	10 U	20 U						10 U		20 U	20 U	
Selenium	0.5	5 U	5 U						10 U		10 U	10 U	
Silver	5.4	5 U	10 U		3 U			3 U	10 U		10 U	10 U	3 U
Thallium	0.5	5 U	5 U						100 U		10 U	10 U	
Vanadium									500 U				
Zinc	81	10 U	10 U		6 U	4 U	4 U	6 U	10 U		12	12	6 U
TOTAL METALS (µg/L)													
SW6000-7000 Series													
Antimony	640	5 U		50 U						500 U	10 U	10 U	
Arsenic	5	87		5 U						10 U	15	26	
Beryllium	273	5 U		5 U						10 U	10 U	10 U	
Cadmium	8.8	2.3		3 U						6	0.4 U	1	
Chromium	240000	320		6						13	13	54	
Cobalt										10 U			
Copper	2.4	400		14						10	28	78	
Lead	8.1	190		2 U						120	26	30	
Mercury	0.1	0.68		0.5 U						1 U	0.2 U	0.2 U	
Molybdenum										500 U			
Nickel	50	380		20 U						10 U	20 U	50	
Selenium	0.5	5 U		5 U						10 U	10 U	10 U	
Silver	5.4	5 U		10 U						10 U	10 U	10 U	
Thallium	0.5	5 U		5 U						100 U	10 U	10 U	
Vanadium										500 U			
Zinc	81	750		10 U						10 U	48	100	

TABLE C-4
METALS IN CHARACTERIZATION WATER SAMPLES
AMERON HULBERT SITE PORT OF EVERETT, WASHINGTON

Area ID:		I	J	J	J	J	M	M	M	M
Sample Name:		P12	HC-MW01	HC-MW04	J-1	J-2	M-1	M-2	M-3	M-4
Depth Range:			(5-15)	(5-15)						
Date Collected:		2/19/2004	7/10/1992	7/10/1992	2/12/2004	2/12/2004	1/18/2005	1/18/2005	1/18/2005	1/17/2005
Sample Type:		Monitoring Well	Monitoring Well	Monitoring Well	Boring	Boring	Boring	Boring	Boring	Boring
	Cleanup Screening Levels (a)									
DISSOLVED METALS (µg/L)										
SW6000-7000 Series										
Antimony	640		10 U	10 U						
Arsenic	5	2	10 U	10 U	2	6	1.8	14	0.8	2.3
Beryllium	273		10 U	10 U						
Cadmium	8.8	2 U	0.4 U	0.4 U	2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chromium	240000	5 U	20 U	20 U	5 U	5 U				
Cobalt										
Copper	2.4	2 U	12	20 U	4	2 U	0.7	0.6	0.5 U	0.5 U
Lead	8.1	1 U	6 U	6 U	1 U	1 U	1 U	1 U	1 U	1 U
Mercury	0.1	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Molybdenum										
Nickel	50		20 U	20 U						
Selenium	0.5		10 U	10 U						
Silver	5.4	3 U	10 U	10 U	3 U	3 U				
Thallium	0.5		10 U	10 U						
Vanadium										
Zinc	81	6 U	16	12	6 U	6 U	4 U	4 U	4 U	4 U
TOTAL METALS (µg/L)										
SW6000-7000 Series										
Antimony	640		10 U	10 U						
Arsenic	5		16	15						
Beryllium	273		10 U	10 U						
Cadmium	8.8		4.4	4.5						
Chromium	240000		31	30						
Cobalt										
Copper	2.4		51	68						
Lead	8.1		16	20						
Mercury	0.1		0.2 U	0.2 U						
Molybdenum										
Nickel	50		36	30						
Selenium	0.5		10 U	10 U						
Silver	5.4		10 U	10 U						
Thallium	0.5		10 U	10 U						
Vanadium										
Zinc	81		84	77						

U = the analyte was not detected in the sample at the given reporting limit.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) Development of the cleanup levels is presented in Table 8 of the work plan.

TABLE C-5
VOCS IN CHARACTERIZATION WATER SAMPLES
AMERON/HULBERT SITE,
PORT OF EVERETT, WASHINGTON

Area ID:		G	G	G	G	G	G	G	G	I	I	I	I	I
Sample Name:		AGI-D-1	ECI-D-1	ECI-MW-2	G-1	G-2	G-3	G-FA-4	G-FA-7	HC-MW02	HC-MW02	HC-MW03	HC-MW03	P11
Depth Range:											(7-16)		(5-15)	
Date Collected:		6/23/1992	10/7/1991	10/7/1991	12/22/2003	12/22/2003	2/11/2004	1/20/2005	1/20/2005	11/8/1991	7/10/1992	11/8/2009	7/10/1992	2/19/2004
Sample Type:	Cleanup Screening Levels (a)	Concrete Settling Basin Sump	Concrete Settling Basin Sump	Monitoring Well	Boring	Boring	Boring	Boring	Boring	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well
VOCs (µg/L)														
EPA Method 8260														
1,1,1,2-Tetrachloroethane					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
1,1,1-Trichloroethane	420000	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
1,1,2,2-Tetrachloroethane		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane					0.2 U	0.2 U	0.2 U	2 U	2 U					0.2 U
1,1,2-Trichloroethane		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
1,1-Dichloroethane	800	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
1,1-Dichloroethene		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
1,1-Dichloropropene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
1,2,3-Trichlorobenzene					0.5 U	0.5 U	0.5 U	5 U	5 U					0.5 U
1,2,3-Trichloropropane					0.5 U	0.5 U	0.5 U	2 U	2 U					0.5 U
1,2,4-Trichlorobenzene					0.5 U	0.5 U	0.5 U	5 U	5 U					0.5 U
1,2,4-Trimethylbenzene	400				0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
1,2-Dibromo-3-chloropropane					2 U	2 U	2 U	5 U	5 U					2 U
1,2-Dichlorobenzene			1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
1,2-Dichloroethane	1600	1 U	1	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
1,2-Dichloroethene		1 U									1 U		1 U	
1,2-Dichloropropane		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
1,3,5-Trimethylbenzene	400				0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
1,3-Dichlorobenzene			1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
1,3-Dichloropropane					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
1,4-Dichlorobenzene			1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
2,2-Dichloropropane					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
2-Butanone		10 U	10 U	10 U	1 U	1 U	1 U	5 U	5 U		10 U		10 U	1 U
2-Chloroethylvinylether			10 U	10 U	0.5 U	0.5 U	0.5 U	5 U	5 U					0.5 U
2-Chlorotoluene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
2-Hexanone		10 U	10 U	10 U	1 U	1 U	1 U	5 U	5 U		10 U		10 U	1 U
4-Chlorotoluene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
4-Isopropyltoluene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
4-Methyl-2-Pentanone (MIBK)		10 U	10 U	10 U	1 U	1 U	1 U	5 U	5 U		10 U		10 U	1 U
Acetone	800	10 U	20 U	20 U	2.8	1 U	1 U	5 U	5 U		10 U		10 U	1 U
Acrolein					5 U	5 U	5 U	50 U	50 U					5 U
Acrylonitrile					1 U	1 U	1 U	5 U	5 U					1 U
Benzene	51	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U		1 U		1 U	0.2 U
Bromobenzene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
Bromochloromethane					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
Bromodichloromethane		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
Bromoethane					0.2 U	0.2 U	0.2 U	2 U	2 U					0.2 U
Bromoform		5 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	5 U	5 U	5 U	0.2 U
Bromomethane		10 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U		10 U		10 U	0.2 U
Carbon Disulfide	800	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
Carbon Tetrachloride		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
Chlorobenzene		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
Chloroethane	15	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U		1 U		1 U	0.2 U
Chloroform	470	1 U	4	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
Chloromethane		10 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U		10 U		10 U	0.2 U
cis-1,2-Dichloroethene	70		1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
cis-1,3-Dichloropropene		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
Dibromochloromethane		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U	1 U	5 U	1 U	0.2 U
Dibromomethane					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U

TABLE C-5
VOCS IN CHARACTERIZATION WATER SAMPLES
AMERON/HULBERT SITE,
PORT OF EVERETT, WASHINGTON

Area ID:		G	G	G	G	G	G	G	G	I	I	I	I	I
Sample Name:		AGI-D-1	ECI-D-1	ECI-MW-2	G-1	G-2	G-3	G-FA-4	G-FA-7	HC-MW02	HC-MW02	HC-MW03	HC-MW03	P11
Depth Range:											(7-16)		(5-15)	
Date Collected:		6/23/1992	10/7/1991	10/7/1991	12/22/2003	12/22/2003	2/11/2004	1/20/2005	1/20/2005	11/8/1991	7/10/1992	11/8/2009	7/10/1992	2/19/2004
Sample Type:	Cleanup Screening Levels (a)	Concrete Settling Basin Sump	Concrete Settling Basin Sump	Monitoring Well	Boring	Boring	Boring	Boring	Boring	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well
Ethylbenzene	2100	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	4.3	1 U		1 U		1 U	0.2 U
Ethylene Dibromide					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
Hexachlorobutadiene					0.5 U	0.5 U	0.5 U	5 U	5 U					0.5 U
Isopropylbenzene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
m, p-Xylene	1600				0.4 U	0.4 U	0.4 U	17	1 U					0.4 U
Methyl Iodide					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
Methylene Chloride	590	5 U	10 U	10 U	0.3 U	0.3 U	0.3 U	2 U	2 U	5 U	5 U	5 U	5 U	0.3 U
Naphthalene	4900				0.5 U	0.5 U	0.5 U	5 U	5 U					0.5 U
n-Butylbenzene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
n-Propylbenzene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
o-Xylene	16000				0.2 U	0.2 U	0.2 U	4.1	1 U					0.2 U
sec-Butylbenzene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
Styrene		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U		1 U		1 U	0.2 U
tert-Butylbenzene					0.2 U	0.2 U	0.2 U	1 U	1 U					0.2 U
Tetrachloroethene		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
Toluene	15000	1 U	1 U	1 U	0.2 U	0.4	0.2 U	1.1	1 U		1 U		1 U	0.2 U
trans-1,2-Dichloroethene	10000		1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	5 U		5 U		0.2 U
trans-1,3-Dichloropropene		1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U		1 U		1 U	0.2 U
trans-1,4-Dichloro-2-butene					1 U	1 U	1 U	5 U	5 U					1 U
Trichloroethene	30	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
Trichlorofluoromethane			1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U		1 U		0.2 U
Trichlorotrifluoroethane			10 U	10 U										
Vinyl Acetate		10 U	10 U	10 U	0.2 U	0.2 U	0.2 U	5 U	5 U		10 U		10 U	0.2 U
Vinyl Chloride	2.4	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U		1 U		1 U	0.2 U

TABLE C-5
VOCS IN CHARACTERIZATION WATER SAMPLES
AMERON/HULBERT SITE,
PORT OF EVERETT, WASHINGTON

Area ID:		I	J	J	J	J	J	J	M	M	M	M	M
Sample Name:		P12	HC-MW01	HC-MW01	HC-MW04	HC-MW04	J-1	J-2	ECI-MW-3	M-1	M-2	M-3	M-4
Depth Range:				(5-15)		(5-15)							
Date Collected:		2/19/2004	11/8/1991	7/10/1992	11/8/1991	7/10/1992	2/12/2004	2/12/2004	10/7/1991	1/18/2005	1/18/2005	1/18/2005	1/17/2005
Sample Type:	Cleanup Screening Levels (a)	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Boring	Boring	Monitoring Well	Boring	Boring	Boring	Boring
VOCs (µg/L)													
EPA Method 8260													
1,1,1,2-Tetrachloroethane		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	420000	0.2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane		0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane		0.2 U					0.2 U	0.2 U		2 U	2 U	2 U	2 U
1,1,2-Trichloroethane		0.2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	800	0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene		0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene		0.5 U					0.5 U	0.5 U		5 U	5 U	5 U	5 U
1,2,3-Trichloropropane		0.5 U					0.5 U	0.5 U		2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene		0.5 U					0.5 U	0.5 U		5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	400	0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane		2 U					2 U	2 U		5 U	5 U	5 U	5 U
1,2-Dichlorobenzene		0.2 U					0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1600	0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene				1 U		1 U							
1,2-Dichloropropane		0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	400	0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
1,3-Dichlorobenzene		0.2 U					0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
1,4-Dichlorobenzene		0.2 U					0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
2-Butanone		1 U		10 U		10 U	1 U	1 U	10 U	5 U	5 U	5 U	5 U
2-Chloroethylvinylether		0.5 U					0.5 U	0.5 U	10 U	5 U	5 U	5 U	5 U
2-Chlorotoluene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
2-Hexanone		1 U		10 U		10 U	1 U	1 U	10 U	5 U	5 U	5 U	5 U
4-Chlorotoluene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
4-Isopropyltoluene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone (MIBK)		1 U		10 U		10 U	1 U	1 U	10 U	5 U	5 U	5 U	5 U
Acetone	800	3.7		10 U		10 U	1 U	1 U	20 U	5 U	5 U	5 U	5 U
Acrolein		5 U					5 U	5 U		50 U	50 U	50 U	50 U
Acrylonitrile		1 U					1 U	1 U		5 U	5 U	5 U	5 U
Benzene	51	0.2 U		1 U		1 U	0.2 U	0.2 U	1 U	1 U	1 U	6.4	1 U
Bromobenzene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
Bromochloromethane		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
Bromodichloromethane		0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Bromoethane		0.2 U					0.2 U	0.2 U		2 U	2 U	2 U	2 U
Bromoform		0.2 U	5 U	5 U	5 U	5 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Bromomethane		0.2 U		10 U		10 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	800	0.2 U					0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride		0.2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene		0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	15	0.2 U		1 U		1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Chloroform	470	0.2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Chloromethane		0.2 U		10 U		10 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	70	0.2 U					0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene		0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane		0.2 U	5 U	1 U	5 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U

TABLE C-5
VOCS IN CHARACTERIZATION WATER SAMPLES
AMERON/HULBERT SITE,
PORT OF EVERETT, WASHINGTON

Area ID:		I	J	J	J	J	J	J	M	M	M	M	M
Sample Name:		P12	HC-MW01	HC-MW01	HC-MW04	HC-MW04	J-1	J-2	ECI-MW-3	M-1	M-2	M-3	M-4
Depth Range:				(5-15)		(5-15)							
Date Collected:		2/19/2004	11/8/1991	7/10/1992	11/8/1991	7/10/1992	2/12/2004	2/12/2004	10/7/1991	1/18/2005	1/18/2005	1/18/2005	1/17/2005
Sample Type:	Cleanup Screening Levels (a)	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Boring	Boring	Monitoring Well	Boring	Boring	Boring	Boring
Ethylbenzene	2100	0.2 U		1 U		1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
Hexachlorobutadiene		0.5 U					0.5 U	0.5 U		5 U	5 U	5 U	5 U
Isopropylbenzene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
m, p-Xylene	1600	0.4 U					0.4 U	0.4 U		1 U	1 U	1 U	1 U
Methyl Iodide		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
Methylene Chloride	590	0.3 U	5 U	5 U	5 U	5 U	0.3 U	0.3 U	10 U	2 U	2 U	2 U	2 U
Naphthalene	4900	0.5 U					0.5 U	0.5 U		5 U	5 U	5 U	5 U
n-Butylbenzene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
n-Propylbenzene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
o-Xylene	16000	0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
sec-Butylbenzene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
Styrene		0.2 U		1 U		1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene		0.2 U					0.2 U	0.2 U		1 U	1 U	1 U	1 U
Tetrachloroethene		0.2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Toluene	15000	0.2 U		1 U		1 U	1.6	2.3	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	10000	0.2 U	5 U		5 U		0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene		0.2 U		1 U		1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
trans-1,4-Dichloro-2-butene		1 U					1 U	1 U		5 U	5 U	5 U	5 U
Trichloroethene	30	0.2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane		0.2 U	1 U		1 U		0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U
Trichlorotrifluoroethane									10 U				
Vinyl Acetate		0.2 U		10 U		10 U	0.2 U	0.2 U	10 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2.4	0.2 U		1 U		1 U	0.2 U	0.2 U	1 U	1 U	1 U	13	1 U

U = the analyte was not detected in the sample at the given reporting limit.
Shaded cells indicate an exceedance of the site cleanup levels.

(b) Development of the cleanup levels is presented in Table 8 of the work plan.

TABLE C-6
STORMWATER SAMPLE RESULTS
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	G	G	M		
	Sample Name:	CB-2	CB-3	CB-1	ECI-Area-R	R
	Date Collected:	3/26/2008	3/26/2008	3/26/2008	10/9/1991	6/23/1992
	Sample Type:	Stormwater Catch Basin	Stormwater Catch Basin	Stormwater Catch Basin	Storm Water Outfall	Storm Water Outfall
	Ecology Industrial Stormwater General Permit Criteria					
TOTAL METALS (µg/L)						
Method 6010/7470/200.8						
Antimony		50 U	50 U	50 U	50 U	
Arsenic		1.1	8.5	12.3	6	
Beryllium		1 U	1 U	1 U	5 U	
Cadmium		2 U	2 U	2 U	3 U	
Chromium		5 U	68	24	5	
Copper	149	9	36	25	11	
Lead	159	5	8	13	2	
Mercury		0.10 U	0.10 U	0.10 U	0.5 U	
Nickel		10 U	30	10	20 U	
Selenium		0.5 U	0.5 U	0.7	5 U	
Silver		3 U	3 U	3 U	10 U	
Thallium		0.2 U	0.2 U	0.2 U	5 U	
Zinc	372	250	3,230	330	43	
DISSOLVED METALS (µg/L)						
Method 6010/7470/200.8						
Antimony		50 U	50 U	50 U		
Arsenic		0.3	2.1	11		
Beryllium		1 U	1 U	1 U		
Cadmium		2 U	2 U	2 U		
Chromium		5 U	5 U	12		
Copper	149	2 U	2 U	22		
Lead	159	5	1 U	24		
Mercury		0.10 U	0.10 U	0.10 U		
Nickel		10 U	10 U	10 U		
Selenium		0.5 U	0.5 U	0.5 U		
Silver		3 U	3 U	3 U		
Thallium		0.2 U	0.2 U	0.2 U		
Zinc	372	100	1,640	380		
SVOCs (µg/L)						
SW8260						
N-nitrosodimethylamine					10 U	
Aniline					40 U	
Bis-(2-Chloroethyl) Ether					10 U	
1,2-Dichlorobenzene					10 U	
1,3-Dichlorobenzene					10 U	
1,4-Dichlorobenzene					10 U	
2,2'-Oxybis(1-Chloropropane)					10 U	
N-Nitroso-di-n-propylamine					10 U	
Hexachloroethane					10 U	
Nitrobenzene					10 U	
Isophorone					10 U	
bis(2-Chloroethoxy) Methane					10 U	
1,2,3-Trichlorobenzene					10 U	
Naphthalene					10 U	
4-Chloroaniline					10 U	
Hexachlorobutadiene					10 U	
2-Methylnaphthalene					10 U	
Hexachlorocyclopentadiene					20 U	
2-Chloronaphthalene					10 U	
2-Nitroaniline					40 U	
Dimethylphthalate					10 U	
Acenaphthylene					10 U	
3-Nitroaniline					40 U	
Acenaphthene					10 U	
Dibenzofuran					10 U	
2,4-Dinitrotoluene					10 U	
Phenol					10 U	
2-Chlorophenol					10 U	
Benzyl Alcohol					10 U	
2-Methylphenol					10 U	
3- and 4-Methylphenol					10 U	
2-Nitrophenol					10 U	
2,4-Dimethylphenol					10 U	
Benzoic Acid					100 U	
2,6-Dinitrotoluene					10 U	
Diethylphthalate					10 U	
4-Chlorophenyl-phenylether					10 U	
Fluorene					10 U	
4-Nitroaniline					40 U	
N-Nitrosodiphenylamine					10 U	

TABLE C-6
STORMWATER SAMPLE RESULTS
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Ecology Industrial Stormwater General Permit Criteria					
Area ID:		G	G	M		R
Sample Name:		CB-2	CB-3	CB-1	ECI-Area-R	R
Date Collected:		3/26/2008	3/26/2008	3/26/2008	10/9/1991	6/23/1992
Sample Type:		Stormwater Catch Basin	Stormwater Catch Basin	Stormwater Catch Basin	Storm Water Outfall	Storm Water Outfall
4-Bromophenyl-phenylether					10 U	
Hexachlorobenzene					10 U	
Phenanthrene					10 U	
Anthracene					10 U	
Di-n-Butylphthalate					10 U	
Fluoranthene					10 U	
Pyrene					10 U	
Benzyl butyl phthalate					10 U	
3,3'-Dichlorobenzidine					40 U	
Benzo(a)anthracene					10 U	
Bis(2-ethylhexyl)phthalate					10 U	
Chrysene					10 U	
Di-n-octyl phthalate					10 U	
Benzo(b)fluoranthene					10 U	
Benzo(k)fluoranthene					10 U	
Benzo(a)Pyrene					10 U	
Indeno(1,2,3-cd)pyrene					10 U	
Dibenz(a,h)anthracene					10 U	
Benzo(g,h,i)perylene					10 U	
2,4-Dichlorophenol					10 U	
4-Chloro-3-methylphenol					10 U	
2,4,6-Trichlorophenol					10 U	
2,4,5-Trichlorophenol					10 U	
2,4-Dinitrophenol					100 U	
4-Nitrophenol					100 U	
4,6-Dinitro-2-Methylphenol					40 U	
Pentachlorophenol					60 U	
VOCs (µg/L)						
SW8260						
Bromomethane					1 U	10 U
Carbon Disulfide					1 U	1 U
1,1,1-Trichloroethane					1 U	1 U
1,1,2,2-Tetrachloroethane					1 U	1 U
1,1,2-Trichloroethane					1 U	1 U
1,1-Dichloroethane					1 U	1 U
1,1-Dichloroethene					1 U	1 U
1,2-Dichlorobenzene					1 U	
1,2-Dichloroethane					1 U	1 U
1,2-Dichloroethene						1 U
1,2-Dichloropropane					1 U	1 U
1,3-Dichlorobenzene					1 U	
1,4-Dichlorobenzene					1 U	
2-Butanone					10 U	10 U
2-Chloroethylvinylether					10 U	
2-Hexanone					10 U	10 U
4-Methyl-2-Pentanone (MIBK)					10 U	10 U
Acetone					51	10 U
Benzene					1 U	1 U
Bromodichloromethane					1 U	1 U
Bromoform					1 U	5 U
Bromomethane					1 U	
Carbon Disulfide					1 U	
Carbon Tetrachloride					1 U	1 U
Chlorobenzene					1 U	1 U
chloroethane					1 U	1 U
Chloroform					10	10
chloromethane					1 U	10 U
cis-1,2-Dichloroethene					1 U	
cis-1,3-Dichloropropene					1 U	1 U
Dibromochloromethane					1 U	1 U
Ethylbenzene					1 U	1 U
Methylene Chloride					10 U	5 U
styrene					1 U	1 U
Tetrachloroethene					1 U	1 U
Toluene					1 U	1 U
trans-1,2-Dichloroethene					1 U	
trans-1,3-Dichloropropene					1 U	1 U
Trichloroethene					1 U	1 U
Trichlorofluoromethane					1 U	
Trichlorotrifluoroethane					10 U	
vinyl acetate					10 U	10 U
vinyl chloride					1 U	1 U
Xylenes, Total					1 U	1 U
Naphthalene						

TABLE C-6
STORMWATER SAMPLE RESULTS
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Ecology Industrial Stormwater General Permit Criteria	G	G	M		
Area ID:		G	G	M		
Sample Name:		CB-2	CB-3	CB-1	ECI-Area-R	R
Date Collected:		3/26/2008	3/26/2008	3/26/2008	10/9/1991	6/23/1992
Sample Type:		Stormwater Catch Basin	Stormwater Catch Basin	Stormwater Catch Basin	Storm Water Outfall	Storm Water Outfall
PCBs and Pesticides (µg/L)						
Alpha-BHC					0.04 U	
Gamma-BHC					0.04 U	
Beta-BHC					0.1 U	
Heptachlor					0.04 U	
Delta-BHC					0.04 U	
Aldrin					0.04 U	
Heptachlor Epoxide					0.04 U	
EndoSulfan I					0.04 U	
4,4'-DDE					0.04 U	
Dieldrin					0.04 U	
Endrin					0.04 U	
4,4'-DDD					0.04 U	
Endrin Aldehyde					0.04 U	
Endosulfan Sulfate					0.04 U	
Methoxychlor					0.1 U	
Toxaphene					1 U	
Chlordane					0.5 U	
Aroclor 1016					0.2 U	
Aroclor 1221					0.2 U	
Aroclor 1232					0.2 U	
Aroclor 1242					0.2 U	
Aroclor 1248					0.2 U	
Aroclor 1254					0.2 U	
Aroclor 1260					0.2 U	
INORGANICS (SU)						
Method 150.1						
pH	5- 10 (acceptable range)	7.05	7.00	6.92		

U = the analyte was not detected in the sample at the given reporting limit.

Shaded cells indicate an exceedance of the site cleanup levels.

TABLE C-7
VOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	J	J	J	J	J
	Sample Name:	**ECI-Q-1**	**ECI-Q-5**	**ECI-Q-6**	**ECI-Q-8**	**HC-GT-1A (b)**	**HC-MW-2 (b)**	**HC-MW-2 (b)**	**HC-MW-3 (b)**	**HC-MW-3 (b)**	**I-X**	**I-Y**	**Chamber-1**	**Chamber-2**	**Chamber-3**	**Chamber-4**	**HC-MW-1 (b)**
	Depth Range:	(1-2)	(1-2)	(0-1)	(5-5)		(2.5-4)	(12.5-14)	(5-6.5)	(10-11.5)							(5-6.5)
	Date Collected:	10/7/1991	10/7/1991	10/7/1991	10/7/1991	11/7/1991	11/6/1991	11/6/1991	11/7/1991	11/7/1991	2/12/2004	2/12/2004	8/11/2006	8/11/2006	8/11/2006	8/11/2006	11/6/1991
	Sample Type:	Test Pit	Test Pit	Test Pit	Test Pit	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Excavation	Excavation	Excavation	Excavation	Boring
	Cleanup Screening Levels (a)																
VOCs (mg/kg)																	
EPA Method 8260																	
1,1,1,2-Tetrachloroethane													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
1,1,1-Trichloroethane	3400	0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.05 U
1,1,2,2-Tetrachloroethane		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
1,1,2-Trichloro-1,2,2-trifluoroethane													0.0021 U	0.018 U	0.0045 U	0.0034 U	
1,1,2-Trichloroethane		0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.05 U
1,1-Dichloroethane	4.3	0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
1,1-Dichloroethene		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
1,1-Dichloropropene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
1,2,3-Trichlorobenzene													0.0053 U	0.044 U	0.011 U	0.0086 U	
1,2,3-Trichloropropane													0.0021 U	0.018 U	0.0045 U	0.0034 U	
1,2,4-Trichlorobenzene											0.14 U	0.081 U					
1,2,4-Trimethylbenzene	4000												0.0011 U	0.0088 U	0.0034	0.0017 U	
1,2-Dibromo-3-chloropropane													0.0053 U	0.044 U	0.011 U	0.0086 U	
1,2-Dichlorobenzene		0.005 U	0.005 U	0.005 U	0.005 U						0.14 U	0.081 U					
1,2-Dichloroethane		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
1,2-Dichloropropane		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
1,3,5-Trimethylbenzene	4000												0.0011 U	0.0088 U	0.0022 U	0.0017 U	
1,3-Dichlorobenzene		0.005 U	0.005 U	0.005 U	0.005 U						0.14 U	0.081 U					
1,3-Dichloropropane													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
1,4-Dichlorobenzene		0.005 U	0.005 U	0.005 U	0.005 U						0.14 U	0.081 U					
2,2-Dichloropropane													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
2-Butanone	48000	0.01 U	0.01 U	0.01 U	0.01 U								0.0053 U	0.044 U	0.011 U	0.0086 U	
2-Chloroethylvinylether		0.01 U	0.01 U	0.01 U	0.01 U								0.0053 U	0.044 U	0.011 U	0.0086 U	
2-Chlorotoluene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
2-Hexanone		0.01 U	0.01 U	0.01 U	0.01 U								0.0053 U	0.044 U	0.011 U	0.0086 U	
4-Chlorotoluene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
4-Isopropyltoluene													0.0011 U	0.0088 U	0.05	0.0018	
4-Methyl-2-Pentanone (MIBK)		0.01 U	0.01 U	0.01 U	0.01 U								0.0053 U	0.044 U	0.011 U	0.0086 U	
Acetone	3.2	0.05 U	0.05 U	0.05 U	0.05 U								0.027	0.06	0.03	0.013	
Acrolein													0.053 U	0.44 U	0.11 U	0.086 U	
Acrylonitrile													0.0053 U	0.044 U	0.011 U	0.0086 U	
Benzene	0.29	0.005 U	0.005 U	0.005 U	0.005 U										0.0022 U		
Bromobenzene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Bromochloromethane													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Bromodichloromethane		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
Bromoethane													0.0021 U	0.018 U	0.0045 U	0.0034 U	
Bromoform		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
Bromomethane		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Carbon Disulfide		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Carbon Tetrachloride		0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.05 U
Chlorobenzene		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
Chloroethane		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Chloroform		0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.05 U
Chloromethane		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	
cis-1,2-Dichloroethene		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	
cis-1,3-Dichloropropene		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
Dibromochloromethane		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
Dibromomethane																	
Ethylbenzene	18	0.005 U	0.005 U	0.005 U	0.005 U										0.0022 U		
Ethylene Dibromide													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Hexachlorobutadiene											0.27 U	0.16 U					
Isopropylbenzene	8000												0.0011 U	0.0088 U	0.0037	0.0017 U	
m, p-Xylene	15														0.0022 U		
Methyl Iodide													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Methylene Chloride		0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0021 U	0.018 U	0.01	0.0034 U	0.25 U
Naphthalene	140										0.24	0.081 U					
n-Butylbenzene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
n-Propylbenzene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
o-Xylene	150														0.0022 U		

TABLE C-7
VOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	J	J	J	J	J
	Sample Name:	**ECI-Q-1**	**ECI-Q-5**	**ECI-Q-6**	**ECI-Q-8**	**HC-GT-1A (b)**	**HC-MW-2 (b)**	**HC-MW-2 (b)**	**HC-MW-3 (b)**	**HC-MW-3 (b)**	**I-X**	**I-Y**	**Chamber-1**	**Chamber-2**	**Chamber-3**	**Chamber-4**	**HC-MW-1 (b)**
	Depth Range:	(1-2)	(1-2)	(0-1)	(5-5)		(2.5-4)	(12.5-14)	(5-6.5)	(10-11.5)							(5-6.5)
	Date Collected:	10/7/1991	10/7/1991	10/7/1991	10/7/1991	11/7/1991	11/6/1991	11/6/1991	11/7/1991	11/7/1991	2/12/2004	2/12/2004	8/11/2006	8/11/2006	8/11/2006	8/11/2006	11/6/1991
	Sample Type:	Test Pit	Test Pit	Test Pit	Test Pit	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Excavation	Excavation	Excavation	Excavation	Boring
	Cleanup Screening Levels (a)																
sec-Butylbenzene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Styrene		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	
tert-Butylbenzene													0.0011 U	0.0088 U	0.0022 U	0.0017 U	
Tetrachloroethene	1.9	0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.05 U
Toluene	110	0.005 U	0.005 U	0.005 U	0.005 U										0.0022 U		
trans-1,2-Dichloroethene		0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.25 U
trans-1,3-Dichloropropene		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	
trans-1,4-Dichloro-2-butene													0.0053 U	0.044 U	0.011 U	0.0086 U	
Trichloroethene	0.2	0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.05 U
Trichlorofluoromethane		0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U			0.0011 U	0.0088 U	0.0022 U	0.0017 U	0.05 U
Trichlorotrifluoroethane		0.01 U	0.01 U	0.01 U	0.01 U												
Vinyl Acetate		0.01 U	0.01 U	0.01 U	0.01 U								0.0053 U	0.044 U	0.011 U	0.0086 U	
Vinyl Chloride		0.005 U	0.005 U	0.005 U	0.005 U								0.0011 U	0.0088 U	0.0022 U	0.0017 U	

TABLE C-7
VOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Area ID:		J	J	J	J	J	G	G	G	G	G	G	G	G	M	M	M
Sample Name:		**HC-MW-1 (b)**	**HC-MW-4 (b)**	**HC-MW-4 (b)**	**J-MSRC**	**KFI-WP-Comp**	**ECI-N-2**	**G1-AC-3**	**G1-AC-4**	**G1-AC-5**	**G-FA-4**	**G-FA-5**	**G-FA-8**	**STOCKPILE**	**ECI-N-1**	**M-FA-1**	**M-FA-2**
Depth Range:		(7.5-9)	(5-6.5)	(20-21.5)							(2-2.5)	(8-8.5)	(4-4.5)			(3.5-4)	(3.5-4)
Date Collected:		11/6/1991	11/7/1991	11/7/1991	5/23/2007	9/30/1993	10/7/1991	6/22/2006	6/22/2006	6/22/2006	1/20/2005	1/20/2005	1/20/2005	11/12/2004	10/7/1991	1/17/2005	1/17/2005
Sample Type:	Cleanup Screening Levels (a)	Boring	Boring	Boring	Excavation	Stock Pile	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Boring	Stock Pile	Surface Soil	Boring	Boring
VOCs (mg/kg)																	
EPA Method 8260																	
1,1,1,2-Tetrachloroethane											0.0012 U	0.0009 U	0.0008 U				
1,1,1-Trichloroethane	3400	0.05 U	0.05 U	0.05 U		0.07 U	0.005 U				0.003	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
1,1,2,2-Tetrachloroethane		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
1,1,2-Trichloro-1,2,2-trifluoroethane											0.0024 U	0.0017 U	0.0016 U				
1,1,2-Trichloroethane		0.05 U	0.05 U	0.05 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
1,1-Dichloroethane	4.3	0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
1,1-Dichloroethene		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
1,1-Dichloropropene											0.0012 U	0.0009 U	0.0008 U				
1,2,3-Trichlorobenzene											0.0059 U	0.0044 U	0.0039 U				
1,2,3-Trichloropropane											0.0024 U	0.0017 U	0.0016 U				
1,2,4-Trichlorobenzene					50 U	2.3 U		0.066 U	0.076 U	0.064 U	0.0059 U	0.0044 U	0.0039 U				
1,2,4-Trimethylbenzene	4000										0.3 ES	0.0009 U	0.0008 U				
1,2-Dibromo-3-chloropropane											0.0059 U	0.0044 U	0.0039 U				
1,2-Dichlorobenzene					50 U	2.3 U	0.005 U	0.066 U	0.076 U	0.064 U	0.0012 U	0.0009 U	0.0008 U		0.005 U		
1,2-Dichloroethane		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
1,2-Dichloropropane		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
1,3,5-Trimethylbenzene	4000										0.3 ES	0.0009 U	0.0008 U				
1,3-Dichlorobenzene					50 U	2.3 U	0.005 U	0.066 U	0.076 U	0.064 U	0.0012 U	0.0009 U	0.0008 U		0.005 U		
1,3-Dichloropropane											0.0012 U	0.0009 U	0.0008 U				
1,4-Dichlorobenzene					50 U	2.3 U	0.005 U	0.066 U	0.076 U	0.064 U	0.0012 U	0.0009 U	0.0008 U		0.005 U		
2,2-Dichloropropane											0.0012 U	0.0009 U	0.0008 U				
2-Butanone	48000					0.7 U	0.01 U				0.028	0.0044 U	0.0039 U	0.014 UJ	0.01 U		
2-Chloroethylvinylether							0.01 U				0.0059 U	0.0044 U	0.0039 U		0.01 U		
2-Chlorotoluene											0.0012 U	0.0009 U	0.0008 U				
2-Hexanone						0.7 U	0.01 U				0.0059 U	0.0044 U	0.0039 U	0.014 UJ	0.01 U		
4-Chlorotoluene											0.0012 U	0.0009 U	0.0008 U				
4-Isopropyltoluene											0.0012 U	0.0009 U	0.0008 U				
4-Methyl-2-Pentanone (MIBK)						0.7 U	0.01 U				0.0059 U	0.0044 U	0.0039 U	0.014 UJ	0.01 U		
Acetone	3.2					2.3 B	0.05 U				0.3	0.0044 U	0.0077	0.014 UJ	0.05 U		
Acrolein											0.059 U	0.044 U	0.039 U				
Acrylonitrile											0.0059 U	0.0044 U	0.0039 U				
Benzene	0.29					0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U	0.0068 U	0.0085 U
Bromobenzene											0.0012 U	0.0009 U	0.0008 U				
Bromochloromethane											0.0012 U	0.0009 U	0.0008 U				
Bromodichloromethane		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Bromoethane											0.0024 U	0.0017 U	0.0016 U				
Bromoform		0.25 U	0.25 U	0.25 U		0.35 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Bromomethane						0.7 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Carbon Disulfide						0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Carbon Tetrachloride		0.05 U	0.05 U	0.05 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Chlorobenzene		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Chloroethane						0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Chloroform		0.05 U	0.05 U	0.05 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Chloromethane						0.7 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
cis-1,2-Dichloroethene							0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
cis-1,3-Dichloropropene		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Dibromochloromethane		0.25 U	0.25 U	0.25 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Dibromomethane											0.0012 U	0.0009 U	0.0008 U				
Ethylbenzene	18					0.2	0.005 U				0.41 ES	0.0009 U	0.0008 U	0.004 UJ	0.005 U	0.014 U	0.017 U
Ethylene Dibromide											0.0012 U	0.0009 U	0.0008 U				
Hexachlorobutadiene					50 U	2.3 U		0.066 U	0.076 U	0.064 U	0.0059 U	0.0044 U	0.0039 U				
Isopropylbenzene	8000										0.17	0.0009 U	0.0008 U				
m, p-Xylene	15										1.3 ES	0.0009 U	0.0011	0.004 UJ		0.027 U	0.034 U
Methyl Iodide											0.0012 U	0.0009 U	0.0008 U				
Methylene Chloride		0.25 U	0.25 U	0.25 U		0.35 U	0.1 U				0.0024 U	0.0017 U	0.0016 U	0.28 J	0.1 U		
Naphthalene	140				50 U	1.8 J		0.066 U	0.076 U	0.064 U	0.024	0.0044	0.0039 U				
n-Butylbenzene											0.0051	0.0009 U	0.0008 U				
n-Propylbenzene											0.19	0.0009 U	0.0008 U				
o-Xylene	150										0.94 ES	0.0009 U	0.0008 U	0.004 UJ		0.014 U	0.017 U

TABLE C-7
VOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	J	J	J	J	J	G	G	G	G	G	G	G	G	M	M	M
	Sample Name:	**HC-MW-1 (b)**	**HC-MW-4 (b)**	**HC-MW-4 (b)**	**J-MSRC**	**KFI-WP-Comp**	**ECI-N-2**	**G1-AC-3**	**G1-AC-4**	**G1-AC-5**	**G-FA-4**	**G-FA-5**	**G-FA-8**	**STOCKPILE**	**ECI-N-1**	**M-FA-1**	**M-FA-2**
	Depth Range:	(7.5-9)	(5-6.5)	(20-21.5)							(2-2.5)	(8-8.5)	(4-4.5)			(3.5-4)	(3.5-4)
	Date Collected:	11/6/1991	11/7/1991	11/7/1991	5/23/2007	9/30/1993	10/7/1991	6/22/2006	6/22/2006	6/22/2006	1/20/2005	1/20/2005	1/20/2005	11/12/2004	10/7/1991	1/17/2005	1/17/2005
	Sample Type:	Boring	Boring	Boring	Excavation	Stock Pile	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Boring	Stock Pile	Surface Soil	Boring	Boring
	Cleanup Screening Levels (a)																
sec-Butylbenzene											0.0012 U	0.0009 U	0.0008 U				
Styrene						0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
tert-Butylbenzene											0.0012 U	0.0009 U	0.0008 U				
Tetrachloroethene	1.9	0.05 U	0.05 U	0.079		0.07 U	0.005 U				0.0019	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Toluene	110					0.07 U	0.005 U				0.18	0.0009 U	0.0008 U	0.004 UJ	0.005 U	0.014 U	0.017 U
trans-1,2-Dichloroethene		0.25 U	0.25 U	0.25 U			0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
trans-1,3-Dichloropropene						0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
trans-1,4-Dichloro-2-butene											0.0059 U	0.0044 U	0.0039 U				
Trichloroethene	0.2	0.05 U	0.05 U	0.05 U		0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Trichlorofluoromethane		0.05 U	0.05 U	0.05 U			0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		
Trichlorotrifluoroethane							0.01 U								0.01 U		
Vinyl Acetate						0.7 U	0.01 U				0.0059 U	0.0044 U	0.0039 U		0.01 U		
Vinyl Chloride						0.07 U	0.005 U				0.0012 U	0.0009 U	0.0008 U	0.004 UJ	0.005 U		

U = the analyte was not detected in the sample at the given reporting limit.
ES = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
This value is considered an estimate.

(a) Development of the cleanup levels is presented in Table 9 of the work plan.
(b) Analysis of the sample were performed using screening techniques. Quantitations are
estimates, compound identifications are tentative.

TABLE C-8
METAL LEACHATE IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					Metal Leachate (mg/L) SW6000-7000 TCLP										
Sample Name	Depth Range	Date Collected	Area ID	Sample Type	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
ECI-Area-F		10/7/1991	G	Blasting Sand				0.03	0.04			0.97			1.39
ECI-J-2	(3-3)	10/7/1991	G	Test Pit				0.03	0.02			0.04			0.11
ECI-K-1	(4-4)	10/7/1991	G	Test Pit	0.1 U			0.01 U	0.37			0.21			0.86
G1A-100507-AC-1		10/5/2007	G	Stock Pile	0.2 U					0.1 U					
G1A-100907-STK-1		10/9/2007	G	Stock Pile	0.6					0.6					
G1A-101607-STK-2		10/16/2007	G	Stock Pile	0.2 U					0.3					
G1-TP4	(0-6)	4/25/2006	G	Test Pit	0.2 U	0.13	0.01 U	0.02 U		0.1 U	0.0001 U		0.2 U	0.02 U	
G1-TP5	(0-5)	4/25/2006	G	Test Pit	1	0.43	0.01	0.02 U		0.6	0.0001 U		0.2 U	0.02 U	
ECI-Q-6	(0-1)	10/7/1991	I	Test Pit					8.11	2.9		0.03			13.4
I2-WP	(1.5-2.5)	5/8/2006	I	Boring	0.2 U	0.36	0.01 U	0.07		0.1 U	0.0001 U		0.2 U	0.02 U	
I-GC-1	(0-0.5)	7/15/2005	I	Boring	0.7					0.3					
I-GC-1	(1-2)	7/14/2005	I	Boring	1					2.3					
I-GC-1C	(0-0.5)	10/19/2005	I	Boring	0.6					0.2					
I-TP-5	(0-5)	4/25/2006	I	Test Pit	0.2 U	0.04	0.01 U	0.02 U		0.1 U	0.0001 U		0.2 U	0.02 U	
Chamber-1		8/11/2006	J	Excavation	0.2 U	0.07	0.01 U	0.02 U		0.1 U	0.0001 U		0.2 U	0.02 U	
Chamber-2		8/11/2006	J	Excavation	0.2 U	0.06	0.01 U	0.02 U		0.1 U	0.0001 U		0.2 U	0.02 U	
Chamber-3		8/11/2006	J	Excavation	0.2 U	0.28	0.01 U	0.02 U		0.1 U	0.0001 U		0.2 U	0.02 U	
Chamber-4		8/11/2006	J	Excavation	0.2 U	0.25	0.01 U	0.02 U		0.1 U	0.0001 U		0.2 U	0.02 U	
KFI-WP-Comp		9/30/1993	J	Stock Pile	0.05 U	1.1	0.005 U	0.01 U		0.042	0.0002 U		0.05 U	0.005 U	

U = the analyte was not detected in the sample at the given reporting limit.

TABLE C-9
cPAHs IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name	Depth Range	Date Collected	Area ID	Sample Type	cPAHs (mg/kg) SW8270/8270SIM Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	cPAH TEQ
				Cleanup Screening Levels (a)		0.14						0.14
F-GC-1	(0-0.5)	1/14/2005	F	Boring	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
G1A-100507-AC-1		10/5/2007	G	Stock Pile	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
G1A-100907-STK-1		10/9/2007	G	Stock Pile	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
G1A-101607-STK-2		10/16/2007	G	Stock Pile	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
G1-AC-3		6/22/2006	G	Surface Soil	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
G1-AC-4		6/22/2006	G	Surface Soil	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U
G1-AC-5		6/22/2006	G	Surface Soil	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
G-3	(3-3)	2/11/2004	G	Boring	0.051	0.047	0.063	0.052	0.071	0.0095 U	0.032	0.0675
G-FA-5	(8-8.5)	1/20/2005	G	Boring	0.069	0.079	0.066 U	0.066 U	0.14	0.066 U	0.066 U	0.0873
G-FA-8	(4-4.5)	1/20/2005	G	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
G-GC-1	(1.5-2)	3/2/2005	G	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
G-GC-2	(1.4-1.9)	3/2/2005	G	Boring	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
G-GC-3	(1-1.5)	3/2/2005	G	Boring	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
M-2C	(1-1.5)	7/15/2005	G	Boring	0.065 U	0.085	0.068	0.069	0.087	0.065 U	0.065 U	0.09957
PZ-10 (b)	(3-3)	2/11/2004	G	Boring	0.011	0.0093	0.0098	0.0098	0.019	0.0072 U	0.0072 U	0.0126
I2-AC-1A		7/12/2006	I	Excavation	0.15	0.16	0.22	0.13	0.21	0.062 U	0.062 U	0.2121
I2-1	(1-1.5)	5/8/2006	I	Boring	0.065 U	0.065 U	0.12	0.065 U	0.17	0.065 U	0.065 U	0.0137
I2-2	(1-2.25)	5/8/2006	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I2-3	(0.5-2.5)	5/8/2006	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I2-4	(1.4-2.4)	5/8/2006	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I2-5	(1.3-2.5)	5/8/2006	I	Boring	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
I2-6	(1.5-2.2)	5/8/2006	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I2-7	(1.7-2.8)	5/8/2006	I	Boring	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
I2-8	(1.5-3.3)	5/8/2006	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I2-9	(1.7-3.3)	5/8/2006	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I2-10	(1.5-2.5)	5/8/2006	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-3		2/12/2004	I	Boring	0.019	0.019	0.04	0.028	0.04	0.0084 U	0.013	0.0294
I-GC-1	(0-0.5)	7/14/2005	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-1A	(0-0.5)	10/19/2005	I	Boring	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U
I-GC-1B	(0-0.5)	10/19/2005	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-1C	(0-0.5)	10/19/2005	I	Boring	0.13	0.093	0.16	0.18	0.36	0.066 U	0.074	0.151
I-GC-1C	(1-2)	10/18/2005	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-2	(0-0.5)	7/14/2005	I	Boring	0.084	0.11	0.26	0.14	0.23	0.062 U	0.062 U	0.1607
I-GC-2	(1-2)	7/14/2005	I	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
I-GC-3	(0-0.5)	7/14/2005	I	Boring	0.065 U	0.068	0.083	0.065 U	0.08	0.065 U	0.065 U	0.0771
I-GC-4	(0-0.5)	7/14/2005	I	Boring	0.064 U	0.079	0.077	0.064 U	0.07	0.064 U	0.064 U	0.0874
I-GC-4	(1-2)	7/14/2005	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-5	(3-3.5)	7/14/2005	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-6	(3.5-4)	7/14/2005	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-7	(0-0.5)	7/14/2005	I	Boring	0.063 U	0.063 U	0.085	0.063 U	0.076	0.063 U	0.063 U	0.00926
I-GC-8	(3.5-4)	7/14/2005	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-9	(3.5-4)	7/14/2005	I	Boring	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
I-GC-10	(0-0.5)	7/14/2005	I	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
I-GC-11	(0-0.5)	7/14/2005	I	Boring	0.13	0.23	0.35	0.16	0.26	0.064 U	0.11	0.3076
I-GC-11	(1-2)	7/14/2005	I	Boring	0.32	0.48	0.71	0.48	0.7	0.073	0.23	0.6683
I-GC-11	(2-3)	7/14/2005	I	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
I-GC-11.1E	(0-0.5)	3/1/2006	I	Surface Soil	0.085	0.09	0.19	0.11	0.17	0.064 U	0.064 U	0.1302

TABLE C-9
cPAHs IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					cPAHs (mg/kg) SW8270/8270SIM							
					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	cPAH TEQ
				Cleanup Screening Levels (a)		**0.14**						**0.14**
Sample Name	Depth Range	Date Collected	Area ID	Sample Type								
I-GC-11.1N	(0-0.5)	3/1/2006	I	Surface Soil	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
I-GC-11.1S	(0.75-1.25)	3/1/2006	I	Surface Soil	0.075	0.097	0.19	0.083	0.3	0.064 U	0.064 U	0.1348
I-GC-11.1W	(0-0.5)	3/1/2006	I	Surface Soil	0.16	0.14	0.2	0.11	0.28	0.065 U	0.065 U	0.1898
I-GC-12	(0-0.5)	7/14/2005	I	Boring	0.29	0.41	0.62	0.34	1.1	0.081	0.22	0.5761
I-GC-12	(1-2)	7/14/2005	I	Boring	0.074	0.075	0.076	0.086	0.079	0.066 U	0.066 U	0.09939
I-GC-12.1E	(0-0.5)	3/1/2006	I	Surface Soil	0.13	0.12	0.21	0.1	0.28	0.064 U	0.067	0.1735
I-GC-12.1S	(0.75-1.25)	3/1/2006	I	Hand Auger	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-12.1W	(0-0.5)	3/1/2006	I	Surface Soil	0.11	0.13	0.13	0.096	0.14	0.065 U	0.072	0.1722
I-GC-12.2E	(0-0.5)	3/10/2006	I	Surface Soil	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U
I-GC-12.5S	(0.5-1)	3/1/2006	I	Surface Soil	0.064 U	0.064 U	0.087	0.064 U	0.076	0.064 U	0.064 U	0.00946
I-GC-13	(0-0.5)	7/14/2005	I	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-14	(0-0.5)	7/14/2005	I	Boring	0.077	0.097	0.21	0.099	0.18	0.065 U	0.1	0.1474
I-GC-14	(1-2)	7/14/2005	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-15	(0-0.5)	8/22/2005	I	Hand Auger	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-16	(0-0.5)	8/22/2005	I	Hand Auger	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-17	(0-0.5)	8/22/2005	I	Hand Auger	0.12	0.16	0.15	0.072	0.13	0.066 U	0.13	0.2085
I-GC-17	(1-2)	8/22/2005	I	Hand Auger	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U
I-GC-18	(0-0.5)	8/22/2005	I	Hand Auger	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-19	(0-0.5)	8/22/2005	I	Hand Auger	0.066 U	0.066 U	0.094	0.066 U	0.078	0.066 U	0.066 U	0.01018
I-GC-20	(0-0.5)	8/22/2005	I	Hand Auger	0.34	0.53	1.1	0.59	0.97	0.12	0.39	0.7937
I-GC-20	(1-2)	8/22/2005	I	Hand Auger	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-21	(0-0.5)	8/22/2005	I	Hand Auger	0.064 U	0.064 U	0.065	0.064 U	0.064 U	0.064 U	0.064 U	0.0065
I-GC-22	(0-0.5)	8/22/2005	I	Hand Auger	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
I-GC-23	(0-0.5)	8/22/2005	I	Hand Auger	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-24	(1.2-6)	10/19/2005	I	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.078	0.065 U	0.065 U	0.00078
I-GC-24	(6.5-7.5)	10/19/2005	I	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
I-GC-25	(0.5-1)	10/19/2005	I	Boring	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
I-GC-26	(0-0.5)	10/19/2005	I	Boring	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
I-X		2/12/2004	I	Boring	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
I-Y		2/12/2004	I	Boring	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U
I-Z		2/12/2004	I	Surface Soil	0.021	0.017	0.028	0.015	0.031	0.0087 U	0.01	0.02471
Chamber-1		8/11/2006	J	Excavation	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
Chamber-2		8/11/2006	J	Excavation	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
Chamber-3		8/11/2006	J	Excavation	0.066 U	0.066 U	0.077	0.066 U	0.094	0.066 U	0.066 U	0.0086
Chamber-4		8/11/2006	J	Excavation	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
J-GC-1 (c)	(0.5-1)	1/14/2005	J	Boring	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
J-GC-1 (c)	(0.5-1)	1/14/2005	J	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.074	0.066 U	0.066 U	0.00074
J-GC-2	(0-0.5)	3/2/2005	J	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
J-GC-3	(0-0.5)	3/2/2005	J	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
J-GC-4	(1.5-2)	3/3/2005	J	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
J-GC-6	(1.1-1.6)	7/15/2005	J	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
J-GC-6	(2-2.7)	7/15/2005	J	Boring	0.38 J	0.38 J	0.31 J	0.38 J	0.35 J	0.064 UJ	0.15 J	0.5055 J
J-GC-6	(3.1-4.1)	7/15/2005	J	Boring	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ
J-GC-6f	(0.7-1.1)	2/6/2006	J	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
J-GC-6g	(1-1.5)	2/6/2006	J	Boring	0.09	0.098	0.078	0.087	0.11	0.065 U	0.072	0.1318
J-GC-6h	(1-1.5)	2/6/2006	J	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.069	0.064 U	0.064 U	0.00069
J-GC-6i	(1-1.5)	2/6/2006	J	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U

TABLE C-9
cPAHs IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					cPAHs (mg/kg) SW8270/8270SIM							
					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	cPAH TEQ
				Cleanup Screening Levels (a)		**0.14**						**0.14**
Sample Name	Depth Range	Date Collected	Area ID	Sample Type								
J-GC-6i	(3.2-4)	2/6/2006	J	Boring	0.3	0.39	0.37	0.37	0.47	0.077	0.27	0.5565
J-GC-7	(0.7-1.2)	7/15/2005	J	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
J-GC-8	(2.1-2.6)	7/15/2005	J	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
J-GC-9	(1.4-1.9)	7/15/2005	J	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
J-GC-10	(0-0.5)	7/14/2005	J	Boring	0.064 U	0.064 U	0.069	0.064 U	0.064 U	0.064 U	0.064 U	0.0069
J-MSRC		5/23/2007	J	Excavation	50 U	50 U	50 U	50 U	69	50 U	50 U	0.69
KFI-WP-Comp		9/30/1993	J	Stock Pile	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
M-1	(0.3-0.8)	1/18/2005	M	Boring	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
M-2	(1.5-2)	1/18/2005	M	Boring	0.13	0.18	0.12	0.12	0.21	0.064	0.095	0.235
M-2	(2-3)	1/18/2005	M	Boring	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ	0.064 UJ
M-2.1S	(1-1.5)	3/1/2006	M	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
M-2.1W	(1-1.5)	3/1/2006	M	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
M-2B	(1-1.5)	7/15/2005	M	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
M-2D	(0.9-1.4)	7/15/2005	M	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
M-3	(0-0.5)	1/18/2005	M	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
M-4	(0.8-1.3)	1/17/2005	M	Boring	0.062 UJ	0.062 UJ	0.062 UJ	0.062 UJ	0.062 UJ	0.062 UJ	0.062 UJ	0.062 UJ
M-GC-1	(1.6-2.1)	3/3/2005	M	Boring	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U
M-GC-2	(1.5-2)	3/2/2005	M	Boring	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
M-GC-3	(1-1.5)	3/3/2005	M	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
M-GC-4	(1.5-2)	3/2/2005	M	Boring	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
M-GC-5	(1-1.5)	3/2/2005	M	Boring	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) Development of the cleanup levels is presented in Table 9 of the work plan.
(b) PZ-10 is located at P-10. PZ-10 was taken during the drilling for the P-10 monitoring well.
(c) Sample analyzed using both EPA Method 8270SIM and standard EPA Method 8270.
Lower reporting limits achieved using EPA Method 8270SIM.

TABLE C-10
TRIBUTYL TINS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

					Tributyl Tins (mg/kg) KRONE 1989					
					Butyl Tin Ion	Butyl Tin Trichloride	Dibutyl Tin Dichloride	Dibutyl Tin Ion	Tributyl Tin Chloride	Tributyl Tin Ion
				Cleanup Screening Levels (a)						7
Sample Name	Depth Range	Date Collected	Area ID	Sample Type						
F-GC-1	(0-0.5)	1/14/2005	F	Boring		0.01	0.038		0.069	
G1-AC-1		6/22/2006	G	Surface Soil	0.0039 U			0.0055 U		0.0037 U
G1-AC-2		6/22/2006	G	Surface Soil	0.0039 U			0.0056 U		0.0037 U
G1-AC-5		6/22/2006	G	Surface Soil	0.004 UJ			0.0057 UJ		0.0038 UJ
G1-AC-7		6/27/2006	G	Surface Soil	0.0038 UJ			0.0054 UJ		0.0036 UJ
G1-AC-8		6/27/2006	G	Surface Soil	0.0038 U			0.0054 U		0.0036 U
G1-AC-9		6/23/2006	G	Surface Soil	0.0037 U			0.0053 U		0.0035 U
I1-AC-1		6/21/2006	I	Surface Soil	0.093			0.3		0.95
I2-AC-1		7/13/2006	I	Excavation	0.0041 U			0.0058 U		0.0038 U
I2-AC-2		7/13/2006	I	Excavation	0.0039 U			0.0056 U		0.0037 U
I3A-AC-1A		6/29/2006	I	Surface Soil	0.004 U			0.0057 U		0.0038 U
I3A-AC-1B		6/29/2006	I	Surface Soil	0.004 U			0.0057 U		0.0038 U
I3A-AC-2A		6/30/2006	I	Surface Soil	0.0038 U			0.0054 U		0.0036 U
I3A-AC-2B		6/30/2006	I	Surface Soil	0.0041 U			0.0058 U		0.0038 U
I3B-AC-1		7/7/2006	I	Surface Soil	0.0038 U			0.0054 U		0.0036 U
I3B-AC-2		7/7/2006	I	Surface Soil	0.004 U			0.0057 U		0.0038 U
I4-AC-2		7/12/2006	I	Surface Soil	0.0038 U			0.0053 U		0.0036 U
I5-AC-2		6/28/2006	I	Surface Soil	0.0039 U			0.0056 U		0.0037 U
I5-AC-4		6/28/2006	I	Surface Soil	0.0039 U			0.0055 U		0.0037 U
I5-AC-5		7/14/2006	I	Surface Soil	0.0039 U			0.0056 U		0.0037 U

U = the analyte was not detected in the sample at the given reporting limit.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

(a) Development of the cleanup levels is presented in Table 9 of the work plan.

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Area ID:		F	G	G	G	G	G	G	G	G	G	G	G	G	G	I	I	I	I
Sample Name:		F-GC-1	ECI-N-2	G1A-100507-AC-1	G1-AC-3	G1-AC-4	G1-AC-5	G-FA-4	G-FA-5	G-FA-8	G-GC-1	G-GC-2	G-GC-3	M-2C	STOCKPILE	ECI-Q-1	ECI-Q-5	ECI-Q-6	ECI-Q-8
Depth Range:		(0-0.5)						(2-2.5)	(8-8.5)	(4-4.5)	(1.5-2)	(1.4-1.9)	(1-1.5)	(1-1.5)		(1-2)	(1-2)	(0-1)	(5-5)
Date Collected:		1/14/2005	10/7/1991	10/5/2007	6/22/2006	6/22/2006	6/22/2006	1/20/2005	1/20/2005	1/20/2005	3/2/2005	3/2/2005	3/2/2005	7/15/2005	11/12/2004	10/7/1991	10/7/1991	10/7/1991	10/7/1991
Sample Type:	Cleanup Levels (b)	Boring	Surface Soil	Excavation	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Stock Pile	Test Pit	Test Pit	Test Pit	Test Pit
SVOCs (mg/kg)																			
EPA Method 8270/8270SIM																			
1,2,4-Trichlorobenzene					0.066 U	0.076 U	0.064 U	0.0059 U	0.066 U	0.064 U					0.470 UJ				
1,2-Dichlorobenzene			0.005 U		0.066 U	0.076 U	0.064 U	0.0012 U	0.066 U	0.064 U					0.470 UJ	0.005 U	0.005 U	0.005 U	0.005 U
1,3-Dichlorobenzene			0.005 U		0.066 U	0.076 U	0.064 U	0.0012 U	0.066 U	0.064 U					0.470 UJ	0.005 U	0.005 U	0.005 U	0.005 U
1,4-Dichlorobenzene			0.005 U		0.066 U	0.076 U	0.064 U	0.0012 U	0.066 U	0.064 U					0.470 UJ	0.005 U	0.005 U	0.005 U	0.005 U
1-Methylnaphthalene	24														0.470 UJ				
2,2'-Oxybis(1-Chloropropane)					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U									
2,3,4,6-Tetrachlorophenol																			
2,4,5-Trichlorophenol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U									
2,4,6-Trichlorophenol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
2,4-Dichlorophenol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
2,4-Dimethylphenol					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
2,4-Dinitrophenol					0.66 U	0.76 U	0.64 U		0.66 U	0.64 U					0.470 UJ				
2,4-Dinitrotoluene					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.940 UJ				
2,6-Dichlorophenol															0.470 UJ				
2,6-Dinitrotoluene					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U									
2-Chloronaphthalene					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
2-Chlorophenol					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
2-Methylnaphthalene	320				0.16	0.18	0.5		0.066 U	0.064 U					0.470 UJ				
2-Methylphenol					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
2-Nitroaniline					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
2-Nitrophenol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
3,3'-Dichlorobenzidine					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
3-Nitroaniline					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
4,6-Dinitro-2-Methylphenol					0.66 U	0.76 U	0.64 U		0.66 U	0.64 U					0.470 UJ				
4-Bromophenyl-Phenylether					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
4-Chloro-3-Methylphenol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
4-Chloroaniline					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
4-Chlorophenyl-Phenylether					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
4-Methylphenol	--				0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
4-Nitroaniline					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
4-Nitrophenol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
Acenaphthene	66				0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Acenaphthylene					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Aniline															0.470 UJ				
Anthracene	12000				0.066 U	0.076 U	0.064 U		0.066 U	0.064 U									
Azobenzene															0.470 UJ				
Benzidine																			
Benzo(a)anthracene		0.07 U		0.066 U	0.066 U	0.076 U	0.064 U		0.069	0.064 U	0.064 U	0.062 U	0.062 U	0.065 U					
Benzo(a)pyrene	0.14	0.07 U		0.066 U	0.066 U	0.076 U	0.064 U		0.079	0.064 U	0.064 U	0.062 U	0.062 U	0.085	0.640 J				
Benzo(b)fluoranthene		0.07 U		0.066 U	0.066 U	0.076 U	0.064 U		0.066 U	0.064 U	0.064 U	0.062 U	0.062 U	0.068	0.570 J				
Benzo(g,h,i)perylene					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.660 J				
Benzo(k)fluoranthene		0.07 U		0.066 U	0.066 U	0.076 U	0.064 U		0.066 U	0.064 U	0.064 U	0.062 U	0.062 U	0.069	0.470 UJ				
Benzoic Acid	320000				0.66 U	0.76 U	0.65 U		0.66 U	0.64 U					0.470 UJ				
Benzyl Alcohol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					1.200 J				
Benzyl butyl phthalate					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
bis(2-Chloroethoxy) Methane					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Bis-(2-Chloroethyl) Ether					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Bis(2-Ethylhexyl)Phthalate	4.9				0.35	0.96	1.2		0.19	0.064 U					0.470 UJ				
Carbazole	50				0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Chrysene		0.07 U		0.066 U	0.066 U	0.076 U	0.064 U		0.14	0.064 U	0.064 U	0.062 U	0.062 U	0.087	0.470 UJ				
Dibenz(a,h)anthracene		0.07 U		0.066 U	0.066 U	0.076 U	0.064 U		0.066 U	0.064 U	0.064 U	0.062 U	0.062 U	0.065 U	0.730 J				
Dibenzofuran	160				0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Diethylphthalate					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Dimethylphthalate					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Di-N-Butylphthalate					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Di-n-Octyl phthalate	1600				0.066 U	0.076 U	0.075		0.066 U	0.064 U					0.470 UJ				
Fluoranthene	89				0.066 U	0.076 U	0.099		0.17	0.064 U					0.470 UJ				
Fluorene	553				0.066 U	0.08	0.099		0.066 U	0.064 U					1.400 J				
Hexachlorobenzene					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Hexachlorobutadiene					0.066 U	0.076 U	0.064 U	0.0059 U	0.066 U	0.064 U					0.470 UJ				

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Area ID:		F	G	G	G	G	G	G	G	G	G	G	G	G	G	I	I	I	I
Sample Name:		F-GC-1	ECI-N-2	G1A-100507-AC-1	G1-AC-3	G1-AC-4	G1-AC-5	G-FA-4	G-FA-5	G-FA-8	G-GC-1	G-GC-2	G-GC-3	M-2C	STOCKPILE	ECI-Q-1	ECI-Q-5	ECI-Q-6	ECI-Q-8
Depth Range:		(0-0.5)						(2-2.5)	(8-8.5)	(4-4.5)	(1.5-2)	(1.4-1.9)	(1-1.5)	(1-1.5)		(1-2)	(1-2)	(0-1)	(5-5)
Date Collected:		1/14/2005	10/7/1991	10/5/2007	6/22/2006	6/22/2006	6/22/2006	1/20/2005	1/20/2005	1/20/2005	3/2/2005	3/2/2005	3/2/2005	7/15/2005	11/12/2004	10/7/1991	10/7/1991	10/7/1991	10/7/1991
Sample Type:	Cleanup Levels (b)	Boring	Surface Soil	Excavation	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Stock Pile	Test Pit	Test Pit	Test Pit	Test Pit
Hexachlorocyclopentadiene					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
Hexachloroethane					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Indeno(1,2,3-cd)pyrene		0.07 U		0.066 U	0.066 U	0.076 U	0.064 U		0.066 U	0.064 U	0.064 U	0.062 U	0.062 U	0.065 U	0.470 UJ				
Isophorone					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
Naphthalene	140				0.066 U	0.076 U	0.064 U	0.024	0.08	0.064 U					0.470 UJ				
Nitrobenzene					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					0.470 UJ				
N-Nitrosodimethylamine															0.470 UJ				
N-Nitroso-Di-N-Propylamine					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U									
N-Nitrosodiphenylamine					0.074 U	0.11 U	0.15 U		0.066 U	0.064 U					0.470 UJ				
Pentachlorophenol					0.33 U	0.38 U	0.32 U		0.33 U	0.32 U					0.470 UJ				
Phenanthrene	12000				0.27	0.31	0.48		0.21	0.064 U					0.470 UJ				
Phenol					0.066 U	0.076 U	0.064 U		0.066 U	0.064 U					1.300 J				
Pyrene	2400				0.066 U	0.076 U	0.091		0.18	0.064 U					0.470 UJ				
Pyridine															1.200 J				

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I2-1	I2-2	I2-3	I2-4	I2-5	I2-6	I2-7	I2-8	I2-9	I2-10	I-3	I-GC-1	I-GC-1A	I-GC-1B	I-GC-1C	I-GC-1C	I-GC-2	I-GC-2	I-GC-3
	Depth Range:	(1-1.5)	(1-2.25)	(0.5-2.5)	(1.4-2.4)	(1.3-2.5)	(1.5-2.2)	(1.7-2.8)	(1.5-3.3)	(1.7-3.3)	(1.5-2.5)		(0-0.5)	(0-0.5)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(1-2)	(0-0.5)
	Date Collected:	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	2/12/2004	7/14/2005	10/19/2005	10/19/2005	10/19/2005	10/18/2005	7/14/2005	7/14/2005	7/14/2005
	Sample Type:	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
	Cleanup Levels (b)																			
SVOCs (mg/kg)																				
EPA Method 8270/8270SIM																				
1,2,4-Trichlorobenzene																				
1,2-Dichlorobenzene																				
1,3-Dichlorobenzene																				
1,4-Dichlorobenzene																				
1-Methylnaphthalene	24																			
2,2'-Oxybis(1-Chloropropane)																				
2,3,4,6-Tetrachlorophenol																				
2,4,5-Trichlorophenol																				
2,4,6-Trichlorophenol																				
2,4-Dichlorophenol																				
2,4-Dimethylphenol																				
2,4-Dinitrophenol																				
2,4-Dinitrotoluene																				
2,6-Dichlorophenol																				
2,6-Dinitrotoluene																				
2-Chloronaphthalene																				
2-Chlorophenol																				
2-Methylnaphthalene	320																			
2-Methylphenol																				
2-Nitroaniline																				
2-Nitrophenol																				
3,3'-Dichlorobenzidine																				
3-Nitroaniline																				
4,6-Dinitro-2-Methylphenol																				
4-Bromophenyl-Phenylether																				
4-Chloro-3-Methylphenol																				
4-Chloroaniline																				
4-Chlorophenyl-Phenylether																				
4-Methylphenol	--																			
4-Nitroaniline																				
4-Nitrophenol																				
Acenaphthene	66																			
Acenaphthylene																				
Aniline																				
Anthracene	12000																			
Azobenzene																				
Benzidine																				
Benzo(a)anthracene		0.065 U	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.064 U	0.064 U	0.064 U	0.019	0.066 U	0.061 U	0.066 U	0.13	0.064 U	0.084	0.065 U	0.065 U
Benzo(a)pyrene	0.14	0.065 U	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.064 U	0.064 U	0.064 U	0.019	0.066 U	0.061 U	0.066 U	0.093	0.064 U	0.11	0.065 U	0.068
Benzo(b)fluoranthene		0.12	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.064 U	0.064 U	0.064 U	0.04	0.066 U	0.061 U	0.066 U	0.16	0.064 U	0.26	0.065 U	0.083
Benzo(g,h,i)perylene																				
Benzo(k)fluoranthene		0.065 U	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.064 U	0.064 U	0.064 U	0.028	0.066 U	0.061 U	0.066 U	0.18	0.064 U	0.14	0.065 U	0.065 U
Benzoic Acid	320000																			
Benzyl Alcohol																				
Benzyl butyl phthalate																				
bis(2-Chloroethoxy) Methane																				
Bis-(2-Chloroethyl) Ether																				
Bis(2-Ethylhexyl)Phthalate	4.9																			
Carbazole	50																			
Chrysene		0.17	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.064 U	0.064 U	0.064 U	0.04	0.066 U	0.061 U	0.066 U	0.36	0.064 U	0.23	0.065 U	0.08
Dibenz(a,h)anthracene		0.065 U	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.064 U	0.064 U	0.064 U	0.0084 U	0.066 U	0.061 U	0.066 U	0.066 U	0.064 U	0.062 U	0.065 U	0.065 U
Dibenzofuran	160																			
Diethylphthalate																				
Dimethylphthalate																				
Di-N-Butylphthalate																				
Di-n-Octyl phthalate	1600																			
Fluoranthene	89																			
Fluorene	553																			
Hexachlorobenzene																				
Hexachlorobutadiene																				

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I2-1	I2-2	I2-3	I2-4	I2-5	I2-6	I2-7	I2-8	I2-9	I2-10	I-3	I-GC-1	I-GC-1A	I-GC-1B	I-GC-1C	I-GC-1C	I-GC-2	I-GC-2	I-GC-3
	Depth Range:	(1-1.5)	(1-2.25)	(0.5-2.5)	(1.4-2.4)	(1.3-2.5)	(1.5-2.2)	(1.7-2.8)	(1.5-3.3)	(1.7-3.3)	(1.5-2.5)		(0-0.5)	(0-0.5)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(1-2)	(0-0.5)
	Date Collected:	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	5/8/2006	2/12/2004	7/14/2005	10/19/2005	10/19/2005	10/19/2005	10/18/2005	7/14/2005	7/14/2005	7/14/2005
	Sample Type:	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
	Cleanup Levels (b)																			
Hexachlorocyclopentadiene																				
Hexachloroethane																				
Indeno(1,2,3-cd)pyrene		0.065 U	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.064 U	0.064 U	0.064 U	0.013	0.066 U	0.061 U	0.066 U	0.074	0.064 U	0.062 U	0.065 U	0.065 U
Isophorone																				
Naphthalene	140																			
Nitrobenzene																				
N-Nitrosodimethylamine																				
N-Nitroso-Di-N-Propylamine																				
N-Nitrosodiphenylamine																				
Pentachlorophenol																				
Phenanthrene	12000																			
Phenol																				
Pyrene	2400																			
Pyridine																				

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I-GC-4	I-GC-4	I-GC-5	I-GC-6	I-GC-7	I-GC-8	I-GC-9	I-GC-10	I-GC-11	I-GC-11	I-GC-11	I-GC-11.1E	I-GC-11.1N	I-GC-11.1S	I-GC-11.1W	I-GC-12	I-GC-12	I-GC-12.1E	I-GC-12.1S
	Depth Range:	(0-0.5)	(1-2)	(3-3.5)	(3.5-4)	(0-0.5)	(3.5-4)	(3.5-4)	(0-0.5)	(0-0.5)	(1-2)	(2-3)	(0-0.5)	(0-0.5)	(0.75-1.25)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0.75-1.25)
	Date Collected:	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	3/1/2006	3/1/2006	3/1/2006	3/1/2006	7/14/2005	7/14/2005	3/1/2006	3/1/2006
	Sample Type:	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Surface Soil	Hand Auger
	Cleanup Levels (b)																			
SVOCs (mg/kg)																				
EPA Method 8270/8270SIM																				
1,2,4-Trichlorobenzene																				
1,2-Dichlorobenzene																				
1,3-Dichlorobenzene																				
1,4-Dichlorobenzene																				
1-Methylnaphthalene	24																			
2,2'-Oxybis(1-Chloropropane)																				
2,3,4,6-Tetrachlorophenol																				
2,4,5-Trichlorophenol																				
2,4,6-Trichlorophenol																				
2,4-Dichlorophenol																				
2,4-Dimethylphenol																				
2,4-Dinitrophenol																				
2,4-Dinitrotoluene																				
2,6-Dichlorophenol																				
2,6-Dinitrotoluene																				
2-Chloronaphthalene																				
2-Chlorophenol																				
2-Methylnaphthalene	320																			
2-Methylphenol																				
2-Nitroaniline																				
2-Nitrophenol																				
3,3'-Dichlorobenzidine																				
3-Nitroaniline																				
4,6-Dinitro-2-Methylphenol																				
4-Bromophenyl-Phenylether																				
4-Chloro-3-Methylphenol																				
4-Chloroaniline																				
4-Chlorophenyl-Phenylether																				
4-Methylphenol	--																			
4-Nitroaniline																				
4-Nitrophenol																				
Acenaphthene	66																			
Acenaphthylene																				
Aniline																				
Anthracene	12000																			
Azobenzene																				
Benzidine																				
Benzo(a)anthracene		0.064 U	0.064 U	0.066 U	0.064 U	0.063 U	0.066 U	0.067 U	0.065 U	0.13	0.32	0.065 U	0.085	0.065 U	0.075	0.16	0.29	0.074	0.13	0.064 U
Benzo(a)pyrene	0.14	0.079	0.064 U	0.066 U	0.064 U	0.063 U	0.066 U	0.067 U	0.065 U	0.23	0.48	0.065 U	0.09	0.065 U	0.097	0.14	0.41	0.075	0.12	0.064 U
Benzo(b)fluoranthene		0.077	0.064 U	0.066 U	0.064 U	0.085	0.066 U	0.067 U	0.065 U	0.35	0.71	0.065 U	0.19	0.065 U	0.19	0.2	0.62	0.076	0.21	0.064 U
Benzo(g,h,i)perylene																				
Benzo(k)fluoranthene		0.064 U	0.064 U	0.066 U	0.064 U	0.063 U	0.066 U	0.067 U	0.065 U	0.16	0.48	0.065 U	0.11	0.065 U	0.083	0.11	0.34	0.086	0.1	0.064 U
Benzoic Acid	320000																			
Benzyl Alcohol																				
Benzyl butyl phthalate																				
bis(2-Chloroethoxy) Methane																				
Bis-(2-Chloroethyl) Ether																				
Bis(2-Ethylhexyl)Phthalate	4.9																			
Carbazole	50																			
Chrysene		0.07	0.064 U	0.066 U	0.064 U	0.076	0.066 U	0.067 U	0.065 U	0.26	0.7	0.065 U	0.17	0.065 U	0.3	0.28	1.1	0.079	0.28	0.064 U
Dibenz(a,h)anthracene		0.064 U	0.064 U	0.066 U	0.064 U	0.063 U	0.066 U	0.067 U	0.065 U	0.064 U	0.073	0.065 U	0.064 U	0.065 U	0.064 U	0.065 U	0.081	0.066 U	0.064 U	0.064 U
Dibenzofuran	160																			
Diethylphthalate																				
Dimethylphthalate																				
Di-N-Butylphthalate																				
Di-n-Octyl phthalate	1600																			
Fluoranthene	89																			
Fluorene	553																			
Hexachlorobenzene																				
Hexachlorobutadiene																				

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I-GC-4	I-GC-4	I-GC-5	I-GC-6	I-GC-7	I-GC-8	I-GC-9	I-GC-10	I-GC-11	I-GC-11	I-GC-11	I-GC-11.1E	I-GC-11.1N	I-GC-11.1S	I-GC-11.1W	I-GC-12	I-GC-12	I-GC-12.1E	I-GC-12.1S
	Depth Range:	(0-0.5)	(1-2)	(3-3.5)	(3.5-4)	(0-0.5)	(3.5-4)	(3.5-4)	(0-0.5)	(0-0.5)	(1-2)	(2-3)	(0-0.5)	(0-0.5)	(0.75-1.25)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0.75-1.25)
	Date Collected:	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	7/14/2005	3/1/2006	3/1/2006	3/1/2006	3/1/2006	7/14/2005	7/14/2005	3/1/2006	3/1/2006
	Sample Type:	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Surface Soil	Hand Auger
	Cleanup Levels (b)																			
Hexachlorocyclopentadiene																				
Hexachloroethane																				
Indeno(1,2,3-cd)pyrene		0.064 U	0.064 U	0.066 U	0.064 U	0.063 U	0.066 U	0.067 U	0.065 U	0.11	0.23	0.065 U	0.064 U	0.065 U	0.064 U	0.065 U	0.22	0.066 U	0.067	0.064 U
Isophorone																				
Naphthalene	140																			
Nitrobenzene																				
N-Nitrosodimethylamine																				
N-Nitroso-Di-N-Propylamine																				
N-Nitrosodiphenylamine																				
Pentachlorophenol																				
Phenanthrene	12000																			
Phenol																				
Pyrene	2400																			
Pyridine																				

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I-GC-12.1W	I-GC-12.2E	I-GC-12.5S	I-GC-13	I-GC-14	I-GC-14	I-GC-15	I-GC-16	I-GC-17	I-GC-17	I-GC-18	I-GC-19	I-GC-20	I-GC-20	I-GC-21	I-GC-22	I-GC-23
	Depth Range:	(0-0.5)	(0-0.5)	(0.5-1)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0-0.5)	(0-0.5)
	Date Collected:	3/1/2006	3/10/2006	3/1/2006	7/14/2005	7/14/2005	7/14/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005
	Sample Type:	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Boring	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger
	Cleanup Levels (b)																	
SVOCs (mg/kg)																		
EPA Method 8270/8270SIM																		
1,2,4-Trichlorobenzene																		
1,2-Dichlorobenzene																		
1,3-Dichlorobenzene																		
1,4-Dichlorobenzene																		
1-Methylnaphthalene	24																	
2,2'-Oxybis(1-Chloropropane)																		
2,3,4,6-Tetrachlorophenol																		
2,4,5-Trichlorophenol																		
2,4,6-Trichlorophenol																		
2,4-Dichlorophenol																		
2,4-Dimethylphenol																		
2,4-Dinitrophenol																		
2,4-Dinitrotoluene																		
2,6-Dichlorophenol																		
2,6-Dinitrotoluene																		
2-Chloronaphthalene																		
2-Chlorophenol																		
2-Methylnaphthalene	320																	
2-Methylphenol																		
2-Nitroaniline																		
2-Nitrophenol																		
3,3'-Dichlorobenzidine																		
3-Nitroaniline																		
4,6-Dinitro-2-Methylphenol																		
4-Bromophenyl-Phenylether																		
4-Chloro-3-Methylphenol																		
4-Chloroaniline																		
4-Chlorophenyl-Phenylether																		
4-Methylphenol	--																	
4-Nitroaniline																		
4-Nitrophenol																		
Acenaphthene	66																	
Acenaphthylene																		
Aniline																		
Anthracene	12000																	
Azobenzene																		
Benzidine																		
Benzo(a)anthracene		0.11	0.063 U	0.064 U	0.066 U	0.077	0.064 U	0.066 U	0.064 U	0.12	0.063 U	0.066 U	0.066 U	0.34	0.064 U	0.064 U	0.066 U	0.064 U
Benzo(a)pyrene	0.14	0.13	0.063 U	0.064 U	0.066 U	0.097	0.064 U	0.066 U	0.064 U	0.16	0.063 U	0.066 U	0.066 U	0.53	0.064 U	0.064 U	0.066 U	0.064 U
Benzo(b)fluoranthene		0.13	0.063 U	0.087	0.066 U	0.21	0.064 U	0.066 U	0.064 U	0.15	0.063 U	0.066 U	0.094	1.1	0.064 U	0.065	0.066 U	0.064 U
Benzo(g,h,i)perylene																		
Benzo(k)fluoranthene		0.096	0.063 U	0.064 U	0.066 U	0.099	0.064 U	0.066 U	0.064 U	0.072	0.063 U	0.066 U	0.066 U	0.59	0.064 U	0.064 U	0.066 U	0.064 U
Benzoic Acid	320000																	
Benzyl Alcohol																		
Benzyl butyl phthalate																		
bis(2-Chloroethoxy) Methane																		
Bis-(2-Chloroethyl) Ether																		
Bis(2-Ethylhexyl)Phthalate	4.9																	
Carbazole	50																	
Chrysene		0.14	0.063 U	0.076	0.066 U	0.18	0.064 U	0.066 U	0.064 U	0.13	0.063 U	0.066 U	0.078	0.97	0.064 U	0.064 U	0.066 U	0.064 U
Dibenz(a,h)anthracene		0.065 U	0.063 U	0.064 U	0.066 U	0.065 U	0.064 U	0.066 U	0.064 U	0.066 U	0.063 U	0.066 U	0.066 U	0.12	0.064 U	0.064 U	0.066 U	0.064 U
Dibenzofuran	160																	
Diethylphthalate																		
Dimethylphthalate																		
Di-N-Butylphthalate																		
Di-n-Octyl phthalate	1600																	
Fluoranthene	89																	
Fluorene	553																	
Hexachlorobenzene																		
Hexachlorobutadiene																		

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I-GC-12.1W	I-GC-12.2E	I-GC-12.5S	I-GC-13	I-GC-14	I-GC-14	I-GC-15	I-GC-16	I-GC-17	I-GC-17	I-GC-18	I-GC-19	I-GC-20	I-GC-20	I-GC-21	I-GC-22	I-GC-23
	Depth Range:	(0-0.5)	(0-0.5)	(0.5-1)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0-0.5)	(0-0.5)	(1-2)	(0-0.5)	(0-0.5)	(0-0.5)
	Date Collected:	3/1/2006	3/10/2006	3/1/2006	7/14/2005	7/14/2005	7/14/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005	8/22/2005
	Sample Type:	Surface Soil	Surface Soil	Surface Soil	Boring	Boring	Boring	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger
	Cleanup Levels (b)																	
Hexachlorocyclopentadiene																		
Hexachloroethane																		
Indeno(1,2,3-cd)pyrene		0.072	0.063 U	0.064 U	0.066 U	0.1	0.064 U	0.066 U	0.064 U	0.13	0.063 U	0.066 U	0.066 U	0.39	0.064 U	0.064 U	0.066 U	0.064 U
Isophorone																		
Naphthalene	140																	
Nitrobenzene																		
N-Nitrosodimethylamine																		
N-Nitroso-Di-N-Propylamine																		
N-Nitrosodiphenylamine																		
Pentachlorophenol																		
Phenanthrene	12000																	
Phenol																		
Pyrene	2400																	
Pyridine																		

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Area ID:		I	I	I	I	I	I	I	J	J	J	J	J	J	J	J	J	J	J
Sample Name:		I-GC-24	I-GC-24	I-GC-25	I-GC-26	I-X	I-Y	I-Z	Chamber-1	Chamber-2	Chamber-3	Chamber-4	J-GC-1 (a)	J-GC-1 (a)	J-GC-2	J-GC-3	J-GC-4	J-GC-6	J-GC-6
Depth Range:		(1.2-6)	(6.5-7.5)	(0.5-1)	(0-0.5)								(0.5-1)	(0.5-1)	(0-0.5)	(0-0.5)	(1.5-2)	(1.1-1.6)	(2-2.7)
Date Collected:		10/19/2005	10/19/2005	10/19/2005	10/19/2005	2/12/2004	2/12/2004	2/12/2004	8/11/2006	8/11/2006	8/11/2006	8/11/2006	1/14/2005	1/14/2005	3/2/2005	3/2/2005	3/3/2005	7/15/2005	7/15/2005
Sample Type:	Cleanup Levels (b)	Boring	Boring	Boring	Boring	Boring	Boring	Surface Soil	Excavation	Excavation	Excavation	Excavation	Boring	Boring	Boring	Boring	Boring	Boring	Boring
SVOCs (mg/kg)																			
EPA Method 8270/8270SIM																			
1,2,4-Trichlorobenzene						0.14 U	0.081 U												
1,2-Dichlorobenzene						0.14 U	0.081 U												
1,3-Dichlorobenzene						0.14 U	0.081 U												
1,4-Dichlorobenzene						0.14 U	0.081 U												
1-Methylnaphthalene	24																		
2,2'-Oxybis(1-Chloropropane)						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
2,3,4,6-Tetrachlorophenol																			
2,4,5-Trichlorophenol						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
2,4,6-Trichlorophenol						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
2,4-Dichlorophenol						0.41 U	0.24 U		0.32 U	0.33 U	0.33 U	0.33 U							
2,4-Dimethylphenol						0.41 U	0.24 U		0.065 U	0.066 U	0.066 U	0.066 U							
2,4-Dinitrophenol						1.4 U	0.81 U		0.65 U	0.66 U	0.66 U	0.66 U							
2,4-Dinitrotoluene						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
2,6-Dichlorophenol																			
2,6-Dinitrotoluene						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
2-Chloronaphthalene						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
2-Chlorophenol						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
2-Methylnaphthalene	320					2.4	0.081 U		0.13	0.61	0.066 U	0.066 U							
2-Methylphenol						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
2-Nitroaniline						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
2-Nitrophenol						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
3,3'-Dichlorobenzidine						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
3-Nitroaniline						0.82 U	0.49 U		0.32 U	0.33 U	0.33 U	0.33 U							
4,6-Dinitro-2-Methylphenol						1.4 U	0.81 U		0.65 U	0.66 U	0.66 U	0.66 U							
4-Bromophenyl-Phenylether						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
4-Chloro-3-Methylphenol						0.27 U	0.16 U		0.32 U	0.33 U	0.33 U	0.33 U							
4-Chloroaniline						0.41 U	0.24 U		0.32 U	0.33 U	0.33 U	0.33 U							
4-Chlorophenyl-Phenylether						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
4-Methylphenol	--					0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
4-Nitroaniline						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
4-Nitrophenol						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
Acenaphthene	66					0.14 U	0.081 U		0.065 U	0.15	0.066 U	0.066 U							
Acenaphthylene						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Aniline																			
Anthracene	12000					0.14 U	0.081 U		0.065 U	0.066 U	0.097	0.066 U							
Azobenzene																			
Benzidine																			
Benzo(a)anthracene		0.065 U	0.064 U	0.062 U	0.06 U	0.14 U	0.081 U	0.021					0.13 U	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.38 J
Benzo(a)pyrene	0.14	0.065 U	0.064 U	0.062 U	0.06 U	0.14 U	0.081 U	0.017					0.13 U	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.38 J
Benzo(b)fluoranthene		0.065 U	0.064 U	0.062 U	0.06 U	0.14 U	0.081 U	0.028					0.13 U	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.31 J
Benzo(g,h,i)perylene						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.095 U							
Benzo(k)fluoranthene		0.065 U	0.064 U	0.062 U	0.06 U	0.14 U	0.081 U	0.015					0.13 U	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.38 J
Benzoic Acid	320000					1.4 U	0.81 U		0.65 U	0.66 U	0.66 U	0.66 U							
Benzyl Alcohol						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
Benzyl butyl phthalate						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
bis(2-Chloroethoxy) Methane						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Bis-(2-Chloroethyl) Ether						0.27 U	0.16 U		0.065 U	0.066 U	0.066 U	0.066 U							
Bis(2-Ethylhexyl)Phthalate	4.9					0.14 U	0.081 U		0.065 U	0.066 U	0.15	0.072							
Carbazole	50					0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Chrysene		0.078	0.064 U	0.062 U	0.06 U	0.14 U	0.081 U	0.031					0.13 U	0.74	0.064 U	0.065 U	0.065 U	0.065 U	0.35 J
Dibenz(a,h)anthracene		0.065 U	0.064 U	0.062 U	0.06 U	0.14 U	0.081 U	0.0087 U					0.13 U	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 UJ
Dibenzofuran	160					0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Diethylphthalate						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Dimethylphthalate						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Di-N-Butylphthalate						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Di-n-Octyl phthalate	1600					0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Fluoranthene	89					0.14 U	0.081 U		0.065 U	0.066 U	0.099	0.091							
Fluorene	553					0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Hexachlorobenzene						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Hexachlorobutadiene						0.27 U	0.16 U												

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	J	J	J	J	J	J	J	J	J	J	J
	Sample Name:	I-GC-24	I-GC-24	I-GC-25	I-GC-26	I-X	I-Y	I-Z	Chamber-1	Chamber-2	Chamber-3	Chamber-4	J-GC-1 (a)	J-GC-1 (a)	J-GC-2	J-GC-3	J-GC-4	J-GC-6	J-GC-6
	Depth Range:	(1.2-6)	(6.5-7.5)	(0.5-1)	(0-0.5)								(0.5-1)	(0.5-1)	(0-0.5)	(0-0.5)	(1.5-2)	(1.1-1.6)	(2-2.7)
	Date Collected:	10/19/2005	10/19/2005	10/19/2005	10/19/2005	2/12/2004	2/12/2004	2/12/2004	8/11/2006	8/11/2006	8/11/2006	8/11/2006	1/14/2005	1/14/2005	3/2/2005	3/2/2005	3/3/2005	7/15/2005	7/15/2005
	Sample Type:	Boring	Boring	Boring	Boring	Boring	Boring	Surface Soil	Excavation	Excavation	Excavation	Excavation	Boring	Boring	Boring	Boring	Boring	Boring	Boring
	Cleanup Levels (b)																		
Hexachlorocyclopentadiene						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
Hexachloroethane						0.27 U	0.16 U		0.065 U	0.066 U	0.066 U	0.066 U							
Indeno(1,2,3-cd)pyrene		0.065 U	0.064 U	0.062 U	0.06 U	0.14 U	0.081 U	0.01					0.13 U	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.15 J
Isophorone						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Naphthalene	140					0.24	0.081 U												
Nitrobenzene						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
N-Nitrosodimethylamine																			
N-Nitroso-Di-N-Propylamine						0.27 U	0.16 U		0.32 U	0.33 U	0.33 U	0.33 U							
N-Nitrosodiphenylamine						0.14 U	0.081 U		0.065 U	0.066 U	0.066 U	0.066 U							
Pentachlorophenol						0.68 U	0.41 U		0.32 U	0.33 U	0.33 U	0.33 U							
Phenanthrene	12000					1.2	0.081 U		0.065 U	0.066 U	0.076	0.11							
Phenol						0.27 U	0.16 U		0.065 U	0.066 U	0.066 U	0.066 U							
Pyrene	2400					0.16	0.081 U		0.065 U	0.066 U	0.07	0.082							
Pyridine																			

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	J	J	J	J	J	J	J	M	M	M	M	M	M	M	M	M	M	M	M
	Sample Name:	J-GC-6	J-GC-7	J-GC-8	J-GC-9	J-GC-10	J-MSRC	KFI-WP-Comp	ECI-N-1	M-1	M-2	M-2	M-2B	M-2D	M-2.1S	M-2.1W	M-3	M-4	M-GC-1	M-GC-2
	Depth Range:	(3.1-4.1)	(0.7-1.2)	(2.1-2.6)	(1.4-1.9)	(0-0.5)				(0.3-0.8)	(1.5-2)	(2-3)	(1-1.5)	(0.9-1.4)	(1-1.5)	(1-1.5)	(0-0.5)	(0.8-1.3)	(1.6-2.1)	(1.5-2)
	Date Collected:	7/15/2005	7/15/2005	7/15/2005	7/15/2005	7/14/2005	5/23/2007	9/30/1993	10/7/1991	1/18/2005	1/18/2005	1/18/2005	7/15/2005	7/15/2005	3/1/2006	3/1/2006	1/18/2005	1/17/2005	3/3/2005	3/2/2005
	Sample Type:	Boring	Boring	Boring	Boring	Boring	Excavation	Stock Pile	Surface Soil	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
	Cleanup Levels (b)																			
SVOCs (mg/kg)																				
EPA Method 8270/8270SIM																				
1,2,4-Trichlorobenzene							50 U	2.3 U												
1,2-Dichlorobenzene							50 U	2.3 U	0.005 U											
1,3-Dichlorobenzene							50 U	2.3 U	0.005 U											
1,4-Dichlorobenzene							50 U	2.3 U	0.005 U											
1-Methylnaphthalene	24						50 U													
2,2'-Oxybis(1-Chloropropane)							50 U	2.3 U												
2,3,4,6-Tetrachlorophenol							125 U													
2,4,5-Trichlorophenol							50 U	12 U												
2,4,6-Trichlorophenol							50 U	2.3 U												
2,4-Dichlorophenol							50 U	2.3 U												
2,4-Dimethylphenol							50 U	2.3 U												
2,4-Dinitrophenol							250 U	12 U												
2,4-Dinitrotoluene							125 U	2.3 U												
2,6-Dichlorophenol							50 U													
2,6-Dinitrotoluene							125 U	2.3 U												
2-Chloronaphthalene							50 U	2.3 U												
2-Chlorophenol							50 U	2.3 U												
2-Methylnaphthalene	320						50 U	8.8												
2-Methylphenol							50 U	2.3 U												
2-Nitroaniline							125 U	12 U												
2-Nitrophenol							125 U	2.3 U												
3,3'-Dichlorobenzidine							50 U	4.8 U												
3-Nitroaniline							125 U	12 U												
4,6-Dinitro-2-Methylphenol							125 U	12 U												
4-Bromophenyl-Phenylether							50 U	2.3 U												
4-Chloro-3-Methylphenol							50 U	2.3 U												
4-Chloroaniline							50 U	2.3 U												
4-Chlorophenyl-Phenylether							50 U	2.3 U												
4-Methylphenol	--						50 U	2.3 U												
4-Nitroaniline							125 U	12 U												
4-Nitrophenol							250 U	12 U												
Acenaphthene	66						50 U	2.3 U												
Acenaphthylene							50 U	2.3 U												
Aniline							50 U	2.3 U												
Anthracene	12000						50 U	2.3 U												
Azobenzene							50 U													
Benzidine								23 U												
Benzo(a)anthracene		0.064 UJ	0.066 U	0.066 U	0.064 U	0.064 U	50 U	2.3 U		0.066 U	0.13	0.064 UJ	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.062 UJ	0.063 U	0.062 U
Benzo(a)pyrene	0.14	0.064 UJ	0.066 U	0.066 U	0.064 U	0.064 U	50 U	2.3 U		0.066 U	0.18	0.064 UJ	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.062 UJ	0.063 U	0.062 U
Benzo(b)fluoranthene		0.064 UJ	0.066 U	0.066 U	0.064 U	0.069	50 U	2.3 U		0.066 U	0.12	0.064 UJ	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.062 UJ	0.063 U	0.062 U
Benzo(g,h,i)perylene							50 U	2.3 U												
Benzo(k)fluoranthene		0.064 UJ	0.066 U	0.066 U	0.064 U	0.064 U	50 U	2.3 U		0.066 U	0.12	0.064 UJ	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.062 UJ	0.063 U	0.062 U
Benzoic Acid	320000						500 U	12 U												
Benzyl Alcohol							50 U	2.3 U												
Benzyl butyl phthalate							50 U	2.3 U												
bis(2-Chloroethoxy) Methane							50 U	2.3 U												
Bis-(2-Chloroethyl) Ether							50 U	2.3 U												
Bis(2-Ethylhexyl)Phthalate	4.9						65 U	1.4 J												
Carbazole	50						50 U													
Chrysene		0.064 UJ	0.066 U	0.066 U	0.064 U	0.064 U	69	2.3 U		0.066 U	0.21	0.064 UJ	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.062 UJ	0.063 U	0.062 U
Dibenz(a,h)anthracene		0.064 UJ	0.066 U	0.066 U	0.064 U	0.064 U	50 U	2.3 U		0.066 U	0.064	0.064 UJ	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.062 UJ	0.063 U	0.062 U
Dibenzofuran	160						50 U	2.3 U												
Diethylphthalate							50 U	2.3 U												
Dimethylphthalate							50 U	2.3 U												
Di-N-Butylphthalate							65 U	2.3 U												
Di-n-Octyl phthalate	1600						50 U	2.3 U												
Fluoranthene	89						50 U	2.3 U												
Fluorene	553						50 U	1.6 J												
Hexachlorobenzene							50 U	2.3 U												
Hexachlorobutadiene							50 U	2.3 U												

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	J	J	J	J	J	J	J	M	M	M	M	M	M	M	M	M	M	M	M
	Sample Name:	J-GC-6	J-GC-7	J-GC-8	J-GC-9	J-GC-10	J-MSRC	KFI-WP-Comp	ECI-N-1	M-1	M-2	M-2	M-2B	M-2D	M-2.1S	M-2.1W	M-3	M-4	M-GC-1	M-GC-2
	Depth Range:	(3.1-4.1)	(0.7-1.2)	(2.1-2.6)	(1.4-1.9)	(0-0.5)				(0.3-0.8)	(1.5-2)	(2-3)	(1-1.5)	(0.9-1.4)	(1-1.5)	(1-1.5)	(0-0.5)	(0.8-1.3)	(1.6-2.1)	(1.5-2)
	Date Collected:	7/15/2005	7/15/2005	7/15/2005	7/15/2005	7/14/2005	5/23/2007	9/30/1993	10/7/1991	1/18/2005	1/18/2005	1/18/2005	7/15/2005	7/15/2005	3/1/2006	3/1/2006	1/18/2005	1/17/2005	3/3/2005	3/2/2005
	Sample Type:	Boring	Boring	Boring	Boring	Boring	Excavation	Stock Pile	Surface Soil	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
	Cleanup Levels (b)																			
Hexachlorocyclopentadiene							250 U	2.3 U												
Hexachloroethane							50 U	2.3 U												
Indeno(1,2,3-cd)pyrene		0.064 UJ	0.066 U	0.066 U	0.064 U	0.064 U	50 U	2.3 U		0.066 U	0.095	0.064 UJ	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.062 UJ	0.063 U	0.062 U
Isophorone							50 U	2.3 U												
Naphthalene	140						50 U	1.8 J												
Nitrobenzene							50 U	2.3 U												
N-Nitrosodimethylamine							50 U	2.3 U												
N-Nitroso-Di-N-Propylamine							50 U	2.3 U												
N-Nitrosodiphenylamine							250 U	2.3 U												
Pentachlorophenol							250 U	2.3 U												
Phenanthrene	12000						50 U	3.4												
Phenol							50 U	2.3 U												
Pyrene	2400						84	2.3 U												
Pyridine							100 U													

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	M	M	M
	Sample Name:	M-GC-3	M-GC-4	M-GC-5
	Depth Range:	(1-1.5)	(1.5-2)	(1-1.5)
	Date Collected:	3/3/2005	3/2/2005	3/2/2005
	Sample Type:	Boring	Boring	Boring
	Cleanup Levels (b)			
SVOCs (mg/kg)				
EPA Method 8270/8270SIM				
1,2,4-Trichlorobenzene				
1,2-Dichlorobenzene				
1,3-Dichlorobenzene				
1,4-Dichlorobenzene				
1-Methylnaphthalene	24			
2,2'-Oxybis(1-Chloropropane)				
2,3,4,6-Tetrachlorophenol				
2,4,5-Trichlorophenol				
2,4,6-Trichlorophenol				
2,4-Dichlorophenol				
2,4-Dimethylphenol				
2,4-Dinitrophenol				
2,4-Dinitrotoluene				
2,6-Dichlorophenol				
2,6-Dinitrotoluene				
2-Chloronaphthalene				
2-Chlorophenol				
2-Methylnaphthalene	320			
2-Methylphenol				
2-Nitroaniline				
2-Nitrophenol				
3,3'-Dichlorobenzidine				
3-Nitroaniline				
4,6-Dinitro-2-Methylphenol				
4-Bromophenyl-Phenylether				
4-Chloro-3-Methylphenol				
4-Chloroaniline				
4-Chlorophenyl-Phenylether				
4-Methylphenol	--			
4-Nitroaniline				
4-Nitrophenol				
Acenaphthene	66			
Acenaphthylene				
Aniline				
Anthracene	12000			
Azobenzene				
Benzidine				
Benzo(a)anthracene		0.065 U	0.065 U	0.064 U
Benzo(a)pyrene	0.14	0.065 U	0.065 U	0.064 U
Benzo(b)fluoranthene		0.065 U	0.065 U	0.064 U
Benzo(g,h,i)perylene				
Benzo(k)fluoranthene		0.065 U	0.065 U	0.064 U
Benzoic Acid	320000			
Benzyl Alcohol				
Benzyl butyl phthalate				
bis(2-Chloroethoxy) Methane				
Bis-(2-Chloroethyl) Ether				
Bis(2-Ethylhexyl)Phthalate	4.9			
Carbazole	50			
Chrysene		0.065 U	0.065 U	0.064 U
Dibenz(a,h)anthracene		0.065 U	0.065 U	0.064 U
Dibenzofuran	160			
Diethylphthalate				
Dimethylphthalate				
Di-N-Butylphthalate				
Di-n-Octyl phthalate	1600			
Fluoranthene	89			
Fluorene	553			
Hexachlorobenzene				
Hexachlorobutadiene				

TABLE C-11
SVOCS IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	M	M	M
	Sample Name:	M-GC-3	M-GC-4	M-GC-5
	Depth Range:	(1-1.5)	(1.5-2)	(1-1.5)
	Date Collected:	3/3/2005	3/2/2005	3/2/2005
	Sample Type:	Boring	Boring	Boring
	Cleanup Levels (b)			
Hexachlorocyclopentadiene				
Hexachloroethane				
Indeno(1,2,3-cd)pyrene		0.065 U	0.065 U	0.064 U
Isophorone				
Naphthalene	140			
Nitrobenzene				
N-Nitrosodimethylamine				
N-Nitroso-Di-N-Propylamine				
N-Nitrosodiphenylamine				
Pentachlorophenol				
Phenanthrene	12000			
Phenol				
Pyrene	2400			
Pyridine				

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) Sample analyzed using both EPA Method 8270SIM and standard EPA Method 8270. Lower reporting limits achieved using EPA Method 8270SIM.
(b) Development of the cleanup levels is presented in Table 9 of the work plan.

TABLE C-12
PCBs in CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	G	G	G	J	J	J	J	J	J	J	J	J	I	I	I	I
	Sample Name:	G-3	PZ-10 (a)	STOCKPILE	Chamber-1	Chamber-2	Chamber-3	Chamber-4	J-MSRC	KFI-WP01	KFI-WP02	KFI-WP03	KFI-WP04	ECI-G-1	I-X	I-Y	I2-WP
	Depth Range:	(3-3)	(3-3)											(0-0.5)			(1.5-2.5)
	Date Collected:	2/11/2004	2/11/2004	11/12/2004	8/11/2006	8/11/2006	8/11/2006	8/11/2006	5/23/2007	9/30/1993	9/30/1993	9/30/1993	9/30/1993	7/9/1987	2/12/2004	2/12/2004	5/8/2006
	Sample Type:	Boring	Boring	Stock Pile	Excavation	Excavation	Excavation	Excavation	Excavation	Stock Pile	Stock Pile	Stock Pile	Stock Pile	Surface Soil	Boring	Boring	boring
	Cleanup Screening Levels (b)																
PCBs (mg/kg) SW8082																	
Aroclor 1016		0.047 U	0.036 UJ	0.024 UJ	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U		0.067 U	0.04 U	0.033 U
Aroclor 1221		0.047 U	0.036 U	0.024 UJ	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U		0.067 U	0.04 U	0.033 U
Aroclor 1232		0.047 U	0.036 U	0.024 UJ	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U		0.067 U	0.04 U	0.033 U
Aroclor 1242		0.047 U	0.036 U	0.024 UJ	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U		0.067 U	0.04 U	0.033 U
Aroclor 1248		0.047 U	0.036 U	0.095 J	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U		0.067 U	0.04 U	0.033 U
Aroclor 1254	1	0.110	0.036 U	0.14 J	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U		0.067 U	0.04 U	0.033 U
Aroclor 1260		0.094 U	0.036 U	0.061 J	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U		0.067 U	0.04 U	0.033 U
Total PCBs	1	0.110	0.036 U	0.296	0.033 U	0.032 U	0.033 U	0.032 U	0.1 U	1.4 U	2.8 U	1.5 U	2.4 U	1 U	0.067 U	0.04 U	0.033 U

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) PZ-10 is located at P-10. PZ-10 was taken during the drilling for the P-10 monitoring well.
(b) Development of the cleanup levels is presented in Table 9 of the work plan.

TABLE C-13
cPAHs IN CHARACTERIZATION WATER SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

				cPAHs (µg/L) SW8270/8270SIM							
				Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	cPAH TEQ
			Cleanup Screening Levels (a)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Sample Name	Date Collected	Area ID	Sample Type								
G-1	12/22/2003	G	Boring	0.019	0.018	0.012	0.012	0.025	0.011 U	0.011 U	0.02255
G-2	12/22/2003	G	Boring	0.042	0.052	0.034	0.034	0.059	0.012	0.031	0.06789
G-3	2/11/2004	G	Boring	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
G-FA-4 (b)	1/20/2005	G	Boring	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1/20/2005	G	Boring	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
G-FA-7(b)	1/20/2005	G	Boring	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1/20/2005	G	Boring	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
P10	2/18/2004	G	Monitoring Well	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ
P11	2/19/2004	I	Monitoring Well	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
P12	2/19/2004	I	Monitoring Well	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
J-1	2/12/2004	J	Boring	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
J-2	2/12/2004	J	Boring	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U

U = the analyte was not detected in the sample at the given reporting limit.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

(a) Development of the cleanup levels is presented in Table 8 of the work plan.
(b) Sample analyzed using both EPA Method 8270SIM and standard EPA Method 8270. Lower reporting limits achieved using EPA Method 8270SIM.

TABLE C-14
SVOCS IN CHARACTERIZATION GROUNDWATER SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Area ID:		G	G	G	G	G	G	G	G	G	G	I	I	J	J
Sample Name:		ECI-D-1	ECI-MW-2	G-1	G-2	G-3	G-FA-4 (a)	G-FA-4 (a)	G-FA-7 (a)	G-FA-7 (a)	P10	P11	P12	J-1	J-2
Date Collected:		10/7/1991	10/7/1991	12/22/2003	12/22/2003	2/11/2004	1/20/2005	1/20/2005	1/20/2005	1/20/2005	2/18/2004	2/19/2004	2/19/2004	2/12/2004	2/12/2004
Sample Type:	Cleanup Screening Levels (b)	Concrete Settling Basin Sump	Monitoring Well	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Monitoring Well	Monitoring Well	Monitoring Well	Boring	Boring
SVOCs (µg/L)															
EPA Method 8270/8270SIM															
1,2,4-Trichlorobenzene				0.5 U	0.5 U	1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
1,2-Dichlorobenzene		1 U	1 U	0.2 U	0.2 U	1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
1,3-Dichlorobenzene		1 U	1 U	0.2 U	0.2 U	1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
1,4-Dichlorobenzene		1 U	1 U	0.2 U	0.2 U	1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
2,2'-Oxybis(1-Chloropropane)						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
2,4,5-Trichlorophenol						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
2,4,6-Trichlorophenol						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
2,4-Dichlorophenol						3.4 U	5 U		5 U			3.1 U	3.2 U	3.3 U	3.3 U
2,4-Dimethylphenol						3.4 U	1 U		1 U			3.1 U	3.2 U	3.3 U	3.3 U
2,4-Dinitrophenol						28 U	10 U		10 U			26 U	26 U	28 U	27 U
2,4-Dinitrotoluene						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
2,6-Dinitrotoluene						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
2-Chloronaphthalene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
2-Chlorophenol						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
2-Methylnaphthalene	--					1.1 U	1.5		1 U			1 U	1.1 U	1.1 U	1.1 U
2-Methylphenol						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
2-Nitroaniline						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
2-Nitrophenol						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
3,3'-Dichlorobenzidine						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
3-Nitroaniline						6.7 U	5 U		5 U			6.2 U	6.3 U	6.7 U	6.6 U
4,6-Dinitro-2-Methylphenol						17 U	10 U		10 U			16 U	16 U	17 U	16 U
4-Bromophenyl-phenylether						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
4-Chloro-3-methylphenol						2.2 U	5 U		5 U			2.1 U	2.1 U	2.2 U	2.2 U
4-Chloroaniline						3.4 U	5 U		5 U			3.1 U	3.2 U	3.3 U	3.3 U
4-Chlorophenyl-phenylether						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
4-Methylphenol						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
4-Nitroaniline						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
4-Nitrophenol						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
Acenaphthene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Acenaphthylene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Anthracene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Benzo(a)anthracene	0.1			0.019	0.042	1.1 U	1 U	0.1 U	1 U	0.1 U	0.01 UJ	1 U	1.1 U	1.1 U	1.1 U
Benzo(a)pyrene	0.1			0.018	0.052	1.1 U	1 U	0.1 U	1 U	0.1 U	0.01 UJ	1 U	1.1 U	1.1 U	1.1 U
Benzo(b)fluoranthene	0.1			0.012	0.034	1.1 U	1 U	0.1 U	1 U	0.1 U	0.01 UJ	1 U	1.1 U	1.1 U	1.1 U
Benzo(g,h,i)perylene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Benzo(k)fluoranthene	0.1			0.012	0.034	1.1 U	1 U	0.1 U	1 U	0.1 U	0.01 UJ	1 U	1.1 U	1.1 U	1.1 U
Benzoic Acid						11 U	10 U		10 U			10 U	11 U	11 U	11 U
Benzyl Alcohol						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
Benzyl butyl phthalate						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
bis(2-Chloroethoxy) Methane						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Bis-(2-Chloroethyl) Ether						2.2 U	1 U		1 U			2.1 U	2.1 U	2.2 U	2.2 U
bis(2-Ethylhexyl)phthalate	2.2					1.1 U	2.2 U		26			1 U	1.1 U	1.1 U	1.1 U
Carbazole						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Chrysene	0.1			0.025	0.059	1.1 U	1 U	0.1 U	1 U	0.1 U	0.01 UJ	1 U	1.1 U	1.1 U	1.1 U
Dibenz(a,h)anthracene	0.1			0.011 U	0.012	1.1 U	1 U	0.1 U	1 U	0.1 U	0.01 UJ	1 U	1.1 U	1.1 U	1.1 U
Dibenzofuran						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Diethylphthalate						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Dimethylphthalate						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Di-n-Butylphthalate						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Di-n-Octyl phthalate						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Fluoranthene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Fluorene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Hexachlorobenzene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Hexachlorobutadiene				0.5 U	0.5 U	2.2 U	1 U		1 U			2.1 U	2.1 U	2.2 U	2.2 U
Hexachlorocyclopentadiene						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U

TABLE C-14
SVOCS IN CHARACTERIZATION GROUNDWATER SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Area ID:		G	G	G	G	G	G	G	G	G	G	I	I	J	J
Sample Name:		ECI-D-1	ECI-MW-2	G-1	G-2	G-3	G-FA-4 (a)	G-FA-4 (a)	G-FA-7 (a)	G-FA-7 (a)	P10	P11	P12	J-1	J-2
Date Collected:		10/7/1991	10/7/1991	12/22/2003	12/22/2003	2/11/2004	1/20/2005	1/20/2005	1/20/2005	1/20/2005	2/18/2004	2/19/2004	2/19/2004	2/12/2004	2/12/2004
Sample Type:	Cleanup Screening Levels (b)	Concrete Settling Basin Sump	Monitoring Well	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Monitoring Well	Monitoring Well	Monitoring Well	Boring	Boring
Hexachloroethane						2.2 U	1 U		1 U			2.1 U	2.1 U	2.2 U	2.2 U
Indeno(1,2,3-cd)pyrene	0.1			0.011 U	0.031	1.1 U	1 U	0.1 U	1 U	0.1 U	0.01 UJ	1 U	1.1 U	1.1 U	1.1 U
Isophorone						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Naphthalene	4900			0.5 U	0.5 U	1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Nitrobenzene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
N-Nitroso-Di-N-Propylamine						2.2 U	5 U		5 U			2.1 U	2.1 U	2.2 U	2.2 U
N-Nitrosodiphenylamine						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Pentachlorophenol						5.6 U	5 U		5 U			5.2 U	5.3 U	5.6 U	5.5 U
Phenanthrene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U
Phenol						2.2 U	1 U		1 U			2.1 U	2.1 U	2.2 U	2.2 U
Pyrene						1.1 U	1 U		1 U			1 U	1.1 U	1.1 U	1.1 U

TABLE C-14
SVOCS IN CHARACTERIZATION GROUNDWATER SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (b)					
Area ID:		M	M	M	M	M
Sample Name:		ECI-MW-3	M-1	M-2	M-3	M-4
Date Collected:		10/7/1991	1/18/2005	1/18/2005	1/18/2005	1/17/2005
Sample Type:		Monitoring Well	Boring	Boring	Boring	Boring
SVOCs (µg/L)						
EPA Method 8270/8270SIM						
1,2,4-Trichlorobenzene			5 U	5 U	5 U	5 U
1,2-Dichlorobenzene		1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene		1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene		1 U	1 U	1 U	1 U	1 U
2,2'-Oxybis(1-Chloropropane)						
2,4,5-Trichlorophenol						
2,4,6-Trichlorophenol						
2,4-Dichlorophenol						
2,4-Dimethylphenol						
2,4-Dinitrophenol						
2,4-Dinitrotoluene						
2,6-Dinitrotoluene						
2-Chloronaphthalene						
2-Chlorophenol						
2-Methylnaphthalene	--					
2-Methylphenol						
2-Nitroaniline						
2-Nitrophenol						
3,3'-Dichlorobenzidine						
3-Nitroaniline						
4,6-Dinitro-2-Methylphenol						
4-Bromophenyl-phenylether						
4-Chloro-3-methylphenol						
4-Chloroaniline						
4-Chlorophenyl-phenylether						
4-Methylphenol						
4-Nitroaniline						
4-Nitrophenol						
Acenaphthene						
Acenaphthylene						
Anthracene						
Benzo(a)anthracene	0.1					
Benzo(a)pyrene	0.1					
Benzo(b)fluoranthene	0.1					
Benzo(g,h,i)perylene						
Benzo(k)fluoranthene	0.1					
Benzoic Acid						
Benzyl Alcohol						
Benzyl butyl phthalate						
bis(2-Chloroethoxy) Methane						
Bis-(2-Chloroethyl) Ether						
bis(2-Ethylhexyl)phthalate	2.2					
Carbazole						
Chrysene	0.1					
Dibenz(a,h)anthracene	0.1					
Dibenzofuran						
Diethylphthalate						
Dimethylphthalate						
Di-n-Butylphthalate						
Di-n-Octyl phthalate						
Fluoranthene						
Fluorene						
Hexachlorobenzene						
Hexachlorobutadiene			5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene						

TABLE C-14
SVOCS IN CHARACTERIZATION GROUNDWATER SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	M	M	M	M	M
	Sample Name:	ECI-MW-3	M-1	M-2	M-3	M-4
	Date Collected:	10/7/1991	1/18/2005	1/18/2005	1/18/2005	1/17/2005
	Sample Type:	Monitoring Well	Boring	Boring	Boring	Boring
	Cleanup Screening Levels (b)					
Hexachloroethane						
Indeno(1,2,3-cd)pyrene	0.1					
Isophorone						
Naphthalene	4900		5 U	5 U	5 U	5 U
Nitrobenzene						
N-Nitroso-Di-N-Propylamine						
N-Nitrosodiphenylamine						
Pentachlorophenol						
Phenanthrene						
Phenol						
Pyrene						

U = the analyte was not detected in the sample at the given reporting limit.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

(a) Sample analyzed using both EPA Method 8270SIM and standard EPA Method 8270;
Lower reporting limits achieved using EPA Method 8270SIM
(b) Development of the cleanup levels is presented in Table 8 of the work plan.

TABLE C-15
CATCH BASIN SEDIMENT SAMPLE RESULTS
AMERON HULBERT SITE PORT OF EVERETT, WASHINGTON

		SMS Crieria		
			Area ID:	G
			Sample Name:	CB-3
			Date Collected:	3/26/2008
			Sample Type:	Stormwater Catch Basin
	TCLP (a)	SQS (b)	CSL (c)	
TOTAL METALS (mg/kg)				
Method 6010/7470/200.8				
Antimony				300
Arsenic		57	93	1,700
Beryllium		--	--	0.4
Cadmium		5.1	6.7	10.2
Chromium		260	270	338
Copper		390	390	1,700
Lead		450	530	1,510
Mercury		0.41	0.59	0.08
Nickel		--	--	185
Selenium		--	--	1.3
Silver		6.1	6.1	3
Thallium		--	--	0.7
Zinc		410	960	8,110
TCLP METALS (mg/L)				
Method 6010B				
Arsenic	5.0			2.0
Lead	5.0			0.6
SEMIVOLATILES (µg/kg)				
SW8270				
Phenol				260 U
Bis-(2-Chloroethyl) Ether				260 U
2-Chlorophenol				260 U
1,3-Dichlorobenzene				260 U
1,4-Dichlorobenzene				260 U
Benzyl Alcohol				1,300 U
1,2-Dichlorobenzene				260 U
2-Methylphenol				260 U
2,2'-Oxybis(1-Chloropropane)				260 U
4-Methylphenol				260 U
N-Nitroso-Di-N-Propylamine				1,300 U
Hexachloroethane				260 U
Nitrobenzene				260 U
Isophorone				260 U
2-Nitrophenol				1,300 U
2,4-Dimethylphenol				260 U
Benzoic Acid				2,600 U
bis(2-Chloroethoxy) Methane				260 U
2,4-Dichlorophenol				1,300 U
1,2,4-Trichlorobenzene				260 U
Naphthalene				260 U
4-Chloroaniline				1,300 U
Hexachlorobutadiene				260 U
4-Chloro-3-methylphenol				1,300 U
2-Methylnaphthalene				260 U
Hexachlorocyclopentadiene				1,300 U
2,4,6-Trichlorophenol				1,300 U
2,4,5-Trichlorophenol				1,300 U
2-Chloronaphthalene				260 U

TABLE C-15
CATCH BASIN SEDIMENT SAMPLE RESULTS
AMERON HULBERT SITE PORT OF EVERETT, WASHINGTON

		SMS Crieria		
			Area ID:	G
			Sample Name:	CB-3
			Date Collected:	3/26/2008
			Sample Type:	Stormwater Catch Basin
	TCLP (a)	SQS (b)	CSL (c)	
2-Nitroaniline				1,300 U
Dimethylphthalate				260 U
Acenaphthylene				260 U
3-Nitroaniline				1,300 U
Acenaphthene				260 U
2,4-Dinitrophenol				2,600 U
4-Nitrophenol				1,300 U
Dibenzofuran				260 U
2,6-Dinitrotoluene				1,300 U
2,4-Dinitrotoluene				1,300 U
Diethylphthalate				260 U
4-Chlorophenyl-phenylether				260 U
Fluorene				260 U
4-Nitroaniline				1,300 U
4,6-Dinitro-2-Methylphenol				2,600 U
N-Nitrosodiphenylamine				260 U
4-Bromophenyl-phenylether				260 U
Hexachlorobenzene				260 U
Pentachlorophenol				1,300 U
Phenanthrene		100000	480000	340
Carbazole				260 U
Anthracene				260 U
Di-n-Butylphthalate				260 U
Fluoranthene		160000	1200000	440
Pyrene		1000000	1400000	510
Butylbenzylphthalate				260 U
3,3'-Dichlorobenzidine				1,300 U
Benzo(a)anthracene				260 U
bis(2-Ethylhexyl)phthalate		47000	78000	10,000
Chrysene		110000	460000	280
Di-n-Octyl phthalate		58000	4500000	700
Benzo(b)fluoranthene		230000	450000	270
Benzo(k)fluoranthene				260 U
Benzo(a)pyrene				260 U
Indeno(1,2,3-cd)pyrene				260 U
Dibenz(a,h)anthracene				260 U
Benzo(g,h,i)perylene				260 U
1-Methylnaphthalene				260 U
NWTPH-DxSG (mg/kg)				
Diesel-Range Hydrocarbons		--	--	1,800
Motor Oil		--	--	3,000

Shaded value indicates exceedance of SQS
Boxed value indicates exceedance of CSL
U = the analyte was not detected in the sample at the given reporting limit.

(a) TCLP Dangerous Waste Criteria. Maximum concentration of contaminants for the toxicity characteristics as set forth in WAC 173-303-090.
(b) SMS Sediment Quality Standard (Chapter 173-204 WAC).
(c) CSL Cleanup Screening Level (Chapter 173-204 WAC).

TABLE C-16
FAILED COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTING SOIL REMOVED
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	G	G
	Sample Name:	G1-B4	G1-B9
	Depth Range:		
	Date Collected:	6/30/2006	9/19/2006
	Sample Type:	Excavation	Excavation
	Cleanup Levels (a)		
NWTPH-Dx (mg/kg)			
Diesel-Range Organics	2000	19	
Lube Oil	2000	43	
Metals (mg/kg)			
SW6000-7000 Series			
Arsenic	20	430	64
Barium	1650		
Cadmium	80	1.1	0.4
Chromium	120000	47	34.3
Copper	36	454	70.5
Lead	250	400	61
Mercury	24	0.05 U	0.04 U
Selenium	400		
Silver	400		
Zinc	24000	1360	215
cPAHs (mg/kg)			
8270/8270SIM			
Benzo(a)anthracene		0.065 U	
Benzo(a)pyrene	0.14	0.065 U	
Benzo(b)fluoranthene		0.065 U	
Benzo(k)fluoranthene		0.065 U	
Chrysene		0.07	
Dibenz(a,h)anthracene		0.065 U	
Indeno(1,2,3-cd)pyrene		0.065 U	
cPAH TEQ	0.14	0.0007	

TABLE C-16
FAILED COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTING SOIL REMOVED
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I
	Sample Name:	I-11-A	I1-B1	I1-B2	I2-B11	I2-S10	I2-S5	I3A-B1
	Depth Range:	(1.5-1.75)						
	Date Collected:	10/7/2005	7/11/2006	7/11/2006	9/15/2006	9/15/2006	10/2/2006	7/5/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Cleanup Levels (a)							
Metals (mg/kg)								
SW6000-7000 Series								
Arsenic	20	22	80	210	75	36	39	1930
Barium	1650							
Cadmium	80	0.2	0.5 U	0.5	0.7	0.2 U	0.4	4
Chromium	120000		36	39	76.7	23.5	32.3	57
Copper	36	47.3	277	220	190	62.8	44.2	1410
Lead	250	37	69	139	103	42	17	1490
Mercury	24	0.06	0.29	0.17	0.19	0.05 U	0.06	0.04 U
Selenium	400							
Silver	400							
Zinc	24000	128	560	714	719	152	120	4200
cPAHs (mg/kg)								
8270/8270SIM								
Benzo(a)anthracene		0.065 U						0.22
Benzo(a)pyrene	0.14	0.065 U						0.26
Benzo(b)fluoranthene		0.065 U						0.42
Benzo(k)fluoranthene		0.065 U						0.35
Chrysene		0.065 U						0.42
Dibenz(a,h)anthracene		0.065 U						0.064 U
Indeno(1,2,3-cd)pyrene		0.065 U						0.2
cPAH TEQ	0.14	0.065 U						0.3832

TABLE C-16
FAILED COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTING SOIL REMOVED
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Levels (a)					
Area ID:		I	I	I	I	I
Sample Name:		I3A-S1	I3A-S2	I3B-B3	I4-S2	I5-B2
Depth Range:						
Date Collected:		7/18/2006	7/18/2006	7/7/2006	7/28/2006	6/29/2006
Sample Type:		Excavation	Excavation	Excavation	Excavation	Excavation
Metals (mg/kg)						
SW6000-7000 Series						
Arsenic	20	48.6	63	60	26	94
Barium	1650					
Cadmium	80	0.5 U	0.5 U	0.3	0.2 U	0.2 U
Chromium	120000	26	26	23.8	31.3	29.8
Copper	36	77	61	109	143	54.4
Lead	250	32	46	88	39	8
Mercury	24	0.05 U	0.04 U	0.04 U	0.32	0.05
Selenium	400					
Silver	400					
Zinc	24000	160	180	311	100	51.2
cPAHs (mg/kg)						
8270/8270SIM						
Benzo(a)anthracene		0.065 U	0.066 U	0.063 U	0.13	
Benzo(a)pyrene	0.14	0.13	0.066 U	0.063 U	0.09	
Benzo(b)fluoranthene		0.17	0.066 U	0.063 U	0.19	
Benzo(k)fluoranthene		0.13	0.066 U	0.063 U	0.19	
Chrysene		0.18	0.066 U	0.063 U	0.33	
Dibenz(a,h)anthracene		0.097	0.066 U	0.063 U	0.064 U	
Indeno(1,2,3-cd)pyrene		0.37	0.066 U	0.063 U	0.094	
cPAH TEQ	0.14	0.2085	0.066 U	0.063 U	0.1537	

TABLE C-16
FAILED COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTING SOIL REMOVED
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I
	Sample Name:	I5-S1	I5-S2	I5-S3	I5-S3A	I5-S3B	I5-S3C	I5-S3E	I5-S3F	I6-B6
	Depth Range:									
	Date Collected:	6/29/2006	6/29/2006	6/29/2006	7/17/2006	7/26/2006	7/26/2006	8/22/2006	8/22/2006	7/28/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Cleanup Levels (a)									
Metals (mg/kg)										
SW6000-7000 Series										
Arsenic	20	1610	70	330	95.2	125	510	80	23	24
Barium	1650									
Cadmium	80	2.8	0.2 U	0.9	0.5	0.3	1.1	0.5 U	0.2 U	0.2 U
Chromium	120000	54	28.9	41	31	29.4	41	29	32.2	32
Copper	36	1180	69.4	260	155	133	476	982	89	24.7
Lead	250	1310	60	228	75	99	402	100	13	5
Mercury	24	0.05 U	0.06	0.05 U	0.05 U	0.05	0.04 U	0.07	0.05 U	0.04
Selenium	400									
Silver	400									
Zinc	24000	3770	214	662	260	287	1060	1210	162	43.7
cPAHs (mg/kg)										
8270/8270SIM										
Benzo(a)anthracene										0.065 U
Benzo(a)pyrene	0.14									0.065 U
Benzo(b)fluoranthene										0.065 U
Benzo(k)fluoranthene										0.065 U
Chrysene										0.065 U
Dibenz(a,h)anthracene										0.065 U
Indeno(1,2,3-cd)pyrene										0.065 U
cPAH TEQ	0.14									0.065 U
Tributyl Tins (mg/kg)										
KRONE 1989										
Butyl Tin Ion								0.0039 UJ		
Dibutyl Tin Ion								0.0088 J		
Tributyl Tin Ion	7							0.014 J		

TABLE C-16
FAILED COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTING SOIL REMOVED
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I
	Sample Name:	I6-B16	I6-S1	I6-S4	I6-S4A	I6-S5	I6-S5A	I6-S9	I7-B1	I7-S1
	Depth Range:									
	Date Collected:	9/22/2006	7/28/2006	7/28/2006	8/9/2006	7/28/2006	8/9/2006	7/28/2006	7/31/2006	7/31/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Cleanup Levels (a)									
Metals (mg/kg)										
SW6000-7000 Series										
Arsenic	20	41	20	12	7	87	10	20	50	40
Barium	1650									
Cadmium	80	0.2 U	0.2 U	0.4	0.2 U	0.8	0.2 U	0.2 U	0.5 U	0.5 U
Chromium	120000	22.7	30.9	42.6	25.2	30.5	27.9	38.6	20	40
Copper	36	12.1	43.5	38	16	220	39.9	22	53.8	133
Lead	250	4	24	34	13	86	133	20	5 U	103
Mercury	24	0.04 U	0.05	0.06	0.04 U	0.11	0.05 U	0.04 U	0.04 U	0.6
Selenium	400									
Silver	400									
Zinc	24000	33.7	130	107	45.3	658	452	130	47	533
cPAHs (mg/kg)										
8270/8270SIM										
Benzo(a)anthracene		0.066 U	7.8	0.097	0.12	0.15	0.27	0.48		
Benzo(a)pyrene	0.14	0.066 U	5.1	0.14	0.14	0.21	0.25	0.49		
Benzo(b)fluoranthene		0.066 U	6	0.13	0.18	0.29	0.34	0.47		
Benzo(k)fluoranthene		0.066 U	6	0.13	0.16	0.29	0.25	0.47		
Chrysene		0.066 U	15	0.18	0.22	0.25	0.36	1		
Dibenz(a,h)anthracene		0.066 U	0.92	0.065 U	0.065 U	0.065 U	0.066 U	0.12		
Indeno(1,2,3-cd)pyrene		0.066 U	1.9	0.11	0.081	0.087	0.092	0.28		
cPAH TEQ	0.14	0.066 U	7.512	0.1885	0.1963	0.2942	0.3488	0.682		
Tributyl Tins (mg/kg)										
KRONE 1989										
Butyl Tin Ion										
Dibutyl Tin Ion										
Tributyl Tin Ion	7									

TABLE C-16
FAILED COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTING SOIL REMOVED
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I
	Sample Name:	I7-S1A	I7-S3	I7-S4	I7-S4A	I7-S6	I7-S6A	I7-S6B	I-9-D	I-9-E
	Depth Range:								(1.5-2)	(1.5-2)
	Date Collected:	8/9/2006	7/31/2006	7/31/2006	8/9/2006	7/31/2006	8/22/2006	10/3/2006	10/7/2005	10/7/2005
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Cleanup Levels (a)									
Metals (mg/kg)										
SW6000-7000 Series										
Arsenic	20	90	30	30	250 U	52	29	100	98	24
Barium	1650									
Cadmium	80	0.5 U	0.5 U	0.5 U	10 U	0.2 U	0.2	0.7	0.6	0.2 U
Chromium	120000	38	35	45	50	23.2	34.4	24		
Copper	36	138	53.6	104	163000	34.4	62	57.9	455	31.6
Lead	250	87	29	57	100 U	19	37	40	96	15
Mercury	24	0.05	0.04 U	0.04	0.04 U	0.04 U	0.04 U	0.05 U	0.06 U	0.05 U
Selenium	400									
Silver	400									
Zinc	24000	571	172	321	320	104	155	190	286	73.7
cPAHs (mg/kg)										
8270/8270SIM										
Benzo(a)anthracene									0.066 U	0.063 U
Benzo(a)pyrene	0.14								0.066 U	0.063 U
Benzo(b)fluoranthene									0.066 U	0.063 U
Benzo(k)fluoranthene									0.066 U	0.063 U
Chrysene									0.066 U	0.063 U
Dibenz(a,h)anthracene									0.066 U	0.063 U
Indeno(1,2,3-cd)pyrene									0.066 U	0.063 U
cPAH TEQ	0.14								0.066 U	0.063 U
Tributyl Tins (mg/kg)										
KRONE 1989										
Butyl Tin Ion										
Dibutyl Tin Ion										
Tributyl Tin Ion	7									

TABLE C-16
FAILED COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTING SOIL REMOVED
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	J
	Sample Name:	J1-B4
	Depth Range:	
	Date Collected:	8/2/2006
	Sample Type:	Excavation
	Cleanup Levels (a)	
Metals (mg/kg)		
SW6000-7000 Series		
Arsenic	20	10
Barium	1650	
Cadmium	80	0.6
Chromium	120000	21
Copper	36	42
Lead	250	50
Mercury	24	3.4
Selenium	400	
Silver	400	
Zinc	24000	153

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) Development of the cleanup levels is presented in Table 9 of the work plan.

TABLE C-17
pH IN CHARACTERIZATION AND WASTE PROFILE SOIL SAMPLES
AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name	Date Collected	Area ID	Sample Type	pH (SU) EPA 150.1
			Cleanup Screening Levels (a)	
G1-AC-1	6/22/2006	G	Surface Soil	12.29
G1-AC-2	6/22/2006	G	Surface Soil	12.35
G1-AC-3	6/22/2006	G	Surface Soil	12.33
G1-AC-4	6/22/2006	G	Surface Soil	11.56
G1-AC-5	6/22/2006	G	Surface Soil	12.18
G1-AC-6	6/26/2006	G	Surface Soil	11.94
G1-AC-7	6/27/2006	G	Surface Soil	8.06
G1-AC-9	6/23/2006	G	Surface Soil	8.39
I1-AC-1	6/21/2006	I	Surface Soil	7.22
I2-AC-1	7/13/2006	I	excavation	12.35
I2-AC-2	7/13/2006	I	excavation	12.31
I3B-AC-1	7/7/2006	I	Surface Soil	8.70
I3B-AC-2	7/7/2006	I	Surface Soil	7.99
I4-AC-2	7/12/2006	I	Surface Soil	7.79
I5-AC-4	6/28/2006	I	Surface Soil	8.38
I5-AC-5	7/14/2006	I	Surface Soil	7.61
I5-AC-1	6/27/2006	I	Surface Soil	12.27

(a) Development of the cleanup levels is presented in Table 9 of the work plan.

TABLE C-18
BACKFILL SOIL SAMPLE RESULTS
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I
	Sample Name:	BF-TP-1	BF-TP-2	BF-TP-3	BF-TP-4	BF-TP-5
	Date Collected:	10/23/2006	10/23/2006	10/23/2006	10/23/2006	10/23/2006
	Sample Type:	Backfill	Backfill	Backfill	Backfill	Backfill
	Cleanup Screening Levels (a)					
TOTAL METALS (mg/kg)						
Method 200.8						
Arsenic	20	7.2	9.1	54.8	126	61.3

Shaded cells indicate an exceedance of the site cleanup levels.

(a) Development of the cleanup levels is presented in Table 9 of the work plan.

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Preliminary Cleanup Levels (a)									
Area ID:		G	G	G	G	G	I	I	I	I
Sample Name:		ECI-J-2	ECI-K-1	Stockpile	G-FA-4	G1A-100507-B1	G1A-100507-B2	G1A-100507-S1	G1A-100507-S2	G1A-100507-S3
Date Collected:		10/7/1991	10/7/1991	11/12/2004	1/20/2005	10/5/2007	10/5/2007	10/5/2007	10/5/2007	10/5/2007
Sample Type:		Test Pit	Test Pit	Stockpile	Boring	Excavation	Excavation	Excavation	Excavation	Excavation
NWTPH-Dx (mg/kg)										
Diesel-Range Organics	2000			110 J						
Lube Oil	2000									
Motor Oil	2000			190 J						
Metals (mg/kg)										
SW6000-7000 Series										
Antimony	32	100 U	106							
Arsenic	20	40	144	13.9	80	6	42	8	40	600
Barium	1650									
Beryllium	160	10 U	1 U							
Cadmium	80	12 U	3			0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Chromium	120000	377	481			27.5	35	33.2	25.8	44
Copper	3000	514	398	119	47	21.3	53.9	27	47.5	470
Lead	250	200 U	304	97.5	50	5	41	9	36	473
Mercury	24	0.2 U	20 U			0.04 U	0.07	0.06	0.04 U	0.04 U
Nickel	1,600	281	1120							
Selenium	400	1 U	1 U							
Silver	400	20 U	2							
Thallium	5.9	1 U	1 U							
Zinc	24000	722	1180	199	157	44	143	58	160	1470
cPAHs (mg/kg)										
8270/8270SIM										
Benzo(a)anthracene						0.064 U	0.064 U	0.078	0.063 U	0.065 U
Benzo(a)pyrene	0.14					0.064 U	0.064 U	0.074	0.063 U	0.065 U
Benzo(b)fluoranthene						0.064 U	0.064 U	0.063 U	0.063 U	0.065 U
Benzo(k)fluoranthene						0.064 U	0.064 U	0.063 U	0.063 U	0.065 U
Chrysene						0.064 U	0.064 U	0.12	0.063 U	0.065 U
Dibenz(a,h)anthracene						0.064 U	0.064 U	0.063 U	0.063 U	0.065 U
Indeno(1,2,3-cd)pyrene						0.064 U	0.064 U	0.063 U	0.063 U	0.065 U
cPAH TEQ	0.14					0.064 U	0.064 U	0.083	0.063 U	0.065 U
VOLATILE ORGANIC COMPOUNDS										
Method 8260B (μg/kg)										
1,1,1-Trichloroethane	7,400,000			4.0 UJ	3					
1,2,4-Trimethylbenzene	62,000			NA	7,000					
1,3,5-Trimethylbenzene	800,000			NA	5,300					
2-Butanone	48,000,000			14.0 UJ	28					
Acetone	29,000			14.0 UJ	300					
Ethylbenzene	18,000			4.0 UJ	8,100					
Isopropylbenzene	8,000,000			NA	170					
m,p-Xylene	16,000,000			4.0 UJ	43,000					
Methylene chloride	2,600			280 J	2 U					
Naphthalene	140,000			NA	24					
n-Butylbenzene	3,900,000			NA	5					
n-Propylbenzene	8,000,000			NA	190					
o-Xylene	16,000,000			4.0 UJ	9,100					
Tetrachloroethene	1,900			4.0 UJ	2					
Toluene	110,000			4.0 UJ	180					
SEMIVOLATILE ORGANIC COMPOUNDS										
Method 8270C (μg/kg)										
Benzoic acid	320,000,000			1,200 J						
Naphthalene	140,000			470 UJ						
Phenanthrene	12,000,000			1,300 J						
Fluoranthene	89,000			1,400 J						
Pyrene	2,400,000			1,200 J						
bis(2-Ethylhexyl)phthalate	4,900			470 UJ						
Benzo[a]anthracene	TEQ			640 J						
Chrysene	TEQ			730 J						
Benzo[b]fluoranthene	TEQ			660 J						
Benzo[a]pyrene	140			570 J						
CPAH TEQ	140			707.3						
PCBs (μg/kg)										
Method SW8082										
Aroclor-1248	Total PCBs			95 J						
Aroclor-1254	Total PCBs			140 J						
Aroclor-1260	Total PCBs			61 J						
Total PCBs	1,000			296						

Area ID:	G	G	G	G	G	G	G	G	G
Sample Name:	G1-B1	G1-B3	G1-B5	G1-B6	G1-B8	G1-B7	G1-B9A	G1-B10	G1-B11
Date Collected:	6/30/2006	6/30/2006	6/30/2006	6/30/2006	6/30/2006	6/30/2006	9/27/2006	9/19/2006	9/25/2006
Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
NWTPH-Dx (mg/kg)									
Diesel-Range Organics	5.6 U	20	5.4 U	6.1 U	7.7	7			
Lube Oil	11	30	11 U	12 U	20	13 U			
Motor Oil									
Metals (mg/kg)									
SW6000-7000 Series									
Antimony									
Arsenic	18	350	6	8	46	8	8	13	5 U
Barium									
Beryllium									
Cadmium	0.2 U	0.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
Chromium	33.5	44	28.9	30.6	31.4	33.9	36.7	33.3	28
Copper	31	487	17.4	19.8	28.7	24.3	27.6	34.2	17.7
Lead	15	312	6	3	13	3	5	17	5
Mercury	0.05 U	0.04 U	0.05 U	0.04 U	0.05 U	0.05	0.05	0.05 U	0.05 U
Nickel									
Selenium									
Silver									
Thallium									
Zinc	72.2	797	44.5	44.3	76.4	46.3	49.7	78.4	42
cPAHs (mg/kg)									
8270/8270SIM									
Benzo(a)anthracene	0.065 U	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			
Benzo(a)pyrene	0.065 U	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			
Benzo(b)fluoranthene	0.065 U	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			
Benzo(k)fluoranthene	0.065 U	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			
Chrysene	0.071	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			
Dibenz(a,h)anthracene	0.065 U	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			
Indeno(1,2,3-cd)pyrene	0.065 U	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			
cPAH TEQ	0.00071	0.066 U	0.063 U	0.065 U	0.064 U	0.066 U			

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I-10-A	I-10-B	I-11-A	I-11-B	I-11-C	I-11-D	I-11-E	I-11-F	I-11-G	I1-B1A	I1-B2A	I1-S1	I1-S2	I2-B1	I2-B2	I2-B3	I2-B4
	Depth Range:	(2.5-2.75)	(2.5-2.75)	(2.5-3)	(1.5-1.75)	(1.5-1.75)	(1.5-1.75)	(1.5-1.75)	(1.5-1.75)	(1.5-1.75)								
	Date Collected:	10/7/2005	10/7/2005	10/13/2005	10/7/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005	7/26/2006	7/26/2006	7/11/2006	7/11/2006	7/14/2006	7/14/2006	9/15/2006	7/14/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)																	
Metals (mg/kg)																		
SW6000-7000 Series																		
Arsenic	20	12	19	12	19	12	12	11	8	9	5 U	8	9	15	6.3	4.3	6 U	4.4
Barium	1650																	
Cadmium	80	0.2 U	0.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U
Chromium	120000										21.6	22.7	27.8	24.3	35	30	30.7	34
Copper	3000	24.3	36.7	28.3	33.4	20.7	20.5	21.3	18.2	18.5	9.6	12.4	27.2	67.9	23	15	16.8	19
Lead	250	4	7	4	15	10	10	8	2	2	2	3	24	61	3	3	3	3
Mercury	24	0.06 U	0.08	0.05 U	0.06 U	0.05 U	0.04 U	0.04 U	0.04 U	0.05 U	0.05 U	0.04 U	0.08	0.16	0.06	0.04 U	0.04 U	0.04
Selenium	400																	
Silver	400																	
Zinc	24000	43.6	68.6	47.4	100	68.5	72.8	44.4	31.8	35.8	38.8	29.4	53.4	71.7	60	40	37.1	40
cPAHs (mg/kg)																		
8270/8270SIM																		
Benzo(a)anthracene		0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								
Benzo(a)pyrene	0.14	0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								
Benzo(b)fluoranthene		0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								
Benzo(k)fluoranthene		0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								
Chrysene		0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								
Dibenz(a,h)anthracene		0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								
Indeno(1,2,3-cd)pyrene		0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								
cPAH TEQ	0.14	0.066 U	0.064 U		0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U								

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I2-B5	I2-B6	I2-B7	I2-B8	I2-B9	I2-B10	I2-B11A	I2-B12	I2-B13	I2-B14	I2-B15	I2-S3	I2-S4	I2-S5A	I2-S6	I2-S7	I3A-B1A
	Depth Range:																	
	Date Collected:	7/14/2006	7/14/2006	9/15/2006	10/2/2006	9/15/2006	9/15/2006	9/25/2006	9/15/2006	9/15/2006	9/22/2006	10/2/2006	9/15/2006	10/2/2006	11/14/2006	10/2/2006	10/2/2006	7/13/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)																	
Metals (mg/kg)																		
SW6000-7000 Series																		
Arsenic	20	3.7	6.6	6 U	7	20	7	5 U	6 U	6	6	7	5 U	7	6 U	8	7	6.3
Barium	1650																	
Cadmium	80	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.5 U
Chromium	120000	25	34	35.2	34.3	27.9	32.6	22.2	22.8	21.8	24.7	32.9	44.1	31.5	24.2	29.2	21.5	27
Copper	3000	10	22	23.4	24.8	36.6	22.4	11	12	11	11.5	23.6	20.3	23.5	12.5	20.6	16.2	16
Lead	250	2 U	6	4	5	18	3	2	2 U	2 U	3	5	2	7	2 U	19	13	3
Mercury	24	0.04 U	0.04 U	0.1	0.05 U	0.05 U	0.07	0.05 U	0.04 U	0.05 U	0.04 U	0.05	0.05 U	0.05 U	0.05 U	0.05	0.04	0.04 U
Selenium	400																	
Silver	400																	
Zinc	24000	30	50	43.2	39.3	76.9	39.9	27	32.3	30.6	33.7	35.8	35.1	40	33	66	47.2	40
cPAHs (mg/kg)																		
8270/8270SIM																		
Benzo(a)anthracene																		0.064 U
Benzo(a)pyrene	0.14																	0.064 U
Benzo(b)fluoranthene																		0.064 U
Benzo(k)fluoranthene																		0.064 U
Chrysene																		0.064 U
Dibenz(a,h)anthracene																		0.064 U
Indeno(1,2,3-cd)pyrene																		0.064 U
cPAH TEQ	0.14																	0.064 U

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I3A-B2	I3A-B3	I3A-B4	I3A-B5	I3A-B6	I3A-B7	I3B-B1	I3B-B2	I3B-B3A	I3B-B4	I4-B1	I4-B2	I4-B3	I4-S1	I4-S2A	I5-AC-N.WALL.A	I5-AC-N.WALL.B
	Depth Range:																	
	Date Collected:	7/5/2006	7/5/2006	7/7/2006	7/7/2006	7/7/2006	7/26/2006	7/7/2006	7/7/2006	7/13/2006	7/7/2006	7/28/2006	7/28/2006	10/3/2006	7/28/2006	10/3/2006	7/10/2006	7/10/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)																	
Metals (mg/kg)																		
SW6000-7000 Series																		
Arsenic	20	5 U	8	7	6	9	7	7	5	4.6	6	7	8	5 U	6	11	1730	130
Barium	1650																	
Cadmium	80	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	5	1 U
Chromium	120000	27.3	36.9	28	31	29.5	24.7	26.8	22.5	30	33.8	29.9	33.9	45.8	27.7	28.1	66	39
Copper	3000	16.3	28.8	15.4	29.6	17.8	11.5	14.1	11.8	13	26.6	22.1	25.3	19.6	20.3	49.4	3070	164
Lead	250	3	4	3	4	3	3	3	2	3 U	6	6	7	4	16	14	2270	100
Mercury	24	0.05 U	0.06	0.05 U	0.05	0.05	0.04 U	0.05 U	0.04 U	0.04 U	0.04 U	0.04	0.05	0.05 U	0.04 U	0.05	0.04 U	0.07 U
Selenium	400																	
Silver	400																	
Zinc	24000	44.5	55.8	35.4	39.6	34.6	34.9	67.3	29	40	53	45.3	51.6	32.1	57	64.6	5730	531
cPAHs (mg/kg)																		
8270/8270SIM																		
Benzo(a)anthracene		0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.064 U		
Benzo(a)pyrene	0.14	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.077		
Benzo(b)fluoranthene		0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.089		
Benzo(k)fluoranthene		0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.094		
Chrysene		0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.12		
Dibenz(a,h)anthracene		0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.064 U		
Indeno(1,2,3-cd)pyrene		0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.064 U		
cPAH TEQ	0.14	0.066 U	0.064 U	0.065 U	0.065 U	0.065 U	0.064 U	0.064 U	0.063 U		0.064 U	0.065 U	0.066 U	0.063 U	0.064 U	0.0965		

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I5-B1	I5-B2A	I5-B3	I5-B4	I5-B5	I5-B6	I5-B7	I5-S3H	I5-S3I	I5-S3D	I5-S3G	I5-S4
	Depth Range:												
	Date Collected:	6/29/2006	7/17/2006	6/29/2006	6/29/2006	7/26/2006	9/14/2006	9/14/2006	9/14/2006	9/14/2006	7/26/2006	9/14/2006	6/29/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)												
Metals (mg/kg)													
SW6000-7000 Series													
Arsenic	20	13	2.9	9	8	5 U	5 U	5 U	10	14	208	8	19
Barium	1650												
Cadmium	80	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6	0.2 U	0.2 U
Chromium	120000	31.5	25	22.7	25.1	22.6	27.6	23.8	26	28.6	32.1	33.3	29.8
Copper	3000	26.5	14	12.3	12.5	11.5	17.9	11.2	38.8	64.4	283	44	40.8
Lead	250	8	3 U	3	2	2	3	2	16	15	157	16	15
Mercury	24	0.07	0.04 U	0.04 U	0.05 U	0.05 U	0.04 U	0.04 U	0.04 U	0.05	0.05 U	0.05 U	0.05 U
Selenium	400												
Silver	400												
Zinc	24000	44.1	40	29.7	31.3	30.7	39.6	33.2	77.2	122	499	72.7	134
cPAHs (mg/kg)													
8270/8270SIM													
Benzo(a)anthracene													
Benzo(a)pyrene	0.14												
Benzo(b)fluoranthene													
Benzo(k)fluoranthene													
Chrysene													
Dibenz(a,h)anthracene													
Indeno(1,2,3-cd)pyrene													
cPAH TEQ	0.14												

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I5-S1A	I5-S2A	I6-B1	I6-B4	I6-B5	I6-B6A	I6-B7	I6-B8	I6-B9	I6-B10	I6-B11	I6-B12	I6-B13	I6-B14	I6-B15	I6-B16A	I6-B17	I6-S2	I6-S3	I6-S4B	I6-S5B
	Depth Range:																					
	Date Collected:	7/17/2006	7/17/2006	7/28/2006	7/28/2006	7/28/2006	8/9/2006	7/28/2006	7/28/2006	7/28/2006	7/28/2006	7/28/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	9/28/2006	9/22/2006	7/12/2006	7/12/2006	8/22/2006	8/22/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)																					
Metals (mg/kg)																						
SW6000-7000 Series																						
Arsenic	20	18.1	5.6	10	5 U	13	12	6	7	7	5 U	6	13	8	7	11	4.7	6 U				
Barium	1650																					
Cadmium	80	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U				
Chromium	120000	31	25	29.2	32.1	24.8	36.9	32.3	32.5	33.7	31.7	36.1	27.8	25.8	23	45.3	25	26.2				
Copper	3000	30	13	16.6	24.6	13.3	30.5	21.2	23.1	24.9	22.3	34.6	27	14.2	11.8	39.2	20	13.6				
Lead	250	16	2 U	3	4	4	4	4	4	4	4	4	10	5	2	6	3	3				
Mercury	24	0.04 U	0.04 U	0.04 U	0.05 U	0.04 U	0.06	0.06	0.05 U	0.05	0.04	0.06	0.05 U	0.04 U	0.04 U	0.04 U	0.05 U	0.04 U				
Selenium	400																					
Silver	400																					
Zinc	24000	70	40	40.4	38.8	32.7	53.5	42.5	45.7	45.2	37.5	49.2	72.7	37	33.4	60.7	50	34.1				
cPAHs (mg/kg)																						
8270/8270SIM																						
Benzo(a)anthracene				0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.065 U	0.069	0.065 U	0.066 U
Benzo(a)pyrene	0.14			0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.066	0.069	0.065 U	0.068
Benzo(b)fluoranthene				0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.1	0.14	0.13	0.096
Benzo(k)fluoranthene				0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.071	0.078	0.065 U	0.066 U
Chrysene				0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.086	0.14	0.097	0.094
Dibenz(a,h)anthracene				0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.065 U	0.065 U	0.065 U	0.066 U
Indeno(1,2,3-cd)pyrene				0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.065 U	0.065 U	0.065 U	0.066 U
cPAH TEQ	0.14			0.064 U	0.064 U	0.066 U	0.064 U	0.066 U	0.066 U	0.063 U	0.065 U	0.065 U	0.066 U	0.066 U	0.065 U	0.064 U		0.065 U	0.08396	0.0991	0.01397	0.07854

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	I	I	I	I	I	I	I	I	I	I	I	I	I
	Sample Name:	I7-B1A	I7-B2	I7-B3	I7-B4	I7-B5	I7-B6	I7-B7	I7-B8	I7-B9	I7-B10	I7-B11	I7-S2	I7-S5
	Depth Range:													
	Date Collected:	8/9/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006	7/31/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)													
Metals (mg/kg)														
SW6000-7000 Series														
Arsenic	20	5	15	5 U	5 U	5	5 U	5 U	7	7	20	9	9	8
Barium	1650													
Cadmium	80	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.8	0.2 U	0.2 U	0.2 U
Chromium	120000	24.6	25.7	29.9	20	22.5	46.1	31.2	24.2	26.3	24	39.3	31.1	51.2
Copper	3000	21.6	29.9	23.3	11.8	15.4	22.6	23.4	21.1	22	33.8	43.9	35.1	77.1
Lead	250	14	11	23	11	26	3	6	17	16	10	19	15	51
Mercury	24	0.04 U	0.05 U	0.05 U	0.05 U	0.04 U	0.05 U	0.04 U	0.04	0.05 U	0.04 U	0.04	0.06	0.04 U
Selenium	400													
Silver	400													
Zinc	24000	58.5	109	53.6	40.7	77	33.7	47.7	69.1	65.2	59	115	87.4	251
cPAHs (mg/kg)														
8270/8270SIM														
Benzo(a)anthracene														
Benzo(a)pyrene	0.14													
Benzo(b)fluoranthene														
Benzo(k)fluoranthene														
Chrysene														
Dibenz(a,h)anthracene														
Indeno(1,2,3-cd)pyrene														
cPAH TEQ	0.14													

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
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	Preliminary Cleanup Levels (a)	I7-S7	I7-S8	I7-S9	I-8-A	I-8-B	I-9-A	I-9-B	I-9-C	I-9-D	I-9-E
Area ID:		I	I	I	I	I	I	I	I	I	I
Sample Name:		I7-S7	I7-S8	I7-S9	I-8-A	I-8-B	I-9-A	I-9-B	I-9-C	I-9-D	I-9-E
Depth Range:					(2.5-3)	(2.5-3)	(1.5-2)	(1.5-2)	(1.5-2)	(2.5-3)	(2.5-3)
Date Collected:		7/31/2006	7/31/2006	7/31/2006	10/7/2005	10/7/2005	10/7/2005	10/7/2005	10/7/2005	10/13/2005	10/13/2005
Sample Type:		Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
Metals (mg/kg)											
SW6000-7000 Series											
Arsenic	20	6	5 U	10 U	12	14	8	10	10	15	10
Barium	1650										
Cadmium	80	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chromium	120000	23.7	13	43							
Copper	3000	17.9	10.6	65.9	31.8	33.4	14.1	16	14.9	33	15.9
Lead	250	10	9	69	10	16	2	2	2	5	2
Mercury	24	0.04 U	0.04 U	0.04 U	0.05 U	0.06	0.05 U	0.05 U	0.05 U	0.06 U	0.05 U
Selenium	400										
Silver	400										
Zinc	24000	46.6	31.3	143	52.7	69.4	33.2	33.9	33.5	56.8	55.5
cPAHs (mg/kg)											
8270/8270SIM											
Benzo(a)anthracene					0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		
Benzo(a)pyrene	0.14				0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		
Benzo(b)fluoranthene					0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		
Benzo(k)fluoranthene					0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		
Chrysene					0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		
Dibenz(a,h)anthracene					0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		
Indeno(1,2,3-cd)pyrene					0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		
cPAH TEQ	0.14				0.065 U	0.064 U	0.065 U	0.066 U	0.066 U		

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
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	Area ID:	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
	Sample Name:	I7-S1B	I7-S3A	J1-B1	J1-B2	J1-B3	J1-B5	J1-B6	J1-B7	J1-B8	J1-S1	J1-S2	J1-S3	J1-S4	J1-S5	J1-S6	J1-TB1	J1-TB2
	Depth Range:																	
	Date Collected:	8/18/2006	8/9/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	10/2/2006	10/2/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)																	
NWTPH-Dx (mg/kg)																		
Diesel-Range Organics	2000																	
Lube Oil	2000																	
BTEX(mg/kg)																		
Method 8021																		
Benzene	0.29																	
Ethylbenzene	18																	
m, p-Xylene	16,000																	
o-Xylene	16,000																	
Toluene	110																	
Xylenes, Total	16,000																	
Metals (mg/kg)																		
SW6000-7000 Series																		
Arsenic	20	12	5 U	8	5 U	6	5 U	5 U	5 U	6 U	6	6	7	5	5 U	5 U	7	6 U
Barium	1650																	
Cadmium	80	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
Chromium	120000	35.7	37.4	46	35.3	24.8	32	24.8	36.5	23.3	27	27.2	30.7	42.4	28.3	30.3	26.7	27.1
Copper	3000	36	21.7	30	18.8	15.3	16	15	21.9	18.7	17.9	14.2	17.4	20.3	15.3	19.1	19.7	18.5
Lead	250	20	5	16	3	5	3	4	9	16	7	6	5	5	3	5	5	6
Mercury	24	0.08	0.04 U	0.08	0.04 U	0.04 U	0.04 U	0.05 U	0.05	0.09	0.04 U	0.04 U	0.04 U	0.04 U	0.05 U	0.04 U	0.05 U	0.05
Selenium	400																	
Silver	400																	
Zinc	24000	104	42.6	64.5	37	45.7	35.8	32.2	42.7	79.3	44.1	53.5	44	46	33.3	49.5	38.8	40.6
cPAHs (mg/kg)																		
8270/8270SIM																		
Benzo(a)anthracene																	0.065 UJ	0.063 UJ
Benzo(a)pyrene	0.14																0.065 UJ	0.063 UJ
Benzo(b)fluoranthene																	0.065 UJ	0.063 UJ
Benzo(k)fluoranthene																	0.065 UJ	0.063 UJ
Chrysene																	0.065 UJ	0.063 UJ
Dibenz(a,h)anthracene																	0.065 UJ	0.063 UJ
Indeno(1,2,3-cd)pyrene																	0.065 UJ	0.063 UJ
cPAH TEQ	0.14																0.065 UJ	0.063 UJ

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
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	Preliminary Cleanup Levels (a)	J	J	J	J	J	J	J	J	J
Area ID:		J	J	J	J	J	J	J	J	J
Sample Name:		J1-TS1	J1-TS2	J1-TS3	J3-S1	J3-S2	J3-S3	J3-S4	J3-S5	J3-S6
Depth Range:										
Date Collected:		10/2/2006	10/2/2006	10/2/2006	9/22/2006	9/22/2006	9/22/2006	9/22/2006	9/22/2006	8/3/2006
Sample Type:		Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
NWTPH-Dx (mg/kg)										
Diesel-Range Organics	2000									
Lube Oil	2000									
BTEX(mg/kg)										
Method 8021										
Benzene	0.29									
Ethylbenzene	18									
m, p-Xylene	16,000									
o-Xylene	16,000									
Toluene	110									
Xylenes, Total	16,000									
Metals (mg/kg)										
SW6000-7000 Series										
Arsenic	20	7	8	6	33	5 U	7	5 U	9	6
Barium	1650									
Cadmium	80	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chromium	120000	24.4	27.4	24.9	32.3	21.1	27.2	24.4	27.2	26.7
Copper	3000	19.7	20.4	17.9	52	12.2	16.5	18.3	17.3	22.4
Lead	250	10	8	6	28	7	4	5	4	8
Mercury	24	0.36	0.09	0.17	0.07	0.04 U	0.06 U	0.04 U	0.05 U	0.05 U
Selenium	400									
Silver	400									
Zinc	24000	68.6	47.8	80.3	97.6	26.5	38.1	37.7	41	40.9
cPAHs (mg/kg)										
8270/8270SIM										
Benzo(a)anthracene		0.071 J	0.066 UJ	0.069 J	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	
Benzo(a)pyrene	0.14	0.074 J	0.066 UJ	0.064 UJ	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	
Benzo(b)fluoranthene		0.074 J	0.066 UJ	0.064 UJ	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	
Benzo(k)fluoranthene		0.064 UJ	0.066 UJ	0.064 UJ	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	
Chrysene		0.1 J	0.066 UJ	0.086 J	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	
Dibenz(a,h)anthracene		0.064 UJ	0.066 UJ	0.064 UJ	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	
Indeno(1,2,3-cd)pyrene		0.064 UJ	0.066 UJ	0.064 UJ	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	
cPAH TEQ	0.14	0.0895 J	0.066 UJ	0.00776 J	0.064 U	0.064 U	0.066 U	0.065 U	0.066 U	

Area ID:	J	J	J	J	J	J	J	J	J	J
Sample Name:	KFI-SS01	KFI-SS03	KFI-SS05	KFI-SS06	KFI-SS08	KFI-SS09	KFI-SS10	KFI-SS13	KFI-SS15	KFI-SS16
Depth Range:	(8-8)	(7-7)	(6-6)	(8-8)	(6-6)	(4-4)	(4-4)	(8-8)	(10-10)	(8-8)
Date Collected:	10/1/1993	10/1/1993	10/1/1993	10/1/1993	10/1/1993	10/1/1993	10/1/1993	10/20/1993	10/20/1993	10/20/1993
Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
NWTPH-Dx (mg/kg)										
Diesel-Range Organics	160	65	13	11 U	13 U	87	13 U	10 U	10 U	10 U
Lube Oil	110	33	23 U	22 U	26 U	25 U	26 U	10 U	10 U	10 U

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	J	J	J	J	J	J	J	J	J	J	J	J
	Sample Name:	KFI-SS18	KFI-SS19	KFI-SS20	KFI-SS21	KFI-SS23	KFI-SS24	KFI-SS25	PofE Bottom of hole	PofE Center Bottom	PofE Center of Tank	PofE North Wall	PofE South Wall
	Depth Range:	(16-16)	(8-8)	(10-10)	(7-7)	(8-8)	(20-20)	(22-22)					
	Date Collected:	10/20/1993	10/20/1993	10/20/1993	10/20/1993	10/20/1993	10/20/1993	10/20/1993	6/23/1991	6/23/1991	6/23/1991	6/23/1991	6/23/1991
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)												
NWTPH-Dx (mg/kg)													
Diesel-Range Organics	2000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.5 U	2.5 U	0.01 U	2.5 U	2.5 U
Lube Oil	2000	10 U	10 U	10 U	10 U	10 U	10 U	10 U					
BTEX(mg/kg) Method 8021													
Benzene	0.29								0.01 U	0.025 U	0.001 U	0.025 U	0.025 U
Ethylbenzene	18								0.01 U	0.025 U	0.001 U	0.025 U	0.025 U
m, p-Xylene	16,000												
o-Xylene	16,000												
Toluene	110								0.01 U	0.025 U	0.001 U	0.025 U	0.025 U
Xylenes, Total	16,000								0.01 U	0.025 U	0.001 U	0.025 U	0.025 U
Metals (mg/kg) SW6000-7000 Series													
Arsenic	20												
Barium	1650												
Cadmium	80												
Chromium	120000												
Copper	3000												
Lead	250												
Mercury	24												
Selenium	400												
Silver	400												
Zinc	24000												
cPAHs (mg/kg) 8270/8270SIM													
Benzo(a)anthracene													
Benzo(a)pyrene	0.14												
Benzo(b)fluoranthene													
Benzo(k)fluoranthene													
Chrysene													
Dibenz(a,h)anthracene													
Indeno(1,2,3-cd)pyrene													
cPAH TEQ	0.14												

TABLE C-19
FINAL COMPLIANCE MONITORING SAMPLE RESULTS - REPRESENTS SOIL REMAINING
INTERIM ACTION REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	J	M
	Sample Name:	PofE West Wall	PofE East Wall
	Depth Range:		
	Date Collected:	6/23/1991	6/23/1991
	Sample Type:	Excavation	Excavation
	Preliminary Cleanup Levels (a)		
NWTPH-Dx (mg/kg)			
Diesel-Range Organics	2000	2.5 U	2.5 U
Lube Oil	2000		
BTEX(mg/kg)			
Method 8021			
Benzene	0.29	0.025 U	0.025 U
Ethylbenzene	18	0.025 U	0.025 U
m, p-Xylene	16,000		
o-Xylene	16,000		
Toluene	110	0.025 U	0.025 U
Xylenes, Total	16,000	0.025 U	0.025 U
Metals (mg/kg)			
SW6000-7000 Series			
Arsenic	20		
Barium	1650		
Cadmium	80		
Chromium	120000		
Copper	3000		
Lead	250		
Mercury	24		
Selenium	400		
Silver	400		
Zinc	24000		
cPAHs (mg/kg)			
8270/8270SIM			
Benzo(a)anthracene			
Benzo(a)pyrene	0.14		
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Chrysene			
Dibenz(a,h)anthracene			
Indeno(1,2,3-cd)pyrene			
cPAH TEQ	0.14		

TABLE C-19
FINAL COMPLIANCE MONITORING AND CHARACTERIZATION SAMPLE RESULTS - REPRESENTS SOIL REMAINING
RI/FS REPORT - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	M	M	M	M	M	M	M	M	M	M	M	M
	Sample Name:	ECI-B-1	M1-B1	M1-B2	M1-B3	M1-B4	M1-S1	M1-S2	M1-S3	M1-S4	M1-S5	M1-S6	M1-S7
	Date Collected:	10/7/1991	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006
	Sample Type:	Surface Soil	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)												
cPAHs (mg/kg) 8270/8270SIM													
Benzo(a)anthracene			0.063 U	0.065 U	0.064 U	0.067 U	0.53	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
Benzo(a)pyrene	0.14		0.063 U	0.065 U	0.064 U	0.067 U	0.76	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
Benzo(b)fluoranthene			0.063 U	0.065 U	0.064 U	0.067 U	0.7	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
Benzo(k)fluoranthene			0.063 U	0.065 U	0.064 U	0.067 U	0.58	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
Chrysene			0.063 U	0.065 U	0.064 U	0.067 U	0.89	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
Dibenz(a,h)anthracene			0.063 U	0.065 U	0.064 U	0.067 U	0.09	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
Indeno(1,2,3-cd)pyrene			0.063 U	0.065 U	0.064 U	0.067 U	0.48	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
cPAH TEQ	0.14		0.063 U	0.065 U	0.064 U	0.067 U	1.01	0.065 U	0.066 U	0.066 U	0.067 U	0.066 U	0.066 U
Petroleum Hydrocarbons (mk/kg)													
Diesel Range Organics	2,000	7160											

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) Development of the cleanup levels is presented in Table 4.
(b) Cleanup level is 30 if benzene is present.

TABLE C-20
SVOCS IN FINAL COMPLIANCE MONITORING SOIL SAMPLES
RI/FS REPORT - AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Area ID:	J	J	J	J	J
	Sample Name:	J1-TB1	J1-TB2	J1-TS1	J1-TS2	J1-TS3
	Date Collected:	10/2/2006	10/2/2006	10/2/2006	10/2/2006	10/2/2006
	Sample Type:	Excavation	Excavation	Excavation	Excavation	Excavation
	Preliminary Cleanup Levels (a)					
SVOCs (mg/kg)						
EPA Method 8270						
2,2'-Oxybis(1-Chloropropane)		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
2,4,5-Trichlorophenol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
2,4,6-Trichlorophenol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
2,4-Dichlorophenol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
2,4-Dimethylphenol		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
2,4-Dinitrophenol		0.65 UJ	0.63 UJ	0.64 UJ	0.66 UJ	0.64 UJ
2,4-Dinitrotoluene		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
2,6-Dinitrotoluene		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
2-Chloronaphthalene		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
2-Chlorophenol		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
2-Methylnaphthalene	320	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
2-Methylphenol		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
2-Nitroaniline		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
2-Nitrophenol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
3,3'-Dichlorobenzidine		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
3-Nitroaniline		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
4,6-Dinitro-2-Methylphenol		0.65 UJ	0.63 UJ	0.64 UJ	0.66 UJ	0.64 UJ
4-Bromophenyl-phenylether		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
4-Chloro-3-methylphenol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
4-Chloroaniline		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
4-Chlorophenyl-phenylether		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
4-Methylphenol	--	0.28 J	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
4-Nitroaniline		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
4-Nitrophenol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
Acenaphthene	66	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Acenaphthylene		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Anthracene	12000	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Benzo(g,h,i)perylene		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Benzoic Acid	320000	0.65 UJ	0.63 UJ	0.64 UJ	0.66 UJ	0.64 UJ
Benzyl Alcohol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
Benzyl butyl phthalate		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
bis(2-Chloroethoxy) Methane		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Bis-(2-Chloroethyl) Ether		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
bis(2-Ethylhexyl)phthalate	4.9	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Carbazole	50	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Dibenzofuran	160	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Diethylphthalate		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Dimethylphthalate		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Di-n-butylphthalate		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Di-n-Octyl phthalate	1600	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Fluoranthene	89	0.065 UJ	0.063 UJ	0.13 J	0.066 UJ	0.064 UJ
Fluorene	553	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Hexachlorobenzene		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Hexachlorocyclopentadiene		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
Hexachloroethane		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Isophorone		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Nitrobenzene		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
N-Nitroso-Di-N-Propylamine		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
N-Nitrosodiphenylamine		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Pentachlorophenol		0.33 UJ	0.32 UJ	0.32 UJ	0.33 UJ	0.32 UJ
Phenanthrene	12000	0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Phenol		0.065 UJ	0.063 UJ	0.064 UJ	0.066 UJ	0.064 UJ
Pyrene	2400	0.065 UJ	0.063 UJ	0.11 J	0.066 UJ	0.064 UJ

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded cells indicate an exceedance of the site cleanup levels.

(a) Development of the cleanup levels is presented in Table 4.

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	Cleanup Screening Levels CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Sample Name:			RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Depth Range:																		
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000	11/8/2000	11/7/2000	11/7/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Petroleum Hydrocarbons (mg/kg)																		
NWPTH-D/EPA413.1																		
Diesel Range Organics																		
Total Oil & Grease																		
Metals (mg/kg)																		
EPA 6000/7000/200.8																		
Antimony											7 U	6 U	7 U	6 U	6 U	7 U	6 U	6 U
Arsenic	57	93	20	20	20	30	26	30	30	20	10	10	10	11	8	12	7	7
Beryllium																		
Cadmium	5.1	6.7	0.4	0.4	0.5	0.4 U	0.4 U	0.4 U	0.4 U	0.4	0.3 U	0.3	0.3 U	0.3	0.3 U	0.3 U	0.2 U	0.3 U
Chromium	260	270	61	56	63	69	70.1	66	64	59	41.9	41.1	53.4	41.2	40.8	43.1	44.4	44
Copper	390	390	68.7	62.2	70.4	68.6	68.1	65.5	63.2	60.0	39	31	47	34	30	31	33	30
Lead	450	530	12	11	12	12	12	12	12	11	12	8	10	10	8	7	5	5
Mercury	0.41	0.59	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.06	0.07	0.09	0.05	0.06 U	0.07 U	0.05	0.06 U
Nickel											39	37	48	39	39	41	43	44
Selenium																		
Silver	6.1	6.1	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.7 U	0.6 U	0.4 U	0.4 U	0.6	0.4 U	0.4 U	0.4 U	0.4	0.4 U
Thallium																		
Zinc	410	960	109	101	111	109	112	102	100	90	62	58	76	56	51	55	56	56
Pesticides (mg/kg)																		
EPA 8080																		
4,4'-DDD											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U
4,4'-DDE											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U
4,4'-DDT											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U
Aldrin											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Alpha-BHC																		
Beta-BHC																		
Chlordane											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Delta-BHC																		
Dieldrin											0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
EndoSulfan I																		
Endosulfan Sulfate																		
Endrin																		
Endrin Aldehyde																		
Gamma-BHC																		
Heptachlor											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Heptachlor Epoxide																		
Lindane											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methoxychlor																		
Total DDT											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U
Toxaphene																		

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)																
Sample Name:			RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Depth Range:																		
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000	11/8/2000	11/7/2000	11/7/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
PCBs (mg/kg OC)																		
EPA 8080																		
Aroclor 1016			1.0 U	1.4 U	0.9 U	1.0 U	0.9 U	0.9 U	0.9 U	1.124 U	1.214 U	1.176 U	1.118 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Aroclor 1221			1.0 U	1.4 U	0.9 U	1.0 U	0.9 U	0.9 U	0.9 U	1.124 U	2.500 U	2.294 U	2.176 U	4.239 U	4.512 U	4.588 U	4.086 U	4.588 U
Aroclor 1232			1.2 U	1.1 U	0.6 U	1.1 U	0.5 U	1.4 U	0.5 U	1.124 U	1.214 U	1.176 U	1.118 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Aroclor 1242			1.0 U	1.4 U	0.9 U	1.0 U	0.9 U	0.9 U	0.9 U	1.124 U	1.214 U	1.176 U	1.118 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Aroclor 1248			1.0 U	1.4 U	0.9 U	1.0 U	0.9 U	0.9 U	0.9 U	1.124 U	1.214 U	1.176 U	1.118 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Aroclor 1254			1.0 U	1.4 U	0.9 U	1.0 U	0.9 U	0.9 U	0.9 U	1.124 U	1.214 U	1.176 U	1.118 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Aroclor 1260			1.0 U	1.4 U	0.9 U	1.0 U	0.9 U	0.9 U	0.9 U	1.124 U	1.214 U	1.176 U	1.118 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Aroclor 1262			1.0 U	1.4 U	0.9 U	1.0 U	0.9 U	0.9 U	0.9 U	1.124 U								
Aroclor 1268			0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U								
Total PCBs	130		0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	2.500 U	2.294 U	2.176 U	4.239 U	4.512 U	4.588 U	4.086 U	4.588 U
Organotin (mg/L)																		
Porewater																		
Butyl Tin Ion			0.000011	0.000017	0.000026	0.000014	0.000008	0.000008 U	0.00001									
Dibutyl Tin Ion			0.000012 U	0.000012 U	0.000013	0.000012 U	0.000012 U	0.000012 U	0.000012 U									
Tributyltin	0.05	0.15	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U		0.00002 U	0.00007 U	0.00002 U					
Tributyl Tins (mg/kg)																		
Krone 1988 SIM GC/MS																		
Tributyl Tin Ion										0.0038 U								
Dibutyl Tin Ion										0.0056 U								
Butyl Tin Ion										0.0040 U								
Bioassay																		
Biochemical Oxygen Demand (mg/Kg)																		
Chemical Oxygen Demand (mg/Kg)																		
Microtox Test (% Light Change)																		
Amphipod Mortality (%)										10								
Echinoderm Mortality (%)																		
Neanthes Mortality (%)										4								
Conventionals																		
Ammonia (mg/Kg)																		
Sulfide (mg/kg)			251 J1	276 J1	385 J1	306 J1	219 J1	268 J1	156 J1	137	71	19	16	5.6 U	12	6	3.6 U	640
Total Kjeldahl Nitrogen (mg/Kg)																		
Total Sulfides (mg/Kg)																		
Total Volatile Solids (mg/Kg)																		
N Ammonia (mg N/kg)			50.0 J1	13.9 J1	20.4 J1	16.0 J1	18.4 J1	17.2 J1	18.7 J1	8.79	45	25	20	150	34	56	36	47
Total Organic Carbon (%)			1.97	1.48	2.17	2.05	2.35	2.14	2.25	1.78	1.4	1.7	1.7	0.92	0.82	0.85	0.93	0.85
Total Solids (%)			47.40	48.60	48.90	47.70 J1	50.80 J1	48.50 J1	46.90 J1	53.80	71.9	72.6	67.6	73.9	76.6	73.2	73.2	73.1
Total Volatile Solids (%)			6.75 J1	7.14 J1	7.31 J1	7.41 J1	7.10 J1	7.57 J1	7.50 J1	6.82	4.6	4.6	6.3	2.8	2.7	2.8	3.1	2.8
Preserved Total Solids (%)										54.80	69	69.8	58	77.6	67.2	74.7	66.7	55.6

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	Cleanup Screening Levels CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Depth Range:																		
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000	11/8/2000	11/7/2000	11/7/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
SVOCs (mg/kg OC)																		
EPA SW8270/8120																		
LPAHs																		
Acenaphthene	16	57	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.4 U	1.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Acenaphthylene	66	66	0.7 U	0.9 U	0.7 U	0.9 U	0.6 U	0.6 U	0.8 U	1.124 U	1.357 U	1.176 U	1.235	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Anthracene	220	1200	1.3 U	1.4 U	0.9 U	0.9 U	0.8 U	1.0 U	0.7 U	1.067 J	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Fluorene	23	79	1.1 U	1.5 U	1.1 U	0.9 U	0.9 U	0.8 U	0.5 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Naphthalene	99	170	0.6 U	0.9 U	0.6 U	0.6 U	0.5 U	0.4 U	0.3 U	1.124 U	3.786	2.882	4.176	3.370	3.659	4.353	2.581	2.118 J
Phenanthrene	100	480	0.4 J	0.6 U	0.3 J	0.4 U	0.3 U	0.3 U	0.2 J	1.292	3.143	1.882	3.176	2.174	3.049	2.588	2.366	2.235 U
2-Methylnaphthalene	38	64	0.3 U	0.5 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Total LPAH	370	780	0.5	0.9 U	0.6 J	0.6 U	0.5 U	0.5 U	0.3 J	2.360 J	6.929	4.765	8.588	5.543	6.707	6.941	4.946	2.118 J
HPAHs																		
Benzo(a)anthracene	110	270	0.0 J	0.0 U	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.787 J	1.714	1.118 J	1.353	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Benzo(a)pyrene	99	210	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.674 J	1.429	1.176 U	1.412	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Benzo(b)fluoranthene	--	--	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.629								
Benzo(k)fluoranthene	--	--	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.843 J								
Total Benzofluoranthenes	230	450	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	3.258 J	2.643 J	1.176 U	2.588	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Benzo(g,h,i)perylene	31	78	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Chrysene	110	460	0.0	0.0	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	1.461	2.071	1.471	2.235	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Dibenz(a,h)anthracene			0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U								
Fluoranthene	160	1200	0.0	0.0 J	0.0	0.0 U	0.0 J	0.0 U	0.0 J	3.652	4.714	2.765	5.176	2.065 U	2.561	4.118	2.366	2.235 U
Indeno(1,2,3-cd)pyrene	34	88	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Pyrene	1000	1400	0.0	0.0 J	0.0	0.0 U	0.0 J	0.0 U	0.0 J	2.360	4.286	2.412	4.118	2.065 U	3.293	3.765	2.688	2.353
Total HPAH	960	5300	0.0 J	0.0 J	0.0 J	0.0 U	0.0 J	0.0 U	0.0 J	8.933	16.857 J	7.765 J	16.882	2.065 U	5.854	7.882	5.054	2.353
OTHER SVOCs																		
1,2,4-Trichlorobenzene	0.81	1.8	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	0.493 U	0.412 U	0.459 U	0.641 U	0.768 U	0.741 U	0.753 U	0.741 U
1,2-Dichlorobenzene	2.3	2.3	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	0.100 U	0.082 U	0.094 U	0.130 U	0.159 U	0.153 U	0.151 U	0.153 U
1,3-Dichlorobenzene			0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	0.100 U	0.082 U	0.094 U	0.130 U	0.159 U	0.153 U	0.151 U	0.153 U
1,4-Dichlorobenzene	3.1	9	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	0.100 U	0.082 U	0.094 U	0.130 U	0.159 U	0.153 U	0.151 U	0.153 U
Bis(2-ethylhexyl)phthalate	47	78	0.0	0.0	0.0 J	0.0 J	0.0	0.0 J	0.0	4.157	1.571	2.000	2.000	3.696	2.317	2.353	2.043 U	3.294
Benzyl butyl phthalate	4.9	64	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Dibenzofuran	15	58	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Diethylphthalate	61	110	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Dimethylphthalate	53	53	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Di-n-Butylphthalate	220	1700	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.714 UJ	2.000 UJ	1.588 UJ	4.022 UJ	4.634 UJ	3.647 UJ	10.753 UJ	3.294 UJ
Di-n-octyl phthalate	58	4500	0.0 U	0.0 U	33.8 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Hexachlorobenzene	0.38	2.3	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Hexachlorobutadiene	3.9	6.2	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
Hexachloroethane			0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U
N-Nitrosodiphenylamine	11	11	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	1.124 U	1.357 U	1.176 U	1.176 U	2.065 U	2.317 U	2.235 U	2.043 U	2.235 U

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Sample Name:			RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Depth Range:																		
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000	11/8/2000	11/7/2000	11/7/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
SVOCs (mg/kg)																		
EPA SW8270/8120																		
1-Methylnaphthalene			0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U								
2,4-Dimethylphenol	0.029	0.029	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
2-Methylphenol	0.063	0.063	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
4-Methylphenol	0.67	0.67	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.490	0.041	0.031	0.039	0.021	0.019 U	0.021	0.019 U	0.019 U
Benzoic Acid	0.65	0.65	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.19 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzyl Alcohol	0.057	0.073	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
Pentachlorophenol	0.36	0.69	0.1 U	0.099 U	0.098 U	0.1 U	0.098 U	0.1 U	0.098 U	0.098 U	0.093 U	0.098 U	0.099 U	0.096 U	0.093 U	0.096 U	0.096 U	0.096 U
Phenol	0.42	1.2	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.017 J	0.02 U	0.140	0.054	0.024	0.036	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
2,2'-Oxybis(1-Chloropropane)																		
2,4,5-Trichlorophenol																		
2,4,6-Trichlorophenol																		
2,4-Dichlorophenol																		
2,4-Dinitrophenol																		
2,4-Dinitrotoluene																		
2,6-Dinitrotoluene																		
2-Chloronaphthalene																		
2-Chlorophenol																		
2-Nitroaniline																		
2-Nitrophenol																		
3- and 4-Methylphenol																		
3,3'-Dichlorobenzidine																		
3-Nitroaniline																		
4,6-Dinitro-2-Methylphenol																		
4-Bromophenyl-phenylether																		
4-Chloro-3-methylphenol																		
4-Chloroaniline																		
4-Chlorophenyl-phenylether																		
4-Nitroaniline																		
4-Nitrophenol																		
Aniline																		
Benzofluoranthenes	230	450									0.037 J	0.02 U	0.044	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
Carbazole																		
Dibenzo(a,h)anthracene	12	33									0.019 U	0.02 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
Hexachlorocyclopentadiene																		
Isophorone																		
Nitrobenzene																		
N-nitrosodimethylamine																		
N-Nitroso-di-n-propylamine																		

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	Cleanup Screening Levels CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Depth Range:																		
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000	11/8/2000	11/7/2000	11/7/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
VOCs (mg/kg)																		
EPA 8260/824																		
1,1,1-Trichloroethane																		
1,1,2,2-Tetrachloroethane																		
1,1,2-Trichloroethane																		
1,1-Dichloroethane																		
1,1-Dichloroethene																		
1,2,3-Trichlorobenzene																		
1,2-Dichlorobenzene																		
1,2-Dichloroethane																		
1,2-Dichloropropane																		
1,3-Dichlorobenzene																		
1,4-Dichlorobenzene																		
2-Butanone																		
2-Chloroethylvinylether																		
2-Hexanone																		
4-Methyl-2-Pentanone (MIBK)																		
Acetone																		
Benzene																		
bis(2-Chloroethoxy) Methane																		
Bis-(2-Chloroethyl) Ether																		
Bromodichloromethane																		
Bromoform																		
Bromomethane																		
Carbon Disulfide																		
Carbon Tetrachloride																		
Chlorobenzene																		
Chloroethane																		
Chloroform																		
Chloromethane																		
cis-1,2-Dichloroethene																		
cis-1,3-Dichloropropene																		
Dibromochloromethane																		
Ethylbenzene											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U
Methylene Chloride																		
Styrene																		
Tetrachloroethene											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U
Toluene																		
trans-1,2-Dichloroethene																		
trans-1,3-Dichloropropene																		
Trichloroethene											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U
Trichlorofluoromethane																		
Trichlorotrifluoroethane																		
Vinyl Acetate																		
Vinyl Chloride																		
Xylenes, Total											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Sample Name:			RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13 (a)	CM-1	CM-2	CM-3	CM-S4	CM-S5	CM-S6	CM-S7	CM-S8
Depth Range:																		
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000	11/8/2000	11/7/2000	11/7/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
GRAIN SIZE																		
Clay (phi <10) (%)			10.5	10.8	12.8	12.0	11.9	11.3	10.1	8.7	4.9	5.5	7.5	4.3	4.2	5.5	5.3	5
Clay (phi 8 to 9) (%)			7.4	7.4	8.2	7.3	7.8	7.0	5.8	4.5	2.1	2.1	3	1.7	1.8	2.2	2.1	1.9
Clay (phi 9 to 10) (%)			4.9	6.0	7.0	5.8	5.9	5.7	4.9	5.5	1.8	1.8	2.6	1.6	1.2	1.7	1.7	1.8
Fines (%)			93.9	97.0	97.7	97.6	94.9	92.6	81.0	83.2	44.8	46.7	67.9	45.8	46	49.3	50	40.3
Gravel (>phi -1) (%)			0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2	2.6	2.2	2.2	0.2	0.5	0.4	1.6	1.9
Sand (phi 0 to 1) (%)			0.3	0.2	0.2	0.2	0.5	0.6	1.9	0.7	3.8	3.3	1.3	4.4	3.5	2.5	1.6	2.2
Sand (phi -1 to 0) (%)			0.2	0.1	0.2	0.1	0.6	0.9	2.1	0.8	1.3	1.5	1.6	0.9	0.7	0.7	0.7	1.3
Sand (phi 1 to 2) (%)			0.5	0.2	0.1	0.1	0.2	0.4	2.0	1.8	9.4	5.9	1.8	10.7	10.4	7.3	5.7	13.6
Sand (phi 2 to 3) (%)			1.0	0.3	0.1	0.1	0.4	0.6	3.2	3.8	12.9	15.1	5.5	18.8	14.2	15.3	15.4	19.7
Sand (phi 3 to 4) (%)			4.1	2.2	1.7	1.8	3.4	4.9	8.9	9.6	25.2	25.5	19.7	19.3	24.7	24.6	25	21
Silt (phi 4 to 5) (%)			17.2	14.3	13.8	15.8	19.0	14.7	13.7	14.4	18.3	17.3	22.5	21.2	23.4	20.3	22.7	14.4
Silt (phi 5 to 6) (%)			20.2	24.7	21.0	20.5	18.5	19.0	20.8	23.3	8.8	10.2	16.4	9	8.2	10.4	9	8.3
Silt (phi 6 to 7) (%)			21.7	21.0	22.2	23.1	19.3	22.2	16.2	16.6	5.7	6.4	10.7	5.2	4.7	6.1	6.6	5.7
Silt (phi 7 to 8) (%)			12.0	12.8	12.7	13.1	12.4	12.6	9.5	10.2	3.2	3.4	5.2	2.9	2.5	3.1	2.6	3.2

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	Cleanup Screening Levels CSL (c)	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7
Depth Range:				(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)							
Date Collected:			10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990	10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990
Sample Type:			Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Petroleum Hydrocarbons (mg/kg)																		
NWPTH-D/EPA413.1																		
Diesel Range Organics			2100															
Total Oil & Grease												140	240	170	250	30 U	96	81
Metals (mg/kg)																		
EPA 6000/7000/200.8																		
Antimony			11									0.64	1.3	0.89	1.1	0.56	0.87	0.17
Arsenic	57	93	57									6.7	6.5	2.5	11	3.6	3.4	3.3
Beryllium			1 U															
Cadmium	5.1	6.7	3									2.6	4.2	3.7	3.8	2.8	3.5	3.4
Chromium	260	270	118									48	72	42	70	41	55	39
Copper	390	390	167									18	25	15	40	4.4	14	9.6
Lead	450	530	113									24	26	17	27	11	15	14
Mercury	0.41	0.59	0.2 U									0.14	0.92	0.11	0.17	0.1	0.90	0.071
Nickel			38									30	68	49	73	29	58	53
Selenium			1 U															
Silver	6.1	6.1	2									1.3	1.1	0.35	0.58	0.41	0.28	0.45
Thallium			1 U															
Zinc	410	960	526									64	74	62	87	55	59	53
Pesticides (mg/kg)																		
EPA 8080																		
4,4'-DDD			0.1 U															
4,4'-DDE			0.1 U															
4,4'-DDT																		
Aldrin			0.1 U									0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Alpha-BHC			0.1 U															
Beta-BHC			0.3 U															
Chlordane			1 U									0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Delta-BHC			0.1 U															
Dieldrin			0.1 U									0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
EndoSulfan I			0.1 U															
Endosulfan Sulfate			0.1 U															
Endrin			0.1 U															
Endrin Aldehyde			0.1 U															
Gamma-BHC			0.1 U															
Heptachlor			0.1 U									0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Heptachlor Epoxide			0.1 U															
Lindane												0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methoxychlor			0.2 U															
Total DDT												0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Toxaphene			3 U															

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	Cleanup Screening Levels CSL (c)	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7
Depth Range:				(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)							
Date Collected:			10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990	10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990
Sample Type:			Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
PCBs (mg/kg OC)																		
EPA 8080																		
Aroclor 1016			59 U															
Aroclor 1221			59 U															
Aroclor 1232			59 U															
Aroclor 1242			59 U															
Aroclor 1248			59 U															
Aroclor 1254			59 U															
Aroclor 1260			59 U															
Aroclor 1262																		
Aroclor 1268																		
Total PCBs	130		59 U									6.468 U	4.305 U	4.333 U	3.812 U	13.402 U	10.156 U	12.500 U
Organotin (mg/L)																		
Porewater																		
Butyl Tin Ion																		
Dibutyl Tin Ion																		
Tributyltin	0.05	0.15									(d)							
Tributyl Tins (mg/kg)																		
Krone 1988 SIM GC/MS																		
Tributyl Tin Ion																		
Dibutyl Tin Ion																		
Butyl Tin Ion																		
Bioassay																		
Biochemical Oxygen Demand (mg/Kg)												425.4	419.4	521.3	667.5	375	354.2	458.9
Chemical Oxygen Demand (mg/Kg)												49743.6	98716	100061.5	112715.2	22727.3	48451.1	16408.9
Microtox Test (% Light Change)												-24	-24	-23.3	-16.4	-27	-4.4	3.5
Amphipod Mortality (%)												40	50	56	50	9	34	31
Echinoderm Mortality (%)												11.1	6.7	9.8	24.6	7	2.7	8.4
Neanthes Mortality (%)												4	4	8	10	2	6	6
Conventionals																		
Ammonia (mg/Kg)				16.1	25	12.5	19.1	13.8	12.5	12.9	14.5							
Sulfide (mg/kg)																		
Total Kjeldahl Nitrogen (mg/Kg)												470	1800	770	500	250	600	560
Total Sulfides (mg/Kg)				2.8	10.1	5 U	5 U	12.6	12.2	5.6	10.6							
Total Volatile Solids (mg/Kg)												5.2	7.4	7.6	6.8	3.3	3.3	1.7
N Ammonia (mg N/kg)																		
Total Organic Carbon (%)			1.7 (d)	1.7 (d)	1.7 (d)	1.7 (d)	1.7 (d)	1.7 (d)	1.7 (d)	1.7 (d)	1.7 (e)	2.01	3.02	3	3.41	0.97	1.28	1.04
Total Solids (%)				74.5	72	80.1	73.4	65.2	63.9	76	70.3	66.3	66.2	65	60.4	74.8	66.5	76.3
Total Volatile Solids (%)																		
Preserved Total Solids (%)																		

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	Cleanup Screening Levels CSL (c)	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7
Depth Range:				(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)							
Date Collected:			10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990	10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990
Sample Type:			Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
SVOCs (mg/kg OC)																		
EPA SW8270/8120																		
LPAHs																		
Acenaphthene	16	57	588 U									9.950 U	6.623 U	6.667 U	5.865 U	20.619 U	15.625 U	19.231 U
Acenaphthylene	66	66	588 U									9.950 U	6.623 U	6.667 U	5.865 U	20.619 U	15.625 U	19.231 U
Anthracene	220	1200	588 U									6.468 U	4.305 U	4.333 U	3.812 U	13.402 U	10.156 U	12.500 U
Fluorene	23	79	588 U									9.950 U	6.623 U	6.667 U	5.865 U	20.619 U	15.625 U	19.231 U
Naphthalene	99	170	588 U									10.448 U	6.954 U	7.000 U	6.158 U	21.649 U	16.406 U	20.192 U
Phenanthrene	100	480	588 U									15.920 U	10.596 U	10.667 U	9.384 U	32.990 U	25.000 U	30.769 U
2-Methylnaphthalene	38	64	588 U									9.950 U	6.623 U	6.667 U	5.865 U	20.619 U	15.625 U	19.231 U
Total LPAH	370	780	588 U									30.348 U	20.199 U	20.333 U	17.889 U	62.887 U	47.656 U	58.654 U
HPAHs																		
Benzo(a)anthracene	110	270	588 U									22.388 U	14.901 U	15.000 U	13.196 U	46.392 U	35.156 U	43.269 U
Benzo(a)pyrene	99	210	588 U									33.831 U	22.517 U	22.667 U	19.941 U	70.103 U	53.125 U	65.385 U
Benzo(b)fluoranthene	--	--	588 U									39.801 U	26.490 U	26.667 U	23.460 U	82.474 U	62.500 U	76.923 U
Benzo(k)fluoranthene	--	--	588 U									39.801 U	26.490 U	26.667 U	23.460 U	82.474 U	62.500 U	76.923 U
Total Benzofluoranthenes	230	450	588 U									39.801 U	26.490 U	26.667 U	23.460 U	82.474 U	62.500 U	76.923 U
Benzo(g,h,i)perylene	31	78	588 U									26.866 U	17.881 U	18.000 U	15.836 U	55.670 U	42.188 U	51.923 U
Chrysene	110	460	588 U									33.333 U	22.185 U	22.333 U	19.648 U	69.072 U	52.344 U	64.423 U
Dibenz(a,h)anthracene			588 U									6.468 U	4.305 U	4.333 U	3.812 U	13.402 U	10.156 U	12.500 U
Fluoranthene	160	1200	588 U									31.343 U	20.861 U	21.000 U	18.475 U	64.948 U	49.219 U	60.577 U
Indeno(1,2,3-cd)pyrene	34	88	588 U									9.950 U	6.623 U	6.667 U	5.865 U	20.619 U	15.625 U	19.231 U
Pyrene	1000	1400	588 U									21.393 U	14.238 U	14.333 U	12.610 U	44.330 U	33.594 U	41.346 U
Total HPAH	960	5300	588 U									89.552 U	59.603 U	60.000 U	52.786 U	185.567 U	140.625 U	173.077 U
OTHER SVOCs																		
1,2,4-Trichlorobenzene	0.81	1.8		0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	3.184 U	2.119 U	2.133 U	1.877 U	6.598 U	5.000 U	6.154 U
1,2-Dichlorobenzene	2.3	2.3	588 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.841 U	1.225 U	1.233 U	1.085 U	3.814 U	2.891 U	3.558 U
1,3-Dichlorobenzene			588 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8.458 U	5.629 U	5.667 U	4.985 U	17.526 U	13.281 U	16.346 U
1,4-Dichlorobenzene	3.1	9	588 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	9.453 U	6.291 U	6.333 U	5.572 U	19.588 U	14.844 U	18.269 U
Bis(2-ethylhexyl)phthalate	47	78	588 U									154.229 U	102.649 U	103.333 U	90.909 U	319.588 U	242.188 U	298.077 U
Benzyl butyl phthalate	4.9	64	588 U									23.383 U	31.457	15.667 U	13.783 U	48.454 U	36.719 U	45.192 U
Dibenzofuran	15	58	588 U									9.950 U	6.623 U	6.667 U	5.865 U	20.619 U	15.625 U	19.231 U
Diethylphthalate	61	110	588 U									4.826 U	3.212 U	3.233 U	2.845 U	10.000 U	7.578 U	9.327 U
Dimethylphthalate	53	53	588 U									7.960 U	5.298 U	5.333 U	4.692 U	16.495 U	12.500 U	15.385 U
Di-n-Butylphthalate	220	1700	588 U									69.652 U	46.358 U	46.667 U	55.718	144.330 U	109.375 U	336.538
Di-n-octyl phthalate	58	4500	588 U									308.458 U	205.298 U	206.667 U	181.818 U	639.175 U	484.375 U	596.154 U
Hexachlorobenzene	0.38	2.3	588 U	1.35 U	1.35 U	1.35 U	1.35 U					8.358 U	5.563 U	5.600 U	4.927 U	17.320 U	13.125 U	16.154 U
Hexachlorobutadiene	3.9	6.2	588 U									10.547 U	7.020 U	7.067 U	6.217 U	21.856 U	16.563 U	20.385 U
Hexachloroethane			588 U									69.652 U	46.358 U	46.667 U	41.056 U	144.330 U	109.375 U	134.615 U
N-Nitrosodiphenylamine	11	11	588 U									8.010 U	5.331 U	5.367 U	4.721 U	16.598 U	12.578 U	15.481 U

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	Cleanup Screening Levels CSL (c)	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7
Depth Range:				(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)							
Date Collected:			10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990	10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990
Sample Type:			Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
SVOCs (mg/kg)																		
EPA SW8270/8120																		
1-Methylnaphthalene																		
2,4-Dimethylphenol	0.029	0.029	10 U									0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Methylphenol	0.063	0.063	10 U									0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U
4-Methylphenol	0.67	0.67										0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Benzoic Acid	0.65	0.65	60 U									0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Benzyl Alcohol	0.057	0.073	10 U									0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U
Pentachlorophenol	0.36	0.69	60 U									0.504 U	0.504 U	0.504 U	0.504 U	0.504 U	0.504 U	0.504 U
Phenol	0.42	1.2	10 U									0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
2,2'-Oxybis(1-Chloropropane)			10 U															
2,4,5-Trichlorophenol			10 U															
2,4,6-Trichlorophenol			10 U															
2,4-Dichlorophenol			10 U															
2,4-Dinitrophenol			60 U															
2,4-Dinitrotoluene			10 U															
2,6-Dinitrotoluene			10 U															
2-Chloronaphthalene			10 U															
2-Chlorophenol			10 U															
2-Nitroaniline			60 U															
2-Nitrophenol			10 U															
3- and 4-Methylphenol			10 U															
3,3'-Dichlorobenzidine			10 U															
3-Nitroaniline			60 U															
4,6-Dinitro-2-Methylphenol			60 U															
4-Bromophenyl-phenylether			10 U															
4-Chloro-3-methylphenol			10 U															
4-Chloroaniline			10 U															
4-Chlorophenyl-phenylether			10 U															
4-Nitroaniline			60 U															
4-Nitrophenol			60 U															
Aniline			10 U															
Benzofluoranthenes	230	450																
Carbazole																		
Dibenzo(a,h)anthracene	12	33																
Hexachlorocyclopentadiene			10 U															
Isophorone			10 U															
Nitrobenzene			10 U															
N-nitrosodimethylamine			10 U															
N-Nitroso-di-n-propylamine			10 U															

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name:			ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7
Depth Range:				(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)							
Date Collected:			10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990	10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990
Sample Type:			Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
	Cleanup Screening Levels																	
	SQS (b)	CSL (c)																
VOCs (mg/kg)																		
EPA 8260/824																		
1,1,1-Trichloroethane			0.005 U															
1,1,2,2-Tetrachloroethane			0.005 U															
1,1,2-Trichloroethane			0.005 U															
1,1-Dichloroethane			0.005 U															
1,1-Dichloroethene			0.005 U															
1,2,3-Trichlorobenzene			10 U															
1,2-Dichlorobenzene			0.005 U															
1,2-Dichloroethane			0.005 U															
1,2-Dichloropropane			0.005 U															
1,3-Dichlorobenzene			0.005 U															
1,4-Dichlorobenzene			0.005 U															
2-Butanone			0.01 U															
2-Chloroethylvinylether			0.01 U															
2-Hexanone			0.01 U															
4-Methyl-2-Pentanone (MIBK)			0.01 U															
Acetone			0.05 U															
Benzene			0.005 U															
bis(2-Chloroethoxy) Methane			10 U															
Bis-(2-Chloroethyl) Ether			10 U															
Bromodichloromethane			0.005 U															
Bromoform			0.005 U															
Bromomethane			0.005 U															
Carbon Disulfide			0.005 U															
Carbon Tetrachloride			0.005 U															
Chlorobenzene			0.005 U															
Chloroethane			0.005 U															
Chloroform			0.005 U															
Chloromethane			0.005 U															
cis-1,2-Dichloroethene			0.005 U															
cis-1,3-Dichloropropene			0.005 U															
Dibromochloromethane			0.005 U															
Ethylbenzene			0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U							
Methylene Chloride			0.017															
Styrene			0.005 U															
Tetrachloroethene			0.005 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U							
Toluene			0.005 U															
trans-1,2-Dichloroethene			0.005 U															
trans-1,3-Dichloropropene			0.005 U															
Trichloroethene			0.005 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U							
Trichlorofluoromethane			0.005 U															
Trichlorotrifluoroethane			0.01 U															
Vinyl Acetate			0.01 U															
Vinyl Chloride			0.005 U															
Xylenes, Total			0.005 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U							

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7
Depth Range:				(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)							
Date Collected:			10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990	10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990
Sample Type:			Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
GRAIN SIZE																		
Clay (phi <10) (%)																		
Clay (phi 8 to 9) (%)																		
Clay (phi 9 to 10) (%)																		
Fines (%)																		
Gravel (>phi -1) (%)																		
Sand (phi 0 to 1) (%)																		
Sand (phi -1 to 0) (%)																		
Sand (phi 1 to 2) (%)																		
Sand (phi 2 to 3) (%)																		
Sand (phi 3 to 4) (%)																		
Silt (phi 4 to 5) (%)																		
Silt (phi 5 to 6) (%)																		
Silt (phi 6 to 7) (%)																		
Silt (phi 7 to 8) (%)																		

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)	RZA-C-8	LS-COMP-A	LS-COMP-B
Sample Name:			RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:					
Date Collected:			10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Petroleum Hydrocarbons (mg/kg)					
NWPTH-D/EPA413.1					
Diesel Range Organics					
Total Oil & Grease			100		
Metals (mg/kg)					
EPA 6000/7000/200.8					
Antimony			1	0.7	0.6
Arsenic	57	93	10	0.8	0.8
Beryllium					
Cadmium	5.1	6.7	3.6	0.4	0.6
Chromium	260	270	51		
Copper	390	390	17	60	75
Lead	450	530	16	15	87
Mercury	0.41	0.59	0.14	0.1	0.1
Nickel			41	58	65
Selenium					
Silver	6.1	6.1	0.29	0.5	0.5
Thallium					
Zinc	410	960	54	142	123
Pesticides (mg/kg)					
EPA 8080					
4,4'-DDD					
4,4'-DDE					
4,4'-DDT					
Aldrin			0.01 U	0.0008 U	0.0008 U
Alpha-BHC					
Beta-BHC					
Chlordane			0.01 U	0.034 U	0.032 U
Delta-BHC					
Dieldrin			0.01 U	0.0017 U	0.0016 U
EndoSulfan I					
Endosulfan Sulfate					
Endrin					
Endrin Aldehyde					
Gamma-BHC					
Heptachlor			0.01 U	0.0008 U	0.0008 U
Heptachlor Epoxide					
Lindane			0.01 U	0.0008 U	0.0008 U
Methoxychlor					
Total DDT			0.69 U	0.0017 U	0.0016 U
Toxaphene					

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)	RZA-C-8	LS-COMP-A	LS-COMP-B
Sample Name:			RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:					
Date Collected:			10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
PCBs (mg/kg OC)					
EPA 8080					
Aroclor 1016					
Aroclor 1221					
Aroclor 1232					
Aroclor 1242					
Aroclor 1248					
Aroclor 1254					
Aroclor 1260					
Aroclor 1262					
Aroclor 1268					
Total PCBs	130		9.091 U	1.349 U	1.208 U
Organotin (mg/L)					
Porewater					
Butyl Tin Ion					
Dibutyl Tin Ion					
Tributyltin	0.05	0.15			
Tributyl Tins (mg/kg)					
Krone 1988 SIM GC/MS					
Tributyl Tin Ion					
Dibutyl Tin Ion					
Butyl Tin Ion					
Bioassay					
Biochemical Oxygen Demand (mg/Kg)			563.5		
Chemical Oxygen Demand (mg/Kg)			22881.6		
Microtox Test (% Light Change)			-1.7		
Amphipod Mortality (%)			61		
Echinoderm Mortality (%)			8.6		
Neanthes Mortality (%)			4		
Conventionals					
Ammonia (mg/Kg)					
Sulfide (mg/kg)					
Total Kjeldahl Nitrogen (mg/Kg)			640		
Total Sulfides (mg/Kg)				3.2	2.4
Total Volatile Solids (mg/Kg)			2.6		
N Ammonia (mg N/kg)					
Total Organic Carbon (%)			1.43	2.52	2.65
Total Solids (%)			70.1	71.6	69.8
Total Volatile Solids (%)				6.61	6.60
Preserved Total Solids (%)					

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels				
	SQS (b)	CSL (c)			
Sample Name:			RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:					
Date Collected:			10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
SVOCs (mg/kg OC)					
EPA SW8270/8120					
LPAHs					
Acenaphthene	16	57	13.986 U	0.198 J	0.170 U
Acenaphthylene	66	66	13.986 U	0.516 J	0.030 U
Anthracene	220	1200	9.091 U	0.476 J	0.340 J
Fluorene	23	79	13.986 U	0.516	0.174 U
Naphthalene	99	170	14.685 U	0.516 J	0.415 J
Phenanthrene	100	480	22.378 U	1.190	0.830
2-Methylnaphthalene	38	64	13.986 U	0.159 J	0.260 U
Total LPAH	370	780	42.657 U	3.413 J	1.585 J
HPAHs					
Benzo(a)anthracene	110	270	31.469 U	2.183	1.358
Benzo(a)pyrene	99	210	47.552 U	1.349	1.057
Benzo(b)fluoranthene	--	--	55.944 U		
Benzo(k)fluoranthene	--	--	55.944 U		
Total Benzofluoranthenes	230	450	55.944 U	3.294	1.849 J
Benzo(g,h,i)perylene	31	78	37.762 U	1.190	0.679
Chrysene	110	460	46.853 U	1.548	1.208
Dibenz(a,h)anthracene			9.091 U		
Fluoranthene	160	1200	44.056 U	2.937	1.509
Indeno(1,2,3-cd)pyrene	34	88	13.986 U	0.992	0.642 J
Pyrene	1000	1400	30.070 U	3.016	2.038
Total HPAH	960	5300	125.874 U	16.508	10.340 J
OTHER SVOCs					
1,2,4-Trichlorobenzene	0.81	1.8	4.476 U	0.306 U	0.275 U
1,2-Dichlorobenzene	2.3	2.3	2.587 U	0.040 U	0.034 U
1,3-Dichlorobenzene			11.888 U	0.060 U	0.053 U
1,4-Dichlorobenzene	3.1	9	13.287 U	0.151 U	0.136
Bis(2-ethylhexyl)phthalate	47	78	216.783 U	1.944 B	1.057 B
Benzyl butyl phthalate	4.9	64	32.867 U	1.468 J	1.057
Dibenzofuran	15	58	13.986 U	0.278 U	0.249 U
Diethylphthalate	61	110	6.783 U	0.131 U	0.117 U
Dimethylphthalate	53	53	11.189 U	0.476 J	0.143 U
Di-n-Butylphthalate	220	1700	97.902 U	0.254 U	0.230 U
Di-n-octyl phthalate	58	4500	433.566 U	0.397 J	0.491 U
Hexachlorobenzene	0.38	2.3	11.748 U	0.290 U	0.260 U
Hexachlorobutadiene	3.9	6.2	14.825 U	0.302 U	0.272 U
Hexachloroethane			97.902 U	0.262 U	0.234 U
N-Nitrosodiphenylamine	11	11	11.259 U	0.516 U	0.491 U

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels		Sample Name: RZA-C-8	LS-COMP-A	LS-COMP-B
			Depth Range:		
			Date Collected: 10/23/1990	10/8/1987	10/8/1987
			Sample Type: Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
	SQS (b)	CSL (c)			
SVOCs (mg/kg)					
EPA SW8270/8120					
1-Methylnaphthalene					
2,4-Dimethylphenol	0.029	0.029	0.05 U	0.012 U	0.011 U
2-Methylphenol	0.063	0.063	0.072 U	0.0050 U	0.0047 U
4-Methylphenol	0.67	0.67	0.12 U	0.0025 U	0.0024 U
Benzoic Acid	0.65	0.65	0.69 U	0.058 J	0.012 U
Benzyl Alcohol	0.057	0.073	0.073 U	0.0044 U	0.0042 U
Pentachlorophenol	0.36	0.69	0.504 U	0.0053 U	0.0051 U
Phenol	0.42	1.2	0.12 U	0.0033 U	0.0032 U
2,2'-Oxybis(1-Chloropropane)					
2,4,5-Trichlorophenol					
2,4,6-Trichlorophenol					
2,4-Dichlorophenol					
2,4-Dinitrophenol					
2,4-Dinitrotoluene					
2,6-Dinitrotoluene					
2-Chloronaphthalene					
2-Chlorophenol					
2-Nitroaniline					
2-Nitrophenol					
3- and 4-Methylphenol					
3,3'-Dichlorobenzidine					
3-Nitroaniline					
4,6-Dinitro-2-Methylphenol					
4-Bromophenyl-phenylether					
4-Chloro-3-methylphenol					
4-Chloroaniline					
4-Chlorophenyl-phenylether					
4-Nitroaniline					
4-Nitrophenol					
Aniline					
Benzofluoranthenes	230	450		0.083	0.049 J
Carbazole					
Dibenzo(a,h)anthracene	12	33		0.0085 U	0.0081 U
Hexachlorocyclopentadiene					
Isophorone					
Nitrobenzene					
N-nitrosodimethylamine					
N-Nitroso-di-n-propylamine					

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)	RZA-C-8	LS-COMP-A	LS-COMP-B
Sample Name:			RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:					
Date Collected:			10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
VOCs (mg/kg)					
EPA 8260/824					
1,1,1-Trichloroethane					
1,1,2,2-Tetrachloroethane					
1,1,2-Trichloroethane					
1,1-Dichloroethane					
1,1-Dichloroethene					
1,2,3-Trichlorobenzene					
1,2-Dichlorobenzene					
1,2-Dichloroethane					
1,2-Dichloropropane					
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
2-Butanone					
2-Chloroethylvinylether					
2-Hexanone					
4-Methyl-2-Pentanone (MIBK)					
Acetone					
Benzene					
bis(2-Chloroethoxy) Methane					
Bis-(2-Chloroethyl) Ether					
Bromodichloromethane					
Bromoform					
Bromomethane					
Carbon Disulfide					
Carbon Tetrachloride					
Chlorobenzene					
Chloroethane					
Chloroform					
Chloromethane					
cis-1,2-Dichloroethene					
cis-1,3-Dichloropropene					
Dibromochloromethane					
Ethylbenzene				0.0026 U	0.0025 U
Methylene Chloride					
Styrene					
Tetrachloroethene				0.0015 U	0.0014 U
Toluene					
trans-1,2-Dichloroethene					
trans-1,3-Dichloropropene					
Trichloroethene				0.0017 U	0.0017 U
Trichlorofluoromethane					
Trichlorotrifluoroethane					
Vinyl Acetate					
Vinyl Chloride					
Xylenes, Total				0.0029 U	0.0028 U

TABLE C-21
MARINE SEDIMENT SAMPLE RESULTS
RI/FS WORK PLAN - AMERON HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels SQS (b)	CSL (c)	RZA-C-8	LS-COMP-A	LS-COMP-B
Sample Name:			RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:					
Date Collected:			10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
GRAIN SIZE					
Clay (phi <10) (%)					
Clay (phi 8 to 9) (%)					
Clay (phi 9 to 10) (%)					
Fines (%)					
Gravel (>phi -1) (%)					
Sand (phi 0 to 1) (%)					
Sand (phi -1 to 0) (%)					
Sand (phi 1 to 2) (%)					
Sand (phi 2 to 3) (%)					
Sand (phi 3 to 4) (%)					
Silt (phi 4 to 5) (%)					
Silt (phi 5 to 6) (%)					
Silt (phi 6 to 7) (%)					
Silt (phi 7 to 8) (%)					

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J1 = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded value indicates exceedance of SQS
Boxed value indicates exceedance of CSL

(a) See SAIC 2009, Appendix F for full bioassay analysis of A2-13
(b) SMS Sediment Quality Standard (Chapter 173-204 WAC).
(c) CSL Cleanup Screening Level (Chapter 173-204 WAC).
(d) Ecology, 1996, SMS Technical Memorandum: Testing Reporting and Evaulation of Tributyltin Data in PSDDA and SMS Programs
(e) No TOC data is available. Recorded value is the average of the TOC data data presented on this table.

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	Cleanup Screening Levels (a) CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Depth Range:															
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Petroleum Hydrocarbons (mg/kg)															
NWPTH-D/EPA413.1															
Diesel Range Organics															
Total Oil & Grease															
Metals (mg/kg)															
EPA 6000/7000/200.8															
Antimony											7 U	6 U	7 U	6 U	6 U
Arsenic	57	93	20	20	20	30	26	30	30	20	10	10	10	11	8
Beryllium															
Cadmium	5.1	6.7	0.4	0.4	0.5	0.4 U	0.4 U	0.4 U	0.4 U	0.4	0.3 U	0.3	0.3 U	0.3	0.3 U
Chromium	260	270	61	56	63	69	70.1	66	64	59	41.9	41.1	53.4	41.2	40.8
Copper	390	390	68.7	62.2	70.4	68.6	68.1	65.5	63.2	60.0	39	31	47	34	30
Lead	450	530	12	11	12	12	12	12	12	11	12	8	10	10	8
Mercury	0.41	0.59	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.06	0.07	0.09	0.05	0.06 U
Nickel											39	37	48	39	39
Selenium															
Silver	6.1	6.1	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.7 U	0.6 U	0.4 U	0.4 U	0.6	0.4 U	0.4 U
Thallium															
Zinc	410	960	109	101	111	109	112	102	100	90	62	58	76	56	51
Pesticides and PCBs (mg/kg)															
EPA 8080															
4,4'-DDD											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U
4,4'-DDE											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U
4,4'-DDT											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U
Aldrin											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Alpha-BHC															
Aroclor 1016			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U	0.017 U	0.02 U	0.019 U	0.019 U	0.019 U
Aroclor 1221			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U	0.035 U	0.039 U	0.037 U	0.039 U	0.037 U
Aroclor 1232			0.004 U	0.0043 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U	0.017 U	0.02 U	0.019 U	0.019 U	0.019 U
Aroclor 1242			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U	0.017 U	0.02 U	0.019 U	0.019 U	0.019 U
Aroclor 1248			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U	0.017 U	0.02 U	0.019 U	0.019 U	0.019 U
Aroclor 1254			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U	0.017 U	0.02 U	0.019 U	0.019 U	0.019 U
Aroclor 1260			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U	0.017 U	0.02 U	0.019 U	0.019 U	0.019 U
Aroclor 1262			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U					
Aroclor 1268			0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U	0.020 U					
Beta-BHC															
Chlordane											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Delta-BHC															
Dieldrin											0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
EndoSulfan I															
Endosulfan Sulfate															
Endrin															
Endrin Aldehyde															
Gamma-BHC															
Heptachlor											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Heptachlor Epoxide															
Lindane											0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methoxychlor															
Total DDT											0.0017 U	0.002 U	0.0019 U	0.0019 U	0.0019 U
Total PCBs	0.13	1	0.004 U	0.0039 U	0.004 U	0.0039 U	0.004 U	0.004 U	0.0039 U		0.035 U	0.039 U	0.037 U	0.039 U	0.037 U
Toxaphene															
Organotin (mg/L)															
Porewater															
Butyl Tin Ion			0.000011	0.000017	0.000026	0.000014	0.000008	0.000008 U	0.00001						
Dibutyl Tin Ion			0.000012 U	0.000012 U	0.000013	0.000012 U	0.000012 U	0.000012 U	0.000012 U						

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Depth Range:															
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Tributyltin	0.05 (d)	0.15 (d)	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U		0.00002 U	0.00007 U	0.00002 U		
Tributyl Tins (mg/kg)															
Krone 1988 SIM GC/MS															
Tributyl Tin Ion										0.0038 U					
Dibutyl Tin Ion										0.0056 U					
Butyl Tin Ion										0.0040 U					
Bioassay															
Biochemical Oxygen Demand (mg/Kg)															
Chemical Oxygen Demand (mg/Kg)															
Microtox Test (% Light Change)															
Amphipod Mortality (%)															
Echinoderm Mortality (%)															
Neanthes Mortality (%)															

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Sample Name:			RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Depth Range:															
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Conventionals															
Ammonia (mg/Kg)															
Sulfide (mg/kg)			**276** J1	**385** J1	**306** J1	**219** J1	**268** J1	**156** J1	**68.0** J1	137	71	19	16	5.6 U	12
Total Kjeldahl Nitrogen (mg/Kg)															
Total Sulfides (mg/Kg)															
Total Volatile Solids (mg/Kg)															
N Ammonia (mg N/kg)			**13.9** J1	**20.4** J1	**16.0** J1	**18.4** J1	**17.2** J1	**18.7** J1	**14.7** J1	8.79	45	25	20	150	34
Total Organic Carbon (%)	10 (e)	10 (e)	1.48	2.17	2.05	2.35	2.14	2.25	1.65	1.78	1.4	1.7	1.7	0.92	0.82
Total Solids (%)			48.60	48.90	47.70 J1	50.80 J1	48.50 J1	46.90 J1	55.50	53.80	71.9	72.6	67.6	73.9	76.6
Total Volatile Solids (%)	25 (e)	25 (e)	7.14 J1	7.31 J1	7.41 J1	7.10 J1	7.57 J1	7.50 J1	5.86 J1	6.82	4.6	4.6	6.3	2.8	2.7
Preserved Total Solids (%)										54.80	69	69.8	58	77.6	67.2
SVOCs (mg/kg)															
EPA SW8270/8120															
1,2,4-Trichlorobenzene	0.031	0.051	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.0069 U	0.007 U	0.0078 U	0.0059 U	0.0063 U
1,2-Dichlorobenzene	0.035	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U
1,3-Dichlorobenzene			0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U
1,4-Dichlorobenzene	0.11	0.11	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U
1-Methylnaphthalene			0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U					
2,2'-Oxybis(1-Chloropropane)															
2,4,5-Trichlorophenol															
2,4,6-Trichlorophenol															
2,4-Dichlorophenol															
2,4-Dimethylphenol	0.029	0.029	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
2,4-Dinitrophenol															
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
2-Chloronaphthalene															
2-Chlorophenol															
2-Methylnaphthalene	38	64	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
2-Methylphenol	0.063	0.063	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
2-Nitroaniline															
2-Nitrophenol															
3- and 4-Methylphenol															
3,3'-Dichlorobenzidine															
3-Nitroaniline															
4,6-Dinitro-2-Methylphenol															
4-Bromophenyl-phenylether															
4-Chloro-3-methylphenol															
4-Chloroaniline															
4-Chlorophenyl-phenylether															
4-Methylphenol	0.67	0.67	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.490	0.041	0.031	0.039	0.021	0.019 U
4-Nitroaniline															
4-Nitrophenol															
Acenaphthene	0.5	0.5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Acenaphthylene	1.3	1.3	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.021	0.019 U	0.019 U
Aniline															
Anthracene	0.96	0.96	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 J	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Benzo(a)anthracene	1.3	1.6	**0.015** J	0.02 U	**0.01** J	0.02 U	0.02 U	0.02 U	0.02 U	0.014 J	0.024	0.019 J	0.023	0.019 U	0.019 U
Benzo(a)pyrene	1.6	1.6	**0.01** J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.012 J	0.02	0.02 U	0.024	0.019 U	0.019 U
Benzo(b)fluoranthene			**0.011** J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.029					
Benzo(g,h,i)perylene	0.67	0.72	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Benzo(k)fluoranthene			**0.011** J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.015 J					
Benzofluoranthenes	3.2	3.6	**0.022** J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U		0.037 J	0.02 U	0.044	0.019 U	0.019 U
Benzoic Acid	0.65	0.65								0.200 U	0.19 U	0.2 U	0.2 U	0.19 U	0.19 U
Benzyl Alcohol	0.057	0.073	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Benzyl butyl phthalate	0.063	0.9								0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Bis(2-ethylhexyl)phthalate	1.3	3.1	**0.036**	**0.023**	**0.017** J	**0.014** J	**0.022**	**0.012** J	**0.029**	0.074	0.022	0.034	0.034	0.034	0.019

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Sample Name:			RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Depth Range:															
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Carbazole															
Chrysene	1.4	2.8	**0.024**	**0.022**	**0.017** J	0.02 U	0.02 U	0.02 U	0.02 U	0.026	0.029	0.025	0.038	0.019 U	0.019 U
cPAH TEQ															
Dibenz(a,h)anthracene										0.020 U					
Dibenzo(a,h)anthracene	0.23	0.23	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U		0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Dibenzofuran	0.54	0.54	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Diethylphthalate	0.2	1.2	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Dimethylphthalate	0.071	0.16	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Di-n-Butylphthalate	1.4	5.1	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.024 UJ	0.034 UJ	0.027 UJ	0.037 UJ	0.038 UJ
Di-n-octyl phthalate	6.2	6.2	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Fluoranthene	1.7	2.5	**0.028**	**0.017** J	**0.024**	0.02 U	**0.01** J	0.02 U	**0.015** J	0.065	0.066	0.047	0.088	0.019 U	0.021
Fluorene	0.54	0.54	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Hexachlorobenzene	0.022	0.07	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Hexachlorobutadiene	0.011	0.12	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Hexachlorocyclopentadiene															
Hexachloroethane			0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Indeno(1,2,3-cd)pyrene	0.6	0.69	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Isophorone															
Naphthalene	2.1	2.1	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.053	0.049	0.071	0.031	0.03
Nitrobenzene															
N-nitrosodimethylamine															
N-Nitroso-di-n-propylamine															
N-Nitrosodiphenylamine	0.028	0.04	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.020 U	0.019 U	0.02 U	0.02 U	0.019 U	0.019 U
Pentachlorophenol	0.36	0.69	0.1 U	0.099 U	0.098 U	0.1 U	0.098 U	0.1 U	0.098 U	0.097 U	0.093 U	0.098 U	0.099 U	0.096 U	0.093 U
Phenanthrene	1.5	1.5	**0.015** J	0.02 U	**0.014** J	0.02 U	0.02 U	0.02 U	**0.012** J	0.023	0.044	0.032	0.054	0.02	0.025
Phenol	0.42	1.2	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.017** J	0.02 U	**0.019**	0.054	0.024	0.036	0.019 U	0.019 U
Pyrene	2.6	3.3	**0.025**	**0.018** J	**0.021**	0.02 U	**0.01** J	0.02 U	**0.014** J	0.042	0.06	0.041	0.07	0.019 U	0.027
Total HPAH	12	17	**0.124** J	**0.057** J	**0.072** J	0.02 U	**0.02** J	0.02 U	**0.029** J	0.159	0.236 J	0.132 J	0.287	0.019 U	0.048
Total LPAH	5.2	5.2	**0.015** J	0.02 U	**0.014** J	0.02 U	0.02 U	0.02 U	**0.012** J	0.042 J	0.097	0.081	0.146	0.051	0.055
VOCs (mg/kg)															
EPA 8260/824															
1,1,1-Trichloroethane															
1,1,2,2-Tetrachloroethane															
1,1,2-Trichloroethane															
1,1-Dichloroethane															
1,1-Dichloroethene															
1,2,3-Trichlorobenzene															
1,2-Dichlorobenzene	0.035	0.05													
1,2-Dichloroethane															
1,2-Dichloropropane															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene	0.11	0.11													
2-Butanone															
2-Chloroethylvinylether															
2-Hexanone															
4-Methyl-2-Pentanone (MIBK)															
Acetone															
Benzene															
bis(2-Chloroethoxy) Methane															
Bis-(2-Chloroethyl) Ether															
Bromodichloromethane															
Bromoform															
Bromomethane															
Carbon Disulfide															
Carbon Tetrachloride															
Chlorobenzene															
Chloroethane															

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name:	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Depth Range:															
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Chloroform															
Chloromethane															
cis-1,2-Dichloroethene															
cis-1,3-Dichloropropene															
Dibromochloromethane															
Ethylbenzene											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U
Methylene Chloride															
Styrene															
Tetrachloroethene											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U
Toluene															
trans-1,2-Dichloroethene															
trans-1,3-Dichloropropene															
Trichloroethene											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U
Trichlorofluoromethane															
Trichlorotrifluoroethane															
Vinyl Acetate															
Vinyl Chloride															
Xylenes, Total											0.0014 U	0.0014 U	0.0016 U	0.0012 U	0.0013 U

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Sample Name:			RI-SED-1	RI-SED-2	RI-SED-3	RI-SED-4	RI-SED-5	RI-SED-6	RI-SED-7	A2-13	CM-1	CM-2	CM-3	CM-S4	CM-S5
Depth Range:															
Date Collected:			5/12/2009	5/12/2009	5/12/2009	5/11/2009	5/11/2009	5/11/2009	5/11/2009	8/4/2008	11/10/2000	11/8/2000	11/7/2000	11/9/2000	11/9/2000
Sample Type:			Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Surface Sediment	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
GRAIN SIZE															
Clay (phi <10) (%)			10.5	10.8	12.8	12.0	11.9	11.3	10.1	8.7	4.9	5.5	7.5	4.3	4.2
Clay (phi 8 to 9) (%)			7.4	7.4	8.2	7.3	7.8	7.0	5.8	4.5	2.1	2.1	3	1.7	1.8
Clay (phi 9 to 10) (%)			4.9	6.0	7.0	5.8	5.9	5.7	4.9	5.5	1.8	1.8	2.6	1.6	1.2
Fines (%)			93.9	97.0	97.7	97.6	94.9	92.6	81.0	83.2	44.8	46.7	67.9	45.8	46
Gravel (>phi -1) (%)			0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2	2.6	2.2	2.2	0.2	0.5
Sand (phi 0 to 1) (%)			0.3	0.2	0.2	0.2	0.5	0.6	1.9	0.7	3.8	3.3	1.3	4.4	3.5
Sand (phi -1 to 0) (%)			0.2	0.1	0.2	0.1	0.6	0.9	2.1	0.8	1.3	1.5	1.6	0.9	0.7
Sand (phi 1 to 2) (%)			0.5	0.2	0.1	0.1	0.2	0.4	2.0	1.8	9.4	5.9	1.8	10.7	10.4
Sand (phi 2 to 3) (%)			1.0	0.3	0.1	0.1	0.4	0.6	3.2	3.8	12.9	15.1	5.5	18.8	14.2
Sand (phi 3 to 4) (%)			4.1	2.2	1.7	1.8	3.4	4.9	8.9	9.6	25.2	25.5	19.7	19.3	24.7
Silt (phi 4 to 5) (%)			17.2	14.3	13.8	15.8	19.0	14.7	13.7	14.4	18.3	17.3	22.5	21.2	23.4
Silt (phi 5 to 6) (%)			20.2	24.7	21.0	20.5	18.5	19.0	20.8	23.3	8.8	10.2	16.4	9	8.2
Silt (phi 6 to 7) (%)			21.7	21.0	22.2	23.1	19.3	22.2	16.2	16.6	5.7	6.4	10.7	5.2	4.7
Silt (phi 7 to 8) (%)			12.0	12.8	12.7	13.1	12.4	12.6	9.5	10.2	3.2	3.4	5.2	2.9	2.5

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	CM-S6	CM-S7	CM-S8	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	G RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13
Depth Range:							(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)
Date Collected:			11/8/2000	11/7/2000	11/7/2000	10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Petroleum Hydrocarbons (mg/kg)														
NWPTH-D/EPA413.1														
Diesel Range Organics						2100								
Total Oil & Grease														
Metals (mg/kg)														
EPA 6000/7000/200.8														
Antimony			7 U	6 U	6 U	11								
Arsenic	57	93	12	7	7	57								
Beryllium						1 U								
Cadmium	5.1	6.7	0.3 U	0.2 U	0.3 U	3								
Chromium	260	270	43.1	44.4	44	118								
Copper	390	390	31	33	30	167								
Lead	450	530	7	5	5	113								
Mercury	0.41	0.59	0.07 U	0.05	0.06 U	0.2 U								
Nickel			41	43	44	38								
Selenium						1 U								
Silver	6.1	6.1	0.4 U	0.4	0.4 U	2								
Thallium						1 U								
Zinc	410	960	55	56	56	526								
Pesticides and PCBs (mg/kg)														
EPA 8080														
4,4'-DDD			0.0019 U	0.0019 U	0.0019 U	0.1 U								
4,4'-DDE			0.0019 U	0.0019 U	0.0019 U	0.1 U								
4,4'-DDT			0.0019 U	0.0019 U	0.0019 U									
Aldrin			0.001 U	0.001 U	0.001 U	0.1 U								
Alpha-BHC						0.1 U								
Aroclor 1016			0.019 U	0.019 U	0.019 U	1 U								
Aroclor 1221			0.039 U	0.038 U	0.039 U	1 U								
Aroclor 1232			0.019 U	0.019 U	0.019 U	1 U								
Aroclor 1242			0.019 U	0.019 U	0.019 U	1 U								
Aroclor 1248			0.019 U	0.019 U	0.019 U	1 U								
Aroclor 1254			0.019 U	0.019 U	0.019 U	1 U								
Aroclor 1260			0.019 U	0.019 U	0.019 U	1 U								
Aroclor 1262														
Aroclor 1268														
Beta-BHC						0.3 U								
Chlordane			0.001 U	0.001 U	0.001 U	1 U								
Delta-BHC						0.1 U								
Dieldrin			0.002 U	0.002 U	0.002 U	0.1 U								
EndoSulfan I						0.1 U								
Endosulfan Sulfate						0.1 U								
Endrin						0.1 U								
Endrin Aldehyde						0.1 U								
Gamma-BHC						0.1 U								
Heptachlor			0.001 U	0.001 U	0.001 U	0.1 U								
Heptachlor Epoxide						0.1 U								
Lindane			0.001 U	0.001 U	0.001 U									
Methoxychlor						0.2 U								
Total DDT			0.0019 U	0.0019 U	0.0019 U									
Total PCBs	0.13	1	0.039 U	0.038 U	0.039 U									
Toxaphene						3 U								
Organotin (mg/L)														
Porewater														
Butyl Tin Ion														
Dibutyl Tin Ion														

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name:			CM-S6	CM-S7	CM-S8	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	G RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13
Depth Range:							(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)
Date Collected:			11/8/2000	11/7/2000	11/7/2000	10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
	Cleanup Screening Levels (a)													
	SQS (b)	CSL (c)												
Tributyltin	0.05 (d)	0.15 (d)												
Tributyl Tins (mg/kg)														
Krone 1988 SIM GC/MS														
Tributyl Tin Ion														
Dibutyl Tin Ion														
Butyl Tin Ion														
Bioassay														
Biochemical Oxygen Demand (mg/Kg)														
Chemical Oxygen Demand (mg/Kg)														
Microtox Test (% Light Change)														
Amphipod Mortality (%)														
Echinoderm Mortality (%)														
Neanthes Mortality (%)														

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	Cleanup Screening Levels (a) CSL (c)									G			
Sample Name:			CM-S6	CM-S7	CM-S8	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13
Depth Range:							(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)
Date Collected:			11/8/2000	11/7/2000	11/7/2000	10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Conventionals														
Ammonia (mg/Kg)							16.1	25	12.5	19.1	13.8	12.5	12.9	14.5
Sulfide (mg/kg)			6	3.6 U	640									
Total Kjeldahl Nitrogen (mg/Kg)														
Total Sulfides (mg/Kg)							2.8	10.1	5 U	5 U	12.6	12.2	5.6	10.6
Total Volatile Solids (mg/Kg)														
N Ammonia (mg N/kg)			56	36	47									
Total Organic Carbon (%)	10 (e)	10 (e)	0.85	0.93	0.85									
Total Solids (%)			73.2	73.2	73.1		74.5	72	80.1	73.4	65.2	63.9	76	70.3
Total Volatile Solids (%)	25 (e)	25 (e)	2.8	3.1	2.8									
Preserved Total Solids (%)			74.7	66.7	55.6									
SVOCs (mg/kg)														
EPA SW8270/8120														
1,2,4-Trichlorobenzene	0.031	0.051	0.0063 U	0.007 U	0.0063 U		0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U
1,2-Dichlorobenzene	0.035	0.05	0.0013 U	0.0014 U	0.0013 U	10 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
1,3-Dichlorobenzene			0.0013 U	0.0014 U	0.0013 U	10 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,4-Dichlorobenzene	0.11	0.11	0.0013 U	0.0014 U	0.0013 U	10 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U
1-Methylnaphthalene														
2,2'-Oxybis(1-Chloropropane)						10 U								
2,4,5-Trichlorophenol						10 U								
2,4,6-Trichlorophenol						10 U								
2,4-Dichlorophenol						10 U								
2,4-Dimethylphenol	0.029	0.029	0.019 U	0.019 U	0.019 U	10 U								
2,4-Dinitrophenol						60 U								
2,4-Dinitrotoluene						10 U								
2,6-Dinitrotoluene						10 U								
2-Chloronaphthalene						10 U								
2-Chlorophenol						10 U								
2-Methylnaphthalene	38	64	0.019 U	0.019 U	0.019 U	10 U								
2-Methylphenol	0.063	0.063	0.019 U	0.019 U	0.019 U	10 U								
2-Nitroaniline						60 U								
2-Nitrophenol						10 U								
3- and 4-Methylphenol						10 U								
3,3'-Dichlorobenzidine						10 U								
3-Nitroaniline						60 U								
4,6-Dinitro-2-Methylphenol						60 U								
4-Bromophenyl-phenylether						10 U								
4-Chloro-3-methylphenol						10 U								
4-Chloroaniline						10 U								
4-Chlorophenyl-phenylether						10 U								
4-Methylphenol	0.67	0.67	0.021	0.019 U	0.019 U									
4-Nitroaniline						60 U								
4-Nitrophenol						60 U								
Acenaphthene	0.5	0.5	0.019 U	0.019 U	0.019 U	10 U								
Acenaphthylene	1.3	1.3	0.019 U	0.019 U	0.019 U	10 U								
Aniline						10 U								
Anthracene	0.96	0.96	0.019 U	0.019 U	0.019 U	10 U								
Benzo(a)anthracene	1.3	1.6	0.019 U	0.019 U	0.019 U	10 U								
Benzo(a)pyrene	1.6	1.6	0.019 U	0.019 U	0.019 U	10 U								
Benzo(b)fluoranthene						10 U								
Benzo(g,h,i)perylene	0.67	0.72	0.019 U	0.019 U	0.019 U	10 U								
Benzo(k)fluoranthene						10 U								
Benzofluoranthenes	3.2	3.6	0.019 U	0.019 U	0.019 U									
Benzoic Acid	0.65	0.65	0.19 U	0.19 U	0.19 U	60 U								
Benzyl Alcohol	0.057	0.073	0.019 U	0.019 U	0.019 U	10 U								
Benzyl butyl phthalate	0.063	0.9	0.019 U	0.019 U	0.019 U	10 U								
Bis(2-ethylhexyl)phthalate	1.3	3.1	0.02	0.019 U	0.028	10 U								

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	CM-S6	CM-S7	CM-S8	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	G RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13
Depth Range:							(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)
Date Collected:			11/8/2000	11/7/2000	11/7/2000	10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Carbazole														
Chrysene	1.4	2.8	0.019 U	0.019 U	0.019 U	10 U								
cPAH TEQ														
Dibenz(a,h)anthracene						10 U								
Dibenzo(a,h)anthracene	0.23	0.23	0.019 U	0.019 U	0.019 U									
Dibenzofuran	0.54	0.54	0.019 U	0.019 U	0.019 U	10 U								
Diethylphthalate	0.2	1.2	0.019 U	0.019 U	0.019 U	10 U								
Dimethylphthalate	0.071	0.16	0.019 U	0.019 U	0.019 U	10 U								
Di-n-Butylphthalate	1.4	5.1	0.031 UJ	0.1 UJ	0.028 UJ	10 U								
Di-n-octyl phthalate	6.2	6.2	0.019 U	0.019 U	0.019 U	10 U								
Fluoranthene	1.7	2.5	0.035	0.022	0.019 U	10 U								
Fluorene	0.54	0.54	0.019 U	0.019 U	0.019 U	10 U								
Hexachlorobenzene	0.022	0.07	0.019 U	0.019 U	0.019 U	10 U	0.023 U	0.023 U	0.023 U	0.023 U				
Hexachlorobutadiene	0.011	0.12	0.019 U	0.019 U	0.019 U	10 U								
Hexachlorocyclopentadiene						10 U								
Hexachloroethane			0.019 U	0.019 U	0.019 U	10 U								
Indeno(1,2,3-cd)pyrene	0.6	0.69	0.019 U	0.019 U	0.019 U	10 U								
Isophorone						10 U								
Naphthalene	2.1	2.1	0.037	0.024	0.018 J	10 U								
Nitrobenzene						10 U								
N-nitrosodimethylamine						10 U								
N-Nitroso-di-n-propylamine						10 U								
N-Nitrosodiphenylamine	0.028	0.04	0.019 U	0.019 U	0.019 U	10 U								
Pentachlorophenol	0.36	0.69	0.096 U	0.096 U	0.096 U	60 U								
Phenanthrene	1.5	1.5	0.022	0.022	0.019 U	10 U								
Phenol	0.42	1.2	0.019 U	0.019 U	0.019 U	10 U								
Pyrene	2.6	3.3	0.032	0.025	0.02	10 U								
Total HPAH	12	17	0.067	0.047	0.02									
Total LPAH	5.2	5.2	0.059	0.046	0.018 J									
VOCs (mg/kg)														
EPA 8260/824														
1,1,1-Trichloroethane						0.005 U								
1,1,2,2-Tetrachloroethane						0.005 U								
1,1,2-Trichloroethane						0.005 U								
1,1-Dichloroethane						0.005 U								
1,1-Dichloroethene						0.005 U								
1,2,3-Trichlorobenzene						10 U								
1,2-Dichlorobenzene	0.035	0.05				0.005 U								
1,2-Dichloroethane						0.005 U								
1,2-Dichloropropane						0.005 U								
1,3-Dichlorobenzene						0.005 U								
1,4-Dichlorobenzene	0.11	0.11				0.005 U								
2-Butanone						0.01 U								
2-Chloroethylvinylether						0.01 U								
2-Hexanone						0.01 U								
4-Methyl-2-Pentanone (MIBK)						0.01 U								
Acetone						0.05 U								
Benzene						0.005 U								
bis(2-Chloroethoxy) Methane						10 U								
Bis-(2-Chloroethyl) Ether						10 U								
Bromodichloromethane						0.005 U								
Bromoform						0.005 U								
Bromomethane						0.005 U								
Carbon Disulfide						0.005 U								
Carbon Tetrachloride						0.005 U								
Chlorobenzene						0.005 U								
Chloroethane						0.005 U								

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a)										G			
Sample Name:			CM-S6	CM-S7	CM-S8	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13
Depth Range:							(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)
Date Collected:			11/8/2000	11/7/2000	11/7/2000	10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
	SQS (b)	CSL (c)												
Chloroform						0.005 U								
Chloromethane						0.005 U								
cis-1,2-Dichloroethene						0.005 U								
cis-1,3-Dichloropropene						0.005 U								
Dibromochloromethane						0.005 U								
Ethylbenzene			0.0013 U	0.0014 U	0.0013 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methylene Chloride						0.017								
Styrene						0.005 U								
Tetrachloroethene			0.0013 U	0.0014 U	0.0013 U	0.005 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
Toluene						0.005 U								
trans-1,2-Dichloroethene						0.005 U								
trans-1,3-Dichloropropene						0.005 U								
Trichloroethene			0.0013 U	0.0014 U	0.0013 U	0.005 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Trichlorofluoromethane						0.005 U								
Trichlorotrifluoroethane						0.01 U								
Vinyl Acetate						0.01 U								
Vinyl Chloride						0.005 U								
Xylenes, Total			0.0013 U	0.0014 U	0.0013 U	0.005 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name:	Cleanup Screening Levels (a) SQS (b)	Cleanup Screening Levels (a) CSL (c)	CM-S6	CM-S7	CM-S8	ECI-Area-R	RZA-B-2	RZA-B-4	RZA-B-5	RZA-B-7	G RZA-B-9	RZA-B-10	RZA-B-11	RZA-B-13
Depth Range:							(13-14.5)	(0-1.5)	(10.5-11.5)	(0-1.5)	(2-3)	(4-6)	(6-7)	(3-4)
Date Collected:			11/8/2000	11/7/2000	11/7/2000	10/9/1991	10/19/1990	10/19/1990	10/22/1990	10/23/1990	10/24/1990	10/24/1990	10/29/1990	10/30/1990
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment/ Storm Water Outfall	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
GRAIN SIZE														
Clay (phi <10) (%)			5.5	5.3	5									
Clay (phi 8 to 9) (%)			2.2	2.1	1.9									
Clay (phi 9 to 10) (%)			1.7	1.7	1.8									
Fines (%)			49.3	50	40.3									
Gravel (>phi -1) (%)			0.4	1.6	1.9									
Sand (phi 0 to 1) (%)			2.5	1.6	2.2									
Sand (phi -1 to 0) (%)			0.7	0.7	1.3									
Sand (phi 1 to 2) (%)			7.3	5.7	13.6									
Sand (phi 2 to 3) (%)			15.3	15.4	19.7									
Sand (phi 3 to 4) (%)			24.6	25	21									
Silt (phi 4 to 5) (%)			20.3	22.7	14.4									
Silt (phi 5 to 6) (%)			10.4	9	8.3									
Silt (phi 6 to 7) (%)			6.1	6.6	5.7									
Silt (phi 7 to 8) (%)			3.1	2.6	3.2									

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Sample Name:			RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:												
Date Collected:			10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990	10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Petroleum Hydrocarbons (mg/kg)												
NWPTH-D/EPA413.1												
Diesel Range Organics												
Total Oil & Grease			140	240	170	250	30 U	96	81	100		
Metals (mg/kg)												
EPA 6000/7000/200.8												
Antimony			0.64	1.3	0.89	1.1	0.56	0.87	0.17	1	0.7	0.6
Arsenic	57	93	6.7	6.5	2.5	11	3.6	3.4	3.3	10	0.8	0.8
Beryllium												
Cadmium	5.1	6.7	2.6	4.2	3.7	3.8	2.8	3.5	3.4	3.6	0.4	0.6
Chromium	260	270	48	72	42	70	41	55	39	51		
Copper	390	390	18	25	15	40	4.4	14	9.6	17	60	75
Lead	450	530	24	26	17	27	11	15	14	16	15	87
Mercury	0.41	0.59	0.14	0.92	0.11	0.17	0.1	0.9	0.071	0.14	0.1	0.1
Nickel			30	68	49	73	29	58	53	41	58	65
Selenium												
Silver	6.1	6.1	1.3	1.1	0.35	0.58	0.41	0.28	0.45	0.29	0.5	0.5
Thallium												
Zinc	410	960	64	74	62	87	55	59	53	54	142	123
Pesticides and PCBs (mg/kg)												
EPA 8080												
4,4'-DDD												
4,4'-DDE												
4,4'-DDT												
Aldrin			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0008 U	0.0008 U
Alpha-BHC												
Aroclor 1016												
Aroclor 1221												
Aroclor 1232												
Aroclor 1242												
Aroclor 1248												
Aroclor 1254												
Aroclor 1260												
Aroclor 1262												
Aroclor 1268												
Beta-BHC												
Chlordane			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.034 U	0.032 U
Delta-BHC												
Dieldrin			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0017 U	0.0016 U
EndoSulfan I												
Endosulfan Sulfate												
Endrin												
Endrin Aldehyde												
Gamma-BHC												
Heptachlor			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0008 U	0.0008 U
Heptachlor Epoxide												
Lindane			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0008 U	0.0008 U
Methoxychlor												
Total DDT			0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.0017 U	0.0016 U
Total PCBs	0.13	1	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.034 U	0.032 U
Toxaphene												
Organotin (mg/L)												
Porewater												
Butyl Tin Ion												
Dibutyl Tin Ion												

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Sample Name:			RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:												
Date Collected:			10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990	10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Tributyltin	0.05 (d)	0.15 (d)										
Tributyl Tins (mg/kg)												
Krone 1988 SIM GC/MS												
Tributyl Tin Ion												
Dibutyl Tin Ion												
Butyl Tin Ion												
Bioassay												
Biochemical Oxygen Demand (mg/Kg)			425.4	419.4	521.3	667.5	375	354.2	458.9	563.5		
Chemical Oxygen Demand (mg/Kg)			49743.6	98716	100061.5	112715.2	22727.3	48451.1	16408.9	22881.6		
Microtox Test (% Light Change)			-24	-24	-23.3	-16.4	-27	-4.4	3.5	-1.7		
Amphipod Mortality (%)			40	50	56	50	9	34	31	61		
Echinoderm Mortality (%)			11.1	6.7	9.8	24.6	7	2.7	8.4	8.6		
Neanthes Mortality (%)			4	4	8	10	2	6	6	4		

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

Sample Name:	Cleanup Screening Levels (a) SQS (b)	Cleanup Screening Levels (a) CSL (c)	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:												
Date Collected:			10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990	10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Conventionals												
Ammonia (mg/Kg)												
Sulfide (mg/kg)												
Total Kjeldahl Nitrogen (mg/Kg)			470	1800	770	500	250	600	560	640		
Total Sulfides (mg/Kg)											3.2	2.4
Total Volatile Solids (mg/Kg)			5.2	7.4	7.6	6.8	3.3	3.3	1.7	2.6		
N Ammonia (mg N/kg)												
Total Organic Carbon (%)	10 (e)	10 (e)	2.01	3.02	3	3.41	0.97	1.28	1.04	1.43	2.52	2.65
Total Solids (%)			66.3	66.2	65	60.4	74.8	66.5	76.3	70.1	71.6	69.8
Total Volatile Solids (%)	25 (e)	25 (e)									6.61	6.60
Preserved Total Solids (%)												
SVOCs (mg/kg)												
EPA SW8270/8120												
1,2,4-Trichlorobenzene	0.031	0.051	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.0077 U	0.0073 U
1,2-Dichlorobenzene	0.035	0.05	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.0010 U	0.0009 U
1,3-Dichlorobenzene			0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.0015 U	0.0014 U
1,4-Dichlorobenzene	0.11	0.11	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.0038 U	0.00360
1-Methylnaphthalene												
2,2'-Oxybis(1-Chloropropane)												
2,4,5-Trichlorophenol												
2,4,6-Trichlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol	0.029	0.029	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.012 U	0.011 U
2,4-Dinitrophenol												
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
2-Chloronaphthalene												
2-Chlorophenol												
2-Methylnaphthalene	38	64	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.004 J	0.0069 U
2-Methylphenol	0.063	0.063	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.0050 U	0.0047 U
2-Nitroaniline												
2-Nitrophenol												
3- and 4-Methylphenol												
3,3'-Dichlorobenzidine												
3-Nitroaniline												
4,6-Dinitro-2-Methylphenol												
4-Bromophenyl-phenylether												
4-Chloro-3-methylphenol												
4-Chloroaniline												
4-Chlorophenyl-phenylether												
4-Methylphenol	0.67	0.67	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.0025 U	0.0024 U
4-Nitroaniline												
4-Nitrophenol												
Acenaphthene	0.5	0.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.005 J	0.0045 U
Acenaphthylene	1.3	1.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.013 J	0.0008 U
Aniline												
Anthracene	0.96	0.96	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.012 J	0.009 J
Benzo(a)anthracene	1.3	1.6	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.055	0.036
Benzo(a)pyrene	1.6	1.6	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.034	0.028
Benzo(b)fluoranthene			0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U		
Benzo(g,h,i)perylene	0.67	0.72	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.030	0.018
Benzo(k)fluoranthene			0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U		
Benzofluoranthenes	3.2	3.6									0.083	0.049 J
Benzoic Acid	0.65	0.65	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.058 J	0.012 U
Benzyl Alcohol	0.057	0.073	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.0044 U	0.0042 U
Benzyl butyl phthalate	0.063	0.9	0.47 U	0.95	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.037 J	0.028
Bis(2-ethylhexyl)phthalate	1.3	3.1	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	0.049 B	0.028 B

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:												
Date Collected:			10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990	10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Carbazole												
Chrysene	1.4	2.8	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.039	0.032
cPAH TEQ												
Dibenz(a,h)anthracene			0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U		
Dibenzo(a,h)anthracene	0.23	0.23									0.0085 U	0.0081 U
Dibenzofuran	0.54	0.54	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.0070 U	0.0066 U
Diethylphthalate	0.2	1.2	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.0033 U	0.0031 U
Dimethylphthalate	0.071	0.16	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.012 J	0.0038 U
Di-n-Butylphthalate	1.4	5.1	1.4 U	1.4 U	1.4 U	1.9	1.4 U	1.4 U	3.5	1.4 U	0.0064 U	0.0061 U
Di-n-octyl phthalate	6.2	6.2	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	0.010 J	0.013 U
Fluoranthene	1.7	2.5	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.074	0.040
Fluorene	0.54	0.54	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.013	0.0046 U
Hexachlorobenzene	0.022	0.07	0.168 U	0.168 U	0.168 U	0.168 U	0.168 U	0.168 U	0.168 U	0.168 U	0.0073 U	0.0069 U
Hexachlorobutadiene	0.011	0.12	0.212 U	0.212 U	0.212 U	0.212 U	0.212 U	0.212 U	0.212 U	0.212 U	0.0076 U	0.0072 U
Hexachlorocyclopentadiene												
Hexachloroethane			1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	0.0066 U	0.0062 U
Indeno(1,2,3-cd)pyrene	0.6	0.69	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.025	0.017 J
Isophorone												
Naphthalene	2.1	2.1	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.013 J	0.011 J
Nitrobenzene												
N-nitrosodimethylamine												
N-Nitroso-di-n-propylamine												
N-Nitrosodiphenylamine	0.028	0.04	0.161 U	0.161 U	0.161 U	0.161 U	0.161 U	0.161 U	0.161 U	0.161 U	0.013 U	0.013 U
Pentachlorophenol	0.36	0.69	0.504 U	0.504 U	0.504 U	0.504 U	0.504 U	0.504 U	0.504 U	0.504 U	0.0053 U	0.0051 U
Phenanthrene	1.5	1.5	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.030	0.022
Phenol	0.42	1.2	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.0033 U	0.0032 U
Pyrene	2.6	3.3	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.076	0.054
Total HPAH	12	17	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	0.416	0.274 J
Total LPAH	5.2	5.2	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.086 J	0.042 J
VOCs (mg/kg)												
EPA 8260/824												
1,1,1-Trichloroethane												
1,1,2,2-Tetrachloroethane												
1,1,2-Trichloroethane												
1,1-Dichloroethane												
1,1-Dichloroethene												
1,2,3-Trichlorobenzene												
1,2-Dichlorobenzene	0.035	0.05										
1,2-Dichloroethane												
1,2-Dichloropropane												
1,3-Dichlorobenzene												
1,4-Dichlorobenzene	0.11	0.11										
2-Butanone												
2-Chloroethylvinylether												
2-Hexanone												
4-Methyl-2-Pentanone (MIBK)												
Acetone												
Benzene												
bis(2-Chloroethoxy) Methane												
Bis-(2-Chloroethyl) Ether												
Bromodichloromethane												
Bromoform												
Bromomethane												
Carbon Disulfide												
Carbon Tetrachloride												
Chlorobenzene												
Chloroethane												

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:												
Date Collected:			10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990	10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
Chloroform												
Chloromethane												
cis-1,2-Dichloroethene												
cis-1,3-Dichloropropene												
Dibromochloromethane												
Ethylbenzene											0.0026 U	0.0025 U
Methylene Chloride												
Styrene												
Tetrachloroethene											0.0015 U	0.0014 U
Toluene												
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene												
Trichloroethene											0.0017 U	0.0017 U
Trichlorofluoromethane												
Trichlorotrifluoroethane												
Vinyl Acetate												
Vinyl Chloride												
Xylenes, Total											0.0029 U	0.0028 U

TABLE C-22
MARINE SEDIMENT SAMPLE RESULTS - DRY WEIGHT
AMERON/HULBERT SITE
PORT OF EVERETT, WASHINGTON

	Cleanup Screening Levels (a) SQS (b)	CSL (c)	RZA-C-1	RZA-C-2	RZA-C-3	RZA-C-4	RZA-C-5	RZA-C-6	RZA-C-7	RZA-C-8	LS-COMP-A	LS-COMP-B
Depth Range:												
Date Collected:			10/21/1990	10/30/1990	10/24/1990	10/23/1990	10/21/1990	10/30/1990	10/25/1990	10/23/1990	10/8/1987	10/8/1987
Sample Type:			Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core	Marine Sediment Core
GRAIN SIZE												
Clay (phi <10) (%)												
Clay (phi 8 to 9) (%)												
Clay (phi 9 to 10) (%)												
Fines (%)												
Gravel (>phi -1) (%)												
Sand (phi 0 to 1) (%)												
Sand (phi -1 to 0) (%)												
Sand (phi 1 to 2) (%)												
Sand (phi 2 to 3) (%)												
Sand (phi 3 to 4) (%)												
Silt (phi 4 to 5) (%)												
Silt (phi 5 to 6) (%)												
Silt (phi 6 to 7) (%)												
Silt (phi 7 to 8) (%)												

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Shaded value indicates exceedance of SQS
Boxed value indicates exceedance of CSL

(a) Dry weight equivalent criteria are based on the Puget Sound Apparent Effect Threshold Values (Barrick et al. 1988)
(b) SMS Sediment Quality Standard (Chapter 173-204 WAC).
(c) CSL Cleanup Screening Level (Chapter 173-204 WAC).
(d) Ecology, 1996, SMS technical memorandum: testing, reporting and evaluation of tribuyltin data in PSDAA and SMA programs
(e) DMMP clarification paper and SMS technical information memorandum: Management of Wood Waste Under Dredged Material Management Program and the SMS Cleanup Program.

APPENDIX D

Logs of Exploration

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS[2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes: 1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.

2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.

3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50%	- "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50%	- "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30%	- "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15%	- "with gravel," "with sand," "with silt," etc.
	≤ 5%	- "with trace gravel," "with trace sand," "with trace silt," etc., or not noted

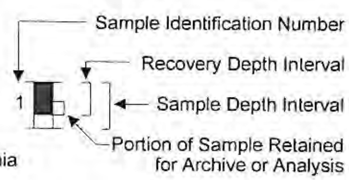
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Single-Tube Core Barrel
f	Double-Tube Core Barrel
g	2.50-inch O.D., 2.00-inch I.D. WSDOT
h	3.00-inch O.D., 2.375-inch I.D. Mod. California
i	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Vibrocore (Rotosonic/Geoprobe)
5	Other - See text if applicable

SAMPLE NUMBER & INTERVAL



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

Approximate water level at time of drilling (ATD)

Approximate water level at time other than ATD

LANDAU ASSOCIATES

Ameron-Hulbert Upland Investigation
Everett, Washington

Soil Classification System and Key

Figure D-1

Boring Logs

G-FA-100

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	
0						SM	Black, silty, medium SAND with organics (roots), trace black, sand-size, granular material (apparent sandblast grit) (no odor, no sheen) (loose, moist) [Fill] Analytical sample G-FA-100 (0-1) collected at 13:33 from 0-1 ft. bgs	Groundwater not encountered.
						SP/ SM	Gray, fine to medium SAND with silt, trace mottling (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample G-FA-100 (1-2) collected at 13:35 from 1-2 ft. bgs	
2	1	d3		0.0				
						SP	Gray, fine to medium SAND, with trace fine organics (no odor, no sheen) (medium dense, moist) [Hydrualic Fill]	
4								

Boring Completed 11/30/10
Total Depth of Boring = 4.0 ft.

6

8

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

0147029.500.610 1/16/14 N:\PROJECTS\147029.500.610.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

North Marina
Ameron-Hulbert Site
RI/FS Report
Everett, Washington

Log of Boring G-FA-100

Figure
D-2

G-FA-101

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Description	Water Level
0					AC	Asphalt	
					SP	Gray, fine to medium SAND with gravel (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
2	1	d3		0.0	DB	White, soft, silt-like material with gravel (concrete-like odor, no sheen) (dense, damp) [Fill]	
4						Analytical sample G-FA-101 (4-5) collected at 12:45 and duplicate analytical sample G-FA-201 (4-5) collected at 12:49 from 4.5-5.5 ft. bgs	
6							∇ ATD
8	2			14.2			
10	3	d3		5.5	SP/SM	Dark gray, fine SAND with silt and wood/organic fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] Analytical sample G-FA-101 (10.5-11.5) at 12:47 collected from 10.5-11.5 ft. bgs	
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/30/10
Total Depth of Boring = 12.0 ft

Depth scale: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

G-FA-101a

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE	GROUNDWATER
							Drilling Method: Geoprobe™ Ground Elevation (ft):	
0						AC	Asphalt	Groundwater not encountered.
						GM	Brown, sandy, fine to coarse GRAVEL with silt (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2		d3		.01		SP	Gray, fine SAND with medium sand (no odor, no sheen) (moist, medium dense) [Fill]	
							Analytical sample G-FA-101a (3.0-3.5) at 14:25 collected from 3.0-3.5 ft. bgs	
4								
							Analytical sample G-FA-101a (5.0-5.5) at 14:30 collected from 5.0-5.5 ft. bgs	
6				0.1			Analytical sample G-FA-101a (5.5-6.5) at 14:35 collected from 5.5-6.5 ft. bgs	
		d3					-Laminated, frequent 2"-3" thick layers of moderately decomposed wood pieces larger than 1.5" sampler diamater from 6.5 to 8.5 ft. bgs	
8								
10		d3		0.0				
12								

Boring Completed 05/29/13
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

G-FA-101b

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

Drilling Method: Geoprobe™

Ground Elevation (ft): ______

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Water Level
0						AC	Asphalt	
						GP	Gray, sandy, fine to coarse GRAVEL (no odor, no sheen) (loose, dry) [Base Coarse Fill]	
2		d3		0.1		SP	Brown, fine to medium SAND (no odor, no sheen) (medium dense, damp) [Fill]	
							Analytical sample G-FA-101b (3.0-3.5) at 13:40 collected from 3.0-3.5 ft. bgs	
4				0.2		SP	Gray, fine SAND with medium sand and stratified, scattered 1"-2" layers of 1/4" sized moderately decomposed sawdust (no odor, no sheen) (medium dense, moist to wet) [Fill]	
6							Analytical sample G-FA-101b (5.0-5.5) at 13:45 collected from 5.0-5.5 ft. bgs	
							Analytical sample G-FA-101b (5.5-6.5) at 13:50 collected from 5.5-6.5 ft. bgs	
8		d3						
								ATD
10		d3		0.0				
12								

Boring Completed 05/29/13
Total Depth of Boring = 12.0 ft.

14 16 18 20

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

G-FA-101c

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SM	Brown, silty, gravelly, fine to coarse SAND (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
2		d3				DB	White to light gray, soft, silt-like material (concrete-like odor, no sheen) (soft to medium stiff, damp) [Fill]	
				11.1			Analytical sample G-FA-101c (3.0-4.0) at 10:50 collected from 3.0-4.0 ft. bgs	
6						SP	Gray, fine to medium SAND (no odor, no sheen) (medium dense, moist to wet) [Fill]	
							Analytical sample G-FA-101c (6.0-7.0) at 11:00 collected from 6.0-7.0 ft. bgs	
		d3		0.0				
								ATD
10		d3					-with 1/4" pieces of moderately weathered sawdust at 11 ft. bgs	
12								

Boring Completed 05/29/13
Total Depth of Boring = 12.0 ft.

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

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G-FA-101d

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						GP	Gray, fine to coarse GRAVEL with sand (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2		d3		0.0		SP	Gray, fine SAND with medium sand and scattered laminated 1" layers of moderately decomposed 1/4" sawdust (no odor, no sheen) (medium dense, moist to wet) [Fill]	
							Analytical sample G-FA-101d (3.0-3.5) at 14:05 collected from 3.0-3.5 ft. bgs	
4								
							Analytical sample G-FA-101d (5.0-5.5) at 14:10 collected from 5.0-5.5 ft. bgs	
6				0.1			-1" thick layer of black, rounded, 0.05" diameter nodules in silt matrix at 5.75 ft. bgs	
							Analytical sample G-FA-101d (5.5-6.5) at 14:15 collected from 5.5-6.5 ft. bgs	
		d3					Analytical sample G-FA-101d (7.0-8.0) at 14:20 collected from 7.0-8.0 ft. bgs	
8								ATD
10								
		d3		0.1				
12								

Boring Completed 05/29/13
Total Depth of Boring = 12.0 ft

Depth (ft): 14, 16, 18, 20

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

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North Marina
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RI/FS Report
Everett, Washington

Log of Boring G-FA-101d

Figure D-7

G-FA-101e

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP-SM	Brown, gravelly, fine to coarse SAND with silt (no odor, no sheen) (loose, dry) [Base Coarse Fill]	
2		d3				DB	Pistachio green and brown with gray mottling, soft, silt-like material (concrete-like odor, no sheen) (soft, moist) [Fill] -Hard concrete at 2.25-2.75 ft. bgs	
4				0.0			Analytical sample G-FA-101e (3.0-4.0) at 12:05 collected from 3.0-4.0 ft. bgs -Hard concrete at 4-4.5 ft. bgs	
6							-Slightly weathered wood piece larger than 2" sampler diameter at 7 ft. bgs	ATD
8		d3		0.0		SP	Gray, fine SAND with medium sand (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
10							Analytical sample G-FA-101e (9.0-10.0) at 12:10 collected from 9.0-10.0 ft. bgs	

Boring Completed 05/29/13
Total Depth of Boring = 10.0 ft.

12
14
16
18
20

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

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North Marina Ameron-Hulbert Site RI/FS Report Everett, Washington	Log of Boring G-FA-101e	Figure D-8

G-FA-101f

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0						AC	Asphalt	Groundwater not encountered.
0.3						DB	Hard concrete from 0.3-1.5 ft. bgs	
1.5		d3					No recovery	
5		d3		0.0		DB	Light gray with dark speckles, soft, silt-like material (concrete-like odor, no sheen) (soft, moist) [Fill]	
9.8						SP	Dark gray, fine sand (no odor, no sheen) (moist, medium dense) [Fill]	

Boring Completed 05/29/13
Total Depth of Boring = 10.0 ft.

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

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North Marina
Ameron-Hulbert Site
RI/FS Report
Everett, Washington

Log of Boring G-FA-101f

Figure D-9

G-FA-101g

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval / Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0					AC	Asphalt	Groundwater not encountered.
					GP	Gray, medium GRAVEL (no odor, no sheen) (loose, moist) [Base Coarse Fill]	
			0.0		SP	Brown, medium SAND with fine sand (no odor, no sheen) (medium dense, moist) [Fill]	
2	d3						
						Analytical sample G-FA-101g (3.0-4.0) at 11:45 collected from 3.0-4.0 ft. bgs	
4							
6						Analytical sample G-FA-101g (6.0-7.0) at 11:50 collected from 6.0-7.0 ft. bgs	
			0.0		WD	Gray-brown 1/4" SAWDUST and WOOD DEBRIS larger than 2" sampler diameter with sand and silt (no odor, no sheen) (loose, moist) [Fill]	
	d3				SP	Gray, fine to medium SAND (no odor, no sheen) (medium dense, moist) [Fill]	
8							
10							

Boring Completed 05/29/13
Total Depth of Boring = 10.0 ft.

12
14
16
18
20

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

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Everett, Washington

Log of Boring G-FA-101g

Figure D-10

G-FA-102

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2	1	d3		0.0	SP	Brown, fine SAND with trace silt (no odor, no sheen) (medium dense, moist to wet) [Fill] -Piece of white, hard, odorless, concrete-like material at 3 ft. bgs Collected soil sample G-FA-102 (2-3) at 12:14 from 3-4 ft. bgs Collected soil sample G-FA-102 (3-4) at 12:16 from 4-5 ft. bgs	
6							ATD
8	2	d3		0.0	SM	Gray, silty, fine SAND, dispersed wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
10–12	3	d3		0.0			

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/30/10
Total Depth of Boring = 12.0 ft.

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

G-FA-103

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile Description	Water Level
0					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Fill]	
0.5					DB	White, soft, silt-like material with gravel (mild hydrocarbon odor, no sheen) (dense, moist to wet) [Fill]	
1–2	1	d3		0.0		Analytical sample G-FA-103 (1-2) collected at 11:10 from 1-2 ft. bgs	
~5							ATD
5.5–6.5						Analytical sample G-FA-103 (5.5-6.5) collected at 11:20 from 5.5-6.5 ft. bgs	
6.5	2	d3		31.2	SP/SM	Dark gray, fine SAND with silt and wood/organic fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
8–9						Analytical sample G-FA-103 (8-9) collected at 11:35 from 8-9 ft. bgs	
10–12	3	d3		0.0			

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/30/10
Total Depth of Boring = 12.0 ft.

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

G-FA-103a

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	Water Level (GROUNDWATER)
						Drilling Method: Geoprobe™	
						Ground Elevation (ft):	
0					AC	Asphalt	
					GP	Gray, fine to coarse GRAVEL with trace sand and silt (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
		d3		0.3	GM	Analytical sample G-FA-103a (1.0-2.0) at 10:00 collected from 1.0-2.0 ft. bgs Brown, silty, fine to medium GRAVEL (no odor, no sheen) (medium dense, moist) [Fill]	
		d3		0.2	SP-SM	Dark gray, fine to medium SAND with gravel and silt and trace 1/2" pieces of wood (no odor, no sheen) (medium dense, wet) [Fill] Analytical sample G-FA-103a (5.5-6.5) at 10:05 collected from 5.5-6.5 ft. bgs Analytical sample G-FA-103a (7.0-8.0) at 10:10 collected from 7.0-8.0 ft. bgs	ATD
		d3		0.1	SM/ML	Gray, fine SAND with silt to sandy SILT with scattered laminated 1"-2" layers of moderately weathered fine sawdust and wood larger than the 2" sampler diameter (no odor, no sheen) (medium dense, wet) [Fill]	
12							

Boring Completed 05/29/13
Total Depth of Boring = 12.0 ft.

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

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Log of Boring G-FA-103a

Figure D-13

G-FA-103b

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE	Water Level (GROUNDWATER)
							Drilling Method: Geoprobe™ Ground Elevation (ft):	
0						SM	Brown, silty, gravelly, fine to coarse SAND (no odor, no sheen) (medium dense, moist) [Fill]	
				0.1			Analytical sample G-FA-103b (1.0-2.0) at 10:25 collected from 1.0-2.0 ft. bgs	
2		d3				SP	Gray, medium SAND with trace fine sand and silt and scattered laminated 1"-2" layers of moderately weathered wood pieces (no odor, no sheen) (medium dense, moist to wet) [Fill]	
4								ATD
6				0.2			Analytical sample G-FA-103b (5.5-6.5) at 10:30 collected from 5.5-6.5 ft. bgs	
		d3					Analytical sample G-FA-103b (7.0-8.0) at 10:35 collected from 7.0-8.0 ft. bgs	
8								
10								
		d3		0.1		WD	Tan, slightly to moderately weathered 1/4" sawdust with silt (no odor, no sheen) (loose, moist) [Fill]	
12						ML	Gray, clayey SILT (no odor, no sheen) (medium stiff, moist)	

Boring Completed 05/29/13
Total Depth of Boring = 12.0 ft.

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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G-FA-103c

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	GROUNDWATER
						Drilling Method: Geoprobe™ Ground Elevation (ft):	
0					AC	Asphalt	
					GP	Gray, fine to medium GRAVEL (no odor, no sheen) (loose, dry) [Base Coarse Fill]	Groundwater not encountered.
2		d3		0.5	DB	Light green and pistachio with some dark specks, soft silt-like material (concrete-like odor, no sheen) (soft to medium stiff, moist) [Fill] Analytical sample G-FA-103c (3.0-4.0) at 14:55 collected from 3.0-4.0 ft. bgs -Hard concrete at 5.5 ft. bgs -Layer of gray fine sand from 7.0-7.25 ft. bgs	
6–8		d3					
8				0.1	SP	Gray to brown, fine SAND with trace medium sand (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample G-FA-103c (8.5-9.5) at 15:00 collected from 8.5-9.5 ft. bgs	
10							

Boring Completed 05/29/13
Total Depth of Boring = 10.0 ft

Depth (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

G-FA-105a

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0	1	d3		0.5		SP	Black, sand size, granular material (apparent sandblast grit) (no odor, no sheen) (medium dense, moist) [Fill]	Groundwater not encountered.
						SP	Brown, fine to coarse SAND with gravel (no odor, no sheen) (medium dense, moist) [Fill]	
2						SP	Brown and grey, medium to coarse SAND (no odor, no sheen) (medium dense, moist) [Fill]	
						SP	Analytical sample G-FA-105a (2-3) collected at 1355 from 2-3 ft. bgs Grey, fine SAND (no odor, no sheen) (medium dense, moist) [Fill]	
4								

Boring Completed 12/09/11
Total Depth of Boring = 4.0 ft.

Depth scale (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

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Everett, Washington

Log of Boring G-FA-105a

Figure D-16

G-FA-110

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						SP/ SM	Grayish tan, with red layers, fine to medium SAND with silt (mild concrete-like odor, no sheen) (dense, moist to wet) [Fill]	
								ATD
2	1	d3		0.0				
							Analytical sample G-FA-110 (3.5-4.5) collected at 14:15 from 3.5-4.5 ft. bgs	
4							-Dark red, medium sized, spherical grains at 4 ft. bgs	
	2	d3		0.0		DB	Gray, silt-like material (mild concrete-like odor, no sheen) (dense, moist) [Fill]	
							-Refusal at 4.5 ft. bgs due to concrete at base of settling basin	

Boring Completed 12/20/10
Total Depth of Boring = 4.5 ft.

6

8

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

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North Marina Ameron-Hulbert Site RI/FS Report Everett, Washington	Log of Boring G-FA-110	Figure D-17

G-FA-111

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Groundwater
0					SP/SM	Grayish red, fine to medium SAND with silt and trace gravel (no odor, no sheen) (medium dense, damp) [Fill]	Groundwater not encountered.
2	1	d3		0.0	DB	Grayish red, silt-like material with sand (concrete-like odor, no sheen) (medium dense, damp) [Fill] Analytical sample G-FA-111 (2-3) collected at 14:00 from 2-3 ft. bgs	
					SP/SM	Grayish tan, fine to medium SAND with silt (concrete-like odor, no sheen) (medium dense, damp to moist) [Fill]	
4	2	d3		0.0			
						-Refusal at 5 ft. bgs due to hard concrete base of settling basin	

SAMPLE DATA — SOIL PROFILE — GROUNDWATER

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/20/10
Total Depth of Boring = 5.0 ft.

Depth scale: 0, 2, 4, 6, 8

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

G-FA-112

SAMPLE DATA						SOIL PROFILE		GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	
0						SP/ SM	Red and tan layers of fine to medium SAND with silt (no odor, no sheen) (dense, damp) [Fill]	Groundwater not encountered.
						DB	Gray, tan, and orange layers of silt-like material (concrete-like odor, no sheen) (dense, moist) [Fill]	
2	1	d3		0.0				
							Analytical sample G-FA-112 (3-4) collected at 13:45 from 3-4 ft bgs	
4								
	2	d3		0.0			-with medium sand at 4.5-5 ft	
							-Refusal at 5 ft. bgs due to concrete base of settling basin	
6								
8								

Boring Completed 12/20/10
Total Depth of Boring = 5.0 ft.

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

G-FA-113

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft) / Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0					AC	Asphalt	
					SP SM	Gray, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
1	d3		0.0			Brown, silty, fine to medium SAND (mild hydrocarbon odor, no sheen) (medium dense, damp to wet) [Fill] Analytical sample G-FA-113 (0-1) collected at 09:50 from 1.0-2.0 ft. bgs Analytical sample G-FA-113 (1-2) collected at 09:52 from 2.0-3.0 ft. bgs Analytical sample G-FA-113 (2-3) collected at 09:54 from 3.0-4.0 ft. bgs	ATD
					SM	Gray, silty, fine SAND with dispersed wood fragments (no odor, no sheen) (medium dense, wet) [Fill]	
2	d3		0.0				
3	d3		0.0				

Depth scale (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Boring Completed 11/22/10
Total Depth of Boring = 12.0 ft.

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

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G-FA-114

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
						SP-SM	Brown, medium to coarse SAND with gravel and silt (no odor, no sheen) (medium dense, moist) [Fill]	
2		d3						
	1			1.1			Analytical sample G-FA-114 (1-2) collected at 0945 from 2-3 ft. bgs	
						ML	White to light grey, silt-like material (concrete-like odor, no sheen) (soft, moist) [Fill]	
						SP	Red-brown medium SAND (no odor, no sheen) (medium dense, moist) [Fill]	
	2					ML	White to light grey, silt-like material (concrete-like odor, no sheen) (soft, moist) [Fill] Analytical sample G-FA-114 (2-3) collected at 0940 from 3-4 ft. bgs	
4						SP	Analytical sample G-FA-114 (3-4) collected at 0950 from 4-5 ft. bgs	
	3							
				0.3				ATD
6		d3						
	4					SP	Red-brown medium sand with occasional 1/4" thick layers of fine organics (no odor, no sheen) (medium dense, moist) [Fill]	
8								
				0.7			Grey, medium SAND (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample G-FA-114 (6-7) collected at 0955 from 7-8 ft. bgs -significant amounts of moderately weathered wood at 11' BGS	
10		d3						
12								

Boring Completed 12/09/11
Total Depth of Boring = 12.0 ft

14

16

18

20

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

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Log of Boring G-FA-114

Figure D-21

G-FA-115

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0						AC	Asphalt	
						GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
2		d3		0.0		SP	Brown, fine to coarse SAND with coarse angular gravel (no odor, no sheen) (medium dense, moist) [Fill]	
4	1			0.4		SP	Red-brown, fine to medium SAND with occasional silt and fine organic interbeds (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample G-FA-115 (2-3) collected at 1015 from 3-4 ft. bgs Duplicate analytical sample G-FA-501 (2-3) collected at 1050 from 3-4 ft. bgs	
6		d3						∇ ATD
8				0.4		SP	Grey, fine SAND with occasional 1/4" fine to medium organic interbeds (no odor, no sheen) (medium dense, saturated) [Fill]	
10		d3						
12								

SAMPLE DATA — SOIL PROFILE — GROUNDWATER

Drilling Method: Geoprobe™

Ground Elevation (ft):

Boring Completed 12/09/11
Total Depth of Boring = 12.0 ft

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

G-FA-115a

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
						SP-SM	Brown, fine to medium SAND with silt (no odor, no sheen) (medium dense, moist) [Fill]	
2		d3				SP	Light grey, medium SAND with gravel (no odor, no sheen) (medium dense, moist) [Fill]	
	1					SP-SM	Brown, fine to medium SAND with silt (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample G-FA-115a (2-3) collected at 1110 from 2-3 ft. bgs	
	2			0.9		ML	Tan and speckled orange silt like material (concrete-like odor, no sheen) (stiff, moist) [Fill] Analytical sample G-FA-115a (3-3.5) collected at 1112 from 3-3.5 ft. bgs - 1/4" thick layer of decomposed wood at 3.5 ft. BGS	
4						GP	Dark grey, angular, coarse GRAVEL (no odor, no sheen) (medium dense, moist) [Fill]	
	3			0.4		SP-SM	Brown, fine to medium SAND with silt (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample G-FA-115a (4.5-5.5) collected at 1115 from 4.5-5.5 ft. bgs	
6						SP	Grey, fine to medium SAND (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] NOTE: samples collected at this location were labeled according to depth below ground surface, not depth below asphalt and base coarse as at other locations during this sampling event	∇ ATD
8		d3		0.1				
10		d3						
12								
14								
16								
18								
20								

Boring Completed 12/09/11
Total Depth of Boring = 12.0 ft.

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

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LANDAU ASSOCIATES | North Marina Ameron-Hulbert Site RI/FS Report Everett, Washington | Log of Boring G-FA-115a | Figure D-23

G-FA-115b

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0						AC	Asphalt	
						GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
				0.1		SP	Brown, medium SAND with GRAVEL (no odor, no sheen) (medium dense, moist) [Fill]	
2		d3						
	1					SP	Red-brown, fine to medium SAND with occasional 1/8" lenses of fine organics (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample G-FA-115b (2-3) collected at 0910 from 3-4 ft. bgs	
4								
						SP	Grey, fine SAND with occasional 1/4" lenses of organics (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	∇ ATD
6		d3		0.0				
8								
10		d3		0.0				
12								

SAMPLE DATA / SOIL PROFILE / GROUNDWATER

Drilling Method: Geoprobe™

Ground Elevation (ft):

Boring Completed 12/09/11
Total Depth of Boring = 12.0 ft.

14
16
18
20

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

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Log of Boring G-FA-115b

Figure D-24

G-FA-115c

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	Water Level
						Drilling Method: Geoprobe™ Ground Elevation (ft):	
0					AC	Asphalt	
					GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
2		d3			GP/SP	Brown, medium to coarse SAND and grey, coarse GRAVEL (no odor, no sheen) (dense, dry) [Fill]	
4							
	1			0.9		- Black/brown color and a slight, possibly organic, sheen at 5 ft. BGS	ATD
6		d3				Analytical sample G-FA-115c (4-7) collected at 1326 from 5-8 ft. bgs	
8	2					Analytical sample G-FA-115c (7-8) collected at 1331 from 8-9 ft. bgs	
					WD	Dark brown, moderately weathered, fine to medium WOOD DEBRIS (no odor, no sheen) (loose, wet) [Fill]	
10		d3		1.4			
12							

Boring Completed 12/09/11
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

G-GC-100

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP	Gray, medium to coarse SAND with gravel and trace silt (no odor, no sheen) (medium dense, damp) [Base Coarse Fill]	
						SP	Gray, fine to medium SAND with trace silt and trace wood fragments (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill]	
2	1	d3		0.0			Analytical sample G-GC-100 (0-1) collected at 09:55 from 1.5-2.5 ft. bgs	
4							Analytical sample G-GC-100 (1-2) collected at 09:57 from 2.5-3.5 ft. bgs	
							Analycial sample G-GC-100 (2-3) collected at 09:59 from 3.5-4.5 ft. bgs	ATD
6	2	d3		0.0			-Lenses of silt and wood fragments from 5-12 ft. bgs	
8								
10	3	d3		0.0				
12								

Boring Completed 12/20/10
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

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Log of Boring G-GC-100

Figure
D-26

G-GC-101

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP	Brown, fine to medium SAND with trace gravel (no odor, no sheen) (medium dense, damp) [Fill] Analytical sample G-GC-101 (0-1) collected at 10:55 from 0.2-1.2 ft. bgs Analycial sample G-GC-101 (1-2) collectedat 10:57 from 1.2-2.2 ft. bgs	
2	1	d3		0.0				
						SP/SM	Analycial sample G-GC-101 (2-3) collected at 10:59 from 2.2-3.2 ft. bgs	
						SP	Gray, fine to medium SAND with silt and trace black wood, red oxidation line at 3.5 ft. (no odor, no sheen) (medium dense, damp) [Fill]	
4								
							Brown, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, damp) [Hydraulic Fill]	ATD
6	2	d3		0.0				
						SM	Gray, silty, fine to medium SAND with alternating layers of wood fragments (no odor, no sheen) (medium dense, wet) [Fill]	
8							-No recovery 8 - 11 ft. bgs	
10	3	d3		0.0				
						SP	Gray, fine to medium SAND with trace silt and trace wood fragments, flakes of mica (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
12								

Boring Completed 12/20/10
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

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Everett, Washington

Log of Boring G-GC-101

Figure
D-27

G-GC-102

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP	Gray, medium to coarse SAND with gravel and trace silt (no odor, no sheen) (medium dense, damp) [Base Coarse Fill]	
2	1	d3		0.0		SP	Gray, fine to medium SAND with trace silt and trace wood fragments (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill] Analycial sample G-GC-102 (0-1) collected at 09:15 from 1.5-2.5 ft. bgs Analycial sample G-GC-102 (1-2) collected at 09:17 from 2.5-3.5 ft. bgs Analycial sample G-GC-102 (2-3) collected at 09:19 from 3.5-4.5 ft. bgs -Lenses of silt from 5.5 to 6.5 ft. bgs	ATD
6	2	d3		0.0				
10	3	d3		0.0			-Gray, medium SAND with trace gravel (loose to medium dense) from 9.5-11 ft. bgs	
						WD	Solid wood log	
12						SM/ ML	Gray SILT with sand (no odor, no sheen) (medium stiff, moist)	

Boring Completed 12/20/10
Total Depth of Boring = 12.0 ft.

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

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Log of Boring G-GC-102

Figure
D-28

G-GC-103

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Description	Water Level
0					AC	Asphalt	
					SP	Brown, fine to medium SAND with trace silt and gravel (no odor, no sheen) (medium dense, damp) [Fill]	
2	1	d3		0.0		Analycial sample G-GC-103 (0-1) collected at 11:25 from 0.2-1.2 ft. bgs	
						Analycial sample G-GC-103 (1-2) collected at 11:27 from 1.2-2.2 ft. bgs	
						Analycial sample G-GC-103 (2-3) collected at 11:29 from 2.2-3.2 ft. bgs	
4					SP	Gray, fine to medium SAND with trace silt and lenses of wood debris and silt (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill]	ATD
6	2	d3		0.0			
8						Analytical sample G-GC-103 (7-8) collected at 11:31 from 7.2-8.2 ft. bgs	
10	3	d3		0.0			
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/20/10
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

G-GC-104

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP	Brown, fine to medium SAND with gravel and trace silt (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2	1	d3		0.0		SP/ SM	Gray, fine to medium SAND with silt and trace wood (no odor, no sheen) (medium dense, damp) [Fill]	
						SP	Analytical sample G-GC-104 (0-1) collected at 12:00 from 0.2-1.2 ft. bgs Analytical sample G-GC-104 (1-2) collected at 12:02 from 1.2-2.2 ft. bgs Analytical sample G-GC-104 (2-3) collected at 12:04 from 2.2-3.2 ft. bgs	ATD
6	2	d3		0.0			Gray, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill]	
10	3	d3		0.0		SM	Gray, silty, fine to medium SAND with wood fragments (no odor, no sheen) (medium dense, wet) [Hydrualic Fill]	
12								

Boring Completed 12/20/10
Total Depth of Boring = 12.0 ft.

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

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Log of Boring G-GC-104

Figure D-30

G-GC-105

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
	1	d3		0.0	SP	Gray, fine to medium SAND with trace silt and wood fragments (no odor, no sheen) (medium dense, damp to wet) [Hydraulic fill] Analytical sample G-GC-105 (0-1) collected at 11:15 from 1.0-2.0 ft. bgs Analytical sample G-GC-105 (1-2) collected at 11:17 from 2.0-3.0 ft. bgs Analytical sample G-GC-105 (2-3) collected at 11:19 from 3.0-4.0 ft. bgs	ATD (~4.4 ft)
	2	d3		0.0			
~9	3	d3		0.0	SM	Brown, silty, fine SAND with occasional wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/22/10
Total Depth of Boring = 12.0 ft.

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

G-GC-106

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE Drilling Method: GeoprobeTM Ground Elevation (ft): 0	GROUNDWATER Water Level
0						AC	Asphalt	
						SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
						SM	Greenish gray, silty, fine SAND (no odor, no sheen) (dense, damp to moist) [Fill]	
2	1	d3		0.0			Analytical sample G-GC-106 (0-1) collected at 13:15 from 1.0-2.0 ft. bgs	
							Analytical sample G-GC-106 (1-2) collected at 13:17 from 2.0-3.0 ft. bgs	
4							-Trace gravel from 3 to 4 ft. bgs	
							Collected soil sample G-GC-106 (2-3) at 13:19 from 3.0-4.0 ft. bgs	
6							-Lens of dark brown of gravelly, coarse sand	ATD
						SP	Gray, fine to medium SAND with trace silt, shell and wood fragments (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill]	
	2	d3		0.0				
8								
10								
12								
	3	d3		0.0				
14								
16								
	4	d3		0.0				
18								
20								

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

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Everett, Washington

Log of Boring G-GC-106

G-GC-106

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
20						SP	Gray, fine to medium SAND with trace silt, shell and wood fragments (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill]	
22	5	d3		0.0				
24								
26						SP	Gray to brown, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, wet) [Native Soil]	
28	6	d3		0 0				
30								

Boring Completed 11/22/10
Total Depth of Boring = 30.0 ft.

32
34
36
38
40

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

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G-GC-107

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2	1	d3		0.0		SP	Gray, fine to medium SAND with trace silt, trace roots and wood fragments (no odor, no sheen) (medium dense, damp to wet) [Hyrdaulic Fill] Analytical sample G-GC-107 (0-1) collected at 12:40 from 1.0-2.0 ft. bgs Analycial sample G-GC-107 (1-2) collected at 12:42 from 2.0-3.0 ft. bgs Analytical sample G-GC-107 (2-3) collected at 12:44 from 3.0-4.0 ft. bgs	
4								ATD
6								
8	2	d3		0.0			-White shell fragments from 7 to 11 ft	
10	3	d3		0.0				
12						SM	Dark brown, organic rich, silty, fine SAND (no odor, no sheen) (loose, wet) [Fill]	

Boring Completed 11/22/10
Total Depth of Boring = 12.0 ft

14

16

18

20

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

G-GC-108

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SM	Brown, silty, fine SAND with trace gravel (no odor, no sheen) (medium dense, damp) [Fill] Analycial sample G-GC-108 (0-1) collected at 13:10 from 0.2-1.2 ft. bgs	
2	1	d3		0.0		SM	Gray, silty, fine to medium SAND with trace gravel and trace organics (no odor, no sheen) (dense, damp to wet) [Fill] Analycial sample G-GC-108 (1-2) collected at 13.12 from 1.2-2.2 ft. bgs Analycial sample G-GC-108 (2-3) collected at 13:14 from 2.2-3.2 ft. bgs	ATD
6	2	d3		0.0		ML	Gray, sandy, SILT (no odor, no sheen) (stiff, damp) -3 inches of black gravel and burned wood/charcoal fragments at 6.5 ft. bgs -2 inches of wood at 6.7 ft. bgs	
						SP/ SM	Gray, fine to medium SAND with silt and shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] -No recovery from 8-10 ft. bgs	
10	3	d3		0.0		SP/ SM		
12								

Boring Completed 12/20/10
Total Depth of Boring = 12.0 ft.

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

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Everett, Washington

Log of Boring G-GC-108

Figure
D-34

G-GC-109

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Description	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					GP	Brown, sandy, 0.5 inch diameter GRAVEL with silt (no odor, no sheen) (medium dense, damp) [Fill]	
2	1	d3		0.0	SP	Analytical sample G-FA-109 (0-1) collected at 15:25 from 1-2 ft. bgs Analytical sample G-FA-109 (1-2) collected at 15:27 from 2-3 ft. bgs Brown, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist to wet) [Fill] Analytical sample G-FA-109 (2-3) collected at 15:29 from 3-4 ft. bgs	ATD (~4.4 ft)
~7	2	d3		0.0	SP/SM	Gray, fine to medium SAND with silt shell fragments organics and wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
~11	3	d3		0.0			
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/29/10
Total Depth of Boring = 12.0 ft.

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

0147029.500.610 1/16/14 N:\PROJECTS\147029.500.610.GPJ SOIL BORING LOG

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Log of Boring G-GC-109

Figure D-35

G-GC-113

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol / USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0	1			0.0	AC	Concrete (thin veneer)	
					SP-SM	Brown, fine to medium SAND with silt (no odor, no sheen) (medium dense, wet) [Fill]	
						Analytical sample G-GC-113 (0-1) collected at 1140 from 0.1-1.1 ft. bgs	
	2	d3			RK	Brown, medium crushed ROCK (no odor, no sheen) (loose, dry) [Fill]	
2					SP-SM	Brown to red, fine to coarse SAND with gravel and silt (no odor, no sheen) (medium dense, dry) [Fill]	
	3				SM	Brown, very silty, fine to medium SAND (no odor, no sheen) (medium dense, moist) [Fill]	
						Analytical sample G-GC-113 (1-2) collected at 1143 from 1.1-2.1 ft. bgs	
						Analytical sample G-GC-113 (2-3) collected at 1140 from 2.1-3.0 ft. bgs	
3					SM	Grey, very silty, fine to coarse SAND (no odor, no sheen) (medium dense, moist) [Fill]	
4		d3		0.0	ML	Brown to grey, medium to coarse, sandy SILT (no odor, no sheen) (stiff, moist) [Fill]	ATD
4.5					SP-SM	Grey, fine to coarse SAND with silt (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
8					WD	Brown WOOD CHIPS [Fill]	

Boring Completed 12/09/11
Total Depth of Boring = 8.0 ft.

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

G-GC-114

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Concrete (thin veneer)	
	1			0.3		SM	Brown, silty, fine to medium SAND with gravel (no odor, no sheen) (medium dense, moist) [Fill]	
2	2	d3					Analytical sample G-GC-114 (0-1) collected at 1225 from 0.1-1.1 ft. bgs	
						ML	Grey SILT with fine sand (no odor, no sheen) (stiff, moist) [Fill]	
	3						Analytical sample G-GC-114 (1-2) collected at 1228 from 1.1-2.1 ft. bgs	
4	4					SP	Grey, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist) [Hydraulic Fill]	ATD
				0.2			Analytical sample G-GC-114 (2-3) collected at 1231 from 2.1-3.1 ft. bgs	
6		d3					Analytical sample G-GC-114 (3-3.5) collected at 1234 from 3.1-3.5 ft. bgs	
8						WD	Moderately decomposed WOOD DEBRIS (organic odor, no sheen) (medium dense, wet) [Fill]	

Boring Completed 12/09/11
Total Depth of Boring = 8.0 ft.

10

12

14

16

18

20

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

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Log of Boring G-GC-114

Figure
D-37

I-FA-100

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP/SM	Brown, gravelly, medium to coarse SAND with silt (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
2	1	d3		0.0	SP	Gray, fine to medium SAND, with silt, trace wood fragment, and shell fragments (no odor, no sheen) (medium dense to dense, moist to wet) [Hydrudalic Fill] Analytical sample I-FA-100 (2-3) collected at 11:45 from 3-4 ft. bgs	
6	2	d3		0.0			∇ ATD
8					SM	Gray, silty fine SAND with trace wood fragments (no odor, no sheen) (medium dense, wet) [Fill]	
10	3	d3		0.0			
12							

Boring Completed 12/17/10
Total Depth of Boring = 12.0 ft.

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

I-FA-101

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
0						AC	Asphalt	
						SP/SM	Gray, gravelly, medium to coarse SAND with silt (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2	1	d3		0.0		SM	Gray, silty, fine SAND with trace roots organics and wood fragments (no odor, no sheen) (medium dense, wet) [Fill] -Geotextile fabric layer at 3.5 ft.	
4								ATD
6	2	d3		0.0		SP/SM	Gray, fine to medium SAND with silt, trace shell fragments, and trace wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
8								
10	3	d3		0.0		SM	Gray, silty, fine SAND with trace wood fragments (no odor no sheen) (medium dense, wet) [Fill]	
12						WD	Wood, wood fragments, and sawdust [Fill]	
14	4	d3		0.0				
16								
18	5	d3		0.0		SM	Gray, silty, fine SAND (no odor, no sheen) (dense, wet) [Native Soil]	
20								

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

I-FA-101

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE — Drilling Method: GeoprobeTM; Ground Elevation (ft): 0	GROUNDWATER — Water Level
20						SM	Gray, silty, fine SAND (no odor, no sheen) (dense, wet) [Native Soil]	
22	6	d3		0.0				
24								
26	7	d3		0.0				
28								
~29						SP	Gray, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, wet) [Native Soil]	
30	8	d3		0.0				
32								

Boring Completed 12/17/10
Total Depth of Boring = 32.0 ft.

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

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Log of Boring I-FA-101

Figure D-39 (2 of 2)

J-FA-100

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					GP	Brown, sandy, 0.5 in diameter GRAVEL with silt (no odor, no sheen) (medium dense, damp) [Fill]	
2	1	d3		0.0			
4					SM	Gray, silty, fine SAND with wood and shell fragments (no odor, no sheen) (medium dense, moist to wet) [Hydualic Fill]	ATD
						Analycial sample J-FA-100 (4-5) collected at 14:00 from 5-6 ft. bgs	
6							
8	2	d3		0.0			
10					SM/ML	Gray, sandy, SILT with trace organics (no odor, no sheen) (medium stiff, wet) [Fill]	
	3	d3		0.0	WD	-Black, sandy, gravelly, organic/decaying wood material [Fill]	
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/29/10
Total Depth of Boring = 12.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring J-FA-100

Figure D-40

J-FA-101

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					SP/SM	Brown, gravelly, fine to medium SAND with silt (no odor, no sheen) (medium dense, damp) [Fill]	
2	1	d3		0.0			
					SP/SM	Gray, fine to medium SAND with silt and shell fragments (no odor, no sheen) (medium dense, damp to moist) [Hydraulic Fill]	
4					SM	Dark gray, silty, fine to medium SAND with reddish brick-like fragments [Fill]	
						-No recovery from 5-8 ft bgs	
6							
	2	d3		0.0			ATD
8					SP	Brownish gray, medium to coarse SAND with shell fragments, trace silt, and red to orange brick-like fragments (no odor, no sheen) (medium dense, wet) [Fill]	
10						-No recovery from 10 to 13 ft bgs	
12	3	d3		0.0			
					SP	Brown, medium to coarse SAND with trace silt and red and white brick-like fragments (no odor, no sheen) (medium dense, wet) [Fill]	
14							
16							
	4	d3		0.0			
18					SM	Black, organic material rich, silty, fine to medium SAND (no odor, no sheen) (medium dense, wet) [Native Soil]	
					SM	Gray, silty, fine SAND (no odor, no sheen)	
20							

Drilling Method: GeoprobeTM

Ground Elevation (ft): 0

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring J-FA-101

J-FA-101

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
20							(medium dense, wet) [Native Soil] -No recovery from 20-25 ft. bgs during first attempt, moved boring 1 foot and collected sample	
22	5	d3		0.0				
24								
25						SM	-Trace shell fragments from 25-28 ft. bgs	
26								
27	6	d3		0.0				
28						SP/SM	Gray, fine to medium SAND with silt and trace shell fragments (no odor, no sheen) (medium dense, wet) [Native Soil] Analytical sample J-FA-101 (27-28) collected at 11:10 from 28-29 ft. bgs	
30								

Boring Completed 11/29/10
Total Depth of Boring = 30.0 ft.

32 34 36 38 40

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
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J-FA-102

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	Water Level
						Drilling Method: GeoprobeTM Ground Elevation (ft): 0	
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					SP	Brown, gravelly, medium SAND with trace silt (no odor, no sheen) (medium dense, damp) [Fill]	
2	1	d3		0.0	SM/ML	Gray, sandy SILT (no odor, no sheen) (medium stiff, damp) [Fill]	
					SP/SM	Gray, fine to medium SAND with silt and silty lenses (no odor, no sheen) (medium dense, damp to wet) [Fill]	
4							
6							ATD
	2	d3		0.0	SM	Black, organic rich material, gravelly, fine SAND with silt (no odor, no sheen) (loose, wet) [Fill]	
8							
10						-No recovery from 10 to 14 ft.	
12	3			0.0			
14					GP	Gray, sandy, 0.5 inch diameter GRAVEL with gravel-sized pieces of hard, white to yellow concrete-like material (no odor, no sheen) (loose, wet) [Fill] Analycial sample J-FA-102 (13-14) collected at 11:50 from 14-15 ft. bgs	
16							
	4	d3		0.0			
18					SP	Black, medium to coarse SAND with organics and wood fragments (no odor, no sheen) (medium dense, wet) [Native Soil]	
					SP/SM	Analytical sample J-FA-102 (18-19) collected	
20							

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

J-FA-102

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
20						SP/ SM	at 11:52 from 19-20 ft. bgs Gray, fine to medium SAND with silt and shell fragments (no odor, no sheen) (medium dense, wet) [Native Soil]	
22	5	d3		0.0				
24								
26								
	6	d3		0.0				
28						SP/ SM	Gray, fine to medium SAND with silt and trace shell fragments (no odor, no sheen) (medium dense, wet) [Native Soil]	
30								

Boring Completed 11/29/10
Total Depth of Boring = 30.0 ft.

32

34

36

38

40

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

J-GC-100

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND with geo-textile material at 1 ft (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					SP/ SM	Brown, fine to medium SAND with silt and gravel (no odor, no sheen) (medium dense, damp) [Fill] Analytical sample J-GC-100 (0-1) collected at 09:10 from 1-2 ft. bgs	
2	1	d3		0.0	SP	Brownish gray, fine to medium SAND with lenses of silt, trace gravel and shell fragments (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill] Analytical sample J-GC-100 (1-2) collected at 09:12 from 2-3 ft. bgs Analytical sample J-GC-100 (2-3) collected at 09:14 from 3-4 ft. bgs	ATD (at 4 ft)
7	2	d3		0.2	SP/ SM	-Wood fragments at 7 ft. bgs Dark gray, fine to medium SAND with silt and shell fragments, lenses of silty sand with wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
11	3	d3		0.5			
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/29/10
Total Depth of Boring = 12.0 ft.

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring J-GC-100

Figure D-43

J-GC-101

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					SP	Brown, medium to coarse SAND with trace silt and gravel (no odor, no sheen) (medium dense, damp) [Fill]	
1	d3		0.0		SP	Analytical sample J-GC-101 (0-1) collected at 08:38 from 1-2 ft. bgs Light gray, medium to fine SAND with shell fragments (no odor, no sheen) (medium dense, damp) [Hydraulic Fill]	ATD
					SP	Analytical sample J-GC-101 (1-2) collected at 08:40 from 2-3 ft. bgs Analytical sample J-GC-101 (2-3) collected at 08:42 from 3-4 ft. bgs Gray, fine to medium SAND (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill]	
2	d3		0.0		SP/SM	Gray, fine to medium SAND with silt and trace shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] -Wood fragments at 6.5 ft. bgs	
3	d3		0.0				

Depth (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Boring Completed 11/29/10
Total Depth of Boring = 12.0 ft.

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

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Log of Boring J-GC-101

Figure D-44

M-FA-100

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	GROUNDWATER (Water Level)
						Drilling Method: GeoprobeTM Ground Elevation (ft):	
0					AC	Asphalt	
					SP/SM	Gray, fine to medium SAND with silt and gravel; no odor, no sheen (medium dense, damp) [Base Coarse Fill]	
2	1	d3		0.0	SP/SM	Gray, fine to medium SAND with silt (no odor, no sheen) (medium dense, damp to wet) [Fill] Analytical sample M-FA-100 (0-1) collected at 0836 from 1.0-2.0 ft. bgs -Brown, trace gravel from 2-5 ft. bgs Analytical sample M-FA-100 (1-2) collected at 0838 from 2.0-3.0 ft. bgs Analytical sample M-FA-100 (2-3) collected at 0840 from 3.0-4.0 ft. bgs -Grayish Brown from 5-7 ft. bgs	ATD
6–8	2	d3		0.0		-Gray from 7-10 ft. bgs -Wood fragments at 7 ft. bgs	
10					SP/SM	Brownish gray, fine to medium SAND with silt and trace shell fragments and wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] -Wood fragments at 10 ft. bgs	
12	3	d3		0.0			
14					SM	Gray, silty fine SAND with trace wood fragments (no odor, no sheen) (medium dense, wet) [Fill]	

Boring Completed 11/22/10
Total Depth of Boring = 15.0 ft.

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

M-FA-101

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					SP	Brown, medium SAND with trace gravel (no odor, no sheen) (loose, wet) [Fill] Analytical sample M-FA-101 (0-1) collected at 14:50 from 0-1 ft. bgs Analytical sample M-FA-101 (1-2) collected at 14:52 from 1-2 ft. bgs Analytical sample M-FA-101 (2-3) collected at 14:54 from 2-3 ft. bgs	
2	1	d3		0.0			
~3					SM	Brown, silty, fine SAND with organics [roots] (no odor, no sheen) (medium dense, moist) [Fill]	ATD
~3					SP	Gray, fine to medium SAND with trace silt and shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
6	2	d3		0.0			
10	3	d3		0.0	SM	Gray, silty, fine to medium SAND (no odor, no sheen) (medium dense, wet) [Fill]	
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/17/10
Total Depth of Boring = 12.0 ft

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring M-FA-101

Figure D-46

M-FA-102

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						SM	Brown, silty, fine SAND with organics, wood fragments, and roots (no odor, no sheen) (medium dense, damp) [Fill]	
						SM	Brown, silty, fine to medium SAND with gravel (no odor, no sheen) (dense, moist to wet) [Fill]	
2	1	d3		0.0				
4						GP/GM	Gray, sandy 0.5 inch diameter GRAVEL with silt (no odor, no sheen) (dense, damp) [Fill]	ATD
						SM	Brown, silty fine to medium SAND with gravel (no odor, no sheen) (dense, wet) [Fill]	
6								
	2	d3		0.0		SP	Dark brown to black, fine to medium SAND with silt and blueish black, sand-size, granular material (apparent sandblast grit), trace gravel (no odor, no sheen) (medium dense, wet) [Fill] Analytical sample M-FA-102 (7-7.5) collected at 14:45 from 7-7.5 ft. bgs -Red brick debris at 7.5 ft. bgs	
8						SP	Black, organic rich, fine SAND (no odor, no sheen) (medium dense, wet) [Fill]	
						SP/SM	Gray, fine to medium SAND with silt, shell fragments, and trace wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] Analytical sample M-FA-102 (9-10) collected at 14:48 from 9-10 ft. bgs	
10								
	3	d3		0.0				
12								

Boring Completed 12/01/10
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

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Log of Boring M-FA-102

Figure D-47

M-FA-102f

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
						Drilling Method: Geoprobe™ Ground Elevation (ft):	
0					AC	Asphalt	
					GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
					SP-SM	Grey, medium to coarse SAND with gravel and silt (no odor, no sheen) (medium dense, damp) [Fill]	
2		d3					
				0.3			
4							
6		d3					
				0.1	SM	Dark brown, silty, medium SAND with gravel and occasional wood fragments (no odor, no sheen) (medium dense, moist) [Fill]	
					WD	Slightly weathered WOOD DEBRIS, pieces larger than 2" core diameter (organic odor, no sheen) (moist) [Fill]	
8	1				SP	Grey, fine to medium SAND with white shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] Analytical sample M-FA-102f (7-8) collected at 1030 from 8-9 ft. bgs	ATD
10		d3		0.4			
12							

Boring Completed 12/08/11
Total Depth of Boring = 12.0 ft.

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

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Log of Boring M-FA-102f

Figure D-48

M-FA-102g

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
				0.3	SP	Light brown, gravelly, medium to coarse SAND with trace silt (no odor, no sheen) (medium dense, damp) [Fill]	
2		d3			GM	Dark brown, medium, angular GRAVEL with sand and silt (no odor, no sheen) (medium dense, moist) [Fill]	
					GM	Grey, medium to coarse GRAVEL with sand and silt and occasional 1/4" diameter wood fragments (no odor, no sheen) (medium dense, moist) [Fill]	
					SP	Tan, medium to coarse SAND with gravel (no odor, no sheen) (medium dense, damp) [Fill]	
6		d3		1.1	SP	Grey, medium to coarse SAND with occasional sawdust fragments (no odor, no sheen) (medium dense, damp) [Fill]	
					WD	Brown, moderately weathered, 1/2" diamter pieces of SAWDUST (no odor, no sheen) (damp) [Fill]	
8	1				SP	Tan, medium to coarse SAND with gravel (no odor, no sheen) (medium dense, damp) [Fill] Analytical sample M-FA-102g (7-8) collected at 0950 from 8-9 ft. bgs	
					WD	Brown, slightly weathered, 1/2" diameter pieces of SAWDUST (no odor, no sheen) (damp) [Fill]	
10		d3		0.2	SP	Grey, fine to medium SAND with trace silt and occasional fine wood fragments and shell fragments (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill]	ATD
12							

Drilling Method: Geoprobe™

Ground Elevation (ft):

Boring Completed 12/08/11
Total Depth of Boring = 12.0 ft

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

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Log of Boring M-FA-102g

Figure D-49

M-FA-102h

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Asphalt	
				0.1		GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
2		d3				SP	Grey, medium SAND with trace silt and occasional shell fragments (no odor, no sheen) (medium dense, moist) [Fill]	
4						GP	Grey, medium, angular GRAVEL with sand (no odor, no sheen) (medium dense, moist) [Fill]	
	1			0.0			Analytical sample M-FA-102h (4-5) collected at 0910 from 5-6 ft. bgs	
6		d3				DB	Red brown BRICK FRAGMENTS (no odor, no sheen) (moist) [Fill]	
8						ML	Dark brown SILT with sand and occasional shell fragments (no odor, no sheen) (stiff, moist) [Fill] - piece of concrete at 5.75 ft. BGS	∇ ATD
				0.3				
10		d3						
						SP	Grey, medium SAND with trace silt (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
12								

Boring Completed 12/08/11
Total Depth of Boring = 12.0 ft.

NOTE: Two samples driven from 4-8 ft. BGS; 2' of recovery or less in both attempts

14

16

18

20

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

M-FA-102i

Drilling Method: Geoprobe™

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
				0.0	SP	Dark gray, gravelly, fine to coarse SAND (no odor, no sheen) (loose, dry) [Fill]	
2		d3					
4					SP-SM	Dark brown, fine to medium SAND with silt (no odor, no sheen) (loose, dry) [Fill]	
					SP	Dark gray, fine to coarse SAND (no odor, no sheen) (loose, dry) [Fill]	
6				0.0	SP	Black, fine to medium SAND with black, sand-sized, granular material (apparent sandblast grit) (no odor, no sheen) (loose, dry) [Fill]	
		d3			DB	Analytical sample M-FA-102i (6.0-7.0) collected at 11:30 from 6.0-7.0 ft. bgs Red brick material	
8					SP	Black, fine to medium SAND with black, sand-sized, granular material (apparent sandblast grit) (no odor, no sheen) (loose, dry) [Fill]	ATD
				0.0	SM	Dark gray, very silty, fine SAND (no odor, no sheen) (loose, wet) [Hydraulic Fill]	
10		d3				Analytical sample M-FA-102i (9.0-10.0) collected at 11:35 from 9.0-10.0 ft. bgs	
12							

Boring Completed 05/30/13
Total Depth of Boring = 12.0 ft.

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

M-FA-102j

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SM	Brown, silty, gravelly, fine to coarse SAND (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
					SM		
2		d3		0.1	SP	Gray, silty, fine SAND with gravel (no odor, no sheen) (medium dense, moist) [Fill]	
						Light gray, fine to medium SAND with trace gravel (no odor, no sheen) (medium dense, moist) [Fill]	
4							
						Analytical sample M-FA-102j (5.0-6.0) collected at 10:25 from 5.0-6.0 ft. bgs	
6				0.1	SP	Gray, fine SAND with trace silt (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	ATD
		d3				Analytical sample M-FA-102j (7.5-8.0) collected at 10.30 from 7.5-8.0 ft. bgs	
8							
				0.0	ML	Gray SILT with slightly weathered WOOD pieces larger than 2" sampler diameter and medium to coarse gravel (no odor, no sheen) (medium stiff, moist) [Fill]	
10		d3				Analytical sample M-FA-102j (9.0-10.0) collected at 10.35 from 9.0-10.0 ft. bgs	
12							

Drilling Method: Geoprobe™

Ground Elevation (ft):

Boring Completed 05/30/13
Total Depth of Boring = 12.0 ft.

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

M-FA-102k

Drilling Method: Geoprobe™

Ground Elevation (ft): ______

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE	GROUNDWATER: Water Level
0						AC	Asphalt	
						SP	Dark gray, fine to coarse SAND with trace gravel (no odor, no sheen) (loose, dry) [Fill]	
2		d3		0.0				
						WD	Brown WOODY DEBRIS (no odor, no sheen) (loose, dry) [Fill]	
						SP	Dark gray, fine to medium SAND (no odor, no sheen) (loose, dry) [Fill]	
4								
						WD	Dark brown decomposed WOOD DEBRIS (no odor, no sheen) (loose, dry) [Fill]	
				0.0		SP	Analytical sample M-FA-102k (5.0-6.0) collected at 12:05 from 5.0-6.0 ft. bgs	
6							Gray, fine to medium SAND (no odor, no sheen) (loose, damp) [Fill]	
		d3		0.0			Analytical sample M-FA-102k (7.0-7.5) collected at 12:10 from 7.0-7.5 ft. bgs	ATD
8								
				0.0			-Grades to fine to coarse SAND, wet	
10							Analytical sample M-FA-102k (9.0-10.0) collected at 12:15 from 9.0-10.0 ft. bgs	
		d3						
12								

Boring Completed 05/30/13
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

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Log of Boring M-FA-102k

Figure D-53

M-FA-102I

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SM	Brown, silty, fine to medium SAND with gravel (no odor, no sheen) (loose, damp) [Fill]	
		d3		0.0		SM	Gray, silty, fine SAND with gravel (no odor, no sheen) (medium dense, moist) [Fill]	
		d3		0.1		ML/DB	Gray SILT with black, shiny, fine to medium sand-sized granular material (apparent sandblast grit) with gravel (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-FA-102I (7.0-8.0) collected at 11:00 from 7.0-8.0 ft. bgs	
						DB	Brown, moderately decomposed, 1/4" SAWDUST with black, shiny, fine to medium sand-sized granular material (apparent sandblast grit) (no odor, no sheen) (medium dense, moist) [Fill]	▽ ATD (10 ft)
		d3		0.2		SP/DB	Gray, fine SAND with trace silt and scattered, laminated 1" layers of very decomposed wood debris larger than the 2" sampler diameter (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-FA-102I (9.0-10.0) collected at 11:05 from 9.0-10.0 ft. bgs	
12								

Boring Completed 05/30/13
Total Depth of Boring = 12.0 ft.

Depth scale (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

M-FA-102m

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0				0.0		SM	Brown, silty, gravelly, fine to medium SAND (no odor, no sheen) (medium dense, damp) [Fill]	
						SP	Brown, fine to medium SAND (no odor, no sheen) (medium dense, moist) [Fill]	
2		d3						
4						SP	Gray, fine SAND with trace silt (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] Analytical sample M-FA-102m (4.0-5.0) collected at 10:00 from 5.0-6.0 ft. below parking lot pavement surface	ATD
6		d3		0.0			Analytical sample M-FA-102m (6.0-6.5) collected at 10:05 from 7.0-7.5 ft. below parking lot pavement surface	
8							Analytical sample M-FA-102m (8.0-9.0) collected at 10:10 from 9.0-10.0 ft. below parking lot pavement surface	
10				0.0				

Boring Completed 05/30/13
Total Depth of Boring = 11.0 ft.

Ground surface at boring location is 1.0 ft. below parking lot pavement surface; planned sample depths adjusted by 1.0 ft.

12
14
16
18
20

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

M-FA-102n

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE (Drilling Method: Geoprobe™; Ground Elevation (ft):)	GROUNDWATER: Water Level
0						SM	Brown, silty, gravelly, medium to coarse SAND (no odor, no sheen) (medium dense, moist) [Fill]	
2		d3		0.0		ML	Brown SILT with gravel (no odor, no sheen) (medium stiff, moist) [Fill]	
4						SP	Red-brown, fine SAND with medium sand (no odor, no sheen) (medium dense, moist to wet) [Fill and Hydraulic Fill]	ATD
							Analytical sample M-FA-102m (4.0-4.8) collected at 09:30 from 5.0-6.0 ft. below parking lot pavement surface	
6		d3		0.0			-To gray, wet at 5 ft. bgs	
							Analytical sample M-FA-102m (5.8-6.3) collected at 09:35 from 7.0-7.5 ft. below parking lot pavement surface	
8							-Shell fragments at 6.5 ft. bgs	
							Analytical sample M-FA-102m (7.8-8.8) collected at 09:40 from 9.0-10.0 ft. below parking lot pavement surface	
10		d3		0.0				

Boring Completed 05/30/13
Total Depth of Boring = 11.0 ft.

Ground surface at boring location is 1.2 ft. below parking lot pavement surface; planned sample depths adjusted by 1.2 ft.

Depth scale (ft): 12, 14, 16, 18, 20

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

M-FA-103

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	Water Level
0					SP/ SM	Brown, gravelly, medium SAND with silt and organics (roots) (no odor, no sheen) (loose, moist) [Fill]	
					SP	Analytical sample M-FA-103 (0-1) collected at 11:10 from 1-2 ft. bgs	
2	1	d3		0.3		Brown, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist) [Fill]	ATD
					SM	Analytical sample M-FA-103 (1-2) collected at 11:12 from 2-3 ft. bgs	
4						Analytical sample M-FA-103 (2-3) collected at 11:14 from 3-4 ft. bgs	
						Brown, silty fine to medium SAND with trace wood and shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
6							
8	2	d3		0.1			
10							
12	3	d3		0.1			

SAMPLE DATA | SOIL PROFILE | GROUNDWATER

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/02/10
Total Depth of Boring = 12.0 ft.

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

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M-FA-103c

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0		d3				AC	Asphalt	
				0.3		GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	
	1					SP	Tan, fine to medium SAND (no odor, no sheen) (medium dense, damp) [Fill] Analytical sample M-FA-103c (0-1) collected at 1145 from 1-2 ft. bgs	
2	2	d3					Analytical sample M-FA-103c (1-2) collected at 1148 from 2-3 ft. bgs	
	3							
4	4					SP	Analytical sample M-FA-103c (2-3) collected at 1151 from 3-4 ft. bgs	ATD
							Grey, fine to medium SAND with shell fragments (no odor, no sheen) (medium dense, moist) [Hydraulic Fill] Analytical sample M-FA-103c (3-4) collected at 1154 from 4-5 ft. bgs	

Boring Completed 12/08/11
Total Depth of Boring = 5.0 ft.

Depth scale (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

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Log of Boring M-FA-103c

Figure D-58

M-FA-103d

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0		d3				AC	Asphalt	
						GP	Gray, crushed GRAVEL (no odor, no sheen) (medium dense, moist) [Base Coarse Fill]	Groundwater not encountered.
	1					SP	Tan, medium SAND with 1" diameter round gravels (no odor, no sheen) (medium dense, damp) [Fill]	
2	2			0.1			Analytical sample M-FA-103d (0-1) collected at 1130 from 1-2 ft. bgs	
	3	d3						
4						SP	Analytical sample M-FA-103d (1-2) collected at 1133 from 2-3 ft. bgs Analytical sample M-FA-103d (2-3) collected at 1136 from 3-4 ft. bgs	
							Grey, fine to medium SAND with shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
6							NOTE: Three samples driven from 1-5 ft. BGS; no recovery in first two attempts	

Boring Completed 12/08/11
Total Depth of Boring = 5.0 ft.

Depth scale: 8, 10, 12, 14, 16, 18, 20

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

M-FA-104

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE	Water Level
0						AC	Asphalt	
						SP	Grey, fine to medium SAND with trace silt, white shell fragments, and wood fragments (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill]	
2	1	d3		0.0			Analytical sample M-FA-104 (0-1) collected at 11:40 from 0.5-1.5 ft. bgs Analytical sample M-FA-104 (1-2) collected at 11:42 from 1.5-2.5 ft. bgs Analytical sample M-FA-104 (2-3) collected at 11:44 from 2.5-3.5 ft. bgs	
4–6								ATD
8	2	d3		0.0				
10–12	3	d3		0.0				

SAMPLE DATA — SOIL PROFILE — GROUNDWATER

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/22/10
Total Depth of Boring = 12.0 ft.

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

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Log of Boring M-FA-104

Figure D-60

M-FA-105

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
0						SP/SM	Gray, fine to medium SAND with silt, shell fragments, organics, and dispersed wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic fill] Analytical sample M-FA-105 (0-1) collected at 11:00 from 0-1 ft. bgs	ATD
2	1	d3		0.0				
4							Analytical sample M-FA-105 (4-5) collected at 11:10 from 4-5 ft. bgs	
6								
8	2	d3		0.0				
10								
12	3	d3		0.0				
14							-No Recovery from 15-20 ft. bgs	
16								
18		d3		N/A				
20								

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

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Log of Boring M-FA-105

Figure D-61 (1 of 2)

M-FA-105

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
20						SP	Gray, coarse SAND with occasional silt and gravel (no odor, no sheen) (medium dense, wet) [Native Soil]	
22		d3		0.0				
24								

Column groups: SAMPLE DATA (Depth through PID); SOIL PROFILE (Graphic Symbol through description); GROUNDWATER (Water Level).

Boring Completed 01/28/11
Total Depth of Boring = 25.0 ft.

26
28
30
32
34
36
38
40

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

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Log of Boring M-FA-105

Figure
D-61
(2 of 2)

M-FA-105

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE: Drilling Method: GeoprobeTM; Ground Elevation (ft): 0	GROUNDWATER: Water Level
20						SP	Gray, coarse SAND with occasional silt and gravel (no odor, no sheen) (medium dense, wet) [Native Soil]	
22		d3		0.0				
24								

Boring Completed 01/28/11
Total Depth of Boring = 25.0 ft.

26
28
30
32
34
36
38
40

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

M-FA-106

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
0						SP/ SM	Gray, fine to medium SAND with shellf fragments and silt, silt lenses (mild organic odor, no sheen) (medium dense, wet) [Hydraulic Fill] Analytical sample M-FA-106 (0-1) collected at 9:50 from 0-1 ft. bgs	ATD
2	1	d3		0.0				
4							Analytical sample M-FA-106 (4-5) collected at 10:00 from 4-5 ft. bgs	
6								
8	2	d3		0.0				
10								
12	3	d3		0.0				
14								
16								
18	4	d3		0.0				
20								

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

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M-FA-106

Depth (ft)	SAMPLE DATA: Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	SOIL PROFILE: Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	GROUNDWATER: Water Level
20	5	d3		0.0		SP	Brown, medium to coarse SAND with trace silt (no odor, no sheen) (medium dense, wet) [Native Soil]	

Boring Completed 01/28/11
Total Depth of Boring = 21.0 ft.

22
24
26
28
30
32
34
36
38
40

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

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Log of Boring M-FA-106

Figure
D-62

M-FA-107

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
0					SP/SM	Gray, fine to medium SAND with silt, shell fragments, and dispursed wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic fill] Analytical sample M-FA-107 (0-1) collected at 12:00 from 0-1 ft. bgs	ATD
2	1	d3		0.0			
4						Analytical sample M-FA-107 (4-5) collected at 12:10 from 4-5 ft. bgs	
6							
8	2	d3		0 0			
10							
12					ML	Gray, sandy SILT (no odor, no sheen) (medium stiff, wet) [Hydraulic fill]	
	3	d3		0.0			
14					SM	Gray, silty, fine to medium SAND with dispursed wood fragments and trace shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic fill]	
16							
18	4	d3		0 0			
20							

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

M-FA-107

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
20						SM	Gray, silty, fine to medium SAND with dispursed wood fragments and trace shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic fill]	
22	5	d3		0.0		SP	Gray, medium to coarse SAND with trace gravel and silt (no odor, no sheen) (medium dense, wet) [Native Soil]	

SAMPLE DATA — SOIL PROFILE — GROUNDWATER

Drilling Method: GeoprobeTM

Ground Elevation (ft): 0

Boring Completed 01/28/11
Total Depth of Boring = 25.0 ft.

Depth (ft): 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40

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

M-FA-108

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	Water Level
						Drilling Method: GeoprobeTM Ground Elevation (ft):	
0					SP/SM	Gray, fine to medium SAND with silt, shell fragments, and disursed wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic fill] Analytical sample M-FA-108 (0-1) collected at 13:50 from 0-1 ft. bgs	ATD
2	1	d3		0.0			
4						Analytical sample M-FA-108 (4-5) collected at 14:00 from 4-5 ft. bgs	
6							
8	2	d3		0.0			
10	3	d3		0.0	ML	Gray, sandy SILT with trace organics (no odor, no sheen) (medium stiff, wet) [Hydraulic fill]	
12							

Boring Completed 01/28/11
Total Depth of Boring = 12.0 ft

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

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Log of Boring M-FA-108

Figure D-64

M-GC-100

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2	1	d3		0.0		SP	Brown, gravelly, medium SAND with trace silt (no odor, no sheen) (medium dense, damp to wet) [Fill] Analytical sample M-GC-100 (0-1) collected at 10:00 from 1-2 ft. bgs Analytical sample M-GC-100 (1-2) collected at 10:02 from 2-3 ft. bgs Analytical sample M-GC-100 (2-3) collected at 10:04 from 3-4 ft. bgs	ATD
6	2	d3		0.0		SP/ SM	Gray, fine to medium SAND with silt and shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
10	3	d3		0.0				
12								

Boring Completed 11/30/10
Total Depth of Boring = 12.0 ft

Depth (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

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M-GC-101

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					SM	Brown, silty fine SAND with trace gravel (no odor, no sheen) (dense, damp) [Fill]	
2	1	d3		0.0	SP	Analytical sample M-GC-101 (0-1) collected at 0930 from 1-2 ft. bgs	
4						Brown, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist to wet) [Fill]	
						Analytical sample M-GC-101 (1-2) collected at 09:32 from 2-3 ft. bgs	ATD
6						Analytical sample M-GC-101 (2-3) collected at 09.34 from 3-4 ft. bgs	
	2	d3		0.0	SP	Gray, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
8							
10					SP/SM	Gray, fine to medium SAND with silt and shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
	3	d3		0.0			
12							

SAMPLE DATA | SOIL PROFILE | GROUNDWATER

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 11/30/10
Total Depth of Boring = 12.0 ft.

14

16

18

20

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

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Log of Boring M-GC-101

Figure
D-66

M-GC-102

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
					SP	Brown, fine to medium SAND with gravel and trace silt (no odor, no sheen) (medium dense, damp) [Fill]	
2	1	d3		0.0		Analytical sample M-GC-102 (0-1) collected at 08:10 from 1-2 ft. bgs	
4					SP	Analytical sample M-GC-102 (1-2) collected at 08:12 from 2-3 ft. bgs Analytical sample M-GC-102 (2-3) collected at 08:14 from 3-4 ft. bgs Brown, fine to medium SAND with shell fragments and trace silt (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill]	ATD
8	2	d3		0.0		Analytical sample M-GC-102 (6-7) collected at 08:16 from 7-8 ft. bgs -Decreasing shell fragments from 8-13 ft. bgs	
12	3	d3		0.0			
14					ML	Gray, sandy SILT with trace organics (no odor, no sheen) (medium stiff, moist) [Hydraulic Fill]	
16					SM	Gray, silty, fine SAND with trace shell fragments and organics (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
18	4	d3		0.0			
					SP		
20							

Drilling Method: GeoprobeTM

Ground Elevation (ft): 0

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

M-GC-102

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE (Drilling Method: GeoprobeTM; Ground Elevation (ft): 0)	Water Level
20						SP	Gray, fine to medium SAND with trace silt and gravel (no odor, no sheen) (medium dense, wet) [Native Soil]	
						SP	Brown, fine to medium SAND (no odor, no sheen) (dense, wet) [Native Soil]	
22	5	d3		0.0				
24								

Boring Completed 11/30/10
Total Depth of Boring = 25.0 ft.

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

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Log of Boring M-GC-102

Figure D-67 (2 of 2)

M-GC-102

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
20						SP	Gray, fine to medium SAND with trace silt and gravel (no odor, no sheen) (medium dense, wet) [Native Soil]	
						SP	Brown, fine to medium SAND (no odor, no sheen) (dense, wet) [Native Soil]	
22	5	d3		0.0				
24								

Boring Completed 11/30/10
Total Depth of Boring = 25.0 ft.

26
28
30
32
34
36
38
40

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

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M-GC-102a

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0		d3				AC	Asphalt	
	1					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	Groundwater not encountered.
						SP-SM	Brown, gravelly, fine to coarse SAND with silt (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102a (0-1) collected at 1355 from 0.5-1.5 ft. bgs Analytical sample M-GC-102a (1-2) collected at 1358 from 1.5-2.5 ft. bgs	
2	2	d3		0.2		GP	Grey, coarse GRAVEL (no odor, no sheen) (medium dense, moist) [Fill]	
						ML	Brown, sandy SILT with gravel (no odor, no sheen) (medium dense, moist) [Fill]	
	3					SP	Red brown, fine to medium SAND with occasional shell fragments (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102a (2-3) collected at 1401 from 2.5-3.5 ft. bgs - Two 1/4" thick beds of grey silt at 3.5 ft BGS	
4	4					SP	Red brown, medium SAND with coarse rounded gravel (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102a (3-4) collected at 1404 from 3.5-4.5 ft. bgs	

Boring Completed 12/08/11
Total Depth of Boring = 4.5 ft

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

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Log of Boring M-GC-102a

Figure D-68

M-GC-102b

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0		d3				AC	Asphalt	
						SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
1	1			1.7		SP-SM	Brown, medium to coarse SAND with gravel and silt (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102b (0-1) collected at 1315 from 0.5-1.5 ft. bgs	Groundwater not encountered.
						SP	Brown, medium SAND (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102b (1-2) collected at 1318 from 1.5-2.5 ft. bgs	
2	2	d3				ML	Grey SILT with gravel (no odor, no sheen) (medium dense, moist) [Fill]	
						GP	Black medium GRAVEL with silt (no odor, no sheen) (medium dense, moist) [Fill]	
3	3					SP	Red-brown, medium SAND with white shell fragments (no odor, no sheen) (medium dense, moist) [Hydraulic Fill] Analytical sample M-GC-102b (2-3) collected at 1321 from 2.5-3.5 ft. bgs Analytical sample M-GC-102b (3-4) collected at 1324 from 3.5-4.5 ft. bgs	
4	4							

Boring Completed 12/08/11
Total Depth of Boring = 4.5 ft.

Depth scale (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

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Log of Boring M-GC-102b

Figure
D-69

M-GC-102c

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0		d3				AC	Asphalt	
	1			0.5		SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	Groundwater not encountered.
						SM	Brown and grey, silty, medium to coarse SAND with gravel (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102c (0-1) collected at 1335 from 0.5-1.5 ft. bgs Analytical sample M-GC-102c (1-2) collected at 1338 from 1.5-2.5 ft. bgs	
2	2	d3				WD	Black, coarse, organic material (no odor, no sheen) (moist) [Fill]	
	3					SP	Tan, medium SAND with white shell fragments (no odor, no sheen) (medium dense, moist) [Hydraulic Fill] Analytical sample M-GC-102c (2-3) collected at 1341 from 2.5-3.5 ft. bgs Analytical sample M-GC-102c (3-4) collected at 1344 from 3.5-4.5 ft. bgs	
4	4							

Boring Completed 12/08/11
Total Depth of Boring = 4.5 ft.

6
8
10
12
14
16
18
20

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

M-GC-102d

SAMPLE DATA | SOIL PROFILE | GROUNDWATER

Drilling Method: Geoprobe™

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Description	Groundwater
0					AC	Asphalt	Groundwater not encountered
		d3			SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
	1				SP-SM	Brown, fine to coarse SAND with gravel and silt (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102d (0-1) collected at 1259 from 1-2 ft. bgs	
2				0.9	SP	Tan, medium to coarse SAND with rounded coarse sand (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102d (1-2) collected at 1302 from 2-3 ft. bgs	
	2				SP-SM	Grey, fine to coarse SAND with gravel and silt (no odor, no sheen) (medium dense, moist) [Fill]	
		d3			SP	Brown, fine to coarse SAND with gravel (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102d (2-3) collected at 1305 from 3-4 ft. bgs	
4	3, 4				SP	Tan, medium SAND with abundant white and blue shell fragments (no odor, no sheen) (medium dense, moist) [Hydraulic Fill] Analytical sample M-GC-102d (3-4) collected at 1308 from 4-5 ft. bgs	

Boring Completed 12/08/11
Total Depth of Boring = 5.0 ft.

Depth scale (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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

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Log of Boring M-GC-102d

Figure D-71

M-GC-102e

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0		d3				AC	Asphalt	Groundwater not encountered.
						SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
1	1			0.4		SP	Tan, medium to coarse SAND with coarse rounded gravel (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102e (0-1) collected at 1410 from 0.5-1.5 ft. bgs Analytical sample M-GC-102e (1-2) collected at 1413 from 1.5-2.5 ft. bgs	
2	2	d3				ML	Grey and red-brown SILT with 1/4" organic interbeds (no odor, no sheen) (stiff, moist) [Fill]	
3	3					SP	Tan, medium SAND with large gravels at 3 ft. and 3.9 ft. BGS (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample M-GC-102e (2-3) collected at 1416 from 2.5-3.5 ft. bgs Analytical sample M-GC-102e (3-4) collected at 1419 from 3.5-4.5 ft. bgs	
4	4							

Boring Completed 12/08/11
Total Depth of Boring = 4.5 ft.

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

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Log of Boring M-GC-102e

Figure D-72

M-GC-103

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	SOIL PROFILE	GROUNDWATER / Water Level
0					AC	Asphalt	
					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, moist) [Base Coarse Fill]	
					SP	Brown, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist to wet) [Fill] Analytical sample M-GC-103 (0-1) collected at 13:35 from 1-2 ft. bgs Analytical sample M-GC-103 (1-2) collected at 13:37 from 2-3 ft. bgs Analytical sample M-GC-103 (2-3) collected at 13:37 from 3-4 ft. bgs	
2	1	d3		0.0			∇ ATD
					SP	Gray, fine to medium SAND with shell fragments and trace silt (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
6	2	d3		0.0			
10	3	d3		0.0			
12							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/17/10
Total Depth of Boring = 12.0 ft.

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

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Log of Boring M-GC-103

Figure D-73

M-GC-104

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					GP	Brown, sandy, 0.5 inch diameter GRAVEL (no odor, no sheen) (medium dense, damp) [Base Coarse Fill]	
2	1	d3		0.0	SP/SM	Brown, fine to medium SAND with silt and gravel (no odor, no sheen) (medium dense, damp) [Fill] Analytical sample M-GC-104 (0-1) collected at 08:15 from 1.5-2.5 ft. bgs	
4					SP	Brown, fine to medium SAND with trace silt and shell fragments (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill] Analytical sample M-GC-104 (1-2) collected at 08:17 from 2.5-3.5 ft. bgs Analytical sample M-GC-104 (2-3) collected at 08:19 from 3.5-4.5 ft. bgs	
6							ATD
8	2	d3		0.0	SP/SM	Gray, fine SAND with silt and shell fragments, and trace wood fragments (no odor, no sheen) (medium dense, wet) (Hydraulic Fill]	
10						-Increased shell fragments from 10-12 ft.	
12	3	d3		0.0			

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/02/10
Total Depth of Boring = 12.0 ft.

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

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Log of Boring M-GC-104

Figure D-74

M-GC-105

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						SP/SM	Reddish Brown, fine to medium SAND with wood debris and silt (organic ordor, no sheen) (loose, wet) [Fill] Analytical sample M-GC-105 (0-0.2) collected at 14:05 from 0-0.2 ft. bgs	ATD
	1	d3		0.0		SP/SM	Brown, fine to medium SAND with silt (no odor, no sheen) (medium dense, wet) [Fill] Analytical sample M-GC-105 (0.5-1.5) collected at 14:50 from 0.5-1.5 ft. bgs	
4						SP/SM	Gray, fine to medium SAND with silt, shell fragments, and dispursed wood fragments (no odor, no sheen) (medium dense, wet) [Fill] Analytical sample M-GC-105 (4-5) collected at 14:55 from 4-5 ft. bgs	
	2	d3		0.0				
	3	d3		0.0				
13						ML	Gray, sandy, SILT with trace oragnics (no odor, no sheen) (medium stiff, wet) [Hydraulic fill]	

Depth scale: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Boring Completed 01/28/11
Total Depth of Boring = 15.0 ft.

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

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M-GC-106

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
0–3	1	d3		0.0		SP/SM	Brown, gravelly, fine to medium SAND with silt (no odor, no sheen) (medium dense, damp) [Fill] Analytical sample M-GC-106 (0-1) collected at 09:05 from 0-1 ft. bgs Analytical sample M-GC-106 (1-2) collected at 09:07 from 1-2 ft. bgs Analytical sample M-GC-106 (2-3) collected at 09:09 from 2-3 ft. bgs	
3–5						SP/SM	Brown, fine to medium SAND with silt and trace gravel and shell fragments (no odor, no sheen) (medium dense, damp) [Hydraulic Fill]	
5–6.5						SP/SM	Dark gray, fine to medium SAND with silt and trace gravel (slight organic odor, no sheen) (medium dense, damp to moist) [Hydraulic Fill]	
6.5–18	2	d3		0.0		SP	Gray, fine to medium SAND with trace silt and shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	ATD
	3	d3		0 0				
	4	d3		0 0			-With wood fragments, increasing shell fragments from 17-18 ft.	
18–20						ML	Gray, sandy, SILT with decaying wood fragments (no odor, no sheen) (medium stiff, wet) [Native Soil]	

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

M-GC-106

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
20					ML	Gray, sandy, SILT with decaying wood fragments (no odor, no sheen) (medium stiff, wet) [Native Soil]	
22	5	d3		0.0			
24					SP/SM	Gray, fine SAND with silt and shell fragments and trace wood fragments and shell fragments (no odor, no sheen) (medium dense, wet) [Native Soil]	
26						-No recovery, moved boring 1 ft. east, advanced boring M-GC-106B	
28	6	d3		0.0			
30							

Drilling Method: GeoprobeTM

Ground Elevation (ft): 0

Boring Completed 12/02/10
Total Depth of Boring = 30.0 ft

32
34
36
38
40

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

M-GC-106B

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

Depth scale: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

-See boring log M-GC-106 for subsurface conditions from 0-25 ft.

Water Level: ATD

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

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Log of Boring M-GC-106B

Figure D-77 (1 of 2)

M-GC-106B

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
20							-See boring log M-GC-106 for subsurface conditions from 0-25 ft.	
25							-No recovery	
27.5	4	d3		0.0				
30						SP	Gray, medium SAND with trace silt (no odor, no sheen) (medium dense, wet) [Native Soil]	
32.5	5	d3		0.0				

Boring Completed 12/02/10
Total Depth of Boring = 35.0 ft.

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

M-GC-107

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	Water Level
0	1					SP	Brown and black, gravelly, medium to coarse SAND (slight petroleum-like odor, slight sheen) (medium dense, damp) [Fill]	
	2	d3				GP	Analytical sample M-GC-107 (0-1) collected at 1450 from 0-1 ft. bgs	
2	3					SP	Grey, medium GRAVEL with sand and trace silt (no odor, no sheen) (medium dense, moist) [Fill]	
							Analytical sample M-GC-107 (1-2) collected at 1455 from 1-2 ft. bgs	
4							Tan-brown, medium SAND with trace gravel (no odor, no sheen) (medium dense, moist) [Fill]	
							Analytical sample M-GC-107 (2-3) collected at 1510 from 2-3 ft. bgs	
6		d3				SP	Grey, fine to medium SAND with white shell fragments (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill]	▽ ATD
8								
10		d3						
12								

Boring Completed 12/08/11
Total Depth of Boring = 12.0 ft

NOTE: Three samples driven from 0-4 ft BGS, maximum recovery of 3 ft. Non-5035 samples homogenized between three attempts due to limited sample volume

14 16 18 20

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

M-GC-107a

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):	
0				0.0		AC	Asphalt	Groundwater not encountered.
	1					SP	Brown, gravelly, medium to coarse SAND (no odor, no sheen) (loose, damp) [Base Coarse Fill]	
2	2	d3				SP	Brown, fine to coarse SAND with trace silt (no odor, no sheen) (medium dense, dry) [Fill] Analytical sample M-GC-107a (0-1) collected at 1450 from 0.5-1.5 ft. bgs Analytical sample M-GC-107a (1-2) collected at 1455 from 1.5-2.5 ft. bgs	
4								

Boring Completed 12/09/11
Total Depth of Boring = 4.0 ft.

6 8 10 12 14 16 18 20

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

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N-FA-100

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SM	Gray, silty, fine SAND with wood fragments (no odor, no sheen) (medium dense, wet) [Fill]	
2	1	d3		0.0		Analytical sample N-FA-100 (0-1) collected at 08:30 from 0.3-1.3 ft. bgs Analytical sample N-FA-100 (1-2) collected at 08:32 from 1.3-2.3 ft. bgs Analytical sample N-FA-100 (2-3) collected at 08:34 from 2.3-3.3 ft. bgs	
4					SM/ML	Gray, sandy, SILT (no odor, no sheen) (medium stiff, moist) [Fill]	ATD
					SM	Gray, silty, fine SAND with shell fragments (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill]	
7	2	d3		0.0			
9.5					SM	Dark brown, organic rich, silty, fine SAND and wood fragments (no odor, no sheen) (loose, wet) [Hydraulic Fill]	

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/01/10
Total Depth of Boring = 10.0 ft.

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

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Log of Boring N-FA-100

Figure D-80

N-FA-101

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP/SM	Gray, fine to medium SAND with silt, trace shell fragments, and trace organics (no odor, no sheen) (medium dense, damp) [Hydraulic Fill]	
2	1	d3		0.0	SM	Brown, silty, fine to medium SAND with organics and trace gravel (no odor, no sheen) (medium dense, damp to moist) [Hydraulic Fill] -Hard, tan, concrete-like material fragment at 3 ft. Analytical sample N-FA-101 (3-4) collected at 09:10 from 3-4 ft. bgs	
4					SP	Gray, fine to medium SAND with shell fragments and trace silt (no odor, no sheen) (medium dense, damp to wet) [Hydraulic Fill] Analytical sample N-FA-101 (4-5) collected at 09:12 from 4-5 ft. bgs	ATD
6–8	2	d3		0.0			
8					WD	Brown, fine decomposed WOOD and roots (no odor, no sheen) (medium dense, damp) [Fill] -Brown solid WOOD from 9.5-10 ft.	
10							

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Boring Completed 12/01/10
Total Depth of Boring = 10.0 ft

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

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Log of Boring N-FA-101

Figure D-81

N-FA-102

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

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Description	Water Level
0					AC	Asphalt	
					AC	White concrete with aggregate matrix (hard, dry)	
						Collected soil sample N-FA-102 (0.5-1.5) at 10.59 from 0.5-1.5 ft. bgs	
2					SP	Light gray, gravelly, SAND mixed with white, hard, concrete fragments (concrete-like odor, no sheen) (loose, damp) [Fill]	
	1	d3		1.6	SM	Brown, organic rich, silty SAND (organic odor, no sheen) (dense, damp) [Fill]	
						Analytical sample N-FA-102 (2-3) collected at 10:57 from 2-3 ft. bgs	
						-Asphalt fragments at 3 ft	
4						No recovery 3-6 ft.	
6					SM	Dark gray, organic rich, silty, SAND with roots and wood fragments (organic odor, no sheen) (medium dense, moist) [Fill]	ATD
8	2	d3		0.0			
10					ML	Gray, sandy, SILT (no odor, no sheen) (medium stiff, wet) [Fill]	
					GM	Black, silty, 1 inch diameter GRAVEL (no odor, no sheen) (loose, wet) [Fill]	
	3	d3		0.0	ML	Gray, organic rich, silt with wood fragments (no odor, no sheen) (medium dense, wet) [Fill]	
12					SM	Gray, silty, fine SAND (no odor, no sheen) (medium dense, wet) [Fill]	
					ML	Gray, sandy, SILT with wood fragments (no odor, no sheen) (dense, wet) [Fill]	

Boring Completed 12/01/10
Total Depth of Boring = 13.0 ft.

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

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Log of Boring N-FA-102

Figure D-82

N-FA-103

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

Drilling Method: GeoprobeTM

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Description	Water Level
0					AC	Asphalt	
					AC	White concrete with aggregate matrix (concrete-like odor) (hard, dry) Analytical sample N-FA-103 (1-2) collected at 09:55 from 1.3-2.3 ft. bgs	
2	1	d3		0.0			
					SM	Black, silty, fine SAND with decomposing wood (mild decomposition odor, no sheen) (medium dense, damp to moist) [Fill]	
4					SM	Gray, silty, fine SAND with trace organics (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample N-FA-103 (4-5) collected at 09:57 from 4.3-5.3 ft. bgs	
6					WD	Decomposing WOOD and wood fragments [Fill] Analytical sample N-FA-103 (6-7) collected at 10:01 from 6.3-7.3 ft. bgs -Sheen on sampler and organic odor from 7-8.3 ft. bgs Analytical sample N-FA-103 (7-8) collected at 09:59 from 7.3-8.3 ft. bgs	ATD
	2	d3		0.0			
8						No recovery 8.3-12 ft.	
10							
	3	d3		0.0			
12							

Boring Completed 12/01/10
Total Depth of Boring = 12.0 ft.

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring N-FA-103

Figure D-83

N-FA-103B

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						AC	White concrete with aggregate matrix (hard, dry)	
2						SM	Black, organic rich, silty SAND (organic odor, no sheen) (medium dense, damp) [Fill]	
						AC	White, concrete with aggregate matrix (hard, dry)	
	1	d3		0.0		WD	Black, decomposing WOOD and wood fragments (organic odor, no sheen) (medium dense, damp to wet) [Fill]	
4								
6								ATD
	2	d3		0.0			Analytical sample N-FA-103B (6-7) collected at 12:30 and N-FA-203B (6-7) at 12:34 from 6.3-7.3 ft. bgs	
8							No recovery from 8.5-10 ft bgs	
10						SP	Gray, fine SAND with silt (no odor, no sheen) (medium dense, wet) [Fill]	
						WD	Brown, fine WOOD fragments with silt [Fill]	
	3	d3		0.0		ML	Gray, SILT with sand and wood fragments (organic odor, organic sheen on sampler) (medium stiff, damp) [Fill] Analytical sample N-FA-103B (10-11) collected at 12:32 from 10.3-11.3 ft. bgs	
12								

Boring Completed 12/01/10
Total Depth of Boring = 12.0 ft.

14

16

18

20

Notes: 1 Stratigraphic contacts are based on field interpretations and are approximate.
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3 Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring N-FA-103B

Figure D-84

RI-MW-4 (Boring)

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
0–6	1	d3		0.0	SP/SM	Brown, silty, fine to medium SAND with gravel (no odor, no sheen) (dense, damp) [Fill]	
6–12		d3		0.0	SP/SM	Brown, fine to medium SAND with silt, trace gravel, and trace shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill] Gray from 7-12 ft. bgs	ATD (6 ft)
12–18		d3		0.0	SM	-Gray, silty, fine SAND with trace shell fragments, and trace wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
18–20		d3		0.0	SM	Gray, sandy, SILT with trace shell fragments and trace wood fragments (no odor, no sheen) (dense to medium dense, moist) [Hydraulic Fill]	

Drilling Method: GeoprobeTM

Ground Elevation (ft): 0

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

RI-MW-4 (Boring)

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: GeoprobeTM Ground Elevation (ft): 0	Water Level
20						SP/ SM	Gray, fine to medium SAND with Silt and trace wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
22		d3		0.0				
						SM	Gray, silty, fine SAND, trace shell fragments and wood fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
24								
26								
		d3		0.0		SP/ SM	Gray, fine to medium SAND, with silt, trace shell fragments and organics (no odor, no sheen) (medium dense, wet) [Native Soil]	
28								
30								

Boring Completed 12/01/10
Total Depth of Boring = 30.0 ft.

32

34

36

38

40

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

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Log of Boring RI-MW-4 (Boring)

Test Pit Logs

G-FA-104

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						SP/SM	Brown, organic rich, fine SAND with gravel and silt (no odor, no sheen) (loose, damp) [Fill]
				0.0		SP/SM	Brown, fine to medium SAND with silt and pockets of black, sand-size, granular material (apparent sandblast grit) (no odor, no sheen) (medium dense, moist) [Fill]
				0.0			Analytical sample G-FA-104 (0-1) collected at 14:10 from 0-1 ft. bgs
						SP/SM	Brown to gray, fine to medium SAND with silt (no odor, no sheen) (medium dense, moist) [Hydraulic Fill]
2		d5		0.0			Analytical sample G-FA-104 (1-2) collected at 14:12 from 1-2 ft. bgs
							Analytical sample G-FA-104 (2-3) collected at 14:14 from 2-3 ft. bgs
				0.0			
						WD	Brown, decomposing fragments of WOOD with sand (organic odor, no sheen) (loose, moist) [Fill]
4							

Drilling Method: Rubber-tired Backhoe

Ground Elevation (ft):

GROUNDWATER

Groundwater not encountered.

Boring Completed 12/06/10
Total Depth of Boring = 4.0 ft.

6

8

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

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Log of Boring G-FA-104

Figure D-86

G-FA-105

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rubber-tired Backhoe Ground Elevation (ft):	Water Level
0							Brown, organic rich, fine to medium SAND (no odor, no sheen) (loose, damp) [Fill]	
						SP/ SM	Black, sand size, granular material (apparent sandblast grit) (no odor, no sheen) (loose, damp) [Fill]	
						SP/ SM	Analytical sample G-FA-105 (0.3-0.8) collected at 13:20 from 0.3-0.8 ft. bgs Brown, fine to medium SAND with silt and trace wood fragments (no odor, no sheen) (medium dense, damp) [Fill] Analytical sample G-FA-105 (1-2) collected at 13:22 from 1-2 ft bgs	
2	1	d5		0.0		SM	Gray, silty, fine SAND (no odor, no sheen) (medium dense, damp) [Fill]	
						OL	Black, organic SILT (no odor, no sheen) (soeft to medium stiff, slightly moist)	
						SP	Gray, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist to wet) [Hydraulic Fill]	
4								ATD

Boring Completed 12/06/10
Total Depth of Boring = 4.5 ft.

6

8

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

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Log of Boring G-FA-105

Figure
D-87

G-FA-106

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE — Drilling Method: Rubber-tired Backhoe; Ground Elevation (ft):	GROUNDWATER — Water Level
0						SP	Black, sand-size, granular material (apparent sandblast grit) with gravel and organics (no odor, no sheen) (loose, damp) [Fill]	
				0.0			Analytical sample G-FA-106 (1-1.2) collected at 09:36 from 1-1.2 ft. bgs	
				0.0			Analytical sample G-FA-106 (1-1.5) collected at 09:32 from 1-1.5 ft. bgs	
2						SP	Brown, fine to medium SAND with wood fragments and tan and orange colored, layered, hard, angular, concrete-like fragments, areas of black, sand-sized, granular material (apparent sandblast grit) (no odor, no sheen) (medium dense, damp to moist) [Fill]	
		d5		0.0			Analytical sample G-FA-106 (3-3.5) collected at 09:34 from 3-3.5 ft. bgs	
4								
				0.0		SP	Gray, fine to medium SAND; no odor, no sheen (medium dense, moist to wet) [Hydraulic Fill]	ATD
							Analytical sample G-FA-106 (5-5.5) at 09:30 from 5-5.5 ft. bgs	
6								
8								

Boring Completed 12/06/10
Total Depth of Boring = 5.5 ft.

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

G-FA-107

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE	GROUNDWATER
							Drilling Method: Rubber-tired Backhoe Ground Elevation (ft):	
0						GP	Brown, gravelly, organic rich, fine to medium SAND with silt, trace black, sand-size, granular material (apparent sandblast grit) (no odor, no sheen) (loose, damp) [Fill]	Groundwater not encountered.
						SP/SM	Analytical sample G-FA-107 (0-1) collected at 10:40 from 0-1 ft. bgs	
				0.0			Brown, fine to medium SAND with silt and trace gravel (no odor, no sheen) (loose to medium dense, damp to moist) [Hydrualic Fill]	
							Analytical sample G-FA-107 (1-2) collected at 10:42 from 1-2 ft. bgs	
2		d5		0.0				
							Analytical sample G-FA-107 (2-1) collected at 10 44 from 2-3 ft. bgs	
				0.0				
						SP	Gray, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist) [Hydraulic Fill]	
4								

Boring Completed 12/06/10
Total Depth of Boring = 4.0 ft.

6

8

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

G-FA-108

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rubber-tired Backhoe Ground Elevation (ft):	
0		d5				SP/ SM	Brown, organic rich, gravelly, fine to medium SAND with silt, roots (no odor, no sheen) (medium dense, damp) [Fill]	Groundwater not encountered.
				0.0		SP/ SM	Analytical sample G-FA-108 (0-1)A collected at 11:30 from 0-1 ft. bgs, Analytical sample G-FA-108 (0-1)B collected at 1132 from 0-1 ft. bgs Brown, fine to medium SAND with silt, trace gravel and wood fragment; no odor, no sheen (medium dense, moist) [Fill]	
						SP	Collected soil sample G-FA-108 (1-2) at 11:34 from 1-2 ft. bgs	
2				0.0			Brown to gray, fine to medium SAND, trace silt; no odor, no sheen (medium dense, moist) [Hydraulic fill]	
				0.0			Collected soil sample G-FA-108 (2-3) at 11:36 from 2-3 ft. bgs	

Boring Completed 12/06/10
Total Depth of Boring = 3.0 ft.

4

6

8

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

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Log of Boring G-FA-108

Figure
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G-FA-109

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval / Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rubber-tired Backhoe Ground Elevation (ft):	
0					SP/ SM	Brown, organic rich, gravelly, fine to medium SAND with silt (no odor, no sheen) (medium dense, damp) [Fill]	Groundwater not encountered.
			0.0		SP	Black, sand-size, granular material (apparent sandblast grit) with brown medium sand and trace silt (no odor, no sheen) (loose, damp) [Fill]	
					SP/ SM	Analytical sample G-FA-109 (0.5-1) collected at 12:15 from 0.5-1 ft. bgs	
			0.0			Brown, fine to medium SAND with silt, trace gravel, and trace organics (no odor, no sheen) (medium dense, damp) [Fill]	
2	d5					Analytical sample G-FA-109 (1-2) collected at 12:17 from 1-2 ft. bgs	
					ML	Gray, sandy SILT with trace shell fragments and trace wood fragments (no odor, no sheen) (medium stiff, moist) [Hydraulic Fill]	

Boring Completed 12/06/10
Total Depth of Boring = 3.5 ft

4

6

8

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

Monitoring Well Logs

RI-MW-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft):	Water Level
0						SP/ SM	Brown, fine to medium SAND with silt and gravel, roots (no odor, no sheen) (medium dense, damp) [Fill]	
5–6.5	1	a1	12	0.0		SM	Brown, silty, fine to medium SAND with trace gravel, shell fragments, and root fragments (no odor, no sheen) (loose, moist to wet) [Hydraulic Fill]	ATD
10–11.5	2	a1	23	0.0		SP/ SM	Gray, fine to medium SAND with silt and trace shell fragments (no odor, no sheen) (medium dense, wet) [Hydraulic Fill]	
14–15.6	3	a1	7	0.0		SM	Gray, sandy, SILT with wood fragments at 15 ft. (no odor, no sheen) (medium stiff, damp) [Hydraulic Fill]	

Boring Completed 12/08/10
Total Depth of Boring = 15.6 ft.

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

0147029.500.610 1/16/14 N:\PROJECTS\147029.500.610.GPJ SOIL BORING LOG

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North Marina
Ameron-Hulbert Site
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Everett, Washington

Log of Boring RI-MW-1

Figure D-92

RI-MW-2

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP/ SM	Brown, fine to medium SAND with silt and gravel, roots (no odor, no sheen) (loose to medium dense, damp) [Fill]	
						SP/ SM	Gray, fine to medium SAND with silt, trace wood fragments and trace shell fragments (no odor, no sheen) (medium dense, moist) [Hydraulic Fill]	
6	1	a1	13	0.0				
8								ATD
11	2	a1	21	0.0			Analytical sample RI-MW-2 (10-11) collected at 14:55 from 10-11 ft. bgs	
15	3	a1	20	0.0				

Depth scale: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Boring Completed 12/08/10
Total Depth of Boring = 15.6 ft.

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

0147029 500 610 1/16/14 N:\PROJECTS\147029 500 610.GPJ SOIL BORING LOG

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Everett, Washington

Log of Boring RI-MW-2

Figure D-93

RI-MW-3

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft):	Water Level
0						SP/ SM	Brown, fine to medium SAND with silt, gravel, trace roots, and trace wood fragments (no odor, no sheen) (loose, moist) [Fill]	
6	1	a1	10	0.0				
8								ATD
10	2	a1	4	0.0		SP	Gray, fine to medium SAND with trace silt, shell fragments, and wood fragments (no odor, no sheen) (very loose, wet) [Hydraulic Fill]	
13							-Refusal at 13 ft bgs due to boulder	

Boring Completed 12/08/10
Total Depth of Boring = 13.0 ft.

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

0147029.500.610 1/16/14 N:\PROJECTS\147029.500.610.GPJ SOIL BORING LOG

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Everett, Washington

Log of Boring RI-MW-3

Figure
D-94

RI-MW-4 Well

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SP	See RI-MW-4 boring log for soil descrptions from 0-15 ft	
6								ATD
7				0.0				
8	1	a1	7					

Boring Completed 12/01/10
Total Depth of Boring = 15.6 ft.

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

0147029 500 610 1/16/14 N:\PROJECTS\147029 500 610.GPJ SOIL BORING LOG

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Everett, Washington

Log of Boring RI-MW-4 Well

Figure D-95

RI-MW-5

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0–0.5	1	a1	22	0.0	GP	Brown, 0.5 inch diameter GRAVEL with trace wood debris (no odor, no sheen) (loose, wet) [Fill]	
0.5–2.5	2	a1	18	0.0	SP/SM	Dark gray, fine SAND with silt and trace decomposed wood (no odor, no sheen) (medium dense, moist) [Fill] Analytical sample RI-MW-5 (0-1) collected at 12:28 from 0-1 ft. bgs Analytical sample RI-MW-5 (1-2) collected at 12:30 from 1-2 ft. bgs Analytical sample RI-MW-5 (2-3) collected at 12:32 from 2-3 ft. bgs	
2.5–15.6	3	a1	4	0.0	SP/SM	Gray, fine SAND with silt and shell fragments (no odor, no sheen) (very loose, moist) [Hydraulic Fill] -Occasional wood fragments	ATD (~6.7 ft)
	4	a1	2	0.0		-3 inch wood fragments at 14 ft. bgs	

Drilling Method: Hollow-stem Auger

Ground Elevation (ft): ______

Boring Completed 12/08/10
Total Depth of Boring = 15.6 ft.

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

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Everett, Washington

Log of Boring RI-MW-5

Figure D-96

RI-MW-6

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP-SM	Brown, fine to medium SAND with silt and gravel (no odor, no sheen) (loose, damp) [Fill]	
	1	a1	13	0.0	SM	Gray, silty, fine SAND with trace shell fragments (no odor, no sheen) (very loose, damp to moist) [Hydraulic Fill]	
	2	a1	4	0.0	SM	Gray, silty, fine SAND with trace wood fragments (no odor, no sheen) (very loose, wet) [Hydraulic Fill]	ATD
	3	a1	2	0.0	SM	Dark gray to black gravelly, silty, fine SAND with wood fragments (no odor, slight organic sheen) (very loose, wet) [Hydraulic Fill]	
	4	a1	6	0.0			

Drilling Method: Hollow-stem Auger

Ground Elevation (ft):

Boring Completed 09/30/11
Total Depth of Boring = 16.5 ft.

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

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Everett, Washington

Log of Boring RI-MW-6

Figure D-97

RI-MW-7

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	USCS Symbol	Soil Profile	Water Level
0					AC	Asphalt	
					SP	Gray, fine to medium SAND with trace silt and gravel (no odor, no sheen) (very loose, damp) [Fill]	
3	1	a1	5	0.0	SP	Gray, fine SAND with trace silt and lenses of wood and organics (no odor, no sheen) (very loose, damp to moist) [Hydraulic Fill]	
7.5							ATD
8	2	a1	2	0.0			
9.5						-Lenses of silt approximately 0.5 inches thick	
12.5	3	a1	2	.2	SP-SM	Gray, fine SAND with silt and trace wood, organics, and shell fragments (no odor, no sheen) (very loose, wet) [Hydraulic Fill]	

Drilling Method: Hollow-stem Auger

Ground Elevation (ft):

Boring Completed 09/30/11
Total Depth of Boring = 15.2 ft.

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

0147029.500.610 1/16/14 N:\PROJECTS\147029.500.610.GPJ SOIL BORING LOG

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Ameron-Hulbert Site
RI/FS Report
Everett, Washington

Log of Boring RI-MW-7

Figure D-98

APPENDIX E

Empirical Demonstration of Protection of Groundwater

APPENDIX E
EMPIRICAL DEMONSTRATION OF PROTECTION OF GROUNDWATER

For some constituents present in soil [carcinogenic polycyclic aromatic hydrocarbons (cPAHs), butylbenzyl phthalate, xylenes, cadmium, copper, mercury, and zinc], the soil criteria protective of human health (i.e., Method B direct human contact) was selected as the soil preliminary cleanup level (PCL) regardless of if it was higher than the screening criteria based on groundwater protection. In accordance with WAC 173-340-747(9), if an empirical demonstration can be made that concentrations present in soil are not causing exceedances of the groundwater cleanup levels, then development of a soil criterion protective of groundwater is not necessary. The MTCA regulations [WAC 173-340-747(9)(b)] identify requirements for demonstrating that soil concentrations will not cause an exceedance of groundwater cleanup levels:

- Requirement 1 - Measured groundwater concentrations must be less than or equal to the groundwater cleanup level
- Requirement 2 - Sufficient time must have elapsed for migration of the hazardous substance from soil to groundwater to have occurred
- Requirement 3 - Characteristics of the site that would impact migration of contaminants to groundwater must be representative of future site conditions.

Demonstration that the above requirements are met at the Site is provided in the following sections.

Requirement 1

Groundwater analytical results for cPAHs, butylbenzyl phthalate, xylenes, and dissolved metals collected during the RI are shown in Table 12 of this report. As is indicated, cPAHs, xylenes, butylbenzyl phthalate, dissolved cadmium, and dissolved zinc were not detected in groundwater at concentrations greater than the PCL during the RI.

Dissolved mercury was detected at concentrations greater than the PCL in samples collected from three direct push borings and five newly installed monitoring wells during the initial round of RI groundwater monitoring (December 2010). These elevated concentrations during the initial round of groundwater sampling appear to be associated with either elevated turbidity in samples collected from direct-push borings or recently constructed monitoring wells, or potentially laboratory QC issues. The initial round of sampling results is not considered representative of groundwater quality. Dissolved mercury was not detected at concentrations greater than the laboratory reporting limit in samples collected during the second (February 2011) or third (October 2011) rounds of sampling.

Dissolved copper was detected at concentrations greater than the PCL in groundwater samples collected from nine direct push borings and two monitoring wells during the initial round of RI groundwater monitoring (December 2010). These elevated dissolved copper concentrations appear to be associated with either elevated turbidity in samples collected from direct-push borings or recently constructed/developed monitoring wells. Additionally, dissolved copper was not detected above the laboratory reporting limit in the groundwater sample collected from M-FA-102 even though the soil sample collected from this location exhibited a dissolved copper concentration of 1,410 mg/kg and was collected from below the groundwater table. The combination of the dissolved copper groundwater concentrations below the reporting limit and the highly elevated dissolved copper concentration in a soil sample collected from below the water table at the same location support the conclusion that the elevated concentrations of copper present in Site soil are not causing elevated copper concentrations in groundwater. Whatever the cause of the elevated dissolved copper concentrations observed during the initial round of sampling, the results are not considered representative of groundwater quality. During the October 2011 sampling event, dissolved copper was not detected in any of the groundwater samples collected at concentrations greater than the PCL, including a groundwater sample collected from monitoring well RI-MW-6 which was installed within 15 feet downgradient of J-FA-100, where the highest concentration of copper was detected during the initial round of RI groundwater monitoring.

Based on the above results, the first MTCA requirement above is met.

Requirement 2

The North Marina Area, which includes the Site, has been used for a variety of commercial, industrial, and marine-related activities since the late 1800s and the occurrence of the listed constituents in soil at the Site is presumed to be attributable to activities related to these various uses. The depth to groundwater at the Site is shallow, ranging from approximately 2 to 11 ft below ground surface. Because the property has been used for over a hundred years and depth to groundwater is shallow, it is expected that adequate time has elapsed for constituents to have reached groundwater, therefore, the second MTCA requirement above is met.

Requirement 3

The Port is in the process of redeveloping the North Marina Area, which includes the Site. Redevelopment will likely include a mix of marina support, retail, restaurant, hotel, office, and public recreational uses. Any changes to the Site uses are expected to decrease rather than increase the potential for migration of contaminants from soil to groundwater, therefore, current conditions are considered to be adequately representative of future conditions, meeting the third MTCA requirement.

Conclusions

Based on an empirical demonstration, the existing soil concentrations at the site for cPAHs, butylbenzyl phthalate, xylenes, cadmium, copper, mercury, and zinc are protective of groundwater, and soil cleanup levels protective of groundwater are not required for these constituents.

APPENDIX F

Grain Size Analysis Results

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Grain Size by ASTM D422

Project: Ameron/Hulbert RIFS
Client: Landau Associates
Client Project #: 147029.500.610
Lab Project #: CHM101217-8

Percent Retained in each Size Fraction

UOM = percent

Sieve Size (microns)	>19000	19000-12500	12500-9500	9500-4750	4750-850	850-425	425-250	250-150	150-75	75-45	45-34	<34
RI-MW-5 (2-4)	0.00	0.00	0.00	2.90	2.64	2.78	25.41	32.56	22.26	8.87	1.71	0.58

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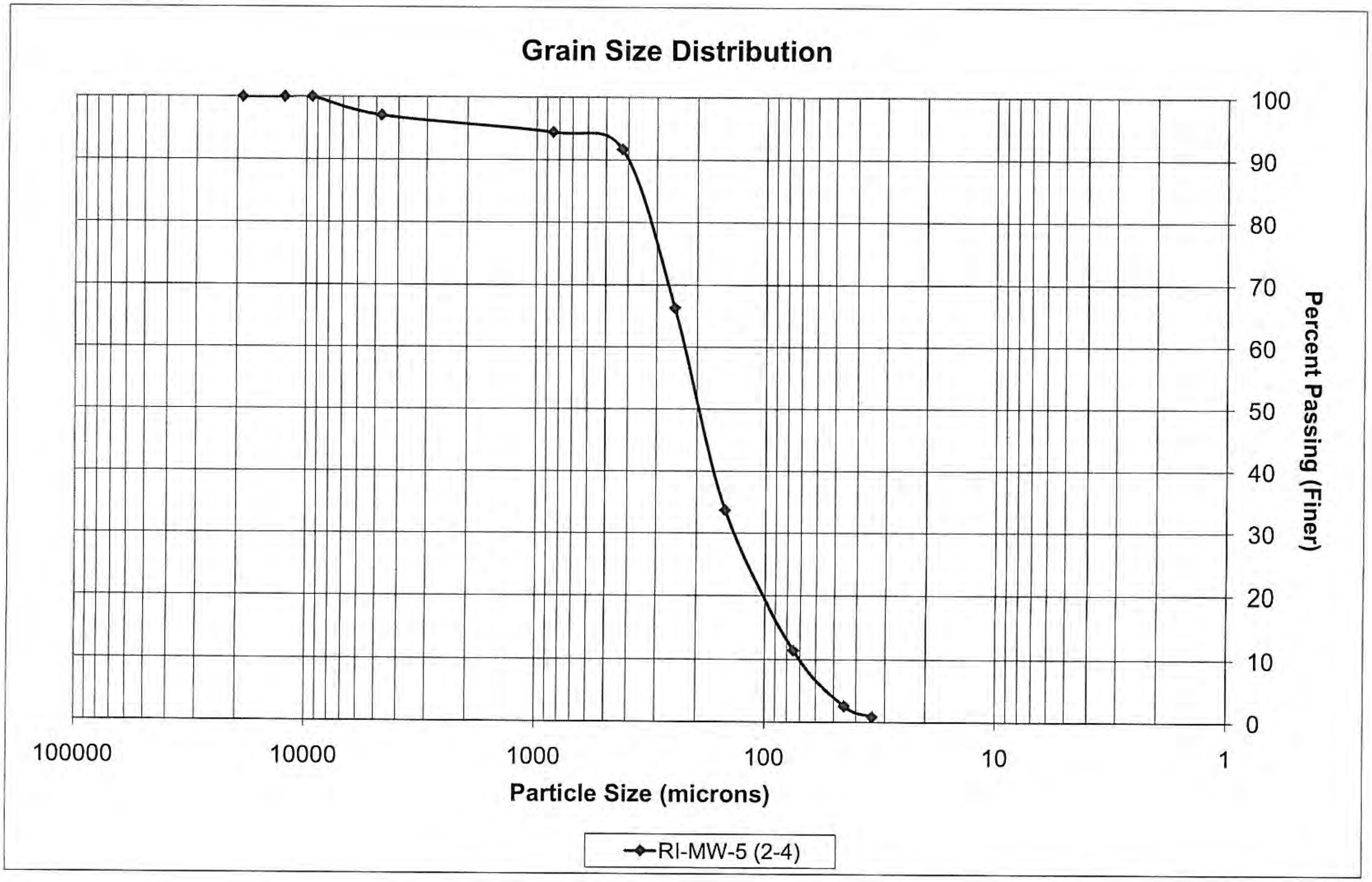
Project: Ameron/Hulbert RIFS
Client: Landau Associates
Client Project #: 147029.500.610
Lab Project #: CHM101217-8



2930 Westlake Ave. N., Suite 100
Seattle, WA 98109
Tel: 206-352-3790
Fax: 206-352-7178
Email: info@fremontanalytical.com

Grain Size by ASTM D422

Project: Ameron/Hulbert RIFS
Client: Landau Associates
Client Project #: 147029.500.610
Lab Project #: CHM101208-9

Percent Finer (Passing) Than the Indicated Size

UOM = Percent

Sieve Size	3/4"	1/2"	3/8"	#4	#20	#40	#60	#100	#200	#325	#450
Particle Size (microns)	19000	12500	9500	4750	850	425	250	150	75	45	34
RI-MW-4 (7-7.5)	100.00	98.82	98.44	97.21	91.60	83.25	66.38	35.47	13.65	4.19	1.92
RI-MW-2 (10-11)	94.45	81.30	73.19	59.81	26.05	18.08	12.07	7.76	-	-	-

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Grain Size by ASTM D422

Project: Ameron/Hulbert RIFS
Client: Landau Associates
Client Project #: 147029.500.610
Lab Project #: CHM101208-9

Percent Retained in Each Size Fraction

UOM = Percent

Sieve Size	3/4"	1/2"	3/8"	#4	#20	#40	#60	#100	>#100	#200	#325	#450	>#450
Particle Size (microns)	19000	12500	9500	4750	850	425	250	150	<150	75	45	34	<34
RI-MW-4 (7-7.5)	0.00	1.18	0.38	1.23	5.61	8.35	16.87	30.91	-	21.81	9.47	2.26	0.71
RI-MW-2 (10-11)	5.55	13.15	8.11	13.38	33.76	7.98	6.00	4.32	7.41	-	-	-	-

Fremont Analytical

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Grain Size by ASTM D422

Project: Ameron/Hulbert RIFS
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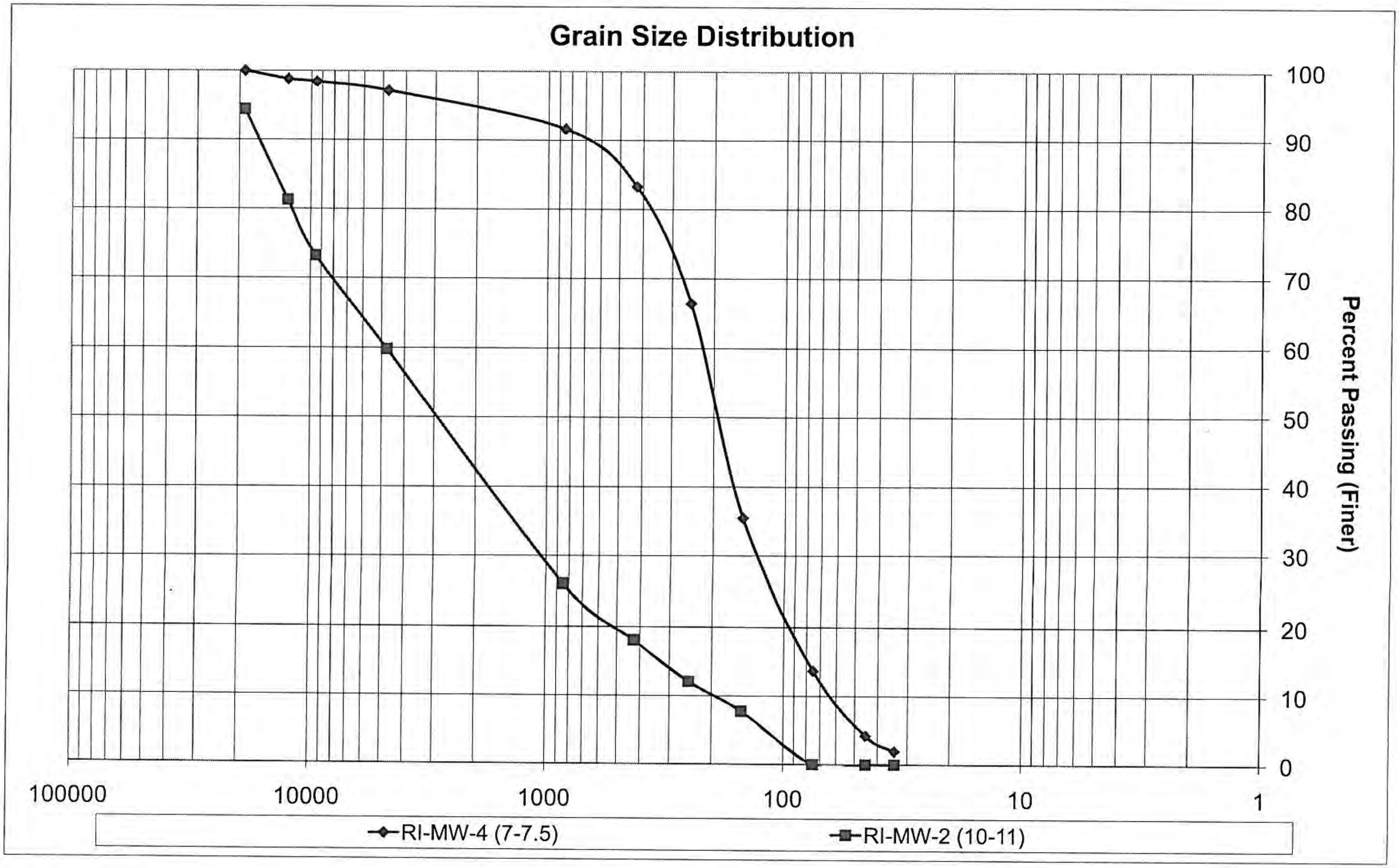
Client Project #: 147029.500.610
Lab Project #: CHM101208-9



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Fax: 206-352-7178
Email: info@fremontanalytical.com

Grain Size by ASTM D422

Project: Ameron/Hulbert RIFS
Client: Landau Associates
Client Project #: 147029.500.610
Lab Project #: CHM101217-8

Percent Finer (Passing) Than the Indicated Size

UOM = percent

Sieve Size	3/4"	1/2"	3/8"	#4	#20	#40	#60	#100	#200	#325	#450
particle size (microns)	19000	12500	9500	4750	850	425	250	150	75	45	34
RI-MW-5 (2-4)	100	100	100	97.10	94.45	91.68	66.26	33.70	11.44	2.57	0.86

APPENDIX G

Statistical Evaluations

APPENDIX G

STATISTICAL EVALUATION OF LEAD AND ARSENIC CONCENTRATIONS REMAINING IN THE SOUTHERN PORTION OF AREA M

This Appendix summarizes the statistical evaluation conducted as part of the Remedial Investigation/Feasibility Study (RI/FS) to determine compliance with the screening level for lead and arsenic in the southern portion of Area M. During RI sampling, lead was detected at concentrations greater than the screening level exclusively in samples where black sand was observed. Excluding samples collected from soil containing black sand and soil samples collected from the Norton Industries property to the north of the Site, lead is present in shallow soil remaining at a concentration exceeding the screening level at one location in the southeastern portion of the Site (M-FA-103).

Arsenic was detected above its soil screening level at more locations than lead where black sand was not present. However, an isolated arsenic soil screening level exceedance occurred at location M-FA-102b during characterization for the Craftsman District boatyard expansion emergency action that did not appear to be related to a Site release based on the lack of any other arsenic soil screening level exceedances in nearby samples.

The Model Toxics Control Act (MTCA) allows for compliance with cleanup levels if the following are true [WAC 173-340-740(7)]:

- Less than ten percent of the concentrations exceed the soil cleanup level
- No single sample concentration is greater than two times the cleanup level
- The upper one-sided ninety-five percent upper confidence limit (UCL) on the true mean soil concentration is less than the soil cleanup level.

The following sections present the results of statistical evaluations performed to evaluate whether the lead and arsenic soil screening level exceedances identified above comply with the screening levels based on the above MTCA provision for statistical demonstration of compliance with cleanup levels.

LEAD

The data set used for the statistical evaluation of location M-FA-103 for lead consists of 22 soil samples representing soil remaining in the southern portion of Area M, excluding samples collected from soil containing black sand that will be addressed as part of cleanup area M-2 (Figure G-1). The soil samples were collected by hand or from direct-push borings from the depths ranging from 0 to 9 ft BGS in the southern portion of Area M. As described below, all of the above criteria are true for this data set and, therefore, the lead concentrations remaining in soil at M-FA-103 comply with the lead screening level:

- One concentration in the data set of 22 exceeds the screening level; therefore, less than ten percent of the concentrations exceed the lead screening level for soil.
- The concentrations associated with the lead screening level exceedance [294 milligrams per kilogram (mg/kg)] are less than two times the lead screening level of 250 mg/kg
- The UCL for the data is 92.26 mg/kg, which is less than the 250 mg/kg lead screening level for soil.

The UCL was calculated using ProUCL 4.1 software [U.S. Environmental Protection Agency (EPA 2010)]. The data set did not include any samples where lead was not detected at concentrations greater than the laboratory reporting limits. The data set was determined by the software to follow a lognormal distribution. The data set and statistical results are documented in an attached report generated using ProUCL. The lead concentrations used in the data set and the associated sample identifications are presented in the attached report.

ARSENIC

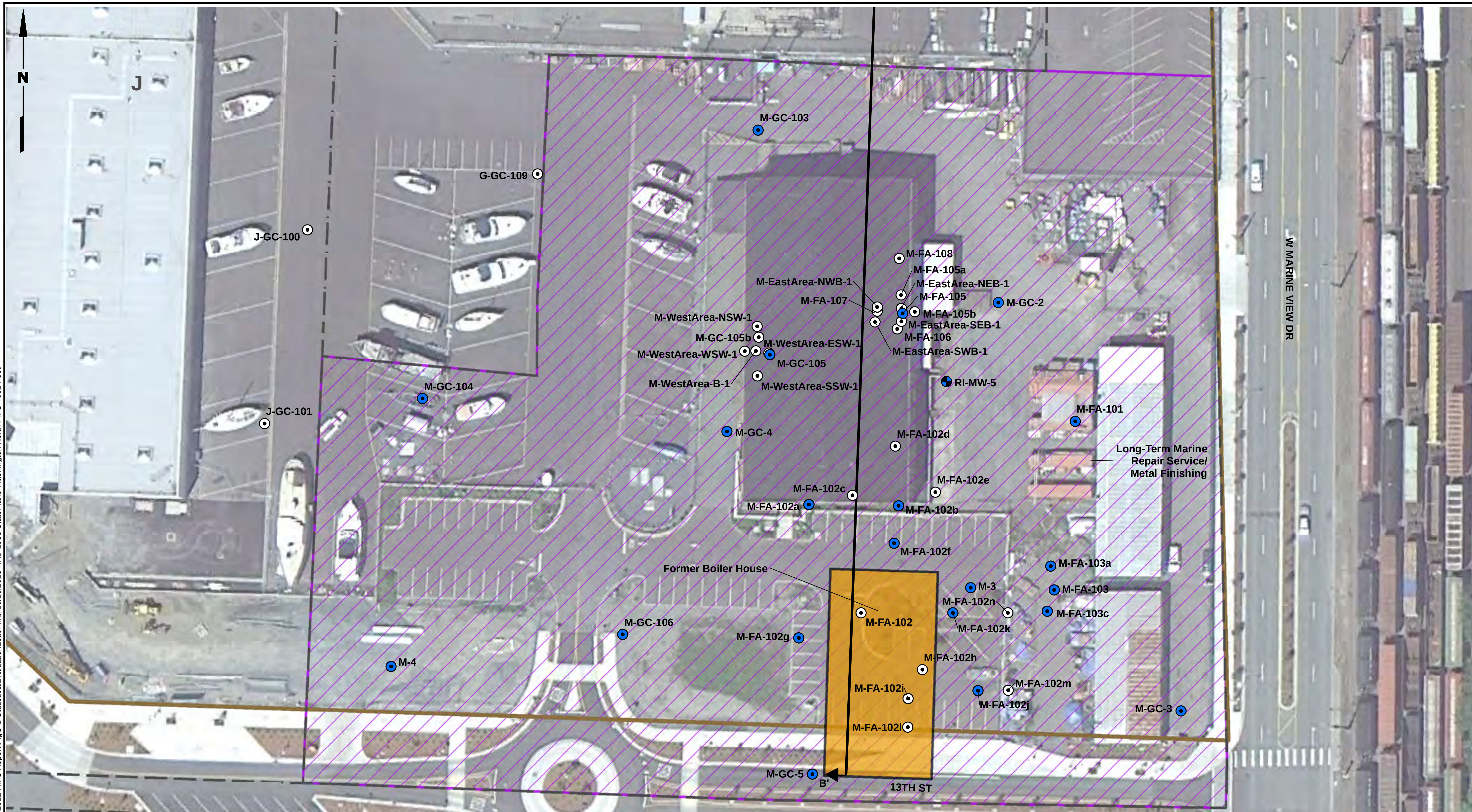
The data set used for the statistical evaluation of location M-FA-102b consists of 29 soil samples representing soil remaining in the southern portion of Area M excluding samples collected from soil containing black sand that will be addressed as part of cleanup area M-2 (Figure G-2). The soil samples were collected by hand or from direct-push borings from the depths ranging from 0 to 10 ft BGS within the exposure area. As described below, all of the above criteria are true for this data set and, therefore, the arsenic concentrations remaining in soil within the boatyard expansion area comply with the arsenic screening level:

- The concentration associated with the single arsenic screening level exceedance is 35.3 mg/kg, which is less than two times the arsenic screening level of 20 mg/kg.
- Only one concentration in the data set of 29 exceeds the screening level; therefore, less than ten percent of the concentrations exceed the arsenic screening level for soil.
- The UCL for the data is 9.80 mg/kg, which is less than the 20 mg/kg arsenic screening level for soil.

The UCL was calculated using ProUCL 4.1 software (EPA 2010). The data set did not include any samples where arsenic was not detected at concentrations greater than the laboratory reporting limits. The data set was determined by the software to follow gamma distribution. The data set and statistical results are documented in an attached report generated using ProUCL. The arsenic concentrations used in the data set and the associated sample identifications are presented in the attached data table.

REFERENCE

EPA. 2010. *ProUCL Version 4.1, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*. National Exposure Research Lab, U.S. Environmental Protection Agency, Las Vegas Nevada. May.



G:\Projects\1470\029\500\640\2012 RIFS Report\FigG-1-StatisticalEvaluationLead.mxd 10/29/2013 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Soil Boring Location
- Monitoring Well Location
- Soil Boring Location Included in Statistical Analysis
- Monitoring Well Location Included in Statistical Analysis
- Approximate Ameron/Hulbert Site Boundary
- G - Area Designation
- Exposure Area
- Cleanup Area M-2
- A A' Cross Sections

0 60 120

Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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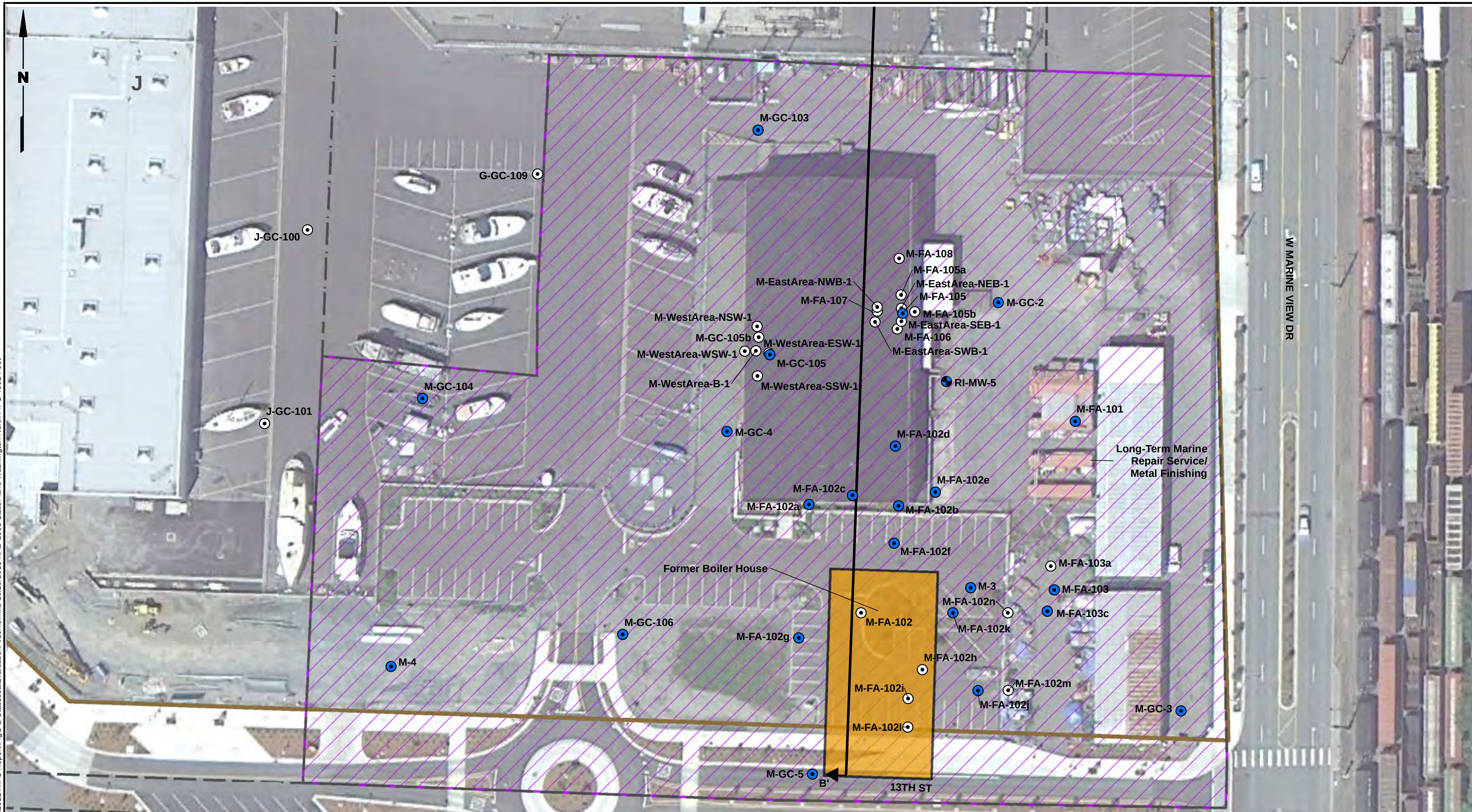
Everett, Washington

Statistical Evaluation for Lead

Figure G-1



G:\Projects\1470\029\500\640\2012 RIFS Report\FigG-2-StatisticalEvaluationArsenic.mxd 10/29/2013 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Soil Boring Location
- Monitoring Well Location
- Monitoring Well Location Included in Statistical Analysis
- Soil Boring Location Included in Statistical Analysis
- Approximate Ameron/Hulbert Site Boundary
- G - Area Designation
- Exposure Area
- Cleanup Area M-2
- A A' Cross Sections

0 60 120

Scale in Feet

Data Source: Google Earth Pro (2011 Image)

Note

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Statistical Evaluation for Arsenic

Figure G-2

Attachments

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C1

General Statistics			
Number of Valid Observations	26	Number of Distinct Observations	22
Raw Statistics		Log-transformed Statistics	
Minimum	2	Minimum of Log Data	0.693
Maximum	294	Maximum of Log Data	5.684
Mean	40.94	Mean of log Data	2.643
Geometric Mean	14.06	SD of log Data	1.438
Median	9.65		
SD	70.09		
Std. Error of Mean	13.75		
Coefficient of Variation	1.712		
Skewness	2.52		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.604	Shapiro Wilk Test Statistic	0.931
Shapiro Wilk Critical Value	0.92	Shapiro Wilk Critical Value	0.92
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	64.42	95% H-UCL	97.07
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	92.26
95% Adjusted-CLT UCL (Chen-1995)	70.81	97.5% Chebyshev (MVUE) UCL	116.3
95% Modified-t UCL (Johnson-1978)	65.55	99% Chebyshev (MVUE) UCL	163.5
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.54	Data appear Lognormal at 5% Significance Level	
Theta Star	75.88		
MLE of Mean	40.94		
MLE of Standard Deviation	55.73		
nu star	28.06		
Approximate Chi Square Value (.05)	16.97	Nonparametric Statistics	
Adjusted Level of Significance	0.0398	95% CLT UCL	63.55
Adjusted Chi Square Value	16.4	95% Jackknife UCL	64.42
		95% Standard Bootstrap UCL	62.7
Anderson-Darling Test Statistic	1.64	95% Bootstrap-t UCL	82.48
Anderson-Darling 5% Critical Value	0.801	95% Hall's Bootstrap UCL	72.22
Kolmogorov-Smirnov Test Statistic	0.245	95% Percentile Bootstrap UCL	64.76
Kolmogorov-Smirnov 5% Critical Value	0.18	95% BCA Bootstrap UCL	72.32
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	100.9
		97.5% Chebyshev(Mean, Sd) UCL	126.8
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	177.7
95% Approximate Gamma UCL (Use when n >= 40)	67.68		
95% Adjusted Gamma UCL (Use when n < 40)	70.03		
Potential UCL to Use		Use 95% H-UCL	97.07

Data Used in Evaluation

Sample ID	Lead mg/kg
M-FA-101 (0-1)	18.3
M-FA-102a (0-1)	8
M-FA-102b (0-1)	73
M-FA-103a (0-1)	127
M-FA-103 (0-1)	294
M-FA-103C (0-1)	48.8
M-FA-105 (0-1)	11.6
M-GC-103 (0-1)	7.68
M-GC-104	7.62
Dup of M-GC-105 (0-0.2)	138
M-GC-106 (0-1)	8.95
RI-MW-5 (0-1)	6.15
M-3 (0-0.5)	184
M-GC-2 (1.5-2)	5
M-GC-3 (1-1.5)	2
M-GC-5 (1-1.5)	3
M-4 (0.8-1.3)	6
M-FA-102G (7-8)	9.9
M-FA-102F (7-8)	9.4
M-GC-4 (1.5-2)	28
M-FA-102j (5-6)	11
Dup of M-FA-102j (5-6)	22
M-FA-102j (7.5-8)	3
M-FA-102k (5-6)	28
M-FA-102k (7-7.5)	2
M-FA-102k (9-10)	2

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C1

General Statistics			
Number of Valid Observations	29	Number of Distinct Observations	23
Raw Statistics		Log-transformed Statistics	
Minimum	2.1	Minimum of Log Data	0.742
Maximum	35.5	Maximum of Log Data	3.57
Mean	8.053	Mean of log Data	1.91
Geometric Mean	6.753	SD of log Data	0.562
Median	6		
SD	6.252		
Std. Error of Mean	1.161		
Coefficient of Variation	0.776		
Skewness	3.278		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.663	Shapiro Wilk Test Statistic	0.959
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	10.03	95% H-UCL	9.779
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	11.63
95% Adjusted-CLT UCL (Chen-1995)	10.72	97.5% Chebyshev (MVUE) UCL	13.26
95% Modified-t UCL (Johnson-1978)	10.15	99% Chebyshev (MVUE) UCL	16.46
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.709	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	2.972		
MLE of Mean	8.053		
MLE of Standard Deviation	4.892		
nu star	157.1		
Approximate Chi Square Value (.05)	129.2	Nonparametric Statistics	
Adjusted Level of Significance	0.0407	95% CLT UCL	9.962
Adjusted Chi Square Value	127.6	95% Jackknife UCL	10.03
		95% Standard Bootstrap UCL	9.944
Anderson-Darling Test Statistic	0.963	95% Bootstrap-t UCL	11.95
Anderson-Darling 5% Critical Value	0.753	95% Hall's Bootstrap UCL	18.28
Kolmogorov-Smirnov Test Statistic	0.152	95% Percentile Bootstrap UCL	10.19
Kolmogorov-Smirnov 5% Critical Value	0.164	95% BCA Bootstrap UCL	11.07
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	13.11
		97.5% Chebyshev(Mean, Sd) UCL	15.3
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	19.6
95% Approximate Gamma UCL (Use when n >= 40)	9.797		
95% Adjusted Gamma UCL (Use when n < 40)	9.913		
Potential UCL to Use		Use 95% Approximate Gamma UCL	9.797

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Data Used in Evaluation

Sample ID	Arsenic (mg/kg)
M-GC-103 (0-1)	8.66
M-FA-105 (0-1)	4.67
M-GC-106 (0-1)	6.51
M-GC-105 (0-0.2)	5.87
M-GC-2 (1.5-2)	5
M-GC-4 (1.5-2)	8
RI-MW-5 (0-1)	4.38
M-FA-102A (0-1)	5.4
M-FA-102B (0-1)	35.5
M-FA-102E (0-1)	3
M-FA-101 (0-1)	5.76
M-FA-102C (0-1)	4.1
M-FA-102D (0-1)	6.4
M-FA-102B(1-2)	14.3
M-GC-104 (0-1)	7.52
M-4 (0.8-1.3)	6
M-FA-102G (7-8)	10.3
M-FA-102F (7-8)	10
M-3(0-0.5)	14
M-FA-103 (0-1)	3.06
M-FA-103C (0-1)	2.1
M-GC-3 (1-1.5)	5
M-GC-5 (1-1.5)	5
M-FA-102j (5-6)	8
dup M-FA-102j (5-6)	10
M-FA-102j (7.5-8)	7
M-FA-102k (5-6)	16
M-FA-102k (7-7.5)	6
M-FA-102k (9-10)	6

APPENDIX H

Remedial Alternative Cost Estimates

TABLE H-1
FEASIBILITY STUDY COST ESTIMATES
PORT OF EVERETT - AMERON HUBERT CLEANUP ALTERNATIVES

PRELIMINARY PLANNING LEVEL ESTIMATE

ALTERNATIVE #1 - SITE-WIDE REMEDIAL EXCAVATION					
ITEM	**QUANTITY**	**UNIT**	**UNIT COST**	**COST**	**NOTES**
CAPITAL DIRECT COSTS					
Additional Soil Investigation	1	LS	$ 50,000	$ 50,000	1
CAP/Engineering Design Report	1	LS	$ 100,000	$ 100,000	2
Remedial Excavation and Site Restoration					
Contractor Mobilization/Demobilization	1	LS	$ 10,000	$ 10,000	3
Temporary Fencing	1	LS	$ 5,000	$ 5,000	4
Excavation and Disposal					
Utilities Management	1	LS	$ 10,000	$ 10,000	5
Erosion and Sediment Control	1	LS	$ 10,000	$ 10,000	6
Dust Monitoring	1	LS	$ 5,000	$ 5,000	7
Surveying/Survey Control	1	LS	$ 20,000	$ 20,000	8
Remove Esplanade (Concrete Slab Demolition)	5,788	SF	$ 2.00	$ 11,576	9
Remove Asphalt Paving	53,620	SF	$ 2.00	$ 107,240	10
Hauling of Pavement Demolition	2,228	TON	$ 5.75	$ 12,810	11
Disposal of Pavement Demolition	2,228	TON	$ 43.70	$ 97,355	12
Excavation and Loading of Contaminated Soil - No Utilities	4,814	CY	$ 10	$ 48,140	13
Excavation and Loading of Contaminated Soil Around Utilities	9,382	CY	$ 40	$ 375,280	14
Excavation and Stockpiling Clean Soil Around Utilities	5,320	CY	$ 40	$ 212,800	15
Dewatering	2	LS	$ 50,000	$ 100,000	16
Beam and Plate Shoring to Protect Buildings near Excavations	1	LS	$ 66,000	$ 66,000	17
Hauling of Excavated Contaminated Soils	21,294	TON	$ 5.75	$ 122,441	18
Disposal of Excavated Contaminated Soils	21,294	TON	$ 43.70	$ 930,548	19
Import Backfill Soil to Site	14,196	CY	$ 18	$ 255,528	20
Place, Grade, and Compact Backfill	19,516	CY	$ 9	$ 175,644	21
Stockpile Sampling	-	EA	$ 613	$ -	22
Confirmation Sampling	170	EA	$ 537	$ 91,290	23
Site Restoration					
Asphalt Paving/Cap with Compacted Gravel Base	53,620	SF	$ 4	$ 214,480	24
Replacement of the Esplanade (Concrete Sidewalk)	5,788	SF	$ 5	$ 28,940	25
Stormdrain Line replacement	320	LF	$ 25	$ 8,000	26
Trunkline manhole replacement	3	EA	$ 1,500	$ 4,500	26
TOTAL CAPITAL DIRECT COSTS				$ 3,072,571	
CAPITAL INDIRECT COSTS					
Remedial Design	10	%	DC	$ 292,257	*27*
Project Management	5	%	DC	$ 153,629	*27*
Construction Management	7	%	DC	$ 204,580	*27*
Construction Completion Report	1	EA	LS	$ 40,000	*33*
Permitting and Regulatory Compliance	3	%	DC	$ 87,677	*33*
Ecology Oversight	2	%	DC	$ 61,451	*33*
Combined Sales Tax for Everett, Washington	9	%	DC	$ 268,877	
TOTAL CAPITAL INDIRECT COSTS				$ 1,108,471	
TOTAL CAPITAL COSTS				**$ 4,180,000**	
O&M COSTS					
Discount Rate	3%				28
Develop and File Restrictive Covenant	1	LS	$ 10,000	$ 10,000	29
Groundwater Compliance Monitoring	1	EA	$ 18,300	$ 18,300	36
Ecology 5-Year Review and Response	6	EA 5 YRS	$ 5,000	$ 19,000	34
TOTAL O&M COSTS				**$ 47,300**	
TOTAL CAPITAL AND O&M COSTS (2012 DOLLARS)				**$ 4,227,300**	
CONTINGENCY	30	%		**$ 1,268,190**	*32*
			ESTIMATED TOTAL COST	***$ 5,500,000***	

ASSUMPTIONS

1. Earthwork contractor contracts directly with PLPs
2. Disposal facility contracts directly with PLPs
3. All soil can be disposed as non-hazardous waste
4. Costs for excavation and hauling do not include potential fuel surcharges

ABBREVIATIONS

CY = Cubic Yard
EA = Each
LF = Linear Foot
LS = Lump Sum
O&M = Operation and Maintenance
QA = Quality Assurance
SF = Square Foot
SY = Square Yard
DC =Direct Costs

TABLE H-2
FEASIBILITY STUDY COST ESTIMATES
PORT OF EVERETT - AMERON HUBERT CLEANUP ALTERNATIVES

PRELIMINARY PLANNING LEVEL ESTIMATE

ALTERNATIVE #2 - REMEDIAL EXCAVATION IN FUTURE DEVELOPMENT AREAS AND CONTAINMENT					
ITEM	**QUANTITY**	**UNIT**	**UNIT COST**	**COST**	**NOTES**
CAPITAL DIRECT COSTS					
Additional Soil Investigation	1	LS	$ 30,000	$ 30,000	1
CAP/Engineering Design Report	1	LS	$ 75,000	$ 75,000	2
Remedial Excavation and Site Restoration					
Contractor Mobilization/Demobilization	1	LS	$ 8,000	$ 8,000	3
Temporary Fencing	1	LS	$ 5,000	$ 5,000	4
Excavation and Disposal					
Erosion and Sediment Control	1	LS	$ 8,000	$ 8,000	6
Dust Monitoring	1	LS	$ 3,000	$ 3,000	7
Surveying/Survey Control	1	LS	$ 15,000	$ 15,000	8
Remove Asphalt Paving	26,550	SF	$ 2.00	$ 53,100	10
Hauling of Pavement Demolition	996	TON	$ 5.75	$ 5,725	11
Disposal of Pavement Demolition	996	TON	$ 43.70	$ 43,509	12
Excavation and loading contaminated soil - No Utilities	4,814	CY	$ 10	$ 48,140	13
Excavation and loading of contaminated soil around utilities	1,242	CY	$ 40	$ 49,680	14
Dewatering	1	LS	$ 50,000	$ 50,000	16
Beam and Plate Shoring to Protect Buildings near Excavations	1	LS	$ 13,544	$ 13,544	17
Hauling of Excavated Contaminated Soils	9,084	TON	$ 5.75	$ 52,233	18
Disposal of Excavated Contaminated Soils	9,084	TON	$ 43.70	$ 396,971	19
Import Backfill Soil to Site	6,056	CY	$ 18	$ 109,008	20
Place, Grade, and Compact Backfill	6,056	CY	$ 9	$ 54,504	21
Stockpile Sampling	-	EA	$ 613	$ -	22
Confirmation Sampling	90	EA	$ 537	$ 48,330	23
Site Restoration					
Asphalt Paving/Cap with Compacted Gravel Base	26,550	SF	$ 4	$ 106,200	24
Trunkline manhole replacement	3	EA	$ 1,500	$ 4,500	26
Stormdrain Line replacement	320	LF	$ 25	$ 8,000	26
TOTAL CAPITAL DIRECT COSTS				$ 1,187,443	
CAPITAL INDIRECT COSTS					
Remedial Design	12	%	DC	$ 129,893	*27*
Project Management	6	%	DC	$ 71,247	*27*
Construction Management	8	%	DC	$ 86,595	*27*
Construction Completion Report	1	EA	LS	$ 30,000	*33*
Permitting and Regulatory Compliance	3	%	DC	$ 32,473	*33*
Ecology Oversight	2	%	DC	$ 23,749	*33*
Combined Sales Tax for Everett, Washington	9	%	DC	$ 99,585	
TOTAL CAPITAL INDIRECT COSTS				$ 473,542	
TOTAL CAPITAL COSTS				**$ 1,660,000**	
O&M COSTS (Present Worth)					
Discount Rate	3%				28
Develop and File Restrictive Covenant	1	LS	$ 10,000	$ 10,000	29
Annual Inspections	30	YR	$ 1,000	$ 19,000	30
Groundwater Compliance Monitoring	1	LS	$ 18,300	$ 18,300	36
Cap Maintenance/Repairs	6	EA 5 YRS	$ 2,000	$ 7,000	31
Ecology 5-Year Review and Response	6	EA 5 YRS	$ 5,000	$ 19,000	34
Future Soil Management	1	LS	$ 5,600	$ 5,000	35
TOTAL O&M COSTS				**$ 78,300**	
TOTAL CAPITAL AND O&M COSTS (2012 DOLLARS)				**$ 1,738,300**	
CONTINGENCY	30	%		**$ 521,490**	32
			ESTIMATED TOTAL COST	***$ 2,260,000***	

ASSUMPTIONS

1. Earthwork contractor contracts directly with PLPs
2. Disposal facility contracts directly with PLPs
3. All soil can be disposed as non-hazardous waste

TABLE H-3
FEASIBILITY STUDY COST ESTIMATES
PORT OF EVERETT - AMERON HUBERT CLEANUP ALTERNATIVES

PRELIMINARY PLANNING LEVEL ESTIMATE

ALTERNATIVE #3 - CONTAINMENT AND FOCUSED REMEDIAL EXCAVATION					
ITEM	**QUANTITY**	**UNIT**	**UNIT COST**	**COST**	**NOTES**
CAPITAL DIRECT COSTS					
Additional Soil Investigation	1	LS	$ 20,000	$ 20,000	1
CAP/Engineering Design Report	1	LS	$ 50,000	$ 50,000	2
Remedial Excavation and Site Restoration					
Contractor Mobilization/Demobilization	1	LS	$ 7,000	$ 7,000	3
Temporary Fencing	1	LS	$ 5,000	$ 5,000	4
Excavation and Disposal					
Erosion and Sediment Control	1	LS	$ 7,000	$ 7,000	6
Dust Monitoring	1	LS	$ 2,500	$ 2,500	7
Surveying/Survey Control	1	LS	$ 10,000	$ 10,000	8
Remove Asphalt Paving	13,400	SF	$ 2.00	$ 26,800	10
Hauling of Pavement Demolition	503	TON	$ 5.75	$ 2,889	11
Disposal of Pavement Demolition	503	TON	$ 43.70	$ 21,959	12
Excavation and loading of contaminated soil - no utilities	4,814	CY	$ 10	$ 48,140	13
Excavation and loading of contaminated soil around utilities	666	CY	$ 40	$ 26,640	14
Dewatering	1	LS	$ 50,000	$ 50,000	16
Hauling of Excavated Contaminated Soils	8,220	TON	$ 5.75	$ 47,265	18
Disposal of Excavated Contaminated Soils	8,220	TON	$ 43.70	$ 359,214	19
Import Backfill Soil to Site	5,480	CY	$ 18	$ 98,640	20
Place, Grade, and Compact Backfill	5,480	CY	$ 9	$ 49,320	21
Stockpile Sampling	-	EA	$ 613	$ -	22
Confirmation Sampling	65	EA	$ 537	$ 34,905	23
Site Restoration					
Asphalt Paving/Cap with compacted gravel base	13,400	SF	$ 4	$ 53,600	24
Trunkline manhole replacement	3	EA	$ 1,500	$ 4,500	26
Stormdrain Line replacement	320	LF	$ 25	$ 8,000	26
TOTAL CAPITAL DIRECT COSTS				$ 933,373	
CAPITAL INDIRECT COSTS					
Remedial Design	15	%	DC	$ 129,506	*27*
Project Management	8	%	DC	$ 74,670	*27*
Construction Management	10	%	DC	$ 86,337	*27*
Construction Completion Report	1	EA	LS	$ 20,000	*33*
Permitting and Regulatory Compliance	3	%	DC	$ 25,901	*33*
Ecology Oversight	2	%	DC	$ 18,667	*33*
Combined Sales Tax for Everett, Washington	9	%	DC	$ 79,430	
TOTAL CAPITAL INDIRECT COSTS				$ 434,512	
TOTAL CAPITAL COSTS				**$ 1,370,000**	
O&M COSTS (Present Worth)					
Discount Rate	3%				28
Develop and File Restrictive Covenant	1	LS	$ 10,000	$ 10,000	29
Annual Inspections	30	YR	$ 1,000	$ 19,000	30
Groundwater Compliance Monitoring	1	LS	$ 18,300	$ 18,300	36
Cap Maintenance/Repairs	6	EA 5 YRS	$ 2,000	$ 7,000	31
Ecology 5-Year Review and Response	6	EA 5 YRS	$ 7,000	$ 26,000	34
Future Soil Management	1	LS	$ 11,200	$ 10,000	35
TOTAL O&M COSTS				**$ 90,300**	
TOTAL CAPITAL AND O&M COSTS (2012 DOLLARS)				**$ 1,460,300**	
CONTINGENCY / UNLISTED ITEMS	30	%		**$ 438,090**	32
			ESTIMATED TOTAL COST	***$ 1,900,000***	

ASSUMPTIONS
1. Earthwork contractor contracts directly with PLPs
2. Disposal facility contracts directly with PLPs
3. All soil can be disposed as non-hazardous waste

TABLE H-4
FEASIBILITY STUDY COST ESTIMATES
PORT OF EVERETT - AMERON HUBERT CLEANUP ALTERNATIVES

PRELIMINARY PLANNING LEVEL ESTIMATE

ALTERNATIVE #4 - SITE-WIDE CAPPING AND CONTAINMENT					
ITEM	**QUANTITY**	**UNIT**	**UNIT COST**	**COST**	**NOTES**
CAPITAL DIRECT COSTS					
Additional Soil Investigation	1	LS	$ 10,000	$ 10,000	1
CAP/Engineering Design Report	1	LS	$ 30,000	$ 30,000	2
Remedial Excavation and Site Restoration					
Contractor Mobilization/Demobilization	1	LS	$ 5,000	$ 5,000	3
Temporary Fencing	1	LS	$ 3,000	$ 3,000	4
Excavation and Disposal					
Erosion and Sediment Control	1	LS	$ 3,000	$ 3,000	6
Dust Monitoring	1	LS	$ 2,000	$ 2,000	7
Surveying/survey control	1	LS	$ 7,000	$ 7,000	8
Site Restoration					
Asphalt Paving/Cap with Compacted Gravel Base	16,388	SF	$ 4	$ 65,552	24
TOTAL CAPITAL DIRECT COSTS				$ 125,552	
CAPITAL INDIRECT COSTS					
Remedial Design	15	%	DC	$ 12,833	*27*
Project Management	8	%	DC	$ 10,044	*27*
Construction Management	10	%	DC	$ 8,555	*27*
Construction Completion Report	1	EA	LS	$ 10,000	*33*
Permitting and Regulatory Compliance	3	%	DC	$ 2,567	*33*
Ecology Oversight	2	%	DC	$ 2,511	*33*
Combined Sales Tax for Everett, Washington	9	%	DC	$ 7,871	
TOTAL CAPITAL INDIRECT COSTS				$ 54,381	
TOTAL CAPITAL COSTS				**$ 180,000**	
O&M COSTS (Present Worth)					
Discount Rate	3%				28
Develop and File Restrictive Covenant	1	LS	$ 10,000	$ 10,000	29
Annual Inspections	30	YR	$ 1,000	$ 19,000	30
Groundwater Compliance Monitoring	1	LS	$ 18,300	$ 18,300	36
Cap Maintenance/Repairs	6	EA 5 YRS	$ 2,000	$ 7,000	31
Ecology 5-Year Review and Response	6	EA 5 YRS	$ 10,000	$ 37,000	34
Future Soil Management	1	LS	$ 22,200	$ 19,000	35
TOTAL O&M COSTS				**$ 110,300**	
TOTAL CAPITAL AND O&M COSTS (2012 DOLLARS)				**$ 290,300**	
CONTINGENCY / UNLISTED ITEMS	30	%		**$ 87,090**	32
			ESTIMATED TOTAL COST	***$ 380,000***	

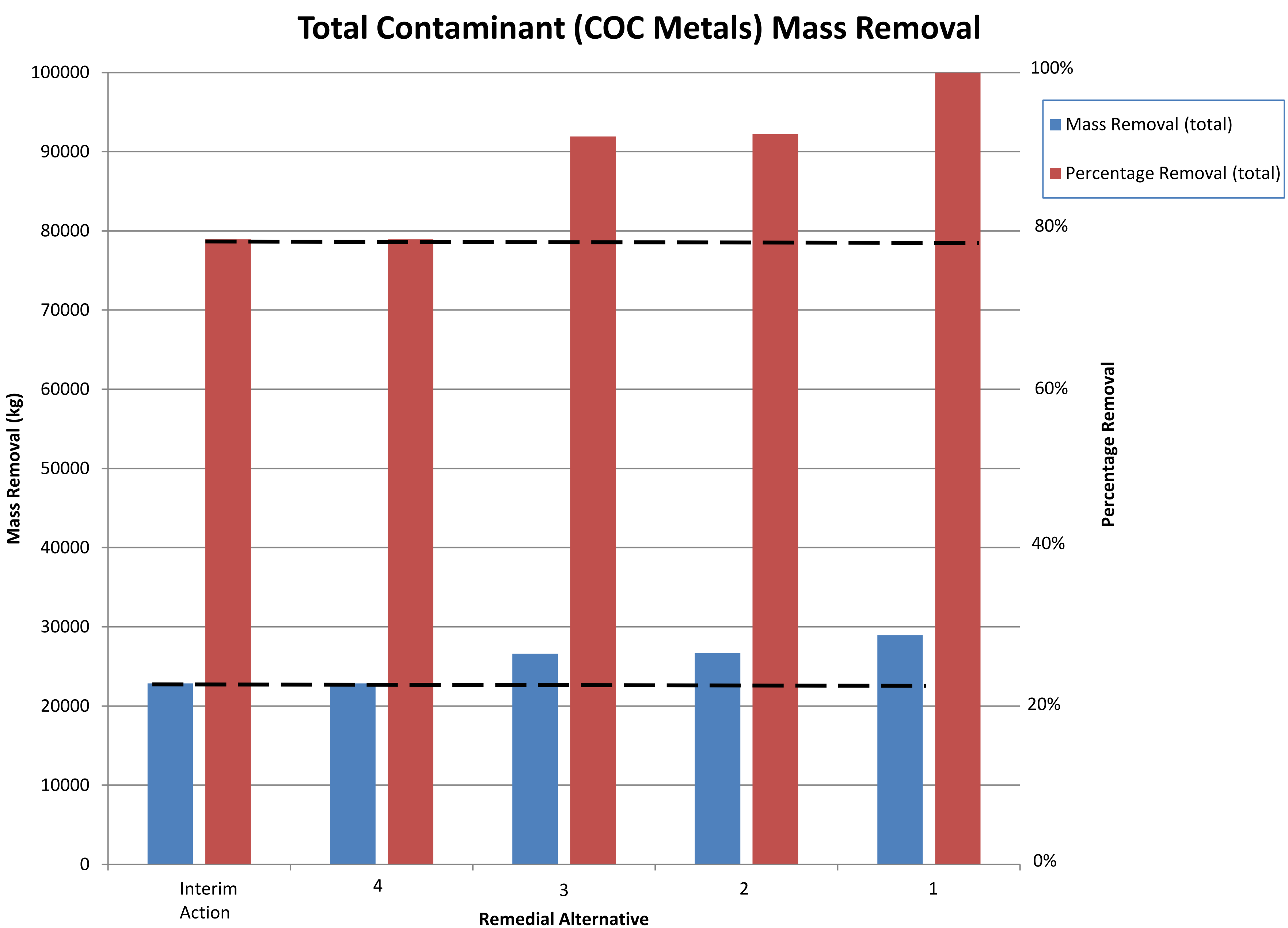
ASSUMPTIONS

1. Earthwork contractor contracts directly with PLPs
2. Disposal facility contracts directly with PLPs
3. All soil can be disposed as non-hazardous waste

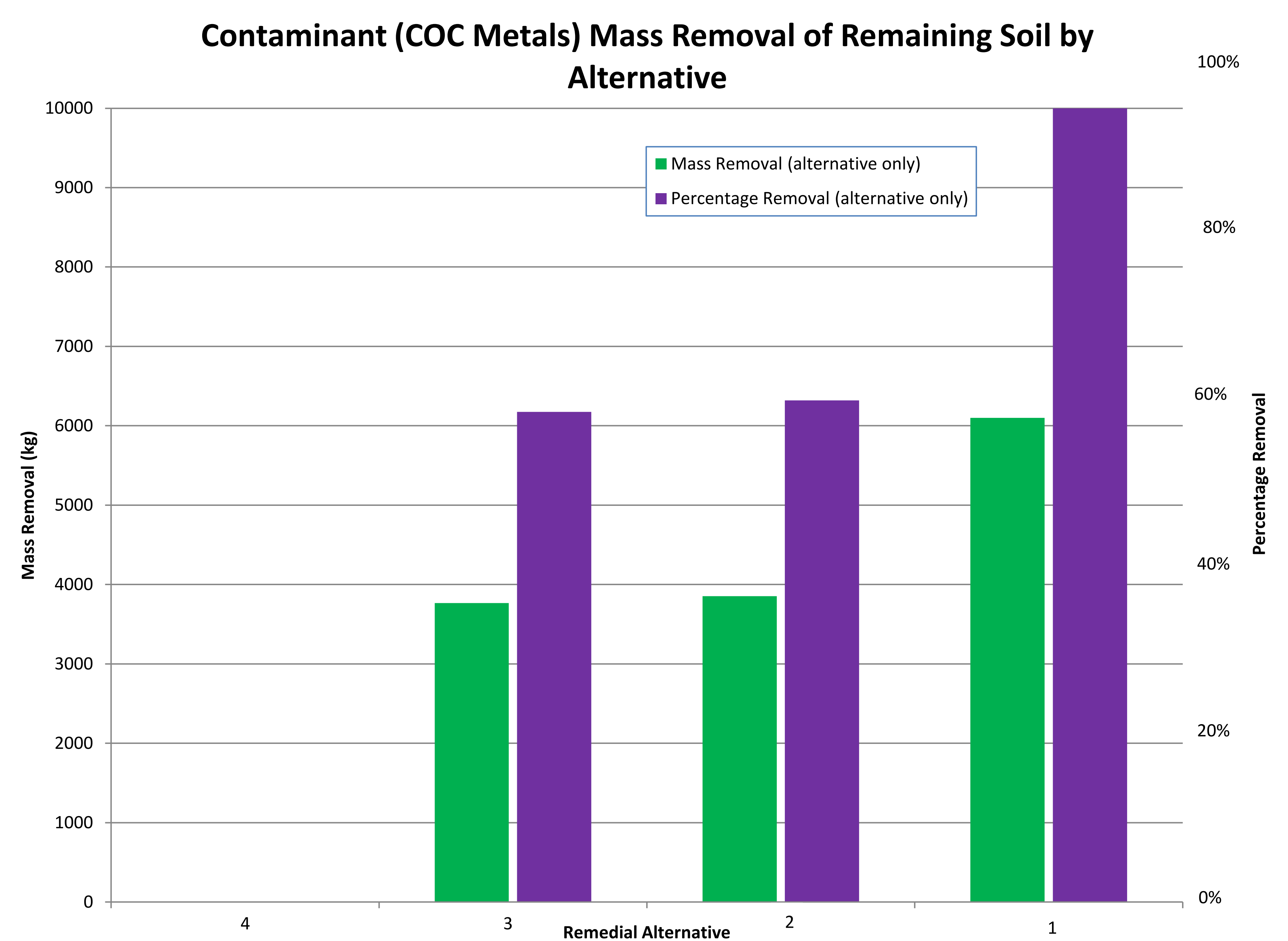
NOTE #		COST ESTIMATE BASIS
1	Additional investigation, sampling and testing that may be required to characterize limits of excavation and/or areas to be capped	
2	Prepare Cleanup Action Plan, Engineering Design Report. Includes draft, draft final and final documents, and assistance during public review for each document. Detailed design,	
3	Includes notification to public utilities and private utilities locate; temporary facilities, work plans/submittals.	
4	Temporary fencing around excavations/soil stockpiles to prevent public entrance	
5	Carefully excavating around utilities and supporting them during excavation and backfill	
6	Dust control (water trucks), street sweeping, erosion control measures	
7	personal and area dust monitoring for arsenic	
8	Surveying vertical and horizontal control for excavation limits	
9	Concrete Paving Demolition RS Means 2006 (16 01 00124 Remove Slab on grade 4"to 6" thick) + 30% for inflation and regional factor and 100% for contractor overhead and profit	
10	Asphalt Paving Demolition assume same as concrete demolition (see note 9)	
11	Hauling Pavement Demolition to Everett Intermodal Transfer Station 6 miles rtrp - ($125/hr x 1 hrs/trip / 25 tons/trip) + 15 % markup	
12	Assumed 6" thick removal, 150 lbs/cubic foot, Disposal at Rabanco Subtitle D solid waste (per Allied Rabanco 206/391-4531) plus 15% Markup	
13	Assumed $2,000/day excavator and operator, 200 cy per day excavate and load	
14	Assumed $2,000/day excavator and operator, 50 cy per day excavate and load due to presence of shallow utilities	
15	Assumed $2,000/day excavator and operator, 50 cy per day excavate and stockpile due to presence of shallow utilities	
16	Assumed 3 days Operator and 3" diameter trash pump to one 21K gal Baker tank then disposal by Emerald Services assume 20K gallons maximum	
17	Assume plate and beam shoring system - Quote from United Rentals for excavations adjacent to Buildings (1 month rental):	For 17-foot deep
17	Assume plate and beam shoring system - Quote from United Rentals for excavations adjacent to Buildings (1 month rental):	
	For 17-foot deep excavation:	
	Drill and install 14"-wide flange beam to depth of 40 feet, 8 feet on center for total of 38 holes @$500 each =	$19,000
	Wide Flange Beam Rental = $390/month x 38 beams =	$14,820
	Wall Plate 8' x 20' Rental = $246.37/month x 36 plates =	$8,900
	Deliver and Pickup	$250
	Engineering Certification	$2,500
	Subtotal	$45,570
	Markup (15%)	$ 6,836
	TOTAL	$52,406
	For 5-foot deep excavation:	
	Drill and install 14"-wide flange beam to depth of 12 feet, 8 feet on center for total of 10 holes @$300 each =	$3,000
	Wide Flange Beam Rental = $390/month x 10 beams =	$3,900
	Wall Plate 8' x 10' Rental = $246.37/month x 9 plates =	$2,217
	Deliver and Pickup	$250
	Engineering Certification	$2,500
	Subtotal	$11,777
	Markup (15%)	$ 1,767
	TOTAL	$13,544
18	Assume 1.5 tons/CY. Hauling soil Everett Intermodal Transfer Station 6 miles rtrp - ($125/hr x 1 hrs/trip / 25 tons/trip) + 15 % markup	
19	Assume 1.5 tons/CY. Disposal at Rabanco Subtitle D solid waste (per Allied Rabanco 206/391-4531) plus 15% Markup	
20	Assume imported structural fill and topsoil from clean borrow required	
21	Assumes filling with structural fill below 6" bgs and base course to grade	
22	10 for first 2000 cy + 1 for each 500 cy - Test for TPH-HCID, cPAHs, 8 RCRA metals, TCLP + 15% =$513 each + $100 each for sampling and data validation	
23	Frequency = 25-foot grid and side walls - Test for TPH-HCID, cPAHs, metals (SB, As, Cu, Pb) + 15% =$437 each + $100 each for sampling and data validation	
24	Repave asphalt parking areas RS Means 2006 (18 020 0301 grading, 10" subgrade compact, 9" base 1.5 " top) + 50% for inflation and profit	
25	Restore Concrete Espalade RS Means 2006 (18 030 0304 5" thick with mesh) +50% for inflation and contractor overhead and profit	
26	Restore Stormdrain in southeast parking lot excavation and trunk line along north property line. Manholes associated with trunk line replacement. Assumes excavation and backfilling addressed as part of soil cleanup	
27	Remedial design includes preparation of construction plans and specifications, preparation of engineer's estimate of probable cost, and bidding support. Project management includes bid/contract administration, cost and performance reporting, planning and coordination. Construction managment includes submittal review, change order review, design modifications, construction schedule tracking. Estimated cost based on Remedial Design, Project Management and Construction Management based on: *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study,* EPA 540-R-00-002, OSWER 9355.0-75, July 2000.	
28	The 3% discount rate represents an average return on investment of 6% minus an assumed inflation rate of 3%.	
29	Includes inspection monitoring and repair program	
30	Annual inspection of site cap	
31	Assume repairs every 5 years	
32	Contingency includes scope contingency and bid contingency and is based on A Guide to Developing and Documenting Cost Estimates During the Feasibility Study, EPA 540-R-00-002, OSWER 9355.0-75, July 2000., and best professional judgement	
33	Costs based on best professional judgement and experience on other projects	
34	Assumed cost for communications and coordination with Ecology, and response to Ecology review questions, findings and requirements.	
35	Assumed cost for management and disposal of contaminated soil during future redevelopment (assume 5 years), site infrastructure maintenance or improvements. Cost assumes installation of new utility line in 3' D x 1.5'W trench extending across length of each containment area with shallow contamination in upper 3 feet (i.e., Area G, north end of Area M). Assume $49.45/ton hauling and disposal cost (see Notes 18 & 19), $12/ton for importing clean fill (assume half the depth of trench will require imported clean structural fill [other half occupied by utility and associated bedding material]), plus capital indirect costs (see Note 27) based on percentages (combined = 50%) shown in the lowest cost Alternative 4. - 0 LF for Alternatives 1 (all contaminated soil removed) - 270 LF (45 CY) for Alternative 2 - 540 LF (90 CY) for Alternative 3 - 1065 LF (178 CY) for Alternative 4	
36	Cost includes one wet season and one dry season monitoring event at 9 wells (and one duplicate) for 1 year (2 events) and collection of concurrent surface water samples. Test for dissolved copper (4 wells and surface water), dissolved arsenic (7 wells and surface water), TPH-Dx (2 wells), BEHP (2 wells), and 1-DCE (1 well). Analytical = $3300 ($165 per sample). Sample collection = $5900 ($295 per sample). Reporting costs = $9,100 (data validation, tablulation, semiannual EIM submittal and data transmittal to Ecology, and annual monitoring report).	

APPENDIX I

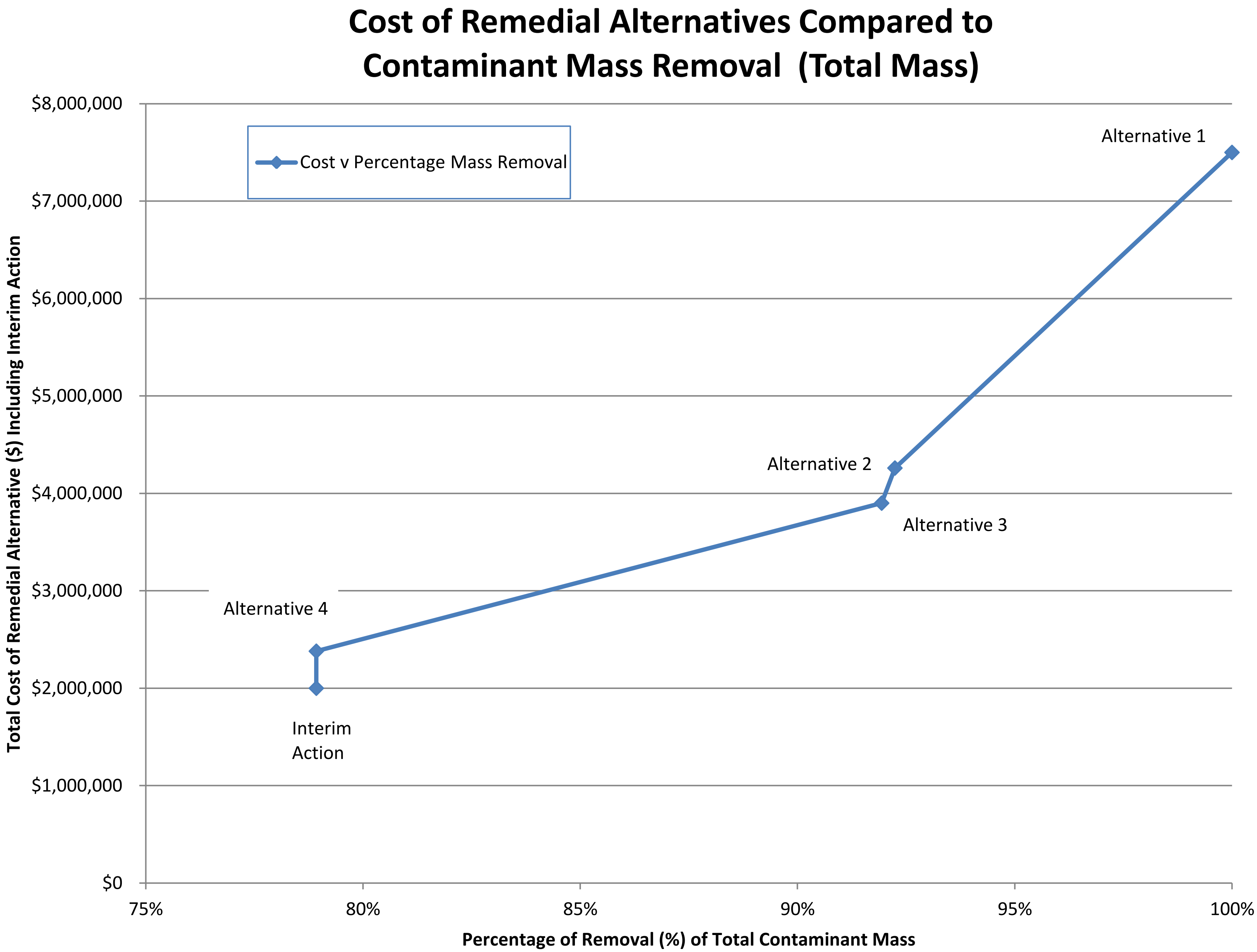
Contaminant Mass Removal Calculations

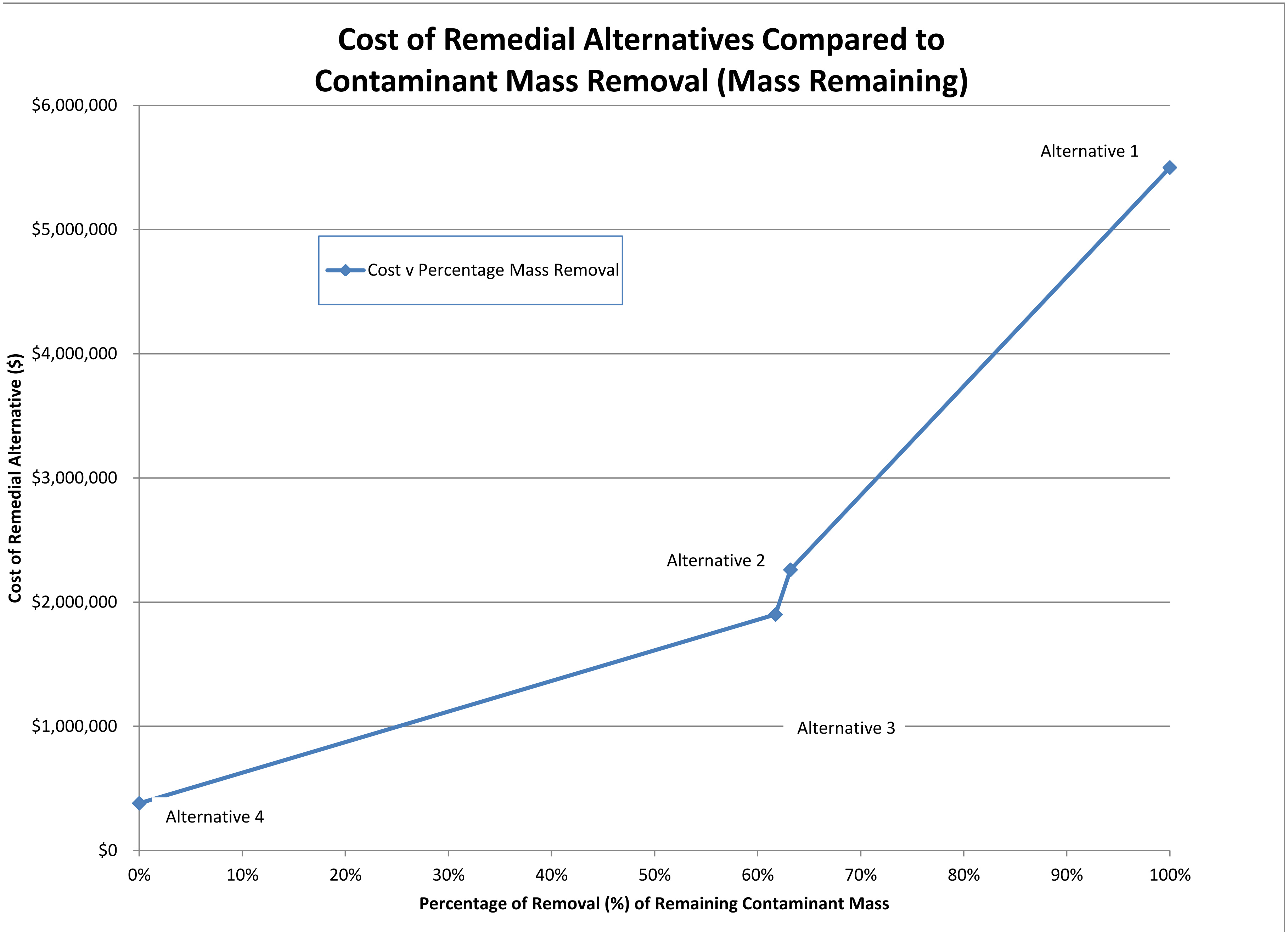


Total Contaminant (COC Metals) Mass Removal
Mass Removal (kg)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Percentage Removal
100%
80%
60%
40%
20%
0%
Mass Removal (total)
Percentage Removal (total)
Interim Action
4
3
2
1
Remedial Alternative



Contaminant (COC Metals) Mass Removal of Remaining Soil by Alternative
Mass Removal (alternative only)
Percentage Removal (alternative only)
Mass Removal (kg)
Percentage Removal
Remedial Alternative
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
100%
80%
60%
40%
20%
0%
4
3
2
1


Cost of Remedial Alternatives Compared to
Contaminant Mass Removal (Total Mass)
Cost v Percentage Mass Removal
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Interim Action
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
75%
80%
85%
90%
95%
100%
Total Cost of Remedial Alternative ($) Including Interim Action
Percentage of Removal (%) of Total Contaminant Mass



Cost of Remedial Alternatives Compared to
Contaminant Mass Removal (Mass Remaining)
Cost v Percentage Mass Removal
Alternative 1
Alternative 2
Alternative 3
Alternative 4
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Cost of Remedial Alternative ($)
Percentage of Removal (%) of Remaining Contaminant Mass

NORTH MARINA AMERON/HULBERT SITE
SUMMARY OF CONTAMINANT MASS REMOVAL COMPARED TO COST

Summary of Contaminant Masses		Antimony	Arsenic	Copper	Lead	TOTAL COC METALS
Interim Action	Contamint Mass (KG)	126	7630	13381	1706	22843
	Percentage of Total	29%	82%	85%	50%	79%
Remaining Mass	Contamint Mass (KG)	314	1690	2389	1706	6099
	Percentage of Total	71%	18%	15%	50%	21%
Interim+Remaining	TOTAL MASS	439	9320	15770	3413	28942

Remedial Action Mass Removal		Antimony	Arsenic	Copper	Lead	TOTAL COC METALS
Alternative #1	Contamint Mass (KG)	314	1690	2389	1706	6099
	Percentage of Remaining Removed	100%	100%	100%	100%	100%
	Percentage of Total Removed	100%	100%	100%	100%	100%
Alternative #2	Contamint Mass (KG)	269	1363	1234	988	3854
	Percentage of Remaining Removed	86%	81%	52%	58%	63.2%
	Percentage of Total Removed	90%	96%	93%	79%	92.2%
Alternative #3	Contamint Mass (KG)	268	1355	1157	986	3766
	Percentage of Remaining Removed	86%	80%	48%	58%	61.7%
	Percentage of Total Removed	90%	96%	92%	79%	91.9%
Alternative #4	Contamint Mass (KG)	0	0	0	0	0
	Percentage of Remaining Removed	0%	0%	0%	0%	0%
	Percentage of Total Removed	29%	82%	85%	50%	79%

Cost of Remedial Action	Cost of Remedial Action	Total Cost (inc. IA)
Interim Action	$2,000,000	$2,000,000
Alternative #1	$5,500,000	$7,500,000
Alternative #2	$2,260,000	$4,260,000
Alternative #3	$1,900,000	$3,900,000
Alternative #4	$380,000	$2,380,000

=skewed low because antimony was rarely sampled for during IA

NORTH MARINA AMERON/HULBERT SITE
AVERAGE METALS CONCENTRATIONS AND APPROXIMATE CONTAMINANT MASS REMOVAL
INTERIM ACTION

Sample Name	Depth Range	Date Collected	Area ID (a)	Sample Type	Antimony	Arsenic	Copper	Lead	TOTAL METAL
					Metals (mg/kg) SW6000-7000 Series				
				Cleanup Screening Levels (a)	32	20	36/3000	250	
G1A-100507-AC-1		10/5/2007	G1a	Stock Pile		5 U	8.8	2	
G1A-100907-STK-1		10/9/2007	G1a	Stock Pile		1750 J		1400	
G1A-101607-STK-2		10/16/2007	G1a	Stock Pile		840		1040	
G1-AC-1		6/22/2006	G1	Surface Soil		20		11	
G1-AC-2		6/22/2006	G1	Surface Soil		70	48	50	
G1-AC-3		6/22/2006	G1	Surface Soil		80		70	
G1-AC-4		6/22/2006	G1	Surface Soil		90		70	
G1-AC-5		6/22/2006	G1	Surface Soil		120	215 J	100	
G1-AC-6		6/26/2006	G1	Surface Soil		80		64	
G1-AC-7		6/27/2006	G1	Surface Soil		280	263 J	180	
G1-AC-8		6/27/2006	G1	Surface Soil		720		1940	
G1-AC-9		6/23/2006	G1	Surface Soil		6650	3010	4150	
G1-TP1	(0-4)	4/25/2006	G1	Test Pit		103		73	
G1-TP2	(0-6)	4/25/2006	G1	Test Pit		28		35	
G1-TP3	(0-5)	4/25/2006	G1	Test Pit		14		10	
G1-TP4	(0-6)	4/25/2006	G1	Test Pit		353		196	
G1-TP5	(0-5)	4/25/2006	G1	Test Pit		1540		1060	
G1-TP6	(0-4)	4/25/2006	G1	Test Pit		86		98	
G1-TP7	(0-5)	4/25/2006	G1	Test Pit		37		23	
G1-TP8	(0-5)	4/25/2006	G1	Test Pit		30		19	
PS-1/PS-2		1/25/1989	G1	Pond Sample	5 U	2.4	13	1.1	
G1-B4		6/30/2006	G1	Excavation		430	454	400	
G1-B9		9/19/2006	G1	Excavation		64	70.5	61	
MASS REMOVED =	2,450,000	KG	AVERAGE CONCENTRATION		5	582	510	481	
			CONTAMINANT MASS (KG)		12	1427	1250	1177	3866
I-Z		2/12/2004	I-1	Surface Soil		240	868	280	
I-GC-25	(0.5-1)	10/19/2005	I-1	Boring		9	19.9	6	
I-TP-1	(0-3)	4/25/2006	I-1	Test Pit		22		14	
I-TP-2	(0-2.5)	4/25/2006	I-1	Test Pit		18		27	
I-TP-3	(0-4)	4/25/2006	I-1	Test Pit		13		16	
I-TP-4	(0-3)	4/25/2006	I-1	Test Pit		10		7	
I-TP-5	(0-5)	4/25/2006	I-1	Test Pit		122		76	
I-TP-6	(0-4)	4/25/2006	I-1	Test Pit		24		48	
I-TP-7	(0-4)	4/25/2006	I-1	Test Pit		15		30	
I-TP-8	(0-4)	4/25/2006	I-1	Test Pit		30		50	
ECI-Q-6	(0-1)	10/7/1991	I-1	Test Pit	58	5 U	1410	1350	
I1-AC-1		6/21/2006	I-1	Surface Soil		16		57	
I-GC-1A.1W		4/25/2006	I-1	Surface Soil		50			
I1-B1			I-1			80	277	69	
I1-B2			I-1			210	220	139	
I-GC-4	(0-0.5)	7/14/2005	I-1	Boring		7	39.5	15	
I-GC-24.3W.1S	(0-0.5)	3/1/2006	I-1	Surface Soil		6			
MASS REMOVED =	511,000	KG	AVERAGE CONCENTRATION		58	52	472	146	
			CONTAMINANT MASS (KG)		30	26	241	74	372
I-GC-5	(3-3.5)	7/14/2005	I-2	Boring	0	6	29.2	7	
I-X		2/12/2004	I-2	Boring		60		41	
I-Y		2/12/2004	I-2	Boring		5.3		6	
I2-B11			I-2			75	190	103	
I2-S10			I-2			36	62.8	42	
I2-S5			I-2			39	44.2	17	
I2-AC-1		7/13/2006	I-2	Excavation		240	212	130	
I2-AC-2		7/13/2006	I-2	Excavation		20	67.6	28	
I2-1	(1-1.5)	5/8/2006	I-2	Boring		197		141	
I2-2	(1-2.25)	5/8/2006	I-2	Boring		130		56	
I2-3	(0.5-2.5)	5/8/2006	I-2	Boring		180		100	
I2-4	(1.4-2.4)	5/8/2006	I-2	Boring		70		47	
I2-5	(1.3-2.5)	5/8/2006	I-2	Boring		90		58	
I2-6	(1.5-2.2)	5/8/2006	I-2	Boring		130		71	
I2-7	(1.7-2.8)	5/8/2006	I-2	Boring		120		60	
I2-8	(1.5-3.3)	5/8/2006	I-2	Boring		100		70	
I2-9	(1.7-3.3)	5/8/2006	I-2	Boring		90		55	
I2-10	(1.5-2.5)	5/8/2006	I-2	Boring		44		32	
I-GC-2.2W	(0-0.5)	3/29/2006	I-2	Surface Soil		12			
I-GC-2.3W	(0-0.5)	3/29/2006	I-2	Surface Soil		7			
I-GC-2.4W	(0-0.5)	3/29/2006	I-2	Surface Soil		14			
MASS REMOVED =	7,226,000	KG	AVERAGE CONCENTRATION		0	79	101	59	
			CONTAMINANT MASS (KG)		0	573	730	427	1730
I-3		2/12/2004	I-3	Boring	0	6.2	21.1	6	
I3A-AC-1A		6/29/2006	I-3	Surface Soil		4290		3230	
I3A-AC-1B		6/29/2006	I-3	Surface Soil		11		6	
I3A-AC-2A		6/30/2006	I-3	Surface Soil		5060	2920	3550	
I3A-AC-2B		6/30/2006	I-3	Surface Soil		7	8.7	2 U	
I3B-AC-1		7/7/2006	I-3	Surface Soil		380	1890	1890	
I3B-AC-2		7/7/2006	I-3	Surface Soil		1800	1400	1450	
I3A-B1			I-3			1930	1410	1490	
I3A-S1			I-3			48.6	77	32	
I3A-S2			I-3			63	61	46	
I3B-B3			I-3			60	109	88	
I-GC-1B.1S	(0-0.5)	3/1/2006	I-3a	Surface Soil	0	53			
I-GC-1B.1W	(0-0.5)	3/1/2006	I-3a	Surface Soil		10			
I-GC-1	(0-0.5)	7/14/2005	I-3a	Boring		1440	954	1070	
I-GC-1	(1-2)	7/14/2005	I-3a	Boring		3690	2790	2560	
I-GC-1	(2-3)	7/14/2005	I-3a	Boring		11	26	4	
I-GC-1B	(0-0.5)	10/19/2005	I-3a	Boring		130	112	91	
I-GC-1B	(1-2)	10/18/2005	I-3a	Boring		8	14.3	4	
I-GC-1C	(0-0.5)	10/19/2005	I-3a	Boring		1640	1140	1310	
I-GC-1C	(1-2)	10/18/2005	I-3a	Boring		380	410	360	
I-GC-1C	(2-3)	10/18/2005	I-3a	Boring		10	17.5	5	
I-GC-1A	(0-0.5)	10/19/2005	I-3b	Boring		640	447	459	
I-GC-1A	(1-2)	10/18/2005	I-3b	Boring		9	25	7	
MASS REMOVED =	3,315,000	KG	AVERAGE CONCENTRATION		0	942	728	841	
			CONTAMINANT MASS (KG)		0	3124	2413	2788	8325
IW-13		3/1/2006	I-4	Surface Soil	0	39			
I4-S2			I-4			26	143	39	
I4-AC-2		7/12/2006	I-4	Surface Soil		2080	2700	2830	
ECI-3448-B		11/7/1988	I-4	Surface Soil		4.8		57	
ECI-G-2	(0-0.5)	7/9/1987	I-4	Surface Soil		3000		1300	
I-GC-2	(0-0.5)	7/14/2005	I-4	Boring		130	193	94	
I-GC-2.1N	(0-0.5)	3/1/2006	I-4	Surface Soil		90			
I-GC-2.1S	(0-0.5)	3/1/2006	I-4	Surface Soil		21			
I-GC-2.1W	(0-0.5)	3/1/2006	I-4	Surface Soil		30			
MASS REMOVED =	706,000	KG	AVERAGE CONCENTRATION		0	602	1012	864	
			CONTAMINANT MASS (KG)		0	425	714	610	1750

AREA	MASS REMOVED (TONS)
G-1	2701
I-1	563
I-2	7,965
I-3a	3,654
I-3b	--(b)
I-4	778
I-5	3,813
I-6	3,237
I-7	2,495
I-8	3,263
I-9	--(c)
I-10	--(c)
I-11	--(c)
J-1	553
J-3	2,563
MSRC Interim Action (1993)	966
M-1	396
UST Interim Action (1991)	50 (d)
TOTAL (tons)	32,947
TOTAL (KG)	29,889,024

(a) Value presented is tons of soil removed.

(b) Soil mass for Areas I-3a and I-3b not separately tallied.
Soil mass presented for Area I-3a represents entire Area I-3.

(c) Soil mass for Areas I-8 through I-11 not separately tallied.
Soil mass presented for Area I-8 represents entire mass for these areas.

(d) Excavated volume presented in cubic yards. Soil mass not available.

NORTH MARINA AMERON/HULBERT SITE
AVERAGE METALS CONCENTRATIONS AND APPROXIMATE CONTAMINANT MASS REMOVAL
INTERIM ACTION

Sample Name	Depth Range	Date Collected	Area ID (a)	Sample Type	Metals (mg/kg) SW6000-7000 Series: Antimony	Arsenic	Copper	Lead	TOTAL METAL	AREA	MASS REMOVED (TONS)
				Cleanup Screening Levels (a)	**32**	**20**	**36/3000**	**250**			
ECI-3448-A		11/7/1988	I-5	Surface Soil		0.1 U	0.6	0.1 U			
I-GC-26	(0-0.5)	10/19/2005	I-5	Boring		13	31.2	9			
I5-AC-1		6/27/2006	I-5	Surface Soil		400	498	407			
I5-AC-2		6/28/2006	I-5	Surface Soil		1970	3170 J	2270			
I5-AC-3		6/28/2006	I-5	Surface Soil		1780		2090			
I5-AC-4		6/28/2006	I-5	Surface Soil		90		68			
I5-AC-5		7/14/2006	I-5	Surface Soil		2210	3430	2390			
ECI-Q-5	(1-2)	10/7/1991	I-5	Test Pit	10 U	5 U	12	20 U			
HC-MW02 (e)	(2.5-4)	11/6/1991	I-5	Boring			16	5.0 U			
I-GC-24	(1.2-6)	10/19/2005	I-5	Boring		105	166	61			
I-GC-24	(6.5-7.5)	10/19/2005	I-5	Boring		20	33.2	9			
I5-B2			I-5			94	54.4	8			
I5-S1			I-5			1610	1180	1310			
I5-S2			I-5			70	69.4	60			
I5-S3			I-5			330	260	228			
I5-S3A			I-5			95.2	155	75			
IF-S3B			I-5			125	133	99			
I5-S3C			I-5			510	476	402			
I5-S3E			I-5			80	982	100			
I5-S3F			I-5			23	89	13			
MASS REMOVED =	3,459,000	KG	AVERAGE CONCENTRATION		10	502	598	481			
			CONTAMINANT MASS (KG)		**35**	**1735**	**2067**	**1664**	5501		
I-GC-12.1S	(0.75-1.25)	3/1/2006	I-6	Hand Auger		14					
I6-B6			I-6			24	24.7	5			
I6-B16			I-6			41	12.1	4			
I6-S1			I-6			20	43.5	24			
I6-S4			I-6			12	38	34			
I6-S4A			I-6			7	16	13			
I6-S5			I-6			87	220	86			
I6-S5A			I-6			10	39.9	133			
I6-S9			I-6			20	22	20			
ECI-Q-1	(1-2)	10/7/1991	I-6	Test Pit	10 U	5	20	20 U			
I-GC-11	(0-0.5)	7/14/2005	I-6	Boring		11	26.9	10			
I-GC-11.1E	(0-0.5)	3/1/2006	I-6	Surface Soil		6					
I-GC-11.1S	(0.75-1.25)	3/1/2006	I-6	Surface Soil		10					
I-GC-11.1W	(0-0.5)	3/1/2006	I-6	Surface Soil		50					
I-GC-12	(0-0.5)	7/14/2005	I-6	Boring		10	23.9	32			
I-GC-12.1E	(0-0.5)	3/1/2006	I-6	Surface Soil		10					
I-GC-12.1W	(0-0.5)	3/1/2006	I-6	Surface Soil		48					
MASS REMOVED =	2,969,000	KG	AVERAGE CONCENTRATION		10	23	44	35			
			CONTAMINANT MASS (KG)		**30**	**67**	**131**	**103**	331		
IW-14		3/1/2006	I-7	Surface Soil	0	20					
I-GC-10	(0-0.5)	7/14/2005	I-7	Boring		19	46.9	32			
I-GC-12.3S	(0-0.5)	3/1/2006	I-7	Surface Soil		41					
I-GC-12.4S	(0.25-0.75)	3/1/2006	I-7	Surface Soil		40					
I-GC-12.4S.1E	(0-0.5)	3/27/2006	I-7	Surface Soil		30					
I-GC-12.4S.2E	(0-0.5)	3/27/2006	I-7	Surface Soil		27					
I-GC-12.5S	(0.5-1)	3/1/2006	I-7	Surface Soil		29					
I-GC-12.6S	(0-0.5)	3/27/2006	I-7	Surface Soil		5					
I-GC-12.6S.1E	(0-0.5)	3/27/2006	I-7	Surface Soil		34					
I7-B1			I-7			50	53.8	5 U			
I7-S1			I-7			40	133	103			
I7-S1A			I-7			90	138	87			
I7-S3			I-7			30	53.6	29			
I7-S4			I-7			30	104	57			
I7-S6			I-7			52	34.4	19			
I7-S6A			I-7			29	62	37			
I7-S6B			I-7			100	57.9	40			
I7-S4A			I-7				163000				
MASS REMOVED =	2,231,000	KG	AVERAGE CONCENTRATION		0	39	76	45			
			CONTAMINANT MASS (KG)		**0**	**87**	**5493**	**101**	5682		
I-GC-15	(0-0.5)	8/22/2005	I-8	Hand Auger	0	40	26	9			
I-GC-15	(1-2)	8/22/2005	I-8	Hand Auger		32	50.3	29			
I-GC-15	(2-3)	8/22/2005	I-8	Hand Auger		11	33.3	21			
I-GC-16	(0-0.5)	8/22/2005	I-9	Hand Auger		50	65.5	17			
I-GC-16	(1-2)	8/22/2005	I-9	Hand Auger		7	16.8	3			
I-GC-17	(0-0.5)	8/22/2005	I-9	Hand Auger		34	20	15			
I-GC-17	(1-2)	8/22/2005	I-9	Hand Auger		10	21.6	4			
I-9-D			I-9			98	455	96			
I-9-E			I-9			24	31.6	15			
I-GC-18	(0-0.5)	8/22/2005	I-10	Hand Auger	0	35	26.3	16			
I-GC-18	(1-2)	8/22/2005	I-10	Hand Auger		45	38.4	33			
I-GC-18	(2-3)	8/22/2005	I-10	Hand Auger		9	15.9	3			
I-GC-19	(0-0.5)	8/22/2005	I-11	Hand Auger		31	37.6	18			
I-GC-19	(1-2)	8/22/2005	I-11	Hand Auger		18	53.2	11			
I-GC-20	(0-0.5)	8/22/2005	I-11	Hand Auger		38	40.6	13			
I-GC-20	(1-2)	8/22/2005	I-11	Hand Auger		8	26.2	4			
I-GC-14	(0-0.5)	7/14/2005	I-11	Boring		50	167 J	45			
I-GC-14	(1-2)	7/14/2005	I-11	Boring		5 U	15.6	2			
ECI-G-1 (d)	(0-0.5)	7/9/1987	I-11	Surface Soil			111	6			
I-11-A		10/7/2005	I-11	Excavation		22	47.3	37			
I-GC-13	(0-0.5)	7/14/2005	I-11	Boring		15	22.2	12			
MASS REMOVED =	2,960,000	KG	AVERAGE CONCENTRATION		0	29	63	19			
			CONTAMINANT MASS (KG)		**0**	**86**	**186**	**58**	330		
Chamber-1		8/11/2006	J-1	Excavation	0	5	15.6	4			
Chamber-2		8/11/2006	J-1	Excavation		6 U	15.3	4			
Chamber-3		8/11/2006	J-1	Excavation		8 U	38.7	54			
Chamber-4		8/11/2006	J-1	Excavation		7 U	24.5	25			
J-GC-4	(1.5-2)	3/3/2005	J-1	Boring		30	31.8	42			
JI-B4			J-1			10	42	50			
MASS REMOVED =	502,000	KG	AVERAGE CONCENTRATION		0	11	28	30			
			CONTAMINANT MASS (KG)		**0**	**6**	**14**	**15**	35		
J-GC-6	(1.1-1.6)	7/15/2005	J-3	Boring		27	43.8	56			
J-GC-6	(2.1-3.1)	7/15/2005	J-3	Boring		20 U	80.7	42			
J-GC-6	(2-2.7)	7/15/2005	J-3	Boring		20 U	80.2	55			
J-GC-6f	(0.7-1.1)	2/6/2006	J-3	Boring		9	26.2	9			
J-GC-6g	(1-1.5)	2/6/2006	J-3	Boring		11	41.9	30			
J-GC-6h	(1-1.5)	2/6/2006	J-3	Boring		34	48.7	31			
J-GC-6i	(1-1.5)	2/6/2006	J-3	Boring		9	29.4	46			
J-GC-6i	(3.2-4)	2/6/2006	J-3	Boring		20 U	99.4	142			
TP01	(1-1)	5/20/1993	J-3	Test Pit	2.7 U	14	24	150			
TP01	(3-3)	5/20/1993	J-3	Test Pit	3.1 U	6.9	22	22			
TP02	(2-2)	5/20/1993	J-3	Test Pit	2.9 U	4	9.5	2.6			
SS01	(0.5-0.5)	5/20/1993	J-3	Surface Sample	580	1600	1800	1400			
SS01	(0.5-0.5)	5/20/1993	J-3	Surface Sample			11				
TP03	(0.5-0.5)	5/20/1993	J-3	Test Pit	8.2	13	55	42			
0-0.5'interval	average				294.1	806.5	622	721			

Concentration for this sample not inlcuded in average. Mass calculated separately and added to total based on separate volume of 65' x 5' x 1' removed from area around sample. This mass added to total for area.
Mass soil from I-7S4A = 24 CY
(i.e., 65'x10'x1') *1.5 CY/ton * 907.185 kg/ton = 32,658 kg;
(32,658 kg soil * 163,000 mg/kg cu)/1,000,000 mg/kg = 5,338 kg cu

Shallow zone 0-0.5' averaged and mass added separately
Mass soil from 0-0.5' = 32CY
(i.e. 1730sf * 0.5/27) *1.5 CY/ton * 907.185 kg/ton = 43545 kg soil)

NORTH MARINA AMERON/HULBERT SITE
AVERAGE METALS CONCENTRATIONS AND APPROXIMATE CONTAMINANT MASS REMOVAL
INTERIM ACTION

Sample Name	Depth Range	Date Collected	Area ID (a)	Sample Type	Metals (mg/kg) SW6000-7000 Series Antimony	Arsenic	Copper	Lead	TOTAL METAL	AREA	MASS REMOVED (TONS)
				Cleanup Screening Levels (a)	32	20	36/3000	250			
MASS REMOVED =	2,282,000	KG	AVERAGE CONCENTRATION		3	16	46	53			
			CONTAMINANT MASS (KG)		19	71	132	153	376		
M-2	(1.5-2)	1/18/2005	M-1	Boring	0	5 U	23.2	47			
MASS REMOVED =	359,000	KG	AVERAGE CONCENTRATION		0	5	23	47			
			CONTAMINANT MASS (KG)		0	2	8	17	27		
		TOTAL									
			CONTAMINANT MASS (KG)		126	7630	13381	7188	28324		

zeros under antimony indicate not analyzed, but inserted to avoid divide by zero error

U = the analyte was not detected in the sample at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

Shaded cells indicate an exceedance of the lowest site cleanup level.

(a) Development of the cleanup levels is presented in Table 3.

(b) Refers to the Investigation Area, described in Section 2.1 of the main report.
(c) PZ-10 is located at P-10. PZ-10 was taken during the drilling for the P-10 monitoring well.
(d) Sample was also analyzed for aluminum, boron, calcium, iron, magnesium, silicon, sodium, and tin. Results were below the detection limit for magnesium, and tin. Results were not reported because they are not considered a concern for the Site.
(e) Analysis of the sample were performed using X-Ray Florescence Spectrometry (XRF) or Flame Atomic Absorption (FAA). Quantitations are estimates, compound identifications are tentative.
(f) Samples were also analyzed for Aluminum, Iron, Manganese, and Sulfur. Results are not reported because these metals are not considered a concern for the Site. See Hart Crowser 1991, Appendix C for full results. Both XRF and FAA were used for this sample, the highest result for detects is reported. If the constituent was not detected using either method, the lowest detection limit is reported.

NORTH MARINA AMERON/HULBERT SITE
AVERAGE METALS CONCENTRATION AND CONTAMINANT MASS REMOVAL IN CLEANUP AREAS

			TOTAL METALS (mg/kg) Method SW6020/EPA200.8/SW7471A			
			Antimony	Arsenic	Copper	Lead
		Preliminary Screening Level:	32	20	3,000	250
AREA G-1b	VOLUME = 1821 CY => MASS =	2,477,000	KG			
G-FA-100(0-1)[1]	CHM101202-16	11/30/2010	272	3270	1330	1460
G-FA-100 (1-2)	CHM101201-1	11/30/2010	2.37	21.8	38.0	8.81
G-FA-104 (0-1)[1]	CHM101208-9	12/6/2010	171	714	714	594
G-FA-104 (1-2)	CHM101220-4	12/6/2010	2.10	13.1	25.2	11.5
G-FA-105 (0.3-0.8)[1]	CHM101208-9	12/6/2010	303	1210	1030	996
G-FA-105 (1-2)	CHM101220-4	12/6/2010	24.1	177	95.5	85.8
G-FA-106 (1-1.2)[1]	CHM101208-9	12/6/2010	237	1120	1380	946
G-FA-106 (1-1.5)[1]	CHM101208-9	12/6/2010	11.7	50.9	44.1	39.0
G-FA-107 (0-1)[1]	CHM101208-9	12/6/2010	127	521	423	417
G-FA-107 (1-2)	CHM101220-4	12/6/2010	0.20 U	3.07	12.1	3.62
G-FA-108A (0-1)	CHM101208-9	12/6/2010	127	556	477	501
G-FA-108B (0-1)	CHM101208-9	12/6/2010	42.2	150	204	132
G-FA-108 (1-2)	CHM101220-4	12/6/2010	0.672	3.87	19.9	13.8
G-FA-109 (0.5-1)[1]	CHM101208-9	12/6/2010	297	1310	1420	1060
G-FA-109 (1-2)	CHM101220-4	12/6/2010	7.46	20.5	33.5	28.3
G1-B3		6/30/2006		350.0	487	312
G1-B8		6/30/2006		46.0	28.7	13.0
ECI-K-1 (4)		10/7/1991	106	144	398	304
AVERAGE CONCENTRATION			108	538	453	385
CONTAMINANT MASS (KG)			268	1332	1123	953
PERCENTAGE OF TOTAL COC MASS REMAINING			0.85	0.78	0.47	0.55
AREA G-2b	VOLUME = 275 CY => MASS =	374,000	KG			
G-FA-101 (4-5)[2]	CHM101201-1/CHM110201-6	11/30/2010	9.38	58.4	62.8	30.1
G-FA-103 (1-2)[2]	CHM101201-1	11/30/2010	7.80	50.8	58.8	72.4
G-FA-103 (5.5-6.5)[2]	CHM101201-1	11/30/2010	10.5	62.5	81.1	75.7
AVERAGE CONCENTRATION			9	57	68	59
CONTAMINANT MASS (KG)			3	21	25	22
PERCENTAGE OF TOTAL COC MASS REMAINING			0.01	0.01	0.01	0.01
AREA G-2a	VOLUME = 533 CY => MASS =	725,000	KG			
G-FA-114 (1-2)	UB70D	12/09/2011		12.9	33.1	
G-FA-114 (2-3)[2]	UA77C	12/09/2011	0.3 U	28.6	46.3	10.7
G-FA-114 (3-4)	UB70G	12/09/2011		3.6	23.4	
G-FA-114 (6-7)	UA77D	12/09/2011		3.2	23.9	
G-FA-115A (2-3)	UB70E	12/09/2011		6.3	26.6	
G-FA-115A (3-3.5)[2]	UA77F	12/09/2011	0.7	109	104	73.8
G-FA-115A (4.5-5.5)	UB70F	12/09/2011		10.4	23.6	
G-FA-115C (4-7)	UA78E	12/09/2011		23.6	99.1	
G-FA-4 (2-2.5)		1/20/2005		80.0	47.0	50.0
AVERAGE CONCENTRATION			1	31	47	45
CONTAMINANT MASS (KG)			0	22	34	33
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.01	0.01	0.02
AREA G-3	VOLUME = 176 CY => MASS =	239,000	KG			
G-FA-110 (3.5-4.5)[2]	CHM101220-07	12/20/2010	1.05	50.6	540	13.5
G-FA-111 (2-3)[2]	CHM101220-07	12/20/2010	0.674	29.0	196	12.4
G-FA-112 (3-4)[2]	CHM101220-07	12/20/2010	1.58	24.5	33.9	20.8
ECI-J-2 (3)		10/7/1991	0 U	40.0	514	0 U
AVERAGE CONCENTRATION			1	36	321	12
CONTAMINANT MASS (KG)			0	9	77	3
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.01	0.03	0.00
AREA M2	VOLUME = 764 CY => MASS =	1,039,000	KG			
M-FA-102 (7-7.5)[1]	CHM101202-16	12/1/2010	10.5	290	1410	270
M-FA-102 (9-10)	CHM101213-7	12/1/2010		5.64	18.9	3.36
M-FA-102H (4-5)	UA75A	12/08/2011	0.8 J	30.4	564	328
AVERAGE CONCENTRATION			6	109	664	200
CONTAMINANT MASS (KG)			6	113	690	208
PERCENTAGE OF TOTAL COC MASS REMAINING			0.02	0.07	0.29	0.12
AREA M-3	VOLUME = 412 CY => MASS =	560,000	KG			
M-GC-102 (0-1)	CHM101201-1	11/30/2010	9.44 J	58.0	73.0 J	54.5
M-GC-102 (1-2)	CHM101213-7	11/30/2010		3.43 J	14.8	
M-GC-102A (0-1)	UA76B	12/08/2011		60.7	81.1	
M-GC-102A (1-2)	UB54A	12/08/2011		3.2	18.1	
M-GC-102B (0-1)	UA75E	12/08/2011		44.6	87.5	
M-GC-102B (1-2)	UB70B	12/08/2011		3.1	17.7	
M-GC-102D (0-1)	UB70A	12/08/2011		53.2 J	75.3	
M-GC-102D (1-2)		12/08/2011		3.5	18.9	
AVERAGE CONCENTRATION			9	29	48	55
CONTAMINANT MASS (KG)			5	16	27	31
PERCENTAGE OF TOTAL COC MASS REMAINING			0.02	0.01	0.01	0.02
AREA I-12	VOLUME = 214 CY => MASS =	291,000	KG			
BF-TP-1		10/23/2006	0	7.2	0.0	0
BF-TP-2		10/23/2006		9.1		
BF-TP-3		10/23/2006		54.8		
BF-TP-4		10/23/2006		126		
BF-TP-5		10/23/2006		61.3		
AVERAGE CONCENTRATION			0	52	0	0
CONTAMINANT MASS (KG)			0	15	0	0
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.01	0.00	0.00
AREA I-13	VOLUME = 152 CY => MASS = 2,4	207,000	KG			
G1A-100507-B2		10/5/2007	0	42	53.9	41
G1A-100507-S2		10/5/2007		40	47.5	36
G1A-100507-S3		10/5/2007		600	470	473
AVERAGE CONCENTRATION			0	227	190	183
CONTAMINANT MASS (KG)			0	47	39	38
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.03	0.02	0.02
Area J-3a	VOLUME = 6,238 CY => MASS = 1	8,484,000	KG			
NTERIM ACTION SAMPLES			4	16	47	52
AVERAGE CONCENTRATION			4	16	47	52
CONTAMINANT MASS (KG)			34	136	399	441
PERCENTAGE OF TOTAL COC MASS REMAINING			0.11	0.08	0.17	0.26
TOTAL COC MASS REMAINING		KG	314	1690	2389	1706
Alterntive 1 Mass (All remaining areas)		KG	314	1690	2389	1706
Alterntive 2 Mass (Areas G-1b, G-2, G-3, M-3)		KG	269	1363	1234	988
Alterntive 3 Mass (Area G-1b, G-2)		KG	268	1355	1157	986
Alterntive 4 Mass		KG	0	0	0	0
TOTAL CONTAMINANT MASS REMAINING			314	1690	2389	1706
PERCENTAGE OF TOTAL SITE CONTAMINANT MASS			0.71	0.18	0.15	0.19
TOTAL CONTAMINANT MASS REMOVED DURING IA			126	7630	13381	7188
PERCENTAGE OF TOTAL SITE MASS			0.29	0.82	0.85	0.81

U = Indicates the compound was undetected at the reported concentration.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Bold = Detected compound.
Boxed value indicates exceedance of preliminary cleanup level.
Shaded box indicates the detected concentration is greater than 5 times the preliminary cleanup level.

NORTH MARINA AMERON/HULBERT SITE
AVERAGE METALS CONCENTRATION AND CONTAMINANT MASS REMOVAL IN CLEANUP AREAS

			TOTAL METALS (mg/kg) Method SW6020/EPA200.8/SW7471A			
			Antimony	Arsenic	Copper	Lead
		Preliminary Screening Level:	32	20	3,000	250
AREA G-1b	VOLUME = 1821 CY => MASS =	2,477,000	KG			
G-FA-100(0-1)[1]	CHM101202-16	11/30/2010	272	3270	1330	1460
G-FA-100 (1-2)	CHM101201-1	11/30/2010	2.37	21.8	38.0	8.81
G-FA-104 (0-1)[1]	CHM101208-9	12/6/2010	171	714	714	594
G-FA-104 (1-2)	CHM101220-4	12/6/2010	2.10	13.1	25.2	11.5
G-FA-105 (0.3-0.8)[1]	CHM101208-9	12/6/2010	303	1210	1030	996
G-FA-105 (1-2)	CHM101220-4	12/6/2010	24.1	177	95.5	85.8
G-FA-106 (1-1.2)[1]	CHM101208-9	12/6/2010	237	1120	1380	946
G-FA-106 (1-1.5)[1]	CHM101208-9	12/6/2010	11.7	50.9	44.1	39.0
G-FA-107 (0-1)[1]	CHM101208-9	12/6/2010	127	521	423	417
G-FA-107 (1-2)	CHM101220-4	12/6/2010	0.20 U	3.07	12.1	3.62
G-FA-108A (0-1)	CHM101208-9	12/6/2010	127	556	477	501
G-FA-108B (0-1)	CHM101208-9	12/6/2010	42.2	150	204	132
G-FA-108 (1-2)	CHM101220-4	12/6/2010	0.672	3.87	19.9	13.8
G-FA-109 (0.5-1)[1]	CHM101208-9	12/6/2010	297	1310	1420	1060
G-FA-109 (1-2)	CHM101220-4	12/6/2010	7.46	20.5	33.5	28.3
G1-B3		6/30/2006		350.0	487	312
G1-B8		6/30/2006		46.0	28.7	13.0
ECI-K-1 (4)		10/7/1991	106	144	398	304
AVERAGE CONCENTRATION			108	538	453	385
CONTAMINANT MASS (KG)			268	1332	1123	953
PERCENTAGE OF TOTAL COC MASS REMAINING			0.85	0.78	0.47	0.55
AREA G-2b	VOLUME = 275 CY => MASS =	374,000	KG			
G-FA-101 (4-5)[2]	CHM101201-1/CHM110201-6	11/30/2010	9.38	58.4	62.8	30.1
G-FA-103 (1-2)[2]	CHM101201-1	11/30/2010	7.80	50.8	58.8	72.4
G-FA-103 (5.5-6.5)[2]	CHM101201-1	11/30/2010	10.5	62.5	81.1	75.7
AVERAGE CONCENTRATION			9	57	68	59
CONTAMINANT MASS (KG)			3	21	25	22
PERCENTAGE OF TOTAL COC MASS REMAINING			0.01	0.01	0.01	0.01
AREA G-2a	VOLUME = 533 CY => MASS =	725,000	KG			
G-FA-114 (1-2)	UB70D	12/09/2011		12.9	33.1	
G-FA-114 (2-3)[2]	UA77C	12/09/2011	0.3 U	28.6	46.3	10.7
G-FA-114 (3-4)	UB70G	12/09/2011		3.6	23.4	
G-FA-114 (6-7)	UA77D	12/09/2011		3.2	23.9	
G-FA-115A (2-3)	UB70E	12/09/2011		6.3	26.6	
G-FA-115A (3-3.5)[2]	UA77F	12/09/2011	0.7	109	104	73.8
G-FA-115A (4.5-5.5)	UB70F	12/09/2011		10.4	23.6	
G-FA-115C (4-7)	UA78E	12/09/2011		23.6	99.1	
G-FA-4 (2-2.5)		1/20/2005		80.0	47.0	50.0
AVERAGE CONCENTRATION			1	31	47	45
CONTAMINANT MASS (KG)			0	22	34	33
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.01	0.01	0.02
AREA G-3	VOLUME = 176 CY => MASS =	239,000	KG			
G-FA-110 (3.5-4.5)[2]	CHM101220-07	12/20/2010	1.05	50.6	540	13.5
G-FA-111 (2-3)[2]	CHM101220-07	12/20/2010	0.674	29.0	196	12.4
G-FA-112 (3-4)[2]	CHM101220-07	12/20/2010	1.58	24.5	33.9	20.8
ECI-J-2 (3)		10/7/1991	0 U	40.0	514	0 U
AVERAGE CONCENTRATION			1	36	321	12
CONTAMINANT MASS (KG)			0	9	77	3
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.01	0.03	0.00
AREA M2	VOLUME = 764 CY => MASS =	1,039,000	KG			
M-FA-102 (7-7.5)[1]	CHM101202-16	12/1/2010	10.5	290	1410	270
M-FA-102 (9-10)	CHM101213-7	12/1/2010		5.64	18.9	3.36
M-FA-102H (4-5)	UA75A	12/08/2011	0.8 J	30.4	564	328
AVERAGE CONCENTRATION			6	109	664	200
CONTAMINANT MASS (KG)			6	113	690	208
PERCENTAGE OF TOTAL COC MASS REMAINING			0.02	0.07	0.29	0.12
AREA M-3	VOLUME = 412 CY => MASS =	560,000	KG			
M-GC-102 (0-1)	CHM101201-1	11/30/2010	9.44 J	58.0	73.0 J	54.5
M-GC-102 (1-2)	CHM101213-7	11/30/2010		3.43 J	14.8	
M-GC-102A (0-1)	UA76B	12/08/2011		60.7	81.1	
M-GC-102A (1-2)	UB54A	12/08/2011		3.2	18.1	
M-GC-102B (0-1)	UA75E	12/08/2011		44.6	87.5	
M-GC-102B (1-2)	UB70B	12/08/2011		3.1	17.7	
M-GC-102D (0-1)	UB70A	12/08/2011		53.2 J	75.3	
M-GC-102D (1-2)		12/08/2011		3.5	18.9	
AVERAGE CONCENTRATION			9	29	48	55
CONTAMINANT MASS (KG)			5	16	27	31
PERCENTAGE OF TOTAL COC MASS REMAINING			0.02	0.01	0.01	0.02
AREA I-12	VOLUME = 214 CY => MASS =	291,000	KG			
BF-TP-1		10/23/2006	0	7.2	0.0	0
BF-TP-2		10/23/2006		9.1		
BF-TP-3		10/23/2006		54.8		
BF-TP-4		10/23/2006		126		
BF-TP-5		10/23/2006		61.3		
AVERAGE CONCENTRATION			0	52	0	0
CONTAMINANT MASS (KG)			0	15	0	0
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.01	0.00	0.00
AREA I-13	VOLUME = 152 CY => MASS = 2,4	207,000	KG			
G1A-100507-B2		10/5/2007	0	42	53.9	41
G1A-100507-S2		10/5/2007		40	47.5	36
G1A-100507-S3		10/5/2007		600	470	473
AVERAGE CONCENTRATION			0	227	190	183
CONTAMINANT MASS (KG)			0	47	39	38
PERCENTAGE OF TOTAL COC MASS REMAINING			0.00	0.03	0.02	0.02
Area J-3a	VOLUME = 6,238 CY => MASS = 1	8,484,000	KG			
NTERIM ACTION SAMPLES			4	16	47	52
AVERAGE CONCENTRATION			4	16	47	52
CONTAMINANT MASS (KG)			34	136	399	441
PERCENTAGE OF TOTAL COC MASS REMAINING			0.11	0.08	0.17	0.26
TOTAL COC MASS REMAINING		KG	314	1690	2389	1706
Alterntive 1 Mass (All remaining areas)		KG	314	1690	2389	1706
Alterntive 2 Mass (Areas G-1b, G-2, G-3, M-3)		KG	269	1363	1234	988
Alterntive 3 Mass (Area G-1b, G-2)		KG	268	1355	1157	986
Alterntive 4 Mass		KG	0	0	0	0
TOTAL CONTAMINANT MASS REMAINING			314	1690	2389	1706
PERCENTAGE OF TOTAL SITE CONTAMINANT MASS			0.71	0.18	0.15	0.19
TOTAL CONTAMINANT MASS REMOVED DURING IA			126	7630	13381	7188
PERCENTAGE OF TOTAL SITE MASS			0.29	0.82	0.85	0.81

U = Indicates the compound was undetected at the reported concentration.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Bold = Detected compound.
Boxed value indicates exceedance of preliminary cleanup level.
Shaded box indicates the detected concentration is greater than 5 times the preliminary cleanup level.