REPORT

PROJECT COMPLETION REPORT
ALCOA/EVERGREEN VANCOUVER SITE

Prepared for

Washington State Department of Ecology

On behalf of

Alcoa, Inc.

Prepared by

Anchor QEA, LLC
1423 Third Avenue, Suite 300
Seattle, Washington 98101

December 2009

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LIST OF ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
µg/kg	microgram per kilogram
µg/L	micrograms per liter
ACB	articulated concrete block
ACPC	ACPC, Inc.
AINW	Archeological Investigations Northwest, Inc.
Alcoa	Alcoa Inc.
AOC	Area of Concern
AST	aboveground storage tank
BA	Biological Assessment
BiOp	Biological Opinion
BMP	best management practice
BNSF	Burlington Northern Santa Fe
BPA	Bonneville Power Administration
BTEX	benzene, toluene, ethylbenzene, and xylene
CAP	Cleanup Action Plan
CM	Construction Management
Columbia	Columbia West Engineering, Inc.
Corps	U.S. Army Corps of Engineers
Crowley	Crowley Marine Services, Inc.
CWA	Clean Water Act
CWM	Chemical Waste Management
cy	cubic yard
cy/sf	cubic yards per square foot
DEQ	Oregon Department of Environmental Quality
DNS	Determination of Non-Significance
DOT	Department of Transportation
Ecology	Washington State Department of Ecology
ENR	Enhanced Natural Recovery
EPA	U.S. Environmental Protection Agency
EPSS	Electrical Plant Substation

ESA	Endangered Species Act
eTrac	eTrac, Inc.
Evergreen	Evergreen Aluminum LLC
HDPE	high density polyethylene
Hickey	Hickey Marine Enterprises
HPA	Hydraulic Project Approval
JARPA	Joint Aquatic Resources Permit Application
KHz	kilohertz
KPFF	KPFF Consulting Engineers, Inc.
LNAPL	light non-aqueous phase liquid
LWD	large woody debris
mg/kg	milligram per kilogram
mg/L	milligrams per liter
MTCA	Model Toxics Control Act
NAD 83	North American Datum of 1983
NGVD	National Geodetic Vertical Datum
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRC	Northern Resource Consulting
NTU	nephelometric turbidity unit
NUAC	Northwest Underwater Construction, LLC
NWP 38	Nationwide Permit 38
OHWM	ordinary high water mark
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
Port	Port of Vancouver
PPE	personal protective equipment
PUD	Clark County Public Utilities District
QA	quality assurance
RCW	Revised Code of Washington
RTCM	Radio Technical Commission for Maritime Services
SEPA	State Environmental Policy Act
Site	Alcoa Inc./Evergreen Aluminum LLC Site

SPL	spent potlining
SWAC	surface area weighted concentration
TIN	triangulated irregular network
TPH	total petroleum hydrocarbon
TPH-Dx	total petroleum hydrocarbon – diesel range
TPH-G	total petroleum hydrocarbon – gas range
TSCA	Toxic Substances Control Act
TSS	total suspended solids
TtEC	Tetra Tech EC, Inc.
UST	underground storage tank
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WQMP	Water Quality Monitoring Plan

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ENGINEER'S CERTIFICATION

"To the best of my knowledge, information and belief, I, Rebecca L. Desrosiers, a registered professional engineer in good standing in the State of Washington, hereby certify that the remedial action that was conducted at the Alcoa/Evergreen Site in Vancouver, Washington under Consent Decree No. 09-2-00247-2 was performed in accordance with current professional industry standards. I also hereby certify that this Report and all attachments prepared under my direction and supervision and fulfills the requirements of the Washington Administrative Code (WAC), Section 173-340-400(6)(b). As to the portions of this Report for which I cannot personally verify their truth and accuracy, I certify to the best of my knowledge and belief that the collection and submission of information is true and accurate and was performed by qualified personnel under my direct supervision."

Name, Engineer's Seal, and Date: 12/31/2009

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1 INTRODUCTION

This Project Completion Report (Report) for the final cleanup of the Alcoa Inc., (Alcoa)/ Evergreen Aluminum LLC (Evergreen) Site in Vancouver, Washington (Site) has been prepared to fulfill the requirements of the Washington Administrative Code (WAC), Section 173-340-400(6)(b). This Report has also been developed to fulfill the requirements presented in Consent Decree No. 09-2-00247-2 between the Washington State Department of Ecology (Ecology) and Alcoa (Ecology 2009). Accordingly, this Report documents the remedial construction methods and means, data reporting procedures, and confirmational data that are representative of the work performed.

The remainder of this document provides detailed information on the remedial action activities performed at the Site as follows:

- Section 2 – Facility Background, summarizing the site history and regulatory setting of the project.
- Section 3 – Overview of Cleanup Action
- Section 4 – PCB-Impacted Sediment/Shoreline Remedial Activities
- Section 5 – Dike Underground Storage Tank Removal
- Section 6 – Soluble Oil Area Remedial Activities
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- Appendix H – Well Abandonment and Construction Documentation
- Appendix I – Supplemental Characterization Data
- Appendix J – ENR Sand Borrow Source Data

- Appendix K – Confirmational Sampling Data
- Appendix L – Water Quality Monitoring Data
- Appendix M – Waste Manifest Information
- Appendix N – Ecology Correspondence
- Appendix O – Restrictive Covenants

2 FACILITY BACKGROUND

2.1 Site Description

The Site, consisting of property currently owned by the Port of Vancouver, is located on NW Lower River Road on the northern shore of the Columbia River at River Mile 103.3 in Clark County. It is approximately 3 miles northwest of downtown Vancouver, Washington and approximately 3 miles due west of Interstate 5. The facility covers approximately 208 acres (of which Alcoa owned 97 acres and Evergreen owned 111 acres). It is bordered on the north by NW Lower River Road, on the east by property owned by the Port of Vancouver, on the south by the Columbia River, and on the west by multiple industrial property owners. The current land uses in the general vicinity of the Site are mixed use industrial and agricultural. The Site and surrounding area are shown on Figures 1 and 2. The Site boundary also includes property owned by Clark County and Clark Public Utility District (PUD). These properties were previously owned and remediated by Alcoa under Ecology Agreed Order DE 97 TCI032.

2.2 Site History

The Site was developed in the late 1930s, with the completion of Alcoa's aluminum smelter in 1940. The aluminum smelting operations at the Site began in 1940. During World War II, Alcoa filled the eastern end of the smelter site with dredge sands from the Columbia River. From 1940 to 1970, Alcoa added a number of fabrication operations to the facility. By 1970, the facility contained an aluminum smelter and a series of fabrication plants to form the aluminum metal into finished goods such as wire, rod, and extruded channel. Alcoa operated the entire facility for approximately 45 years until 1986.

Thereafter, Alcoa began remediating and selling individual land parcels and operations associated with the Site. In 1987, ACPC, Inc. (ACPC), purchased the cable mill operations and leased the associated land from Alcoa. In 1987, Alcoa sold the aluminum smelter to Vanalco, Inc.; however, Alcoa retained the title to the extrusion section of the property known as the Vancouver Extrusion Company (Vanexco) and the cable mill operation, subject to the ACPC lease. Vanexco was operated by Alcoa until 1991 when it was closed. Additionally, in 1991, Alcoa sold a tract of land lying west of the aluminum smelter to Russell Towboat and Moorage Company; this tract of land is not part of the Site. In 1994, a

parcel of property known as the North Parcel was sold to the PUD for construction of a cogeneration plant. A cleanup was conducted in an area known as the Northeast Parcel and the property was sold to Clark County as a jail site in 1997. Vanalco owned and operated the aluminum smelter from 1987 until late 2000 when it ceased all manufacturing operations and entered bankruptcy. Glencore Washington LLC (now known as Evergreen) purchased the smelter assets from the bankruptcy estate in 2002. No manufacturing operations have taken place at the Site since December 2000.

Columbia Marine Lines (succeeded by Crowley Marine Services, Inc. [Crowley]) leased property and operated a marine repair facility on the Alcoa property west of the aluminum smelter (the Crowley Parcel) from approximately 1963 until 1984. Evergreen owned the former aluminum smelter site and the stormwater lagoons, and both Evergreen and Alcoa owned the small sanitary sewer plant. Alcoa retained ownership of the remainder of the Site, including the river dock and loading area, the land east of the smelter (including the East Landfill, the former North and North 2 Landfill areas, and the South Bank Area), and the property to the west of the smelter (the Crowley Parcel). As of the writing of the report, the ownership of the Alcoa and Evergreen properties has transferred to the Port of Vancouver.

2.3 Historical Site Use

The aluminum smelter, which included potlines, an aluminum casting facility, a greenmill, carbon bakes, a dock and raw materials handling system, a laboratory, and miscellaneous support facilities, operated with only intermittent interruptions, from 1940 through 2000. The smelting operations required an extensive dry materials handling system for raw materials. Alumina ore was received by rail or ocean-going vessel. Other raw materials, including petroleum coke, coal tar pitch, anthracite coal, cryolite (sodium aluminum fluoride), and aluminum fluoride, were received by rail and truck.

The alumina was reduced to molten aluminum in the potlines. This reduction process involved the use of a carbon cathode and anode; both were manufactured on the Site. Aluminum salts and electrolytes containing fluoride were introduced into the reduction process to increase the solubility of alumina. The molten aluminum was transferred to the

casting facility where it was cast into a variety of products, including sow, billet, and sheet ingot. Many of these products required the aluminum to be alloyed with different metals, including copper, manganese, and magnesium.

Electricity is considered one of an aluminum smelter's raw materials. Bonneville Power Administration (BPA) owns a parcel of property on the northeast side of the Site. BPA supplied power to transformer banks at the aluminum smelter, located on the north side of the aluminum smelter potrooms. The transformer banks contained large transformers and capacitors. These units fed electricity into rectifiers housed in adjacent buildings and then on to the potlines. Prior to 1987, the original mercury-arc rectifiers used to provide power to the potlines were replaced with solid state rectifiers.

The aluminum smelter manufactured carbon anodes and cathodes for the smelting operations at the Site. The carbon storage building housed the petroleum coke and coal tar pitch inventory. The greenmill mixed and heated the coke and pitch to form a paste, which was then pressed into the shape of an anode. The anodes were lowered into in-ground ring furnaces to bake and cure. The cathodes manufactured at the Site used anthracite coal and coal tar pitch to form ram paste. The paste was either rammed around cathode bars or cathode bars embedded in carbon blocks to form the cathodic lining of the pot shell. The reduction of alumina to aluminum occurs between the anode and cathode in the potshell.

The aluminum smelter had a complete maintenance department to support the operations. The maintenance department used land to the southeast of the carbon storage building as a scrap yard. Various materials were placed in this area prior to reuse or off-site recycling.

Several on-site landfills and material storage locations were operated on the eastern portion of the Site prior to the mid-1980s. Materials relating to Site operations, including alumina, bath, cryolite, aluminum fluoride, carbon, anodes, brick, concrete, plastic, wire, paper, drums, aluminum metal, pallets, conveyor belts, cable, metal piping, gravel, asphalt chunks, contaminated waste (including miscellaneous small volumes containing trichloroethylene-bearing solvents, polychlorinated biphenyls [PCBs], and polycyclic aromatic hydrocarbons[PAHs]), and miscellaneous maintenance activity debris, were deposited in the landfills. Spent potlining (SPL; cathodes) were stored in a separate location that was

remediated under Consent Decree 92-2-00783-9 between Alcoa and Ecology. Waste materials were transported off site following the closure of the landfills in the 1980s.

During the 1950s, Alcoa added fabrication facilities, including the extrusion plant, rod mill, and cable plant, at the Site. These fabrication facilities used large quantities of hydraulic oils in numerous pieces of equipment used in the manufacturing processes. Both water-soluble and petroleum-based hydraulic oils were used. Several additional expansions of the facilities took place during the 1950s and 1960s.

From approximately 1963 to approximately 1985, Alcoa leased property to Columbia Marine Lines, which was succeeded by Crowley. During this time, Crowley operated a marine repair facility on the Site in an area adjacent to the stormwater ponds. Crowley deposited wastewater, including barge slops, wash water from barge gas freeing operations, and tug bilge slops, into a series of three dewatering ponds on the property.

3 OVERVIEW OF CLEANUP ACTION

This section provides an overview of the remedial activities performed at the Site pursuant to the Consent Decree (No. 09-2-00247-2) between Alcoa and Ecology, as well as activities related to the redevelopment of the property. While not required by the Consent Decree, documentation of the demolition and redevelopment related activities are included in this report at Ecology's request.

3.1 Consent Decree and Cleanup Action Plan

The remedial actions selected for the Site occurred under the legal framework of a Consent Decree (No. 09-2-00247-2) and Cleanup Action Plan (CAP; Ecology 2009) between Alcoa and Ecology in accordance with the Washington State Model Toxics Control Act (MTCA; Ecology 2007a). The CAP identified four Areas of Concern (AOC) that required additional remedial action as part of a final cleanup action for the Site. These actions are identified below in Section 3.2 and discussed in more detail in Sections 4, 5, and 6. Alcoa also conducted cleanup activities in support of the overall facility demolition project. While these actions were not required by the CAP, they were performed using the same protocols required by MTCA for the Site cleanup and in close coordination with Ecology. These actions are identified in Sections 3.3 and 3.4 and discussed in more detail in Sections 7 and 8.

As summarized in the CAP, additional remedial actions were performed by Evergreen with Ecology's oversight under Enforcement Order 4931 (Ecology 2007b). These activities were formally approved by Ecology on December 3, 2008. In their approval letter, Ecology confirmed that Evergreen had met all requirements of Enforcement Order 4931 and satisfied all remedial activities required for the portion of the Site that was previously owned and controlled by Evergreen.

3.2 Site Areas of Concern

The CAP identified four primary AOCs at the Site requiring additional remedial action. The following sections briefly describe these areas and the required work that is documented in more detail by additional sections within this Report.

3.2.1 PCB-impacted Sediment

Shortly after the 1997 construction of a non-contact cooling water discharge pipeline and outfall to the Columbia River, Clark County PUD collected sediment from the outfall area in accordance with its National Pollutant Discharge Elimination System (NPDES) permit requirements. These sediment samples indicated the presence of elevated concentrations of PCBs in the immediate vicinity of the outfall. Subsequently, Alcoa began an investigation to determine the source of PCBs. These data revealed that disturbance of adjacent upland soils during construction of the outfall line was the source of PCBs detected in Columbia River sediments. In 2003, Alcoa performed a remedial action along the shoreline to remove the PCB-impacted soils and to prevent further impacts to the Columbia River.

With source control complete, Alcoa conducted a risk assessment and feasibility study prior to developing the final remedial action for the Site. The studies determined that sediments adjacent to the Site were impacted with PCBs at levels that pose a potential threat to human health and the environment. The selected remedial action at the Site consisted of a design that is permanent and provides mass removal to the maximum extent practicable. This work includes two main elements: 1) dredging, dewatering, and disposing of existing PCB-impacted sediments; and 2) placing material following dredging to restore natural grades, enhance natural recovery, and provide shoreline protection at the Site. Additionally, Alcoa removed existing Asian clams (*Corbicual fluminea*) within the project area as part of the dredging work. Further details of the remedial activities are provided in Section 4 of this Report.

3.2.2 Dike Underground Storage Tanks

Alcoa maintained numerous underground storage tanks (USTs) at the Site. These tanks stored a variety of fuels used in Site operations including gasoline, diesel, and fuel oils. In 1987, the four USTs on the dike, 1-34C, 2-34C, 3-34C, and 4-34C, (referred to hereafter as UST 1, UST 2, UST 3, and UST 4) were emptied, decontaminated, and abandoned in place. These were the only remaining USTs on the Site that were not abandoned in accordance with current WAC 173-360 (Underground Storage Tank Regulations) and subsequently approved by Ecology. Each dike UST was filled with gravel upon closure. Five monitoring wells were installed near the USTs, and light non-aqueous phase liquid (LNAPL) was

detected in the wells. The presence of diesel products in the soil and groundwater in the vicinity of these USTs indicated that additional remediation activities may be necessary. In mid-2008, characterization of the soils near the USTs was conducted using geoprobe sampling equipment. Subsequently, the four dike USTs were excavated and removed. The overburden soil was removed from the USTs, which included sand and concrete pads. The gravel that had been placed in the tanks during decommissioning was removed, stockpiled on site, and used in various locations for road bed materials and fill. The tanks were recycled off site. After the remediation work was complete, the area was backfilled and compacted. The soils in the excavations and gravel from the USTs met Site cleanup levels. The UST monitoring wells were decommissioned. Further details of the remedial activities are provided in Section 5 of this Report.

3.2.3 Soluble Oil Area

During the fabrication of aluminum redraw rod, Alcoa used water soluble cooling oil. In approximately the 1970s and 1980s, Alcoa discharged this cooling oil to several basin-like areas on the eastern portion of the Site. At an unknown point in time, the water soluble cooling oil was incidentally mixed with hydraulic oil that contained PCBs as a fire retardant. An unknown amount of PCB-impacted water soluble oil was deposited in an equalization pond bordered on the north and south by spurs of the Burlington Northern Santa Fe (BNSF) railways, on the east by a berm, and on the west by a fence. Any excess water in the vicinity had the potential to drain out the southern end of the pond into the surrounding area via a series of ditches and culverts near the railroad tracks. In the 1980s, investigations were conducted to determine possible PCB impacts to soil and groundwater in the vicinity of the former waste oil disposal areas.

In the early 1990s, a remedial action was conducted in the area and confirmation sampling verified that the desired cleanup levels had been met. The remediation excavation was backfilled with on-site borrow material. According to the Remediation Plan, the excavations were backfilled with soil with PCB concentrations less than 15 milligrams per kilogram (mg/kg) and the entire area was capped with a minimum 2 foot clean soil layer. The 1990 cleanup goal was 25 mg/kg.

In 2008, this area was characterized using geoprobe sampling equipment to determine if the backfill and soils that remained in place after the 1990 remedial efforts met the current Site cleanup level of 10 mg/kg PCBs. It was determined that several areas needed further remedial action. Based upon the in situ characterization data, initial removals were conducted and the soils were properly disposed of based upon the in situ characterization. In some locations, additional removals were necessary to reach the Site cleanup levels, and these soils were also properly disposed of based upon their in situ characterization. The soils remaining in the excavation met Site cleanup levels. The area was backfilled and compacted. Further details of the remedial activities are provided in Section 6 of this Report.

3.2.4 Crowley Parcel

From 1964 to 1983, water and waste materials from barge maintenance and cleaning operations were deposited by Crowley Marine Lines (a predecessor in business to Crowley) into a series of three excavated pits located on the southwestern portion of the Site. Over the course of operations, over 2 million gallons of waste materials were deposited in the barge waste disposal area. These waste materials consisted of barge slops, bilge slops, and water from gas freeing operations. As a result, the soil and groundwater at the Crowley Parcel have been impacted by PAHs, total petroleum hydrocarbon – gas range (TPH-G), TPH-oil, TPH-D (diesel range, and benzene, toluene, ethylbenzene, and xylene (BTEX). Although historical remediation actions were performed, residual contamination persisted in both the soil and groundwater. In January 2009, Crowley began construction of the final remedial action for this area of the Site, consisting of source removal (i.e., excavation of soils exceeding Site cleanup levels) and ex situ treatment of impacted materials. Excavation work was completed on February 16, 2009, and construction of the bioremediation cell commenced on February 19, 2009. Bioremediation of the excavated, impacted soil was expected to take approximately one year; thereafter, the soil will be tested for compliance with Site cleanup levels. Soil testing conducted during the late summer of 2009 found that the soils were fully remediated and can be used on site as fill. On behalf of Crowley, SLR International Corp., submitted a *Remedial Action Report* documenting the remedial construction activities. This report was submitted to Ecology on May 20, 2009 along with the *Site Quarterly Report*. On October 9, 2009, SLR International Corp., representing Crowley, submitted the *Third Quarter Remedial Action Report* and requested decommissioning of the biotreatment cell. On November 16,

2009, Ecology provided Crowley with a letter approving biotreatment cell decommissioning. Crowley performed the decommissioning work from December 3 to 15, 2009 and is preparing a final report that will be issued sometime in first quarter 2010.

3.3 Facility Demolition

The Site's ACPC/Vanexco facility contained 16 single story buildings that were constructed between 1949 and 1967. The Extrusion Plant, built in 1954, was located in Buildings 401, 402, 403, and 404. Operations were shut down in 1991 and the equipment was removed. The Rod Mill was located in Buildings 404, 410, and 412. Operations were shut down in the late 1980s and the equipment was removed. PCBs were used in the Extrusion Plant's and Rod Mills' operational fluids. The structure, siding, ceiling, concrete, and some soil in these buildings were contaminated. Remediation began in the 1990s to clean up the PCB contamination from the concrete and soil. The concrete floors were scarified and PCBs were successfully removed from the surfaces. The surfaces of pits and trenches were solvent washed, bringing the surfaces' PCB concentrations below the cleanup standards. The pits and trenches were then filled with flowable concrete or gravel and capped with asphalt. Four areas were excavated to remove PCB-impacted soil. The soil in two of the excavations was removed until cleanup standards were reached, but impacted soil was left in two of the excavations. These areas were capped and maintained in accordance with Consent Decree 95-2-03268-4.

The above-grade structures of the Extrusion Plant and Rod Mill were characterized in situ for PCBs from the operational fluids and, as appropriate, PCBs used incidentally in the manufacture of the paint used to coat structures within the building. The above-grade structures were demolished, segregated, and properly disposed of or recycled. The cap was left in place. Care was taken to ensure that contamination did not migrate from the buildings during demolition.

The Cable Mill consisted of Buildings 412, 414, 416, 418, 420, 422, 424, 426, and 427. Alcoa operated the facility until the 1980s and then leased it to ACPC through the 1990s. It was then shut down and all equipment removed. PCBs were not used extensively in the operation fluids, but a limited amount of PCB contamination did occur. In addition, PCBs

were incidentally used during the manufacture of the paint coatings used on the structures. The PCB concentrations were determined in situ. The above-grade structures of the building were demolished and properly disposed of or recycled. The flooring, concrete slabs, and foundations were also characterized and removed. These were properly disposed of or recycled for future on-site use. Soils under the concrete slabs were characterized in situ and remediated, if site cleanup levels were not met. Two production wells that were in place under the ACPC floor slab were decommissioned.

The Dock Facility consists of a dock, four silos, a rail loading building, and the conveyors in between these structures. The dock and ship unloading crane remain in place. The remaining structures were demolished and properly disposed of or recycled.

The electrical plant substation (EPSS) associated with the ACPC/Vanexco facility was demolished and soils remediated in the area. An additional small electrical yard located west of ACPC was demolished and soils were remediated.

The area around and under building 430, the UST that was previously removed, and associated underground piping was demolished and the soil was remediated.

The storm and sanitary sewer system associated with the ACPC/Vanexco facility was removed or cleaned. In situ characterization for PCBs was conducted prior to beginning work on the sewer system. Sewers that were removed were properly disposed of off-site.

While included as specific requirements of the Consent Decree and CAP, further details of the remedial activities are provided in Section 7 of this Report to document the removal of impacted soils from these areas.

3.4 Other Remediation Activities

During the facility demolition activities, a number of areas were identified and remediated. These areas were impacted by historical plant operations. The emission control system used alumina ore as a medium to collected hydrogen fluoride gases from the primary reduction plant. This fluoride-enriched alumina ore (commonly called reacted ore) was found along

the rail area near the reacted ore silos. This area was delineated and remediated. Coal tar pitch was found around the fresh ore silos in the road bedding materials. The areas with the coal tar pitch were delineated and remediated.

The carbon storage building stored calcined coke and coal tar pitch. Handling of these materials during the reduction plant's historical operations resulted in deposition on surrounding soils. These areas were delineated and remediated.

The reduction plant originally used bunker C fuel oil for fuel in the carbon bake furnaces. The aboveground storage tanks (ASTs) were removed in years past, but the foundations and underground piping system were left in place. This system was removed and impacted soils were remediated.

Historically, ACPC used settling lagoons for soluble oils on the east side of the facility. This area was remediated during the property transfer to PUD. During demolition activities, the underground pipeline that led to the lagoons was identified. The piping was removed and impacted soils were remediated.

Carbon plant materials, such as anodes and coke, were identified on the north side of the soluble oil area. These materials were delineated, excavated, and disposed of off-site.

Two monitoring well clusters were decommissioned near the stormwater settling lagoons. These were background wells and access to the wells had been impacted by development in the area.

While included as specific requirements of the Consent Decree and CAP, further details of these remedial activities are provided in Section 8 of this Report to document the removal of impacted soils from these areas.

3.5 Permits and Regulatory Approvals

The project was conducted at Ecology's direction under a MTCA Consent Decree. In accordance with Ecology Policy 130B (Permit Exemptions for Remedial Actions under

MTCA, February 17, 1995) and MTCA (Revised Code of Washington [RCW] 70.105.D.090), work conducted pursuant to a MTCA order or decree is exempt from the procedural requirements of state and local permits Nevertheless, all substantive permit requirements of the state and local agencies must be addressed, including chapters 70.94 (Air), 70.95 (Solid Waste), 70.105 (Hazardous Waste), 75.20 (Hydraulic Permit), 90.48 (Water Quality), and 90.58 (Shoreline Management). Substantive permit requirements applicable to the project were met, including:

- Washington Department of Fish and Wildlife's (WDFW's) Hydraulic Project Approval (HPA), RCW 77.55.021
- City of Vancouver's Shoreline Master Program, Critical Areas Ordinance, Land Use Code, and Archaeological review
- Clark County's Shoreline Master Program, Land Use Code, and Archaeological Predetermination

A State Environmental Policy Act (SEPA) checklist was filed with Ecology on August 27, 2008, to obtain a SEPA determination for the project sediment and soil remediation activities. Ecology issued a Determination of Nonsignificance (DNS) for the project on September 11, 2008 (Appendix C).

Federal approvals were necessary for the project, including:

- Sections 401, 402, and 404 of the Clean Water Act (CWA), 33 U.S.C. § 1344
- Compliance with Section 7 of the Endangered Species Act (ESA)
- Compliance with Section 106 of the National Historic Preservation Act

CWA Section 402 requirements for Site stormwater and wastewater generated landward of the flood control dike were implemented in compliance with Ecology industrial NPDES Permit number WA-000029-9 (Appendix C) for the Site, held by Evergreen (and the Port of Vancouver after transfer of property ownership). This permit covered the discharge of construction wastewater, as well as wastewater generated by cleaning and decontamination activities. Alcoa's contractor implemented the project Storm Water Pollution Control Plan (included in Appendix D), which specifies control runoff from the Site and best management

practices (BMPs) and procedures to protect stormwater from contamination due to project activities.

A Joint Aquatic Resources Permit Application (JARPA) and Biological Assessment (BA) were submitted to the Seattle District U.S. Army Corps of Engineers (Corps) Regulatory Branch in February 2008 and revised in July 2008. CWA Sections 401 and 404 and Rivers and Harbors Action Section 10 requirements were incorporated into the verification of Nationwide Permit 38 (NWP 38) (number NSW-2008-235-CRS), which was subsequently issued by the Corps for the project on November 25, 2008 (Appendix C). The permit verification covered in-water activities, including sediment and clam removal and disposal, piling removal, and material placement. The permit verification also incorporated ESA requirements for the project, per the terms and conditions of the Biological Opinion (BiOp) (Appendix C) issued by the National Marine Fisheries Service (NMFS) Northwest Region for the project on November 18, 2008 (NMFS reference number 2008/0201). Water quality monitoring implemented pursuant to this permit verification and BiOp is summarized in Section 4.9.

On behalf of Alcoa, Anchor QEA requested modification of the NWP 38 verification to extend the allowable work window for the project in a February 10, 2009, letter from Ms. Elizabeth Appy of Anchor QEA to Mr. Steven Gagnon of the Corps (Anchor QEA 2009). The extension was requested to allow the completion of in-water habitat improvement activities and the placement of erosion protection materials during March 2009. The Corps granted an extension of the allowable work window to March 18, 2009 in a February 27, 2009, letter to Alcoa (Corps 2009) (Appendix C).

The Corps' extension specified that several supplemental BMPs were to be in place during in-water work conducted between March 1 and March 18, 2009. The supplemental BMPs consisted of the installation of a mesh fish diversion panel to isolate the work area by "guiding" juvenile fish moving downstream around the work area (shown on Photographs 1 and 2) and the presence of an on-site monitor to ensure that fish were not being entrapped in the mesh panel. Alcoa complied with the special requirements during project activities and finished all in-water work on March 18, 2009. Appendix E presents daily logs documenting the performance of additional activities during the work window extension and the observations made during the fish diversion panel monitoring.

Photograph 1: Mesh panel for fish diversion prior to installation

Photograph 2: Installed mesh panel for fish diversion

Archaeological Investigations Northwest, Inc. (AINW) conducted a records review and background research for the project in compliance with Section 106 of the National Historic Preservation Act, and reported their findings in a May 2008 Report entitled "*Records Review and Background Research for the Alcoa Vancouver Proposed Sediment Remediation Project."* AINW recommended no further archaeological investigations for the proposed sediment remediation project, as the project had a very low probability of impacting potentially significant archaeological deposits.

4 PCB-IMPACTED SEDIMENT/SHORELINE REMEDIAL ACTIVITIES

The PCB-impacted sediment removal, habitat enhancement, and shoreline remediation and stabilization construction activities began on October 6, 2008, and were completed on April 20, 2009. Activities associated with this work were detailed and documented in daily reports prepared by the field construction Quality Assurance representatives (provided in Appendix D). Photographs were taken throughout the project and are provided throughout this report section.

All work was conducted in accordance with the Project Drawings and Specifications (Appendix A) or approved revisions to those requirements, which are also discussed in this section. All changes to or clarifications of the project design were documented, reviewed, and approved by Ecology when appropriate. The remainder of this section documents the remedial action process for the project from design through construction.

4.1 Design Overview

This phase of the project was developed in accordance with MTCA regulations (Ecology 2007) and the requirements of the Site *Consent Decree and Cleanup Action Plan* (Ecology 2009). Accordingly, Ecology staff were engaged throughout the design process and provided review and approval of Project Drawings, Specifications, and supporting documentation.

4.1.1 Engineering Design

Anchor QEA served as the project engineer and prepared the Project Drawings and Specifications for the project. An Engineering Design Report (Appendix B) was prepared for the project and details the basis of design. The report presents a concise narrative discussion of performance standards and the cleanup remedy design and how the remedy met standard professional practices.

The Project Drawings and Specifications developed for this project provide instructions and requirements for performing the work. The final design was completed in May 2008 and a set of Project Drawings and Specifications was issued for bidding. However, at the time of bid, several important project elements related to the cleanup of the entire Site were not finalized. These project elements included environmental permit and regulatory approvals,

supplemental sampling and analysis plan development, and ongoing upland demolition and cleanup activities. Addenda were issued to the bid set as information became available to incorporate decisions made regarding these project elements.

After the bid set was prepared and issued, six subsequent addenda were issued to all plan holders. A summary of each addendum is as follows:

- Addendum 1: Issued on July 8, 2008 addressed bidder questions raised at a Site pre-bid meeting on June 23, 2008.
- Addendum 2: Issued on July 14, 2008 changed the bid due date and also issued a revised set of Project Drawings and Specifications. This set, titled 'Revision 1', was dated July 14, 2008.
- Addendum 3: Issued on July 21, 2008, provided more clarification and answers to bidder questions. Addenda 3 also included another revision to the Project Drawings and Specifications titled 'Revision 2' and dated July 21, 2008.
- Addendum 4: Issued on July 28, 2009 provided additional clarification and answers to bidder questions.
- Addendum 5: Issued on August 4, 2008 provided additional clarification and answers to bidder questions.
- Addendum 6: The final addendum was issued on September 8, 2008. Addenda 6 included the final revision to the Project Drawings and Specifications titled 'Revision 3' and was dated September 8, 2008.

A copy of the final Project Drawings and Specifications (Revision 3) is included as Appendix A.

4.1.2 Habitat Enhancement Area

Anchor prepared a *Design Bulletin, Former Alcoa Vancouver Works, Habitat Improvement Project* (included in Appendix E). This document presents design specifications for the habitat enhancement area constructed on the shoreline adjacent to the East Landfill revetment. The habitat enhancement area included three primary elements: construction of a riparian planting area, construction and placement of large woody debris piles, and riparian plantings along the length of the East Landfill revetment. All of these elements served to

enhance habitat along the shoreline of the Site and satisfy mitigation requirements agreed upon by Alcoa and the National Marine Fisheries Service (NMFS) as documented in the BiOp terms and conditions. In addition, supplemental riprap at the toe of the East Landfill revetment was placed to stabilize the existing articulated concrete block (ACB) material.

4.1.3 Contractor Selection

Tetra Tech EC, Inc. (TtEC) was selected by Alcoa as the prime contractor for construction activities at the Site. TtEC subcontracted with Hickey Marine Enterprises (Hickey) to perform the in-water dredging and material placement operations. As part of the project requirements, TtEC produced a series of documents outlining their methods and means for completing the required work. For reference, the following documents are included as Appendix D:

- *Final Work Plan for Sediment Remediation Project, November 2008* (includes an Environmental Management Plan section)
- *Final Quality Assurance/Quality Control Plan for Sediment Remediation Project, Revision 2, December 2008*
- *Appendix C, Storm Water Pollution Control Plan for Sediment Remediation Project, Revision 2, October 2008*
- *Final Health and Safety Plan, October 2008*

4.2 Construction Schedule

The original construction schedule had a planned in-water work timeline of approximately 16 weeks to reach completion (November 3, 2008 through February 18, 2009). Actual completion was achieved in approximately 16 weeks; however, the scheduled in-water work start date was delayed until December 1, 2008, pushing the in-water work completion date to March 18, 2009. In order to complete the work during a single season and mobilization event, an extension of the NWP 38 verification was requested and approved to allow work to continue past the environmental work window for the Lower Columbia River (as discussed in Section 3.5). Extreme weather conditions were encountered during construction in December and, as a result, production was reduced during mid-December into early January. To mitigate schedule impacts, the contractors elected to work additional shifts to keep the

project on track, thus successfully completing the project within the initial projected duration. The final construction schedule is included as Appendix D.

4.3 Site Preparation

Site preparation began on October 6, 2008, with the establishment of support facilities for the contractors (TtEC and Hickey) and Alcoa representatives. The field offices were set up adjacent to the existing trailers on site. These trailers were used as support facilities during the completion of demolition activities at the Site. All necessary utilities (electrical power, telephone hookup, sanitary facilities, etc.) for the facilities were established previously by TtEC.

Site security was established to control access to the Site. The Site entrance, the Alcoa gate south of the power generating facility, was staffed 24 hours a day during project implementation. Access to the riverbank was limited by the construction activities during working hours. Hourly patrols were conducted by the security officer at the gatehouse during overnight and weekend hours.

The preparation of the Site for construction activities began on November 3, 2009. These activities included:

- Establishment of staging areas
- Installation of temporary erosion and sediment control measures
- Construction layout and surveys
- Construction and/or repair of access roads
- Clearing and grubbing of shoreline and landfill areas
- Construction of offloading facilities
- Locating and protecting outfalls

Site preparation activities generally were performed following the Project Specifications (included in Appendix A) and the Contractor Work Plan, and met the project performance objectives laid out in the *Project Control Plan* (Appendix B). The following subsections present additional details of the Site preparation activities performed during the project.

4.3.1 Staging Areas

TtEC established a staging and handling area adjacent to the North and North 2 landfills. The area was cleared and grubbed and plastic liners and berms were placed on the ground surface. A staging area for Subtitle C and D material removed from the upland areas was established on December 2, 2008. The area had been previously cleared and grubbed during an earlier removal action and separate plastic liners and berms were established on the ground surface for the stockpiles of the different materials. The Subtitle C piles were covered, except when the stockpiles were being accessed. Equipment ready-lines were also established for parking mobile equipment during decontamination procedures and when the equipment was idle.

4.3.2 Temporary Erosion and Sediment Control

On December 5, 2008, prior to upland excavation and grading activities, TtEC installed silt fencing meeting the requirements presented in Section VII.D of the Project Specifications (Appendix A) at the downhill limits of the excavation, uphill of the water surface elevation (Photograph 3). A containment boom was placed in a horseshoe pattern downstream of the in-water activities (Photograph 4). The boom was deployed December 1, 2008. TtEC maintained these BMPs for erosion control during upland activities and retained an erosion control specialist on site.

Photograph 3: Erosion fencing

Photograph 4: Debris boom installation

Regular inspections from the upland were conducted during project activities to monitor for sheens, turbidity plumes, debris, and other project-related water quality impacts and to

verify that pollution control measures such as the debris boom were in place and functioning. No turbidity plumes or sheens migrating off site (i.e., beyond the compliance location) were reported. Silt curtains or other turbidity control measures were not deployed. In-water inspections conducted pursuant to the Water Quality Monitoring Plan (WQMP) are described in Section 4.9. Some debris was entrapped by the downstream debris boom. The debris was contained and transported off site by truck for final deposition at the Wasco County Landfill.

4.3.3 Construction Layout and Surveys

The construction layout and surveys over the project area were used to establish pre-construction and post-construction conditions and to monitor progress of project activities. The work was performed by two survey contractors: KPFF Consulting Engineers (KPFF) established the Site geodetic control network and performed the upland surveys while eTrac Engineering LLC (eTrac) performed the hydrographic surveys. The methods and equipment outlined in TtEC's Final Quality Assurance/Quality Control Plan (Appendix D) and the Construction QAP for the Site and are summarized below.

Project surveys used the following datum:

- Horizontal: North American Datum 1983 (NAD83) projected on Washington State Plane Coordinate System (South Zone), U.S. survey feet
- Vertical: National Geodetic Vertical 29 (NGVD29), U.S. survey feet

KPFF previously established a geodetic control network over the Site for Alcoa in 2003. The horizontal control is based on a GPS survey and observations using Clark County Control Points No. 768 and 103. The project coordinate system used the Washington State Coordinate System, South Zone, NAD 83/91. Coordinates were scaled to ground or a local datum plane using a combined scale factor of 1.0000475568.

Control monuments from the 2003 survey were located and used to establish the project geodetic control network. The monuments were measured on October 20, 2008 using GPS/RTK survey procedures and a site calibration was completed using five control points. The geodetic control network was used for all Site surveys to provide consistent data. KPFF

conducted a pre-construction survey of the upland remediation areas on December 9 and 11, 2008.

eTrac performed project surveys below the waterline using a combination of multibeam, singlebeam, and land surveying methods. Multibeam methods were used to collect the majority of the pre-construction, post-dredge, and post-material placement survey data. A singlebeam echosounder was used in shore areas too shallow for multibeam coverage and for daily progress data collection. Poling data collection methods were used in areas too shallow for acoustic sounding methods.

Hydrodynamic survey methods used for the project conformed with guidelines set forth in the Corps guidance EM 1110-2-1003, *Engineering and Design – Hydrographic Surveying*, January 2002). Multibeam sounding data was collected using a Reson 9001 MB sonar operating at a frequency of 455 kHz. The multibeam system was calibrated using standard patch testing methods. Single beam sounding data were collected using an Odom 3° single beam echo sounder operating at a frequency of 200 kilohertz (kHz). The singlebeam echosounder was calibrated using bar check and latency check methods. eTrac determined the sound velocity each day before commencing survey activities with an Odom Digi-Bar Pro.

Trimble 750 GPS receivers were used for real time positioning during survey operations. Survey control points were established in the dredge plan depicted on Project Drawing C-1 (included in Appendix A). These control points were used to lay out the dredge cell boundaries. eTrac field verified the survey control points before each survey using the on-board GPS receivers.

Horizontal positions were acquired through the Applanix POS MV Version 4 inertial position system. Coast Guard Radio Technical Commission for Maritime Services (RTCM) corrections were applied for a DGPS positions accuracy of +/-3 feet at the 95% confidence interval. The POS MV motion reference system was used to collect vessel attitude data and apply it to sounding data in real time.

Vertical controls were established by a conventional level loop using a Trimble Digital level and 8-digital leveling rod. Elevations are based on Clark County Benchmark No. 5615, which has a published elevation of 25.49 feet based on the Clark County precision leveling project datum 1990 [theoretically equivalent to Corps Datum NGVD 1929(47)]. Tidal levels were transmitted to the survey boat and dredge with a Tide Trac electronic tide gauge every minute. A tide staff was set at the Alcoa dock for control verification by the operator. Depth accuracy was +/-0.5 feet at the 95% confidence interval.

Survey cross section lines were perpendicular to the baselines shown on the Project Drawings (in Appendix A) and had a varied horizontal spacing to provide 100% overlap in the survey data. eTrac conducted pre-construction surveys of the Site between November 6, 2008 and December 5, 2008. Post-remediation confirmation surveys were performed in a dredge or material placement unit immediately upon completion of work operations in the unit. The combined final KPFF and eTrac survey data, serving as the basis for the Project As-built Drawings, is presented on Figures 3 and 4 and in Appendix G. Use of these data as a quality control tool is discussed in Section 4.7.1.

4.3.4 Access Roads

Site traffic patterns were established in accordance with the Contractor's Work Plan to maximize one-way traffic routes and the use of existing Site access roads to the extent possible. The existing Site access roads are shown on Project Drawing G-2 (included in Appendix A). Additional temporary roads were established along the riverbank to facilitate shoreline-based construction activities such as debris removal, grading, and material placement. These roads are referred to as the "lower levee road." Temporary access roads were also established along the dike near the dock bridge, to access the staging areas and the habitat improvement area at the toe of the East Landfill. TtEC also established decontamination and truck tarping areas to minimize the potential for contaminated material to be inadvertently transported off site.

Clearing and grubbing of the existing roads and site of the temporary roads (shown in Photograph 5) began on November 4, 2008. Also on this day, a fence was removed at station number 18 + 80, along the site of the lower levee road (shown in Photograph 6). After

clearing and grubbing was completed, site materials (such as brick) were placed on the road surface in areas where the roads needed to be augmented. The roads were regraded as needed.

Photograph 5: Grading of the lower levee road

Photograph 6: Removed fencing along the lower levee road

Pumping action was observed on the lower levee road on December 9, 2008. The roads were regraded and stabilized to correct this problem. Subsequently, the roads were regraded on a daily basis through project completion. Snow removal was required to clear the roads on December 22 and 23, 2008, after winter storms. The roads around the North and North 2 landfills were reinforced with brick and crushed concrete material during January 2009.

4.3.5 Clearing and Grubbing

Vegetated areas of the shoreline and upland areas were cleared and grubbed prior to excavation and/or grading activities. TtEC cleared and grubbed vegetation areas in DU1A, DU2B, DU2C, DU3C, DU3E, DU4D, and DU5 prior to dredging to expose the underlying soil and/or salvageable debris. The North and North 2 landfill areas were cleared and grubbed in preparation of material placement activities, as were the road areas to facilitate access and road improvement and construction activities. Mechanical methods were used for these activities. The waste material generated by these activities was transported off-site for disposal at the Wasco County Landfill. Road and landfill areas were cleared and grubbed during early November 2008. Shoreline areas were cleared and grubbed during December 2008.

Photograph 7: Grubbed material

Photograph 8: Clearing and grubbing the shoreline area

4.3.6 Offloading Facilities

Offloading facilities for transferring dredged sediment were constructed at the on-site Alcoa dock and at The Dalles. Figure 3-3 of the Contractor Work Plan (Appendix D) depicts the general layout of the offloading facilities constructed in both locations. Dredged material was moved from the barge to watertight containers via clamshell bucket. Two drip containment barges were strategically located under the swing radius of the crane. Plastic sheeting and a fabricated drip plate were placed over the barges and dock, under the entire swing radius, to reduce the potential spilling sediments into the Columbia River and/or the dock. The Alcoa dock system also included piping to allow decanted liquid to be pumped to the treatment system. A front-end loader was placed on one of the barges to aid in the cleanup of sediment spilled on the containment barges. The drying agent was stockpiled inside covered roll-offs for use as necessary to amend the offloaded material.

Photograph 9: Offloading facility at the Alcoa dock

Photograph 10: Offloading operations at the Alcoa dock

4.3.7 Outfall Location and Protection

On November 19, 2008, the outfalls to the east and west of the Alcoa dock were located by the diving subcontractor Northwest Underwater Construction, LLC's (NWUC's) divers, and buoys placed to mark the end. GPS coordinates were taken and loaded into the on-board computers, which allowed dredging around the structures without damage. A lost or stolen buoy was replaced on December 1, 2008 by NWUC.

Photograph 11: Buoy marking outfall

A 12-inch HDPE PUD outfall was damaged on December 4, 2008, during shoreline excavation work. The PUD was notified and PUD contacted Ecology (because the outfall is permitted discharge). The outfall was repaired on December 12, 2008. PUD representative Ben Maier was on site to oversee the repair and to verify that it met with their expectations.

PUD shut down the discharge on the outfall at 2AM to allow it to drain because the pipe needed to be free of water in order to complete the work. However, it was discovered at approximately 8AM that there was still residual flow in the pipe. Dry ice was obtained and placed down the vent/clean out pipe on the shoreline to form an ice dam. Additional dry ice was placed directly into the pipe where it was cut. This successfully blocked the water flow. Once water flow was stopped, the damaged section was removed and a new section welded in place.

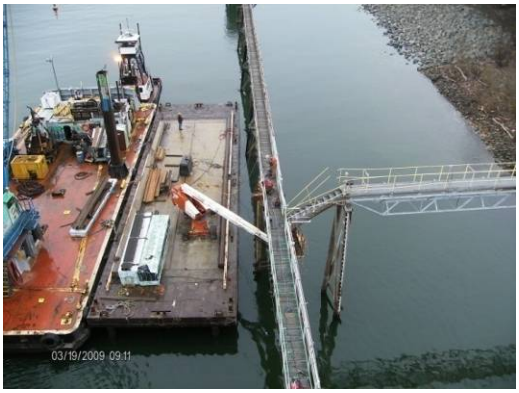
Photograph 12: Damaged outfall

Photograph 13: Repaired outfall

4.3.8 Catwalk Removal

On November 25, 2008, Hickey removed two walkways and stairs from the catwalk on the west end of the Alcoa dock to facilitate dredging in this area. The removed catwalk sections were placed on the west end of the dock. Two piles were removed, as described above in Section 4.3.8. The catwalk sections (and piles) were replaced upon project completion.

Photograph 14: Catwalk removal



Photograph 15: Catwalk replacement

4.3.9 Monitoring Well Relocation

During remedial activities along the shoreline, impacted soil and waste was identified in the vicinity of two well clusters associated with the long-term groundwater monitoring network for the Site. It was determined that monitoring wells MW-50S, MW-19I, MW-50D, MW-50A, MW-51S, MW-51I, MW-51D, and MW-51A would have to be removed in order to remove the impacted soils and waste. On February 24, 2009, the eight monitoring wells were abandoned by Boart Longyear E&I (Boart) under the direction of an Anchor QEA geologist. The wells were abandoned in place by backfilling with bentonite grout using a tremie injection system in accordance with the requirements of WAC 173-160. The impacted soils were removed and the former well locations were regraded and restored to their pre-existing elevations.

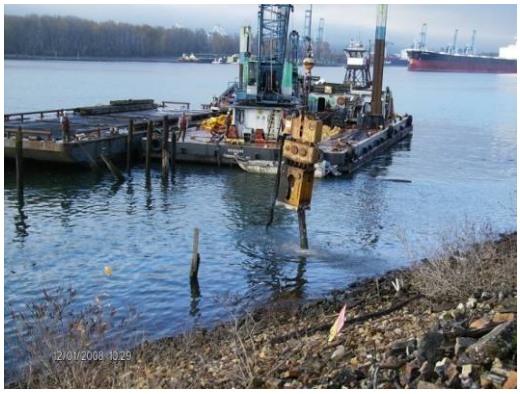
Before reinstallation of the eight wells began, the pre-existing well locations were staked on the restored grade by a surveyor. From March 12, 2009 to March 18, 2009, Boart installed replacement wells at the former well locations under the direction of an Anchor QEA geologist. The wells were constructed using sonic drilling methods according to the guidelines in WAC 173-160 (Minimum Standards for Construction and Maintenance of Wells). The wells were developed using standard surge and purge methods. Appendix H provides a detailed description of the abandonment, reinstallation, and development of the eight wells and includes a map of the well locations, well construction details, boring logs, well development records, and Ecology Resource Protection Reports.

4.4 Impacted Sediment and Soil Removal

4.4.1 Pile Removal

Hickey removed 27 creosote-treated piles as part of the project on December 1, 2009. Vibratory methods were used to initiate vertical pile movement and a crane was used to complete pile removal. Two of the piles were removed from under the Alcoa dock western catwalk to facilitate site access. These piles were replaced with new untreated piles upon completion of project activities. The remaining 25 piles were removed from the pile removal area shown on Project Drawing G-3 (in Appendix A). Removal activities in this area are depicted on Photographs 16 and 17. The piles were brought to shore by barge and transported off site by truck for final deposition at the Wasco County Landfill, located in The

Dalles, Oregon. Wasco County Landfill is permitted to accept this material under Oregon Department of Environmental Quality (DEQ) Solid Waste Permit No. 53 and the material meets the requirements of Resource Conservation and Recovery Act (RCRA) Subtitle D.



Photograph 16: Pile loosening using vibration

Photograph 17: Pile removal

A debris boom was placed downstream of the piling area during removal activities to collect any floating debris that may have been generated during removal activities. An absorbent boom was installed around piles during removal activities in the areas near the Alcoa dock. Additional absorbent booms and absorbent pads were available on site during piling removal in the event that sheens were produced during the removal activities.

An attempt was made to remove each pile in its entirety. However, Hickey reported that two of the piles in the pile removal area broke off at the mudline during removal. The broken piles were removed during subsequent dredging activity within the area. No other difficulties or broken/cut piles were reported.

4.4.2 Shoreline Soil Excavation

Removal of soils and materials from the shoreline commenced on December 2, 2008 and continued until February 28, 2009. Upland-based excavators were used for the removal. Soil contaminated with SPL, carbon bake scrubber process residue (process residue), iron slag, metal debris, and asbestos were removed from the shoreline. In addition, concrete larger than 2 feet by 2 feet was removed from the shoreline. After removal, the waste streams were placed in separate stockpiles in the staging area, in preparation for off-site disposal. Characterization data is provided in Appendix I.

SPL removals on the shoreline occurred from December 13 to 18, 2008; January 1 to 30, 2009; and February 5, 8 to 11, and 25 to 28, 2009. SPL was also screened from sediments when an unstable shoreline area slid underwater. The sediments in this area were dredged and taken upland. The SPL was screened from the sediments and placed in the SPL stockpile for off-site disposal. On February 3, 2009, Alcoa requested approval from Ecology to leave a small quantity of SPL that was under the causeway to the dock in place (provided in Appendix N). An on site meeting with Ecology personnel was held on February 4, 2009. During this meeting Ecology approved the request to leave the SPL beneath the causeway in place and cover the area with shoreline protective materials. Approximately 8,456 tons of SPL was removed from the shoreline.

Process residue, commonly referred to as tar, was removed from the shoreline on December 5 to 18, 2008; January 1, 5, 16 to 20, 24, and 30, 2009; and February 8 to 11, 2009. The excavated material was placed in the process residue (tar) stockpile in preparation for off-site disposal. Approximately 1,404 tons of process residue were removed from the Site. On February 17, 2009, Alcoa requested approval from Ecology to leave in place a narrow lens of process residue (provided in Appendix N). The lens of process residue is approximately 50 feet to the north of the Columbia River shoreline and 20 feet below ground surface. Ecology approved the request and required Alcoa to confirm that the material left in place did not designate as dangerous waste and the area was deed restricted. Figures I-2 and I-3 show the locations of the samples collected to characterize the riverbank prior to placement of armoring. Analytical results are also provided in Appendix I. These results demonstrate that the material left in place is well below the Washington dangerous waste threshold criteria.

Removal of iron slag from the shoreline was conducted on December 17, 2008; January 1 to 8, 14 to 20, 2009; and February 5 to 11, 2009. The iron slag was placed in the staging area in a stockpile for this waste stream. Approximately 3,414 tons of iron slag was disposed of off-site.

Asbestos was found in soil along the shoreline. The asbestos, associated materials, and soils were removed on December 5, 2008; January 6 to 7, 2009; and February 4 to 11, 2009. The asbestos-containing materials were placed in a stockpile in the ACPC slab in preparation for

off-site disposal. Approximately 1,306 tons of asbestos-containing materials were disposed of off-site.

A variety of debris was encountered on the shoreline. This material consisted of metal, brick, carbon products, cardboard, paper, and miscellaneous other non-hazardous materials. Photographs 18 and 19 are of debris removal along the shoreline. This waste stream was removed from the shoreline within the project limits, from December 2, 2008 to February 11, 2009, and was stockpiled in the staging area. Approximately 3,396 tons of debris was disposed of off-site.

Wood and treated piling was removed from the shoreline throughout the project. This waste stream was stockpiled on-site in preparation for off-site disposal. Approximately 322 tons of material was disposed of off-site.

Photograph 18: Shoreline debris removal

Photograph 19: Shoreline debris removal

4.4.3 PCB-impacted Sediment Removal

Removal of PCB-impacted sediment was accomplished using upland-based excavators and in-water mechanical dredging equipment. Dredging commenced on December 1, 2008 and continued until January 26, 2009. A total of 49,990 cubic yards (cy) of sediment were removed during the project and 1,530,827 gallons of dredge decant water was pumped from the sediment barges upland for on-site treatment prior to discharge. Approximately 4,910 cy of the total dredge volume was material that was deposited downslope of the eastern catwalk during the shoreline slope failure that occurred on January 5, 2009. Dredging operations

were conducted in accordance with the Contractor's Work Plan and appropriate BMPs were implemented to reduce impacts to water quality during construction. A downstream debris boom was in place during these dredging activities. Additional pollution control materials, including absorbent booms and absorbent pads, were available on site in the event that sheens were produced during the removal activities. A detailed log summary of dredging activities is provided as Table 1. Water treatment operations are discussed in more detail in Section 4.5.1.

4.4.4 Asian Clam Removal

The location of on-site Asian clam beds was identified during the site reconnaissance activities conducted in early 2008. Photographs 20 and 21 depict samples of clams collected as part of the reconnaissance activities. This area, designated "clam removal area" is shown on Project Drawing G-3 (included in Appendix A). Hickey removed a minimum of 1 foot depth (approximately 1,760 cy) of sediment across the clam removal area. A downstream debris boom was in place during these dredging activities. Additional pollution control materials, including absorbent booms and absorbent pads, were available on site in the event that sheens were produced during the removal activities. The dredged sediment and clams were transported off site by barge to an offloading facility in The Dalles, Oregon, where the material was dewatered and transported by truck for final deposition at the Wasco County Landfill.

Hickey attempted to use an enclosed Cable Arm clamshell bucket to dredge in the clam removal area. However, due to difficulties reaching the specified grades with the closed bucket, Hickey switched to a general clamshell bucket to reach the final grades and elevations. No other problems were reported during clam removal activities.

Photograph 20: Asian Clam harvested during site reconnaissance

Photograph 21: Live Asian clams and remnant shells collected during site reconnaissance

Hickey monitored for Asian clams in sediment placed in the barge during dredging activities in the clam removal area. However, only two Asian clams were observed in dredged sediment during project activities. Based on the site reconnaissance, it is expected that more than two clams were removed during project activities. However, the low density of clams relative to volume of sediment removed and the presence of water in the barge made it difficult to observe and count the removed clams during dredging operations. Thus, the total number of Asian clams removed could not be estimated based on observations during project activities.

4.4.5 Staging Area Removal

At the completion of the project, soil samples were collected in the staging areas to ensure that these areas were not contaminated. In the equipment ready-line area and the waste stream stockpile area, soil excavation was necessary to meet Site cleanup levels. Removal was completed and the soils were either disposed of off-site or were placed in the North Landfills. The final disposition of the soils was based upon the contaminants and contaminant concentrations in the soils. Appendix I has the characterization data for these areas. Figure 5 shows the extent of the excavation and the confirmation soil sample locations. Table 2 provides the data results of the confirmation samples. All confirmation samples met Site cleanup levels for PCBs and/or PAHs.

4.5 Contaminated Material Treatment, Transportation, and Disposal

4.5.1 Barge Water Treatment

All water generated during dredging of Subtitle C, Subtitle D, and Industrial sediments was contained and treated prior to discharge to the Columbia River. During dredging of these materials, temporary barrier walls were installed on the material storage barge to prevent direct discharge of dredge decant water. The walls surrounding the decant compartment had slotted holes and filter screens that allowed water to pass through, while stopping mud or sediments from entering the pump suctions. Trash pumps were placed in each of the four compartments to transfer decant water to a dedicated water management barge with a capacity of approximately 450,000 gallons. The water barge was segmented into four compartments, which were covered to eliminate additional water generation by inclement weather events. Four hatches were present to facilitate pumping water from the barge to the on-site treatment system.

The on-site water treatment system was constructed in accordance with the Contractor Work Plan. TtEC subcontracted with Rain for Rent to develop and maintain the system. On November 20, 2008, TtEC completed grading and lining of the staging area for the water treatment system. A carbon filter treatment unit and eleven 21,000-gallon steel storage tanks were delivered to the Site between November 24, 2008 and December 4, 2008, along with associated piping. On December 10, 2008, the first batch of Subtitle C barge water was treated with the system and samples were sent to Apex Labs for PCB analysis. The tests indicated that additional system refinements were required and the carbon filter material was replaced. Shortly thereafter, extreme freezing temperatures were experienced in the Vancouver area resulting in damage to the treatment system plumbing. Repairs were made and a supplemental heating system was installed. The system was operational on December 31, 2009 and the first batch of Subtitle C barge water was retreated. Samples collected from the first and second barge water treatment batches verified that the system was working properly. The remaining barge water was treated without further problems; monitoring data are discussed in Section 4.9. The last batch of barge water was treated and discharged on February 5, 2009.

4.5.2 Subtitle C Facility

Subtitle C waste streams were PCB sediments (PCB concentrations greater than or equal to 50 mg/kg), process residues (PAH concentrations greater than 1%), and SPL (K088 listed hazardous waste). These waste streams were transported and disposed of in accordance with applicable federal and state regulations, including Toxic Substance Control Act (TSCA) (in 40 CFR 761), RCRA (in 40 CFR 262), Department of Transportation (DOT) regulations (49 CFR 171 and 49 CFR 172), and Ecology regulation (in WAC 173-303). Enviro-Con Trucking, Inc. (ECTI) and Celorie Brothers trucked the Subtitle C waste streams to the Chemical Waste Management of the Northwest (CWM) Landfill, located in Arlington, Oregon, for final disposal. CWM is regulated under RCRA Subtitle C and TSCA.

Subtitle C waste material generated by Site dredging and upland activities was dewatered (when necessary), placed in waterproof, lined trucks, and transported off site via truck for final disposition at a TSCA Subtitle C landfill. This material consisted of waste streams containing PCBs at concentrations above 50 mg/kg. TtEC offloaded dredged Subtitle C material at the Alcoa dock into watertight trucks using a clamshell bucket and transported the material to a watertight holding cell. Cellulous-based drying agent was added to the sediment to absorb excess water in the holding cell such that the sediment would pass the paint filter liquids test prior to disposal. Sediment was then transferred from the holding cell onto trucks using an excavator, and transported off-site by the trucking subcontractor ECTI. ECTI transported 42 truckloads of Subtitle C material generated by sediment removal. Decontamination of equipment generated one additional truckload of Subtitle C material. This waste stream shipped approximately 1,400 tons off-site from December 9, 2008 to January 13, 2009.

Subtitle C material was also generated from the solids in the water treatment system. These solids were staged in the North 3 Landfill and were mixed with cellulous-based drying agent to absorb excess water. Once the solids were able to pass the paint filter liquids test, the solids were transferred into lined trucks using an excavator and transported off-site by ECTI. ECTI transported 16 truckloads of this waste generated from the water treatment system. This waste stream shipped off-site from March 31 to April 7, 2009. A total of 429 tons of water treatment solids were disposed of at CWM, as measured at the facility, verified by

certificates of disposal provided by CWM, and further verified by TtEC by phone with CWM (included in Appendix M).

SPL was managed in stockpiles in the staging area. The stockpiles were placed on two layers of plastic and covered anytime the stockpile was not in use. An excavator removed SPL from the stockpile and loaded it into lined trucks. ECTI transported 263 truckloads of SPL to CWM. Approximately 8,456 tons of SPL were disposed of at CWM, as measured at the facility and verified by certificates of disposal provided by CWM (included in Appendix M).

Process residue was removed from the shoreline and stockpiled in the staging area on two layers of plastic. The stockpile was covered unless it was being accessed. Lined trucks were loaded with process residue using excavators. ECTI and Celorie Brothers transported 44 truckloads of process residue to CWM. Approximately 1,404 tons of process residue were disposed of at CWM, as measured at the facility and verified by certificates of disposal provided by CWM (included in Appendix M).

4.5.3 Subtitle D Facility

Subtitle D waste streams were dredged sediments (PCB concentrations from 10 to 50 mg/kg), iron slag, asbestos-containing materials, debris, and wood. These waste streams were transported and disposed of in accordance with applicable federal and state regulations, including RCRA (in 40 CFR 262), DOT regulations (49 CFR 171 and 49 CFR 172), TSCA (40 CFR 761), and Ecology regulation (in WAC 173-303). Waste Connections Inc., trucked the waste streams to Wasco County Landfill, located in The Dalles, Oregon, for final disposal. The Wasco landfill is regulated under RCRA Subtitle D.

Subtitle D waste material generated by Site dredging and upland activities was barged to The Dalles, Oregon, dewatered (when necessary), and placed in waterproof, lined containers, or directly loaded onto waterproof, lined trucks and transported off site via truck for final disposition at a Subtitle D landfill. This material consisted of waste streams that contained PCBs at concentrations above 10 mg/kg but less than 50 mg/kg. TtEC transported dredged Subtitle D material to the Bernert Barge Lines Terminal located in The Dalles, Oregon, where it was offloaded with a clamshell bucket into a watertight holding cell. Cellulous-

based drying agent was added to the sediment to absorb excess water in the holding cell such that the sediment would pass the paint filter liquids test prior to disposal. Sediment was then transferred from the holding cells onto trucks using an excavator and transported to the disposal facility by Waste Connections' trucking subcontractor Dietrich and Sons. TtEC loaded Subtitle D debris and soil generated by upland work and remedial actions in the staging area directly onto trucks for transport to Waste Connections landfill.

A total of 275 truckloads of Subtitle D sediment were transported to the Wasco County Landfill from December 8 to 12, 2008 from the offload of the barges. 32 truckloads of subtitle D sediments were removed and transported to Wasco County Landfill from the upland removal in the dredge units between December 15 and 30, 2008. An additional 13 truckloads of Subtitle D sediments from the cleanup of the dock and water treatment system were transported to the Wasco County Landfill from February 17 to 25, 2009. A total of 9,985 tons of Subtitle D sediments from the barge transfer/upland removal and 402 tons of sediments from the dock and water treatment system cleanup were disposed of at the landfill, as measured at the facility and verified by the returned final manifests provided by the Wasco landfill (included in Appendix M).

From April 9 to 23, 2009, 24 truckloads of Subtitle D sediments from the removal action at the staging areas were transported by Waste Connections to Wasco Country Landfill. A total of 758 tons of Subtitle D sediments from the staging areas were disposed of at the landfill, as measured at the facility and verified by the returned final manifests provided by the Wasco landfill (included in Appendix M).

Iron slag was removed from the shoreline and placed in stockpiles in the staging area. The stockpiles were placed on plastic to protect the staging area soils. Waste Connections subcontracted trucks were loaded with iron slag by excavators. One hundred ten truckloads of iron slag were transported to Wasco County Landfill from December 30, 2008 to March 26, 2009. A total of 3,414 tons of iron slag was disposed of at the landfill, as measured at the facility and verified by the returned final manifests provided by the Wasco landfill (included in Appendix M).

Asbestos-containing materials were removed from the shoreline and staged on the ACPC slab. This waste stream was loaded into lined container boxes, which were then sealed for shipment and disposal. One hundred thirty-eight container boxes of asbestos-containing materials were transported to Wasco County Landfill from February 9 to 27, 2009. A total of 1,306 tons of asbestos-containing materials were disposed of at the landfill, as measured at the facility and verified by the returned final manifests provided by the Wasco landfill (included in Appendix M).

Subtitle D debris was removed from the shoreline and staged in the staging area. This waste stream was loaded into Waste Connections' subcontracted trucks for transport to Wasco Landfill. One hundred ten truckloads of debris were transported to Wasco County Landfill from February 13 to April 3, 2009. A total of 3,396 tons of Subtitle D debris was disposed of at the landfill, as measured at the facility and verified by the returned final manifests provided by the Wasco landfill (included in Appendix M).

Wood and treated piling was removed from the shoreline and staged in the staging area near the water treatment plant. This waste stream was loaded into Waste Connections' subcontracted trucks for transport to Wasco County Landfill. Twenty-six truckloads of wood and treated piling were transported to Wasco Landfill from December 12, 2008 to February 6, 2009. A total of 322 tons of wood and treated piling was disposed of at the landfill, as measured at the facility and verified by the returned final manifests provided by the Wasco landfill (included in Appendix M).

4.5.4 North Landfills

TtEC disposed of industrial level (defined as material containing PCBs at concentrations between 1 mg/kg and 10 mg/kg) and beneficial use material (containing PCBs at concentrations less than 1 mg/kg) in the North Landfills beginning on December 6, 2008. Dredged material was dewatered in the barge and offloaded at the dock into a watertight transfer box and rehandled into trucks for transport to the landfill. Industrial and beneficial use level material excavated from upland areas was loaded into trucks and transported directly to the landfill. Loaded trucks were routed along the lower levee road to the North Landfills where material was offloaded directly into the landfill. In addition, staging area soil

with PCBs concentrations greater than 1 mg/kg and less than 10 mg/kg were loaded into off-road trucks and transported directly to the landfill.

Approximately 44,150 cy of material was placed in the North Landfills from the sediment and shoreline remediation work. The material was turned using excavators after placement as necessary to reduce the material moisture content. The material was worked in this way until it behaved more like soil than liquid, after which it was track-compacted and graded. This represents a modification in methods, as the Project Specifications indicate that the material should be placed in 12-inch lifts and track compacted. This was not possible due to the nature of the material and weather conditions during construction activities.

Photograph 22: Transport of dredged material to the North Landfills

Photograph 23: Spreading of material in the North Landfills

A Modified Standard Proctor density test (ASTM D698) was conducted on material placed in each landfill, and in-place densities and moisture content testing (following ASTM D2922 and D3017, respectively) were conducted to verify compaction. The geotechnical testing subcontractor Columbia West Engineering, Inc. (Columbia) conducted in-place densities and moisture content testing and collected samples for laboratory density tests on April 20, 2009. Due to the above-described modification in placement method, geotechnical testing was not conducted on each lift (as specified in the Contract Documents). Rather, the material was tested after completion of the material working activities and compaction. Columbia dug a test pit within the footprint of each landfill and measured in-place density and moisture content (ASTM D2922 and D3017) at various depth intervals. In addition, Columbia collected a representative sample from each test pit and laboratory-tested the sample for

density using the Modified Standard Proctor density test (ASTM D698). Tables 3 and 4 below summarize the geotechnical results. The purpose of the in situ testing was not to confirm a specific compaction level, but was to provide a general characterization of the soil for the future property owner.

A 12-inch layer of soil cover material is scheduled to be placed on the North Landfill surfaces in early 2010 by the Port. This work commenced in late 2009. The soil cover material will meet the requirements in the Consent Decree for final closure of the North Landfills.

4.6 Material Placement

4.6.1 Revetment Riprap Supplement

Nutter Corporation (Nutter) installed supplemental riprap on top of the subsided armorflex blocks that form the toe of the East Landfill revetment. In accordance with the Revison 3 Specification and supplemental information provided in the *Habitat Improvement Project Design Bulletin* (Habitat Design Bulletin) (included in Appendix F), Nutter excavated a level bench into the downstream toe end of the revetment to provide a base for the supplemental riprap. A Thrace-LINQ nonwoven GTF250 EX polypropylene geotextile fabric was installed over the existing blocks and under the riprap, and the fabric was anchored with stakes. Approximately 212.5 tons of angular rock meeting the specification for erosion protection material in Section VII.H of the Project Specifications (Appendix A) was placed by Nutter. The revetment riprap supplement construction activities commenced on March 9, 2009, and were completed on March 11, 2009.

Note that although guidance for placement of the supplemental riprap was provided in the Habitat Design Bulletin, this activity was not part of the habitat improvement activities.

4.6.2 Enhanced Natural Recovery (ENR) Sand Quality Control

Enhanced Natural Recovery (ENR) sand for the project was obtained by dredging clean sand from a Corps dredging project location in the Columbia River at approximately River Mile 104. To demonstrate that the material would be suitable for use as ENR Sand, Hickey subcontracted with Northern Resource Consulting, Inc. (NRC) to perform pre-characterization sampling of the sand borrow source. On November 17, 2008, NRC collected

ten grab samples using a 10-cy clamshell dredge bucket. An aliquot from each of the grab samples was sent to Apex Labs for PCB analysis. The remaining sediment from the ten samples was then composited into five samples for further analyses including grain size distribution and priority pollutants in accordance with the Project Specifications. To further confirm that the imported material would meet Project Specifications, ten additional samples were collected from barges delivered to the project and analyzed for PCBs. The pre-characterization sampling plan and the results of the borrow source testing are included as Appendix J.

4.6.3 ENR Sand Placement

After dredging was complete, ENR sand was placed primarily using barge-mounted equipment in areas designated by the Project Drawings. A portion of the material required behind the dock facilities was placed using a truck-mounted telescopic conveyor (a.k.a. telebelt). Areas identified to be steep, clay slopes were avoided as it was determined by Alcoa and Ecology that integrating the ENR sand into the slopes would be technically infeasible and would not meet the intent of the remedial action. Material placement commenced on January 27, 2009 and continued until February 16, 2009. A total of 34,305 cy of sand were placed and surveyed within the project limits. ENR sand placement operations were conducted in accordance with the Contractor's Work Plan and appropriate BMPs were implemented to reduce impacts to water quality during construction. A detailed log summary of ENR sand placement activities is provided as Table 5.

4.6.4 Slope Failure Stabilization

On January 5, 2009, a slope failure adjacent to the shoreline occurred as remedial operations were conducted nearby. The failure resulted in oversteepened nearshore conditions that would not support the original shoreline stabilization. The area was surveyed and a grading plan was developed to reconstruct the underwater and shoreline slopes to a 3 horizontal to 1 vertical configuration using material meeting the requirements of the Gravel Transition Layer material specified in Specification Section VII.H. Slope reconstruction occurred between February 24, 2009 and February 27, 2009.

4.6.5 Shoreline Stabilization

The final shoreline stabilization design for the area east of the dock facilities (i.e., MP3A and MP3B) consists of a toe reinforcement berm, underlying gravel bedding (defined as "Gravel Transition Layer" in Specification Section VII.H), and slope armor rock (defined as "Erosion Protection Material" in Specification Section VII.H). The inclusion of a toe reinforcement berm constitutes a design modification performed to adapt to changed field conditions encountered after dredging was completed (refer to Section 4.8 for additional information). A pilot program was developed to verify the stability of the berm and the methodology for constructing the design element. Between February 18, 2009 and February 20, 2009, 220 feet of berm was constructed parallel to the shoreline approximately along the elevation -4 feet NGVD29 contour. The berm was constructed of armor rock (as shown on Figure 6) using an 8-foot by 12-foot skip box. Initially, 40 to 50-foot sections of berm were placed so that the gravel bedding and armor rock layers could be laid in parallel. After the initial pilot program, the main segments of the berm were constructed between February 22, 2009 and February 24, 2009 up to Station 9+50 of the project baseline. The remainder of the berm between Station 9+50 and the dock was constructed on March 6 and March 7, 2009 after reconstruction of the slope within this area was completed.

Another minor design modification was made with respect to the specification of the gravel bedding. Originally this layer was to be constructed of "Filter Layer" material as defined in Specification Section VII.H. Upon inspection of the delivered armor rock, it was noted to be slightly larger in diameter than specified. Instead of seeking another armor rock source, the "Gravel Transition Layer" material was substituted to support the larger rock because it was larger in grain size and distribution than the originally specified "Filter Layer" material.

During the initial days of the pilot program (February 18 through February 20, 2009), gravel bedding was placed in-water using the skip box. Pre- and post-placement surveys indicated that greater than 30% of the bedding was not deposited within the target area and was transported to adjacent riverbed. Therefore, a different construction approach was necessary to increase the efficiency of the gravel bedding placement operations. On February 26, 2009, Hickey tested the use of a 5-cy clamshell bucket to place gravel bedding. Surveys performed after placement using the clamshell method demonstrated that at least 80% of the material placed was retained within the target area. Full production placement began on February 27,

2009. During full production, 30-foot-long sets of gravel bedding were placed in 4-foot by 15-foot boxes. The in-water placement rate varied between 0.05 and 0.06 cy per square foot (cy/sf) depending on the distance between the armor berm and the water line. Above the water line, gravel bedding was placed using land-based equipment in accordance with Specification Section VIII.C.8 beginning at the water line and progressing up slope.

After approximately 90 feet of gravel bedding was placed below the water line, slope armor rock was placed using the 8-foot by 12-foot skip box. The land-based crew followed the progress of the skip box and placed armor rock from the water line up to the final specified elevation of the ordinary high water mark (OHWM). Quality control surveys were regularly performed to verify that the minimum required gravel bedding and armor rock layer thicknesses were placed in water. On the upper dry slope, stakes were placed at approximately 50-foot intervals along the shoreline and were marked with the specified layer thicknesses (e.g., 1 foot for gravel bedding) to guide the land-based equipment operators during placement. Operations on the east side of the dock were completed on March 7, 2009.

Design modifications were not made to the shoreline stabilization design west of the dock (i.e., MP5A and MP5B), with the exception of the substitution of "Gravel Transition Layer" material for "Filter Layer" material in MP5A. On March 5, 2009, the in-water based crew began placement of transition gravel in MP5B using a 5-cy clamshell bucket. Material was placed at an average rate of approximately 0.08 cy/sf as work progressed from up- to downstream. Material placement within MP5B was completed on March 12, 2009. Gravel bedding placement within MP5A commenced on March 10, 2009 and was completed using the methodology perfected during MP3A operations. As with the eastern shoreline, gravel bedding was placed above the water line using land-based equipment in accordance with Specification Section VIII.C.8 beginning at the water line and progressing up slope. For placement operations above and below the water line, armor rock was placed after approximately 90 feet of gravel bedding was placed. Quality control surveys were regularly performed to verify that the minimum required gravel bedding and armor rock layer thicknesses were placed in water and graduated stakes were used as guides for the land-based equipment operators. All in-water material placement work west of the dock was completed on March 16, 2009. Upland armor rock placement was completed on March 18, 2009.

4.6.6 Upland Grading and Hydroseeding

TtEC graded riverbank areas above OHWM to the east and west of the Alcoa dock to a 3:1 slope, in general accordance with the grading plan shown on Project Drawing C-9 (included in Appendix A). Grading was conducted near the end of the project, following completion of all in-water material placement activities. Grading activities followed the requirements in Section VIII.C.4.3 of the Project Specifications, and according to Alcoa Engineering Standard 33.2121.8. BMPs for fugitive dust control outlined in the Storm Water Pollution Control Plan and erosion prevention measures were implemented during grading activities. Upon completion, graded areas were track rolled (both parallel to the slope and perpendicular to the slope) to prepare the areas for hydroseeding. Graded surfaces were then surveyed to verify that the final elevations met the requirements of the Project Specifications and hydroseeded.

The hydroseeding subcontractor, Charlton Landscape, applied a mixture of grass seed, fertilizer, and Flexterra® flexible growth medium meeting the material specification in Section VII.K of the Project Specifications (contained in Appendix A) and the March 31, 2009 Design Bulletin that provided supplemental hydroseeding information for shoreline areas (Hydroseeding Design Bulletin). The material was applied in two applications per the Hydroseeding Design Bulletin; the first applications consisted of the seed, fertilizer, and Flexterra® mix, and the second application consisted of Flexterra® only. Charlton Landscape hydroseeded the east and west riverbanks on April 7, 2009 and April 8, 2009, respectively.

Photograph 24: Hydroseeded shoreline

Photograph 25: Final grading of the North and North 2 Landfills

4.7 Quality Control Documentation

This section describes the activities that were conducted to demonstrate that the remedial action was constructed to the designed Project Specifications and that cleanup levels were achieved.

4.7.1 Construction Observations/Survey

Daily construction observations were made and reported by the on-site Alcoa Construction Manager (CM) in accordance with the Project Construction Quality Assurance Plan (included in Appendix B). The daily construction reports are provided in Appendix E. These reports documented inspections required to ensure the appropriate BMPs were implemented by TtEC and Hickey. On the water side, the Alcoa CM was supported by the field crew performing the water quality monitoring as discussed in Section 4.9. The Alcoa CM also served as the primary point of communication with TtEC and tracked all required submittals such as Contractor Work Plans and Environmental Protection Plans. The primary submittals used to document consistency with the Project Drawings and completion of the remedial action consisted of bathymetric and land-based surveys.

Bathymetric surveys were performed on a near-daily basis to document the completion of dredge and material placement units. Post-dredge and ENR sand placement surveys were reviewed by Anchor QEA to confirm that minimum required dredge cuts and ENR sand placement goals were achieved. In all dredge units, greater than 95% of the areas achieved the minimum required dredge depths when evaluating the raw survey data. When evaluating the survey data with respect to the tolerance of the bathymetric methods (i.e., +/- 0.5 feet as discussed in Section 4.3.3), all dredge units were determined to meet the required dredge cuts. In most areas, the actual dredge cut was 20% deeper than the required dredge surface ensuring that all PCB-impacted sediment above Site action levels was removed. An example of the data evaluation performed to determine when dredging was complete is shown on Figure 7. Surveys were also performed during and after shoreline armoring material was placed to confirm the minimum design requirements were met. Figures 3 and 4 show the final post-construction surface and serve as the basis for the as-built drawings for the PCB-impacted sediment/shoreline remedial action.

4.7.2 Confirmational Sampling

Post-remedial action confirmational sampling was performed in the riverbed below the shoreline armor rock to demonstrate compliance with Site cleanup standards. Specifically, samples were collected at the point of compliance (0 to 10 cm below the riverbed), which is representative of the biologically active zone per the requirements of the CAP.

Sampling activities were performed in accordance with the Ecology-approved Project Control Plan SAP (included in Appendix B). On February 17 and 18, 2009, 11 sediment grab samples were attempted at the locations shown on Figure 8. At two locations, AV-01-SE and AV-03-SE, refusal was encountered on each of the three attempts to collect a sample. These locations were coincident with the steep slope just offshore of the eastern shoreline where harder clay materials were encountered during dredging. Samples for analytical testing were successfully collected from the remaining nine locations.

The analytical results verify that all locations were below the remediation level of 320 micrograms per kilogram (µg/kg) set forth in the CAP and confirmed that the remedial action was complete. Discrete data points ranged from 2.2 µg/kg to 105 µg/kg PCB as shown in Table 6 (the full data package and validation reports are included as Appendix K). Compliance with the sediment cleanup standard is determined on a surface area weighted average concentration (SWAC) basis. The first step to this evaluation is to divide the cleanup area into a series of Thiessen polygons based on the core sample locations. Thiessen polygons are constructed by triangulating the core locations into a triangulated irregular network (TIN). The perpendicular bisectors for each triangle edge are generated, forming the edges of the Thiessen polygons. The locations at which the bisectors intersect determine the locations of the Thiessen polygon vertices. The result for the confirmational sampling data set is shown on Figure 8. For the two refusal locations, the value of the nearest sample (AV-02-SE-090217) was used to represent the area. The resulting SWAC was calculated to be 38 µg/kg, which is below the Site cleanup level of 97 µg/kg.

4.8 Construction Deviations from the Revision 3 Design

The majority of the work was completed in accordance with the original design documents (in Appendix A); however, a number of modifications were necessary to adjust to changing

field conditions and to keep the project on-track for a February 28, 2009, completion date in light of a delay in permit approvals (permits were expected in late October so that dredging could commence on November 1, 2008). Changes in design that had the potential to affect the remedial action objectives set forth by the CAP were discussed with and approved by Ecology prior to implementation. The significant design revisions included:

- Offshore of the shoreline in approximately 15 feet of water at low tide, a 300 to 400-foot-long bench of very steep clay was identified during dredging operations. During construction, Hickey had difficultly maintaining consistent dredge cuts within this area and concerns arose as to whether or not additional removal of material along the slope would lead to instability of the shoreline. Anchor QEA contacted Ecology about this issue and proposed that these areas be avoided to prevent shoreline instability. Anchor QEA also determined that the slope material was geotechnically similar to the clean horizontal layer identified in the Remedial Investigation and not the looser nearshore material with elevated PCB concentrations. Ecology agreed with the approach. Mutual agreement was also reached regarding ENR sand placement in areas steeper than the natural angle of repose of the ENR sand. During ENR sand placement, an attempt was made to place material along steeper areas; however, the minimum 6-inch thickness designated in the Project Specifications was not required. In steeper areas, the coverage attempts were verified using the electronic record produced by the crane positioning software. To confirm that design modification within these areas met Site cleanup standards, Ecology specifically requested that some of the confirmational samples be located within the slope areas in accordance with the SAP (Appendix B).
- The original shoreline stabilization design for the area east of the dock facilities included the construction of a trenched toe to support the armor layer along the shoreline. Surveying after dredging of the nearshore area east of the dock indicated that the anticipated trench was not excavated. The edge of the trench was located adjacent to the aforementioned steep slopes; therefore, rather than attempting to remove additional sediment to create the trench, Anchor QEA developed an alternative design consisting of a toe reinforcement berm built up from the post-dredge riverbed surface. Prior to full production construction of the new design, pilot testing was performed to demonstrate the constructability of the design. The pilot test also provided an opportunity to refine material placement techniques and to

demonstrate the stability of the integrated armor system. Additionally, the transition layer designed to further support the original trenched toe was removed from the modified design. Changes were not made to the configuration of the shoreline armoring west of the dock facilities.

4.9 Water Quality Monitoring

Water quality monitoring was implemented pursuant to the water quality certification associated with NWP 38 and the NPDES permits for the project. The water quality certification associated with NWP 38 program included monitoring during in-water construction activities. In addition, the BiOp specified the testing of treated barge water prior to discharge. The NPDES program consisted of testing water discharged at the compliance point (outfall 001, located at the westernmost limit of the property). These monitoring activities are summarized below.

Water quality monitoring during in-water work was performed in accordance with the Ecology-approved WQMP (included as part of Appendix B). The WQMP was also consistent with permit and BiOp conditions. Water quality monitoring consisted of visual inspections for turbidity plumes and the collection of readings of field water quality parameters (turbidity, pH, temperature, and dissolved oxygen levels) in two locations: a background station located approximately 100 feet upstream of project activities and a compliance station located approximately 600 feet downstream of project activities. The field parameter readings were compared to the WQMP criteria, which specified that:

- Turbidity was not to exceed 5 nephelometric turbidity units (NTUs) above background when background is less than 50 NTUs or 10 percent above background when background was greater than 50 NTUs. Background was set at the 90th percentile value of the background dataset, which included data from the pre-construction background survey and ongoing monitoring of background stations during construction.
- Dissolved oxygen was not to be less than 6.0 milligrams per liter (mg/L).

The WQMP did not include requirements for temperature and pH.

Pursuant to the WQMP, water quality monitoring was conducted during project activities on "intensive" or "routine" schedules, depending on the type of project activity and the results of previous monitoring events. Intensive monitoring occurred upon commencement of dredging and material placement activities. Intensive monitoring consisted of visual inspections every hour and collection of field parameter data at the compliance and background stations every 4 hours. When the water quality monitoring results indicated no criteria exceedances at the compliance station for 3 consecutive days (counted from the start of a particular construction activity), the monitoring was reduced to a routine schedule. Routine monitoring consisted of hourly visual inspections and collection of field parameters at the compliance and background stations once per day. When the results of routine monitoring indicated no criteria exceedances for 5 consecutive days, field parameter monitoring was further reduced to once per week.

Results from the water quality monitoring verified that water quality was not adversely affected by project activities. No turbidity plumes were observed during visual inspections, and field parameters at the compliance station did not exceed the water quality criteria established in the WQMP at any time during the project. Table L-1 in Appendix L presents the field parameter data. Appendix L also contains the field datasheets prepared during sampling.

In addition to the water quality monitoring activities described above, any barge water generated during the dredging of sediments containing 1 mg/kg PCBs or greater was collected, pumped onshore, and treated using carbon filtration prior to discharging back to the river as specified in the project's WQMP and the Biological Opinion. A maximum allowable treated discharge concentration for PCBs was calculated to meet chronic water quality criteria using the methods described in Ecology guidance documents. However, because the discharge criteria under TSCA (40 CFR 761) is more restrictive than the discharge concentration derived using the Ecology guidance, the more restrictive value of 0.5 µg/L PCBs was adopted for the project.

Water was stored on site and treated in up to 20,000-gallon batches. The dredge water treatment system was inspected regularly when operating. Inspections consisted of monitoring the discharge flow rate and water pressure differential between the influent and

effluent of the treatment system to ensure the system functioned efficiently. The system was backflushed approximately every 2 hours during operation. Additional visual water quality inspections occurred during discharge to the river. These inspections were conducted hourly when discharge occurred when there was no dredging and daily when the activity occurred at the same time as dredging.

Treated water samples of each batch were submitted for laboratory analysis for total PCBs prior to discharge of the batch. Table L-2 of Appendix L presents the analytical results for these samples. The first two batches of treated water (a total of 33,000 gallons) were generated during dredging activities in areas with average sediment PCB concentrations greater than 50 mg/kg, representing the highest PCB concentrations within the project area. It was noted that the flocculent additive did not properly distribute for a portion of the treatment of this water. The treatment system was reconfigured to address the flocculent distribution issue and the water was passed through the treatment system a second time. Two water samples were collected and analyzed for PCBs. As shown on Table L-2, the results were all non-detect for PCBs, below the 0.5 µg/L discharge limit.

On January 2, 2009, one final water sample was collected from a treated water batch (14,733 gallons). The water in this batch was generated during dredging activities in an area with average PCB sediment concentrations between 10 and 50 mg/kg. As shown on Table L-2, the analytical results for this sample indicated that PCB levels in the treated water were below the 0.5 µg/L discharge criteria. In accordance with the WQMP, no additional sampling was conducted because the sample results were all below the PCB maximum discharge level, and the average sediment PCB concentrations in the remaining dredge areas were lower than those associated with the first three batches that were sampled. Treatment system parameter monitoring continued throughout the water treatment process to ensure proper operation of the system.

Discharge to the Columbia River from upland project activities (e.g., North Landfill grading) was monitored under the NPDES permit at the outfall 001 compliance point. When discharges occurred, water samples were collected per permit requirements and tested for fluoride, aluminum, total suspended solids (TSS), oil and grease, and pH. The results were compared to the effluent limitations below in Table 7, as specified in the permit. Water

samples collected during project activities did not exceed the permitted levels. The results of these samples were reported on monthly Discharge Monitoring Reports (DMRs) submitted by Evergreen or the Port of Vancouver, depending on the time of the discharge with respect to property ownership.

4.10 Habitat Enhancement Area

A habitat improvement area was constructed along the shoreline adjacent to the East Landfill revetment. As mentioned previously, this area consisted of three primary elements: riparian planting area, construction and placement of large woody debris piles, and riparian plantings along the length of the East Landfill revetment. All elements serve to enhance or protect habitat along the shoreline of the site. The habitat improvement area was constructed following the Project Specifications (Appendix A) and the Habitat Design Bulletin (Appendix F). Materials and construction methods used met the requirements in these documents.

Nutter, the Contractor, pinned and chained together approximately 23 pieces of large woody debris (LWD) to create a crib wall planting area. Several of the LWD pieces had exposed rootballs to provide a high velocity refuge for juvenile salmonids during high river flow. Two additional LWD piles with several exposed rootballs were placed in front of the planting area anchored at an approximate elevation of 7 to 7.5 feet NGVD to provide further refuge for juvenile salmonids. Twenty-five ecology blocks were used to anchor the crib wall and debris piles.

Once the LWD had been placed, creating the habitat planting area, 24 to 36 inches of topsoil wrapped with coir erosion control fabric was placed within the planting area. The coir fabric served to hold the soil in place until the vegetation is established. Alcoa planted approximately 16 cottonwood poles and 50 live willow stakes within the planting area. Alcoa also planted approximately 50 live willow stakes in the armorflex blocks along the length of the East Landfill revetment. Stakes were planted approximately every 4 feet, as the block cells allowed, to improve the shoreline riparian condition along this section of the Columbia River.

These activities connect to an adjacent area that was planted with willows and where LWD rootballs were placed as part of the East Landfill project, thus extending the Site shoreline area containing complex habitat. The habitat riparian planting area and debris piles were constructed from March 9 to 18, 2009, and the area was planted on March 28, 2009. Photographs depicting habitat improvement activity implementation and documenting the planting locations are presented in Photographs 26, 27, and 28.

Photograph 26: LWD pile

Photograph 27: Riparian planting area prior to planting

Photograph 28: Riparian planting area after planting

4.11 Photographic Summary

The following photographic summary consists of pictures that capture the significant work efforts associated with the project. The pictures are arranged in chronological order.

Before Remediation:

Photograph 29: Site overview, taken facing east

Photograph 30: Site overview, taken facing south

Photograph 31: Visually contaminated surface debris

Photograph 32: Concrete and woody debris

Photograph 33: Dredge areas and piles, taken facing east

Photograph 34: Dredge areas, taken facing west

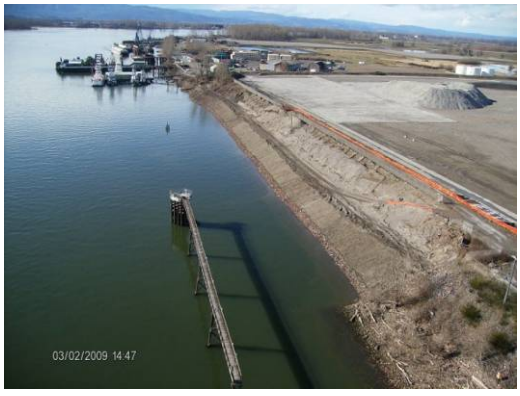
During Remediation:

Photograph 35: Shoreline excavation and dredging, taken facing east

Photograph 36: Dredging, taken facing southeast

Photograph 37: Dredging with debris boom, taken facing east

Photograph 38: Site overview, taken facing east



Photograph 39: Site overview, taken facing west

Photograph 40: Site overview, taken facing east

After Remediation:

Photograph 41: Site overview, taken facing east

Photograph 42: Site overview, taken facing east

Photograph 43: Site overview, taken facing west

Photograph 44: Habitat Improvement area

Photograph 45: Habitat Improvement area

Photograph 46: Habitat Improvement area

5 DIKE UNDERGROUND STORAGE TANK REMOVAL

Removal of the four dike USTs commenced on November 10, 2008 and was completed on January 14, 2009. The work involved removal of soil overburden, concrete caps, and gravel fill from the USTs, removal of the USTs, monitoring well decommissioning, final confirmation sampling, and backfilling activities. The work was performed by TtEC and Boart Longyear and was completed in accordance with the Consent Decree and CAP.

Prior to the start of work, geoprobe sampling was performed to determine the extent of the TPH contamination and if PCBs were present in this area. The data results and the sampling locations are provided in Appendix I. PCB-impacted soils were not identified in this area and TPH concentrations were below Site cleanup levels.

5.1 Well Decommissioning

Five monitoring wells had been installed around the UST area to support previous investigations and monitoring of suspected leaks from the USTs. The removal of the USTs and any additional source soils eliminated the need for these monitoring wells. Three of the five wells were located. Several attempts were made to locate the other two wells, but the attempts were unsuccessful.

On November 17, 2008 and January 14, 2009 the remaining three wells associated with the USTs were abandoned by Boart under the direction of an Anchor QEA geologist. The three wells were abandoned by over-drilling according to the guidelines in WAC 173-160. Appendix H provides a detailed summary and relevant documentation of the abandonment procedures.

5.2 Remedial Activities

Work began by removing the vegetation and sand over the USTs on November 10, 2008. The sand was set aside for future use backfilling. Tanks 1, 2, and 4 had a concrete cap on top of the tank. Tank 3 was held in place with a concrete anchor. The concrete in the UST excavation area was unstained and was removed. The concrete was taken to the concrete crushing area and was sized for on-site fill material. The concrete removal was completed on November 11, 2008.

USTs 1 and 2 were in place end to end with 12 inches of sand separating the two tanks. USTs 3 and 4 were in distinct areas. The top of each UST was torch cut and removed. The gravel that had been placed in the USTs during decommissioning was removed. There was no noticeable odor in the gravel. Water was present in the USTs and sheen not present on the water or the gravel. The removal of the gravel was completed on November 20, 2008. The gravel was stockpiled on-site and a sample was collected on November 20, 2008. The sample results are presented in Table 8 and were less than 1 mg/kg for PCBs and non-detect for TPH. Because both analyte results met Site cleanup levels, the gravel was released for unrestricted use on-site as road bed material and backfill.

The removal of the USTs occurred on December 16, 2008. The sand was pulled away from the edges of the USTs and they were removed from with excavators. Photographs 47 and 48 show UST # 3 removal. The USTs were loaded into off-road trucks and moved to the scrap steel staging area. The steel was sized and shipped off-site for recycling.

On December 23, 2008, the UST excavations were backfilled and compacted with the overburden stockpiled in the area and clean sand from the internal dikes. The slope at the dike was returned to a grade similar to the dike, which was undisturbed.

Photograph 47: Soil removal from UST #3

Photograph 48: Removal of UST #3

5.3 Confirmation Sampling

On December 16, 2008, confirmation samples were collected from the UST excavations. Samples were collected from the bottom and each sidewall for each tank. Figure 9 shows the location of the sample points. Because UST 1 and 2 were in place end to end, each tank had one bottom sample and three sidewall samples (as there was not a "center" sidewall) collected. For UST 3 and 4, samples were collected from the bottom and the four sidewalls.

Samples were analyzed for TPH-Dx (TPH-Dx and TPH-RO) and PCBs. The data results are in Table 9. PCB data results were all less than 1 mg/kg for each sample. The highest total TPH measurement was 479 mg/kg, with the majority of the sample results indicating that TPH was not detected. All of the confirmation samples met Site cleanup levels.

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6 SOLUBLE OIL AREA REMEDIAL ACTIVITIES

Removal of overburden, excavation, in situ characterization sampling, confirmation sampling compaction and backfill activities in the soluble oil area commenced on November 3, 2008 and was completed on November 26, 2008. Work was performed under the requirements of the Consent Decree and CAP. TtEC was the contractor performing the work. The initial work was outlined in Figure I-1 in Appendix I. Additional removal was conducted based upon in situ sampling data collected during the remedial action.

6.1 Remedial Activities

The PCB-impacted soil removal was initially guided by in situ sampling conducted by geoprobe on June 4, 2008. The sampling locations, original extent of excavation, and sampling results are in Appendix I. The data results indicated that PCB-impacted soils were present at concentrations both above and below 50 mg/kg. The soils with in situ concentrations of PCBs less than 50 mg/kg were disposed of in a municipal non-hazardous landfill as bulk PCB remediation waste. The soils with in situ concentrations of PCBs greater than or equal to 50 mg/kg were disposed of in a TSCA Subtitle C landfill as bulk PCB remediation waste. The soil cleanup level for PCBs in the soluble oil area is 10 mg/kg. After excavations in each removal cell, sampling was conducted. If the sample result was less than 10 mg/kg, the sample result was reported as a confirmation sample. If the sample result was greater than 10 mg/kg, the in situ sampling data were used to guide further excavation in the cell. This routine was continued until the PCB concentration in each cell was less than 10 mg/kg.

The removal of the PCB-impacted soils began on November 3, 2008. Excavation continued in all areas until the PCB cleanup goal was met in the remaining soils in the excavation. Photograph 49 shows the final excavation of areas SSO 001, 002, and 003. Photograph 50 shows the final excavation of areas SSO 004, 006, and 008. The final excavation event occurred on November 18, 2008, and was followed by compaction and backfilling. Along the northern edge of the excavation, carbon plant materials were encountered. PCBs were not present above the cleanup levels in this location. An additional remedial activity occurred to address these materials and is discussed in Section 8.

Photograph 49: Removal at SSO 001, 002, and 003

Photograph 50: Removal at SSO 004, 006, and 008

6.2 Confirmation Sampling

As noted above, sampling occurred in the excavation when the predetermined depth had been reached, based upon the previous in situ soil characterization samples. If the soil sample result was greater than the soil cleanup levels, then the area was excavated further and the soils from that area of excavation were disposed of based upon the in situ characterization. In situ characterization sample data are presented in Appendix I. Figure 10 presents the locations of the final confirmation samples in the soluble oil area. Table 10 provides the final confirmation sample data. The final PCB concentrations in the excavation ranged from 7.1 mg/kg to less than 0.012 mg/kg, which were all less than the Site soil cleanup level for the soluble oil area of 10 mg/kg.

6.3 Off-Site Disposal

The excavated soil was stockpiled in two separate locations, one for soil with in situ PCB concentrations of less than 50 mg/kg and one for soil with in situ PCB concentrations equal to or greater than 50 mg/kg. Approximately 484 tons of soil was disposed of at CWM in Arlington, Oregon, and approximately 2,602 tons of soil was disposed of at Wasco County Landfill in The Dalles, Oregon. CWM is regulated under RCRA Subtitle C and TSCA. Wasco County Landfill is regulated under RCRA Subtitle D. The material was transported and disposed of in accordance with applicable federal and state regulations, including TSCA

(in 40 CFR 761), RCRA (in 40 CFR 262), DOT regulations (49 CFR 171 and 49 CFR 172), and Ecology regulation (in WAC 173-303). Manifest logs and manifests are in Appendix M. The waste from the project was disposed of at the landfills as measured at the facility, verified by returned final manifests, and, for the waste transported to CWM, by certificates of disposal and phone verification upon receipt of the final manifest (documentation in Appendix M).

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7 FACILITY DEMOLITION ACTIVITIES

The Alcoa Vanexco/ACPC complex was demolished during 2008 and 2009. The Site activities commenced on March 25, 2008, and final demobilization occurred on June 9, 2009. The primary demolition contractor was TtEC, who mobilized to the Site on March 25, 2008 and completed demobilization on May 22, 2009. Facility demolition activities involved removal of the majority of the site structures, remediation of soils under the ACPC floor slab, decommissioning two supply wells, remediation of the electrical plant substation at Vanexco, remediation of the ACPC electrical plant, removal and remediation of the remaining below grade structure of Building 430, removal and remediation of the oil line from ACPC to the sludge lagoons, and removal and/or cleaning of the storm and sanitary sewer lines on the Alcoa property.

Characterization of impacted materials from the Site buildings was primarily based upon the extensive historical data that was available at the Site. Additional characterization data was collected in June and September of 2007 to supplement the existing data set. During the course of the project, characterization data was collected as needed. These data are available in Appendix I. The characterization guided the proper management and disposal of the Site materials.

As previously discussed, while not required by the Consent Decree, documentation of demolition and site redevelopment related activities is included in this report at Ecology's request.

7.1 Structure Demolition

The Alcoa Vanexco/Rod Mill/ACPC building complex consisted of 14 buildings that were all joined together: Building 401, 402, 403, 404, 410, 412, 414, 416, 418, 420, 422, 424, 426, and 427. Demolition began on this complex and two additional ancillary buildings near the complex (Building 409 and 428), working from the south (Building 427) to the north and west (Building 401). In addition, all other structures at the Site, except for the dock, dock crane, and dock conveyor shed, were demolished and removed from the Site. These structures included four alumina ore silos, conveyor systems, and dry material storage tanks.

Prior to structure demolition, liquids, asbestos, refrigerants, light bulbs, fluorescent light ballasts, and any other materials that may be hazardous or require management separately from building structure materials, were removed from the building. These materials were segregated and prepared for shipment off-site, either for recycling or disposal. Global Pacific Environmental LLC managed the removal of the asbestos-containing materials at the Site. Floor mastic was used in ACPC and this material contained PCBs. The mastic was removed from the concrete and managed as PCB bulk product waste. After building demolition, the building materials were segregated and prepared for off-site shipment or disposal. The majority of the Vanexco and Rod Mill buildings were disposed of off-site in a TSCA Subtitle C landfill because the interior of the building was impacted by historical PCBs releases. Photographs 51 and 52 show the demolition of the last section of Building 410.

Photograph 51: Demolition of Building 410

Photograph 52: Demolition of Building 410

The floor slabs in all the buildings were cleaned of demolition debris and the debris was segregated with the appropriate waste streams. Care was taken with the Vanexco and Rod Mill floor slabs, which was the cap that was left in place over the impacted soil under these buildings. Any penetrations of the cap were filled with concrete prior to the completion of the project to ensure the cap's integrity.

Every effort was made to protect the soil on the west and north sides of Vanexco during the demolition project. Photographs 53 and 54 show demolition activities for the Vanexco buildings. To verify that the soil was not inadvertently contaminated, the soil on the west

(north of the substation) and north of Vanexco was sampled and analyzed for PCBs by both Alcoa and TtEC. The data indicated that PCBs were not present above 1 mg/kg and may be reviewed in Appendix I. At the completion of the demolition at Vanexco, the top of the soil and any debris was removed from around Vanexco. The same ten soil sample locations were resampled at various depths. The sample locations and extent of excavation are on Figure 11. All the samples were analyzed for PCBs. Nine samples were analyzed for PAHs. All of the sample results met Site cleanup levels for PCBs and PAHs. The data are presented in Table 11.

Photograph 53: Demolition of electrical station near Vanexco

Photograph 54: Demolition of Building 401 (Vanexco building) onto concrete floor slab

A crane was used to gently remove the ore conveyor that spanned from the dock in the Columbia River to the shore, as shown in Photograph 55. All work to demolish these sections of conveyor housing was completed in the area of the ore silos. Water was used to wet sections of conveyor housing prior to demolition activities to minimize dust emission during the project. Photograph 56 shows the removal of silo foundations.

Photograph 55: Crane removing section of ore conveyor

Photograph 56: Demolition of silo foundations

The ACPC floor slab had many equipment pits, which had been backfilled with sand and concrete rubble. This material was removed, segregated, and managed based upon the in situ characterization of the oils and fluids in the pit. After the equipment pits were cleaned, the concrete was cleaned by pressure washing in areas where non-PCB oils had stained the concrete. The water from this process was collected and managed with the sewer cleaning waters, as described in Section 7.9.

The ACPC concrete floor slab, foundations, and footings were removed to a minimum depth of 4 feet. In situ characterization data determined the disposition of the concrete (i.e., remain on-site, dispose of as bulk PCB remediation waste [less than 50 mg/kg PCBs] or dispose of as bulk PCB remediation waste [greater than equal to 50 mg/kg PCBs]). The concrete from the other buildings and structures (such as the ore silos) where PCB use was not present was crushed for reuse on site.

The concrete crusher mobilized on December 4, 2008, and demobilized on April 30, 2009. Approximately 90,000 tons of concrete was crushed, in 18 discrete piles of 5,000 tons each. Each 5,000 ton pile was sampled and analyzed for PCBs. Each sample consisted of a composite of discrete samples collected from the crusher belt every 6 to 8 hours of operation. Crushed concrete pile No. 4 was segregated into ten smaller piles, which were sampled for PCBs, when the initial crushed concrete sample from the pile exceeded the unrestricted site

reuse goal of 1 mg/kg PCBs. Sample results for all the crushed concrete testing are found in Table 12. Crushed concrete piles with sample results greater than or equal to 1 mg/kg and less than 10 mg/kg for PCBs were placed in the North Landfill, as dry material to mix with the sediment. Crushed concrete piles with sample results less than 1 mg/kg PCBs were released for unrestricted Site use. The crushed concrete piles near the crusher were relocated, as show in Photograph 57. This crushed concrete was placed in two stockpiles and left for use by the future property owner.

Photograph 57: Crushed concrete piles and relocation activities

7.2 Soils Under ACPC Floor Slab

In ACPC, each equipment location/pit was identified prior to demolition and the remaining oils or sludges were sampled. Two of the equipment locations had PCB sample results of greater than or equal to 50 mg/kg, and in 16 locations the samples results were greater than or equal to 10 mg/kg and less than 50 mg/kg. Using this information, soil samples were collected under the floor slab at each of these 18 equipment locations. In addition, a grid of 30 samples was collected under the floor slab. These sample locations are on Figures 10 and 11. The east/west grid was spaced approximately every 60 feet (three column lines), for a total of 10 east/west grid lines, with three equally spaced sample locations in the north/south direction on each east/west line. The sample results met Site cleanup levels for all of the ACPC soil confirmation samples and are shown in Table 13. Except for Building 427, discussed in more detail below, these sample results were less than 1 mg/kg PCBs.

As the floor slab was removed, the soils were examined for the presence of TPH. If a small amount of petroleum-impacted soil was present under a floor slab in a location not known to have PCBs, the impacted soil was removed and placed with the other Subtitle D soil for disposal off-site. If a larger amount of petroleum-impacted soil was detected, then characterization data were collected for these soil locations (presented in Appendix I). Under Building 416, a larger area of impacted soil was identified. A soil characterization sample indicated the TPH was present above Site cleanup levels, but PCB concentrations in the soil were less than 1 mg/kg. The impacted soil was removed and placed in the Subtitle D landfill soil stockpile. Confirmation samples were collected and analyzed for TPH. The sample results met Site goals and were less than 1 mg/kg TPH. Sampling results are presented in Table 14. The extent of the excavation and the sample locations are on Figures 10 and 11.

Under Building 427, a significant remedial effort occurred. Three areas of fill sand under Building 427 were impacted by PCBs, in concentrations greater than or equal to 50 mg/kg and less than 50 mg/kg. In one location just west of the middle of Building 427, a lens of black carbon material was identified. PAH concentrations were well below Site cleanup levels in the characterization samples. Further sampling efforts delineated the PCB contamination in situ in the fill sand. Dependant upon the in situ characterization, the fill sand was either placed in the TSCA Subtitle C landfill stockpile, the Subtitle D landfill stockpile, or North Landfill. The extent of the excavation and the sampling locations are on Figure 12. Photographs 58 and 59 show the excavation area under Building 427. The in situ characterization data are in Appendix I and the confirmation sampling data is in Table 13. All final confirmation sample results were less than 1 mg/kg PCBs, which met Site cleanup levels for PCBs.

Photograph 58: Excavation under Building 427 to concrete pad

Photograph 59: Excavation under Building 427, looking west

7.3 Supply Wells

During the final phases of the Site cleanup and demolition activities, two remaining supply wells were discovered under the ACPC floor slab. One well was located near the southeastern corner of Building 427 and the other well was located near the west end of Building 426. Upon inspection, it appeared that there had been previous attempts to abandon and/or backfill the wells with a sand and gravel mixture. The wells were identified from historical records as former Production Well 8 and Production Well 13. Alcoa contracted with Anchor QEA to oversee and direct the abandonment of the two supply wells under current Ecology standards and resource protection requirements. Anchor QEA subcontracted Boart to provide the abandonment services.

Under the oversight of Anchor QEA, Boart conducted the abandonment of Production Well 8 and Production Well 13 from May 6 through June 9, 2009. The wells were abandoned according to the guidelines in WAC 173-160 and with pre-approved variances from Ecology where required. Appendix H provides a detailed summary and relevant documentation of the abandonment procedures.

7.4 Vanexco Electrical Plant Substation

The EPSS was located on the west end of Vanexco. In situ soil characterization results from July 2007 indicated that the soil in the EPSS was impacted by PCBs. Additional in situ

characterization samples were collected near the end of the demolition project. These sample results were used to determine the final disposition of the soils in the EPSS. Characterization sample data are in Appendix I. Soil impacted with PCBs greater than or equal to 1 mg/kg were excavated and placed into the appropriate location for final disposition. Soils with in situ PCB concentrations greater than or equal to 50 mg/kg were placed in the TSCA Subtitle C landfill stockpile. Soils with in situ PCB concentration greater than or equal to1 and less than 50 mg/kg were placed in the Subtitle D landfill stockpile. Confirmation samples were collected and the Site soil cleanup levels of less than 1 mg/kg PCBs were met for all samples. The sample locations are in Figure 11 and the data results for the confirmation samples are in Table 15.

7.5 ACPC Electrical Substation

ACPC's Electrical Substation was located to the west of Building 416. In situ characterization samples were collected in June 2007 and the results indicated that further investigation and excavation during the demolition project was necessary. Additional in situ characterization sampling was conducted and the data results were used to determine the extent of the excavation and the disposition of the soil. All characterization data results are in Appendix I. Figure 11 provides the locations of the samples and the extent of the excavation. After the excavation was complete, the final confirmation samples were collected. The data results indicated that the site goals were met with all confirmation samples having PCB concentrations less than 1 mg/kg. The data are presented in Table 16.

7.6 Buildings 430 and 408

Building 430 was a free standing pump house for ACPC located to the east of ACPC. A UST associated with the building had been previously removed and the location backfilled. The building itself had been previously removed. The building foundations, cellar, underground piping, and soils around the storage tank were still in place. Three in situ characterization samples were collected around Building 430's underground piping and UST backfill area. Sample results indicated that the west side of Building 430, where the underground piping went through the building foundation wall and the area where the underground piping connected to the historical UST was greater than 1 mg/kg PCBs and less than 50 mg/kg. Sample results for east side of Building 430 had PCB concentrations less than 1 mg/kg.

Characterization sample results are in Appendix I. Soils were excavated and stockpiled for off-site shipment with the Subtitle D landfill soils from the two locations indicated above. Confirmation samples were collected in the two areas excavated and the results were less than 1 mg/kg PCBs, meeting Site cleanup levels. Figure 10 shows the location of the confirmation samples and the extent of the excavation areas. Table 17 presents the final confirmation sample results.

Building 408 was located to the west of the ACPC complex. The building had been previously demolished. Upon removal of the foundation, petroleum stained soil was encountered. Characterization samples found the soil to have TPH concentrations in excess of Site cleanup levels, but PCB concentration less than 1 mg/kg. Characterization sample results are in Appendix I. Soil was excavated in this area and an additional confirmation sample was collected. The sample contained TPH less than 1,000 mg/kg and PCBs less than 1 mg/kg, both meeting Site cleanup levels. The excavated soil was placed with the Subtitle D landfill soils for off-site disposal. Figure 11 presents the sample location and extent of excavation. Table 14 provides the analytical data for the confirmation samples.

7.7 Sewers

The storm and sanitary sewer lines at the facility were either cleaned, removed, or crushed in place. The lines under the Vanexco/Rod Mill cap were left in place without crushing. Sanitary sewer lines under ACPC were crushed, as were other small ancillary sanitary sewer lines. Small diameter storm sewer lines were removed. The main storm sewer lines were to be left in place for future use. Sediment in the main storm sewer lines was characterized and the data is in Appendix I. It was found that some of the sections of sewer line had PCB contamination in the sediments, both above and below 50 mg/kg.

River City subcontracted to TtEC to clean the storm sewer lines that were to be left in place. They mobilized a water treatment facility, which was staged at the stormwater lagoons to treat their collected waters for particulates and PCBs. Cleaning of the storm sewer lines impacted by PCBs greater than or equal to 50 mg/kg was the first task. Collected sediment was dewatered and placed in the TSCA Subtitle C sewer pipe stockpile for off-site disposal. The water was treated as discussed below.

Storm sewer sections that were found to contain PCB-bearing, oily grease residues were removed. Several sections that were originally to be left in place were removed. These sections were placed in the TSCA Subtitle C sewer pipe stockpile and disposed of off-site.

The remaining storm sewer lines that were to be left in place were cleaned by River City. The debris was collected and placed in the sewer debris Subtitle D landfill stockpile for off-site disposal. The water from the cleaning process was collected and treated on-site.

Excavations from the removal of storm sewer lines were backfilled and compacted. Photograph 60 shows the excavation of the storm sewer line near the ore silos and Photograph 61 shows the backfill and compaction at an ACPC storm sewer line.

Photograph 60: Storm sewer line removal

Photograph 61: Storm sewer line excavation backfill and compaction

The initial water treatment system did not have a carbon filter in place. The first two batches of Subtitle C treated water did not meet TSCA standards for release to the stormwater lagoons (less than 3 µg/L), noted by samples ACPC-BT1 and ACPC-BT2. These two batches of water were retreated by the water treatment system, which was configured with holding tanks, a filter box with two layers of particulate filter fabric, a 5 micron particulate filter, and a carbon filter. This system successfully treated the water, as shown by sample ACPC-BT3. After the test data indicated that the water treatment system met the TSCA standard, the water was discharged to the stormwater lagoon. The sampling data are

reported in Table 18. The system was decontaminated and the solids were managed with the TSCA Subtitle C sewer debris stockpile for off-site disposal.

The water from the cleaning of the ACPC pits, ACPC concrete stains, and the sewer pipes that were not impacted by PCBs greater than or equal to 50 mg/kg, was treated in the same manner as described above. Each 20,000 gallon batch of treated water was tested prior to release into the stormwater lagoons. The test results are in Table 18, for samples ACPC-BT4 and ACPC-BT5. After the completion of the treatment, the treatment system was decontaminated and the solids were placed with the Subtitle D sewer debris for off-site disposal.

7.8 RCRA/TSCA Waste Disposal

RCRA and TSCA wastes were generated during the facility demolition activities. Four primary waste streams were generated: soil (and concrete) containing PCBs greater than or equal to 50 mg/kg; building debris (siding, steel, etc.) containing PCBs greater than or equal to 50 mg/kg; sewer pipe containing PCBs greater than 50 mg/kg; and lab packs from various facility products. The wastes were transported and disposed of (or incinerated) in accordance with applicable federal and state regulations, including TSCA (in 40 CFR 761), RCRA (in 40 CFR 262), DOT regulations (49 CFR 171 and 49 CFR 172), and Ecology regulation (in WAC 173-303).

The materials from the demolition of the Vanexco/Rod Mill buildings contained PCBs greater than or equal to 50 mg/kg. This waste stream was managed as bulk PCB remediation waste and consisted of steel, aluminum, brick, wood, concrete, paper, personal protective equipment (PPE), and other materials that were in contact with the PCB historical release. ECTI transported the waste from the Site to CWM in Arlington, Oregon, in 136 lined container boxes from September 15, 2008 to November 11, 2008. CWM is regulated under RCRA Subtitle C and TSCA. Approximately 1,980 tons of the waste was disposed of at the landfill, as measured at the facility, verified by certificates of disposal, and by phone verification upon receipt of the final manifest (documentation in Appendix M).

Miscellaneous products were found around the facility, such as lubricants, oils, greases, paints, ballasts, and other maintenance fluids. These products were lab packed for disposal off-site. These products were stored in Building 428 and then transferred to Building 67 for lab packing. The materials were lab packed under ten separate profiles for the waste streams. The PCB debris lab pack was shipped to CWM by ECTI on November 11, 2008. The lab pack was one container, weighing approximately 0.49 tons. On March 5, 2009, five drums of PCB ballasts were transported by MP Environmental Services to CWM for final disposal. The weight of the shipment was 1.48 tons. Veolia transported the eight remaining lab packs (one drum of each waste stream) to the Veolia facility in Henderson, Colorado, for final incineration. The lab packs were shipped on April 8, 2009 and weighed 1.96 tons. The disposal/incineration of the lab packs were verified by certificates of disposal and by phone verification upon receipt of the final manifest (documentation in Appendix M). An exception report was issued by Alcoa to the U.S. Environmental Protection Agency (EPA) for this shipment to Veolia, as the original manifest was not received by Alcoa within 45 days, due to the demobilization of TtEC from the work Site.

Soils and miscellaneous concrete containing PCBs greater than or equal to 50 mg/kg were managed as bulk PCB remediation. This waste stream was stockpiled on-site on plastic placed on concrete. The stockpile was covered except when the stockpile was being actively worked. Celorie Brothers and ECTI transported the waste from the Site to CWM, in Arlington, Oregon, in lined container boxes. Twenty-three container boxes were transported to CWM from January 7, 2008 to April 13, 2009. CWM is regulated under RCRA Subtitle C and TSCA. Approximately 725 tons of the waste was disposed of at the landfill, as measured at the facility, verified by certificates of disposal, and by phone verification upon receipt of the final manifest (documentation in Appendix M).

PCB-impacted sewer line sediments, sewer pipe, and water treatment materials with PCB concentrations greater than or equal to 50 mg/kg were managed as bulk PCB remediation. Water treatment materials and solids were dewatered prior to being added to the sewer pipe stockpile. This waste stream was stockpiled on-site on plastic placed on top of concrete. The stockpile was covered except when the stockpile was being actively worked. Celorie Brothers transported the waste from the Site to CWM, in Arlington, Oregon, in lined container boxes. Three container boxes were transported to CWM on January 7, 2009.

CWM is regulated under RCRA Subtitle C and TSCA. Approximately 112 tons of the waste was disposed of at the landfill as measured at the facility, verified by certificates of disposal and by phone verification upon receipt of the final manifest (documentation in Appendix M).

7.9 Subtitle D Waste Disposal

A number of different waste streams were generated during the facility demolition activities. The primary waste streams that were disposed of in a Subtitle D landfill were asbestos containing materials, PCB bulk product waste, soil and concrete containing PCBs less than 50 mg/kg, demolition debris, and waste streams containing TPH. The wastes were transported and disposed of in accordance with applicable federal and state regulations, including TSCA (in 40 CFR 761), RCRA (in 40 CFR 262), DOT regulations (49 CFR 171 and 49 CFR 172), and Ecology regulation (in WAC 173-303).

Asbestos-containing waste was generated during the structure demolition and below-grade utility removal. The asbestos contractor managed the waste during removal and then properly bagged and labeled the waste. Global Pacific Environmental transported the asbestos-containing materials off site via truck for final disposition at Wasco County Landfill, located in The Dalles, Oregon. Wasco County Landfill is regulated under RCRA Subtitle D and is permitted to accept asbestos-containing waste. From April 14, 2008 to May 27, 2009, 30 truckloads of asbestos-containing material were transported to the Wasco County Landfill. A total of 52 tons of asbestos-containing material was disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

Asphalt adhesive used to hold flooring materials in place in many rooms in ACPC contained PCBs. The removed adhesive was managed as PCB bulk product waste as the adhesive contained PCBs in a non-liquid state at a concentration greater than or equal to 50 mg/kg and was packaged in 29-one cubic yard Gaylord boxes on-site. Waste Connections of Washington transported the waste from the Site to Wasco County Landfill, located in The Dalles, Oregon. Wasco County Landfill is regulated under RCRA Subtitle D. On August 22, 2008, the 29 Gaylord boxes were placed in one container and transported to the Wasco

County Landfill. A total of 27 tons of waste was disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

Steel used in the building structures was coated with paints containing PCBs. The steel was managed as PCB bulk product waste as the coatings contained PCBs in a non-liquid state at a concentration greater than or equal to 50 mg/kg. Waste Connections of Washington transported the waste from the site to Wasco County Landfill located in The Dalles, Oregon, in container boxes. Wasco County Landfill is regulated under RCRA Subtitle D. From August 15, 2008 to September 26, 2008, 37 truckloads of waste were transported to the Wasco County Landfill. A total of 448 tons of waste was disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

Concrete removed from the Site was segregated into clean concrete for reuse and contaminated concrete for disposal. The concrete contaminated from PCB sources greater than or equal to 50 mg/kg, was placed and disposed of with the Subtitle C soils, as discussed above. The remaining concrete contaminated with TPH-Dx greater than or equal to 2,000 mg/kg, TPH-mineral oil greater than or equal to 4,000 mg/kg, and/or PCBs less than 50 mg/kg and greater than or equal to 10 mg/kg was managed as bulk PCB remediation waste. Dietrich and Sons transported the waste from the Site to Wasco County Landfill, located in The Dalles, Oregon, in truck and pups. Wasco County Landfill is regulated under RCRA Subtitle D. From January 5, 2009 to March 23, 2009, 18 truckloads of contaminated concrete were transported to Wasco County Landfill. A total of 881 tons of waste was disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

Demolition debris consists of the remaining demolition materials that were not recyclable and were not impacted by PCBs. The demolition debris was transported by Waste Connections of Washington from the Site to Wasco County Landfill, located in The Dalles, Oregon, in container boxes. Wasco County Landfill is regulated under RCRA Subtitle D. From April 21, 2008 to April 23, 2009, 185 container boxes of demolition debris were transported to the Wasco County Landfill. A total of 4,287 tons of demolition debris was

disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

The sand, soil, concrete rubble, and other miscellaneous materials that filled ACPC's equipment pits were removed. In the two equipment locations in the ACPC that had residual oils with PCB concentrations greater than or equal to 50 mg/kg, the pit materials were placed with the Subtitle C soils, discussed above. The remaining ACPC equipment pit materials, with concentrations of TPH-Dx greater than or equal to 2,000 mg/kg, TPH-mineral oil greater than or equal to 4,000 mg/kg, and/or PCBs less than 50 mg/kg, were managed as bulk PCB remediation waste. Dietrich and Sons transported the waste from the Site to Wasco County Landfill, located in The Dalles, Oregon, in truck and pups. Wasco County Landfill is regulated under RCRA Subtitle D. From November 17, 2008 to January 22, 2009, 19 truckloads of waste were transported to Wasco County Landfill. A total of 559 tons of ACPC equipment pit waste was disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

Sand and soil encountered during the demolition of the facility's below grade structures with concentrations of TPH-Dx greater than or equal to 2000 mg/kg, TPH-mineral oil greater than or equal to 4,000 mg/kg, and/or PCBs less than 50 mg/kg, became this waste stream and were managed as bulk PCB remediation waste. Dietrich and Sons transported the waste from the Site to Wasco County Landfill, located in The Dalles, Oregon, in truck and pups. Wasco County Landfill is regulated under RCRA Subtitle D. From December 3, 2008 to April 30, 2009, 19 truckloads of soils were transported to Wasco County Landfill. A total of 2,383 tons of soils were disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

This waste stream was generated from sewer pipe, sewer sediments, and water treatment solids with concentrations of PCBs less than 50 mg/kg and was managed as bulk PCB remediation waste. Waste Connections of Washington transported the waste from the Site to Wasco County Landfill, located in The Dalles, Oregon, in container boxes. Wasco County Landfill is regulated under RCRA Subtitle D. From October 23, 2008 to May 1, 2009, 22 container boxes of waste were transported to Wasco County Landfill. A total of 763 tons of

waste were disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by the Wasco County Landfill (included in Appendix M).

7.10 North Landfills

TtEC disposed of soils from under Building 427 and crushed concrete containing PCBs at concentrations between 1 mg/kg and 10 mg/kg in the North Landfill. These materials were transported to the landfill in off-road trucks. Loaded trucks were routed along the upper haul road through the ACPC gate to the North Landfills where material was offloaded directly into the landfill. These dry materials were mixed in the landfill with the dredged industrial and beneficial reuse level sediments.

7.11 Recycling

Facility demolition generated a large number of recyclable products, such as aluminum, copper, refrigerants, steel, universal wastes, and used oils. Aluminum was recycled by Metro Metals in Vancouver, Washington. They transported approximately 348 tons of aluminum to their facility from September 8, 2008 to April 23, 2009, and 31 tons of copper from August 26, 2008 to April 7, 2009. Steel was also recycled by Metro Metals. They transported 6,216 tons of steel to their Vancouver, Washington, facility from October 10, 2008 to April 28, 2009. Refrigerants were transported by Total Reclaim to their facility and to Ecolights Northwest for recovery on July 3, 2008 and February 27, 2009, with a total weight of 0.75 tons. Universal waste lamps, sodium vapor lamps, thermostats, and lead acid batteries were transported by Total Reclaim to Ecolights Northwest. The total weight of the universal wastes shipped off-site was 2.8 tons and the universal wastes were shipped off-site on July 3, 2008 and February 27, 2009. Used oil, grease, and antifreeze was transported off-site by Oil Re-refiners and recycled at their facility in Portland Oregon. These materials were shipped off-site on March 19, 2009 and totaled 465 gallons. In total, approximately 6,600 tons of materials were recycled from the Site.

8 OTHER REMEDIAL ACTIVITIES

During the demolition and remediation project at the Site, additional areas were identified which did not meet site cleanup levels and required soil removal. These areas were characterized prior to soil removal and the characterization data are provided in Appendix I. Figure I-1 provides the original extent of excavation for the alumina ore rail unloading and carbon storage soil removals. Based upon the characterization of the areas and guided by visual observations during removal, the areas were excavated and confirmation samples collected verifying that Site cleanup levels were met in each location. Additionally, background monitoring wells near the stormwater settling lagoons were decommissioned.

8.1 Alumina Ore Rail Unloading Soil Removal

Fluoride impacted soils were delineated along the railroad tracks from Building 36 (the alumina ore rail unloading building) to near the raised conveyor transfer tower. Approximately 2,095 tons of soils were excavated and stockpiled for off-site disposal. The excavation was primarily surficial, and backfill in the area was not necessary. The area was graded into gentle contours. Confirmation samples were collected prior to grading to verify that the removal action met Site cleanup levels. Figure 13 shows the extent of the excavation and the location of the confirmation samples. The fluoride concentration remaining in the soil varied from 2,350 to 106 mg/kg in the confirmation samples. Where the rail entered Building 36, brick was encountered at a depth of approximately 30 inches. Confirmation sample BLDG 3616-SC100608 was collected in the brick and soil and verifies that PAHs were not present above Site cleanup levels. Table 19 provides the confirmation sample data results.

8.2 Carbon Storage Soil Removal

Adjacent to the Alcoa property, Evergreen's aluminum reduction plant had a coke and pitch storage building (Building 52). The rail lines leading to the coke and pitch rail unloading building ran across Alcoa property through the North Landfill area and across the water well field. PAH contamination was present in the rail ballast along the rail line and in the well water field. Initial characterization and sampling locations is provided in Appendix I. These areas were excavated and the soils were stockpiled for off-site disposal. The excavation in some areas was as deep as 24 inches, but backfill was not necessary. Grading was performed

in the area to smooth out the excavation. The extent of the excavation is shown on Figures 13 and 14.

Confirmation samples were collected to verify that the PAH soil cleanup levels were met in the excavated area. The sediment and shoreline stockpiles were placed in the south carbon storage area. After the final removal of the sediment and shoreline wastes, samples were collected in this area and the area was excavated until Site goals for PAHs and PCBs were met. Further information on this removal is in Section 4. Figures 13 and 14 provide the locations of the confirmation samples. The final PAH confirmation sample results are in Table 20. All confirmation samples met Site goals for PAHs, with total PAHs of less than 18 mg/kg.

8.3 Aboveground Storage Tanks and Pipe Line

Two ASTs were historically filled with fuel oil from a dock in the Columbia River. The fuel oil was fed to the carbon bakes via a pipeline between the ASTs and the carbon bakes. The ASTs were removed from the Site many years ago. The foundations, pipeline through the dike, and the pipeline to the carbon plant (on Alcoa property) remained in place.

The ASTs' foundations were surrounded with carbon plant brick and residues. This material was characterized and found to exceed the Site cleanup levels for PAHs (Appendix I). As the dike is deed-restricted for PAHs, the brick was used as fill material for excavations on the dike. Confirmation samples were collected around the ASTs after the brick excavations were completed. The sample locations are shown on Figure 13 and the data are presented in Table 21. All confirmation sample results met site cleanup levels for PAHs. The excavated area was an average of 4 feet below ground surface (bgs), but in one area the excavation was 7 feet bgs. After receipt of the confirmation sample results, the area was compacted and backfilled with clean sand from the internal dikes.

Fuel oil was still in place in the AST pipeline and was removed for recycling by TtEC (total gallons recycled during the project discussed in Section 7). The AST pipeline was excavated and removed, creating a trench with an average depth of 4 feet bgs. At many of the pipe joints, oil had leaked out of the pipe, contaminating a few cubic yards of soil at these

locations. Photograph 62 shows the pipeline excavation. This impacted soil was removed and stockpiled for off-site disposal. At two locations, oil had leaked from the pipeline, creating larger excavations. The location of the pipeline and the extent of these two excavations are shown on Figure 13, as well as confirmation sample locations along the pipeline and in the excavations. Both of the large excavations were 8 to 15 feet bgs. Photograph 63 shows the southern excavation. The excavation at the north end of the pipeline extended onto Evergreen property. Characterization sample data is in Appendix I. All confirmation sample results met Site goals for TPH and are presented in Table 22. The excavated areas were compacted and backfilled with clean sand from the internal dikes.

Photograph 62: ASTPT excavation along rail line

Photograph 63: Southern excavation of ASTPT

8.4 Building 67

Building 67 was located on Alcoa property, to the south of the Evergreen coke and pitch storage building. Coke and pitch contamination was present in the soil on the north and west side of Building 67 (characterization data are presented in Appendix I). The north and south areas around the building were excavated and the soils were placed in the Subtitle D stockpile for off-site disposal. The excavations were 1 foot bgs or less and backfill was not necessary. The area was graded upon completion of the excavation and confirmation sampling. Figure 13 shows the extent of the excavation and the location of the confirmation samples. Table 23 provides the results of the confirmation samples, all of which met Site cleanup levels for PAHs.

8.5 ACPC Settling Lagoons

The sludge pipeline from ACPC to the historical settling lagoons was removed as part of the ACPC demolition. The pipeline was left in place across Alcoa property onto the PUD property, which had been previously purchased from Alcoa. Alcoa remediated the settling ponds that had been on the PUD property, but the pipeline had not been removed. The removed pipeline was placed in the Subtitle D stockpile for off-site shipment. At three of the pipeline joints, two locations on Alcoa property and 1 on PUD property, the joints had leaked in the past. The soil was excavated until Site goals were met in these locations. Confirmation samples were collected on the PUD property and their locations, as well as the extent of the excavations, are shown on Figure 10. Table 24 provides the confirmation sample data verifying that Site cleanup levels were met for TPH and PCBs.

8.6 Coal Tar Pitch at Ore Silos

Coal tar pitch was found near the alumina ore silos in several locations. The material and surrounding soils were characterized to delineate the excavation area and the data is in Appendix I. The delineated area was excavated to a depth of 1 foot bgs. The excavated soils were stockpiled with the Subtitle C soils for off-site disposal. Backfill was not necessary in the area, but the remaining soils were graded to form gentle contours. Confirmation samples were collected to verify that Site goals were met. Figure 13 shows the extent of the excavation and the confirmation sample locations. The confirmation sample results are in Table 25 and were all less than Site goals for PAHs.

8.7 North Soluble Oil Area

The carbon soil identified during the excavation of the soluble oil area was removed and stockpiled with the Subtitle D soils for off-site disposal. The area extended to the north of the soluble oil area and required the fence to the east parking lot to be removed to complete the excavation. The western area of the excavation (105 feet by 75 feet) was 1 foot bgs. The eastern area of the excavation (120 feet by 90 feet) was an average of 12 feet bgs, with the deepest area 18 feet bgs. The extent of the excavation and the location of the confirmation samples are shown on Figure 10 and highlighted in the photographs below. The confirmation sample results all met site cleanup levels for PAHs and are in Table 26.

Photograph 64: Excavation of carbon materials

Photograph 65: Completed excavation of the North Soluble Oil area

8.8 Stormwater Lagoon Monitoring Well Decommissioning

Historically, the Site used two settlement ponds for treatment of process water and stormwater prior to discharge through an NPDES permitted outfall to the Columbia River. The ponds were formerly located immediately north of the existing water treatment and storage facility at the western extent of the Site. Several monitoring wells were installed to monitor groundwater quality in the vicinity of the former settlement ponds. Three wells (SP-1I, SP-1D, and SP-5D) associated with the former settlement pond well network were identified for abandonment as part of the final Site closure. The three selected wells were located on property currently owned by Moorage 5 Properties, Inc. Well SP-1D could not be located and, therefore, could not be abandoned.

Alcoa obtained access approval from Moorage 5 Properties, and on November 18, 2008 Boart abandoned wells SP-1I and SP-5D under the direction of Anchor QEA. Well SP-1I was abandoned by over-drilling and well SP-5D was abandoned in-place according to the guidelines in WAC 173-160. Appendix H provides a detailed summary and relevant documentation of the abandonment procedures.

8.9 Off-Site Waste Disposal

RCRA and non-RCRA wastes were generated during the remedial activities. The primary waste streams that were generated were fluoride containing soils, soils containing carbon

products and PAHs at concentrations less than 1% (WAC 173-303), soils containing TPH, soils containing TPH and PCBs at concentrations less than 1 mg/kg, and soils containing PAHs at concentrations greater than or equal to 1% (WAC 173-303). The wastes were transported and disposed of in accordance with applicable federal and state regulations, including TSCA (in 40 CFR 761), RCRA (in 40 CFR 262), DOT regulations (49 CFR 171 and 49 CFR 172), and Ecology regulation (in WAC 173-303).

Fluoride-containing soils from the alumina ore rail unloading area were stockpiled for off-site disposal. The fluoride containing soils were transported by Waste Connections of Washington from the Site to Wasco County Landfill, located in The Dalles, Oregon, in truck and pups. Wasco County Landfill is regulated under RCRA Subtitle D. From October 17 to 22, 2008, 65 truck loads of fluoride-containing soils were transported to the Wasco County Landfill. A total of 2,095 tons of waste was disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

Soils from the excavations in the carbon storage area were stockpiled for off-site disposal. The soils were transported by Waste Connections of Washington from the Site to Wasco County Landfill, located in The Dalles, Oregon, in truck and pups. Wasco County Landfill is regulated under RCRA Subtitle D. From October 23, 2008 to January 22, 2009, 422 truck loads of waste soils were transported to the Wasco County Landfill. A total of 13,186 tons of waste was disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

The AST pipeline and associated contaminated soils were stockpiled for off-site disposal. The soils were transported by Waste Connections of Washington from the Site to Wasco County Landfill, located in The Dalles, Oregon, in truck and pups. Wasco County Landfill is regulated under RCRA Subtitle D. From November 5 to 18, 2008, 70 truck loads of TPH-containing soils were transported to the Wasco County Landfill. The large north excavated area generated approximately 897 tons of impacted soils. The pipeline and other removals associated with the pipeline generated an additional 1,275 tons of impacted soils; however, approximately 800 tons of those impacted soils were from the large excavation at the west-to-north pipeline junction. The total quantity of waste disposed of at the landfill was

measured at the facility and verified by returned final manifests provided by Wasco County Landfill (included in Appendix M).

The impacted soils from the excavations at Building 67, the ACPC settling lagoon pipeline, and the north soluble oil area contained concentrations of TPH-Dx greater than or equal to 2,000 mg/kg, TPH-mineral oil greater than or equal to 4,000 mg/kg, PAHs less than 1%, and/or PCBs less than 50 mg/kg and were managed as bulk PCB remediation waste. These soils were stockpiled and aggregated with similar soils as noted in Section 7. Dietrich and Sons transported the waste from the Site to Wasco County Landfill, located in The Dalles, Oregon, in truck and pups. Wasco County Landfill is regulated under RCRA Subtitle D. From December 3, 2008 to April 30, 2009, 19 truckloads of soils were transported to the Wasco County Landfill. A total of 2,383 tons of soils were disposed of at the landfill, as measured at the facility and verified by returned final manifests provided by the Wasco County Landfill (included in Appendix M).

Soil with total PAH concentrations greater than 1% from the area around the alumina ore silos was managed as extremely hazardous waste. This waste stream was stockpiled on-site and aggregated with the sediment and soil with total PAH concentrations greater than 1%. The stockpile was placed on plastic and covered with plastic except when the stockpile was being actively worked. The stockpile was located in the sediment stockpile area. This waste was shipped with the "process residue/pitch" waste stream and is included in the shipments discussed in Section 4.5.2.

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9 INSTITUTIONAL CONTROLS

The CAP required that a restrictive covenant (WAC 173-340-440) be filed that describes the condition of the property, declares that a cleanup was completed at the Site, restricts the disturbance of upland caps, prohibits the modification of the caps without the prior written approval of Ecology, and limits the Site to industrial uses. The restrictive covenant also controls and limits extraction of groundwater from the Site within the Crowley Parcel AOC and the fluoride-bearing groundwater surrounding the SPL Storage Area not covered by previously recorded restrictive covenants. In addition, the restrictive covenant requires owners of the property to notify all lessees or property purchasers of the restrictions on the use of the properties. Finally, the restrictive covenant requires the owners of the property to make provisions for continued monitoring and operation and maintenance of the remedial action prior to conveying title, easement, lease, or other interest in the Site.

Alcoa prepared a restrictive covenant meeting the above requirements for Ecology's approval. The documents were accepted by Ecology and were filed with the State of Washington on March 26, 2009. Additionally, on December 31, 2008 Evergreen filed a restrictive covenant for the parcels that they previously owned. The final documents and attachments are included as Appendix O.

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10 REFERENCES

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TABLES

Table 1
Summary of Dredging Activities

Dredge Unit	Dredge Dates	Primary Dredge Equipment	Cleanup Pass Required?	Volume of Sediment Removed (cy)	Disposition
DU1A	December 2, 2008 - December 8, 2008	Sea Horse 20 cy & 10 cy	Yes	490	Chem Waste Landfill via Truck
DU1B (Upper)	December 1, 2008 - December 4, 2008	Sea Horse 20 cy & 10 cy	Yes	230	Chem Waste Landfill via Truck
DU1B (Lower)	December 1, 2008 - December 4, 2008	Sea Horse 20 cy & 10 cy	Yes	160	Wasco County Landfill via Barge
DU2A	December 4, 2008 - December 11, 2008	Sea Horse 10 cy	Yes	3,190	Wasco County Landfill via Barge
DU2B	December 9, 2008	Sea Horse 20 cy & 10 cy	No	200	Wasco County Landfill via Barge
DU2C	December 9, 2008 - December 11, 2008	Sea Horse 20 cy & 10 cy	Yes	520	Wasco County Landfill via Barge
Asian Clam Removal	December 3, 2008 - December 9, 2008 December 10, 2008 - December 11, 2008	Sea Vulture 3.5 cy & 15 cy Sea Horse 20 cy & 10 cy	Yes	1,760	Wasco County Landfill via Barge
DU3A	December 13, 2008 - December 15, 2008; December 31, 2008	Sea Horse 10 cy	Yes	1,320	On-Site North Landfills
DU3B	December 16, 2008 - December 18, 2008; December 30, 2008	Sea Horse 10 cy	Yes	3,150	On-Site North Landfills
DU3C	December 15, 2008 - December 16, 2008	Sea Horse 10 cy	No	2,030	On-Site North Landfills
DU3D	December 18, 2008 - December 23, 2008; January 6, 2009; January 18, 2009 - January 21, 2009	Sea Horse 10 cy	No	4,000	On-Site North Landfills
DU3E	January 9, 2009; January 15, 2009 - January 24, 2009	Sea Horse 20 cy & 10 cy	Yes	8,280	On-Site North Landfills

Table 1
Summary of Dredging Activities

Dredge Unit	Dredge Dates	Primary Dredge Equipment	Cleanup Pass Required?	Volume of Sediment Removed (cy)	Disposition
DU3F	December 18, 2008	Sea Horse 10 cy	No	110	On-Site North Landfills
DU4A	December 31, 2008	Sea Horse 20 cy	No	350	On-Site North Landfills
DU4B	December 27, 2008 - December 28, 2008	Sea Horse 10 cy	No	1,740	On-Site North Landfills
DU4C	January 2, 2009; January 7, 2009 - January 9, 2009	Sea Horse 20 cy	Yes	710	On-Site North Landfills
DU4D	January 7, 2009 - January 9, 2009; January 15, 2009	Sea Horse 20 cy & 10 cy	No	1,490	On-Site North Landfills
DU4E	December 28, 2009 - December 30, 2009; January 21, 2009	Sea Horse 20 cy	Yes	1,960	On-Site North Landfills
DU4F	January 1, 2009 - January 4, 2009	Sea Horse 20 cy	Yes	2,410	On-Site North Landfills
Slope Failure Cleanup[1]	January 11, 2009 - January 14, 2009	Sea Horse 10 cy	No	4,910	On-Site North Landfills
DU4G	January 3, 2009 - January 4, 2009	Sea Horse 20 cy	Yes	170	On-Site North Landfills
DU5	January 20, 2009 - January 26, 2009	Sea Vulture 8 cy Sea Horse 10 cy	No	10,810	On-Site North Landfills

Notes:
1. Area is located within DU3D and described in Section 4.8.

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Task:		SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas
Location ID:		CS-4-040209	CS-44-040209	CS-8-040209	CS-13-040209	CS-17-040209	CS-15-040909	CS-19-040909	CS-23-040909	CS-1-041409
Sample Date:		4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/9/2009	4/9/2009	4/9/2009	4/14/2009
Sample ID:		CS-4-000-040209	CS-44-000-040209	CS-8-000-040209	CS-13-000-040209	CS-17-000-040209	CS-15-000-040909	CS-19-000-040909	CS-23-000-040909	CS-1-000-041409
Depth:		0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in	0 - 6 in	0 - 6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	FD	N	N	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene		161 U	40.7 U	151 U	7.19 U	**55.6 J**	7.01 U	7.11 U	7.04 U	--
2-Methylnaphthalene		161 U	40.7 U	151 U	7.19 U	**72.6**	7.01 U	7.11 U	7.04 U	--
Acenaphthene		161 U	**50.4**	**156**	**5.79 J**	**268**	**3.94 J**	7.11 U	7.04 U	--
Acenaphthylene		161 U	40.7 U	151 U	7.19 U	72.1 U	7.01 U	7.11 U	7.04 U	--
Anthracene		**99.4 J**	**111**	**442**	**31.4**	**463**	**4.51 J**	7.11 U	7.04 U	--
Benzo(a)anthracene		**825**	**1270**	**2740**	**161**	**1220**	**54**	7.11 U	**14.9**	--
Benzo(a)pyrene		**1080**	**1320**	**2540**	**146**	**1320**	**78.5**	7.11 U	**22.8**	--
Benzo(b)fluoranthene		--	--	--	--	--	--	7.11 U	--	--
Benzo(b,k)fluoranthene		**1890**	**2540 J**	**5180**	**323**	**2260**	**155**	--	**39.2**	--
Benzo(g,h,i)perylene		**680**	**822**	**1450**	**113**	**866**	**63.6**	7.11 U	**16.9**	--
Benzo(k)fluoranthene		--	--	--	--	--	--	7.11 U	--	--
Chrysene		**1220**	**2160 J**	**4750**	**259**	**1550**	**70.2**	7.11 U	**17.8**	--
Dibenzo(a,h)anthracene		**172**	**223**	**437**	**24.7**	**212**	**15.3**	7.11 U	**4.11 J**	--
Fluoranthene		**1220**	**1630 J**	**4040**	**342**	**3220**	**80**	7.11 U	**23.5**	--
Fluorene		161 U	**21.3 J**	**113 J**	**4.05 J**	**217**	7.01 U	7.11 U	7.04 U	--
Indeno(1,2,3-c,d)pyrene		**734**	**821**	**1540**	**103**	**960**	**67.1**	7.11 U	**17.7**	--
Naphthalene		161 U	40.7 U	151 U	**5.73 J**	**230**	7.01 U	7.11 U	7.04 U	--
Phenanthrene		**460**	**463**	**1420**	**128**	**2150**	**27.9**	7.11 U	**7.79**	--
Pyrene		**1280**	**1770 J**	**4210**	**339**	**2790**	**77**	7.11 U	**22.5**	--
Total cPAH TEF (7 minimum) (U = 0)	18000	**1265.3**	**1573**	**3059.2**	**177.46**	**1574.7**	**92.842**	7.11 U	**26.649**	--
PCB Aroclors (µg/kg)										
Aroclor 1016		8.98 U	9.98 UJ	7.75 U	7.32 U	7.08 U	8.29 U	7.63 U	8.59 U	8 U
Aroclor 1221		8.98 U	9.98 UJ	7.75 U	7.32 U	7.08 U	8.29 U	7.63 U	8.59 U	8 U
Aroclor 1232		8.98 U	9.98 UJ	7.75 U	7.32 U	7.08 U	8.29 U	7.63 U	8.59 U	8 U
Aroclor 1242		8.98 U	9.98 UJ	7.75 U	7.32 U	7.08 U	8.29 U	7.63 U	8.59 U	8 U
Aroclor 1248		**109**	**144 J**	**207**	**28.1**	**440**	8.29 U	7.63 U	8.59 U	**44.5**
Aroclor 1254		**48.6**	**46.6 J**	**77**	**11.4**	7.08 U	8.29 U	7.63 U	8.59 U	**29.1**
Aroclor 1260		8.98 U	9.98 UJ	7.75 U	7.32 U	7.08 U	8.29 U	7.63 U	8.59 U	8 U
Total PCB Aroclors (U = 0)	1000	**157.6**	**190.6**	**284**	**39.5**	**440**	8.29 U	7.63 U	8.59 U	**73.6**

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Task:		SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas
Location ID:		CS-2-041409	CS-3-041409	CS-4-041409	CS-5-041409	CS-6-041409	CS-7-041409	CS-8-041409	CS-1-041509	CS-2-041509	CS-3-041509
Sample Date:		4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/15/2009	4/15/2009	4/15/2009
Sample ID:		CS-2-000-041409	CS-3-000-041409	CS-4-000-041409	CS-5-000-041409	CS-6-000-041409	CS-7-000-041409	CS-8-000-041409	CS-1-000-041509	CS-2-000-041509	CS-3-000-041509
Depth:		0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	N	N	N	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene		--	--	--	--	--	--	--	6.71 U	6.97 U	6.88 U
2-Methylnaphthalene		--	--	--	--	--	--	--	6.71 U	6.97 U	6.88 U
Acenaphthene		--	--	--	--	--	--	--	6.71 U	6.97 U	6.88 U
Acenaphthylene		--	--	--	--	--	--	--	6.71 U	6.97 U	6.88 U
Anthracene		--	--	--	--	--	--	--	**9.83**	6.97 U	**4.08 J**
Benzo(a)anthracene		--	--	--	--	--	--	--	**79.3**	6.97 U	**33.7**
Benzo(a)pyrene		--	--	--	--	--	--	--	**71**	6.97 U	**48**
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--	6.97 U	--
Benzo(b,k)fluoranthene		--	--	--	--	--	--	--	**154**	--	**80**
Benzo(g,h,i)perylene		--	--	--	--	--	--	--	**48.6**	6.97 U	**34.4**
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--	6.97 U	--
Chrysene		--	--	--	--	--	--	--	**137**	6.97 U	**41.9**
Dibenzo(a,h)anthracene		--	--	--	--	--	--	--	**13**	6.97 U	**8.48**
Fluoranthene		--	--	--	--	--	--	--	**136**	6.97 U	**55.1**
Fluorene		--	--	--	--	--	--	--	6.71 U	6.97 U	6.88 U
Indeno(1,2,3-c,d)pyrene		--	--	--	--	--	--	--	**46.3**	6.97 U	**35.5**
Naphthalene		--	--	--	--	--	--	--	6.71 U	6.97 U	6.88 U
Phenanthrene		--	--	--	--	--	--	--	**32.7**	6.97 U	**19.4**
Pyrene		--	--	--	--	--	--	--	**138**	6.97 U	**57.2**
Total cPAH TEF (7 minimum) (U = 0)	18000	--	--	--	--	--	--	--	**86.23**	6.97 U	**56.187**
PCB Aroclors (µg/kg)											
Aroclor 1016		8.6 U	7.53 U	9.24 U	8.42 U	8.4 U	7.93 U	7.27 U	7.4 U	7.73 U	8.09 U
Aroclor 1221		8.6 U	7.53 U	9.24 U	8.42 U	8.4 U	7.93 U	7.27 U	7.4 U	7.73 U	8.09 U
Aroclor 1232		8.6 U	7.53 U	9.24 U	8.42 U	8.4 U	7.93 U	7.27 U	7.4 U	7.73 U	8.09 U
Aroclor 1242		8.6 U	7.53 U	9.24 U	8.42 U	8.4 U	7.93 U	7.27 U	7.4 UJ	7.73 U	8.09 U
Aroclor 1248		**8.33 J**	**9.24**	**180**	8.42 U	8.4 U	7.93 U	7.27 U	**85.5 J**	7.73 U	**15.6**
Aroclor 1254		**12.6**	**8.36**	**70.8**	8.42 U	8.4 U	**9.19**	**3.11 J**	7.4 UJ	7.73 U	**6.5 J**
Aroclor 1260		8.6 U	7.53 U	**14.2 J**	8.42 U	8.4 U	**8.14**	**3.55 J**	7.4 UJ	7.73 U	8.09 U
Total PCB Aroclors (U = 0)	1000	**20.93**	**17.6**	**265**	8.42 U	8.4 U	**17.33**	**6.66**	**85.5**	7.73 U	**22.1**

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Task:		SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas
Location ID:		CS-4-041509	CS-5-041509	CS-7-041509	CS-8-041509	CS-8-041509	CS-2-042109	CS-2-042109	CS-3-042109	CS-1-042309
Sample Date:		4/15/2009	4/15/2009	4/15/2009	4/15/2009	4/15/2009	4/21/2009	4/21/2009	4/21/2009	4/23/2009
Sample ID:		CS-4-000-041509	CS-5-000-041509	CS-7-000-041509	CS-8-000-041509	CS-84-000-041509	CS-2-000-042109	CS-42-000-042109	CS-3-000-042109	CS-1-012-042309
Depth:		12 - 18 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	N	N	FD	N	FD	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene		6.97 U	143 U	6.86 U	6.86 U	6.96 U	--	--	--	--
2-Methylnaphthalene		6.97 U	143 U	6.86 U	6.86 U	**4.26 J**	--	--	--	--
Acenaphthene		6.97 U	143 U	6.86 U	**7.25**	**15.2**	--	--	--	--
Acenaphthylene		6.97 U	143 U	6.86 U	6.86 U	6.96 U	--	--	--	--
Anthracene		6.97 U	**78.7 J**	6.86 U	**10.8**	**33.9**	--	--	--	--
Benzo(a)anthracene		**7.39**	**942**	**12.5**	**60.6**	**206**	--	--	--	--
Benzo(a)pyrene		**9.24**	**994**	**19.1**	**86.4**	**290**	--	--	--	--
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		**16.7**	**2040**	**38.2**	**145**	**472**	--	--	--	--
Benzo(g,h,i)perylene		**7.71**	**585**	**17.4**	**55.7**	**175**	--	--	--	--
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--	--
Chrysene		**7.57**	**1610**	**16.7**	**72.2**	**285**	--	--	--	--
Dibenzo(a,h)anthracene		6.97 U	**181**	**4.78 J**	**14.9**	**45.4**	--	--	--	--
Fluoranthene		**10.3**	**1470**	**20.7**	**103**	**405**	--	--	--	--
Fluorene		6.97 U	143 U	6.86 U	**4.35 J**	**9.81**	--	--	--	--
Indeno(1,2,3-c,d)pyrene		**8.65**	**746**	**17.6**	**62.7**	**190**	--	--	--	--
Naphthalene		6.97 U	143 U	6.86 U	**5.07 J**	**8.3**	--	--	--	--
Phenanthrene		6.97 U	**367**	**8.06**	**42.3**	**150**	--	--	--	--
Pyrene		**9.87**	**1530**	**21.5**	**97.6**	**399**	--	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	**10.9197**	**1197**	**22.755**	**100.942**	**336.99**	--	--	--	--
PCB Aroclors (µg/kg)										
Aroclor 1016		7.85 U	7.25 U	6.7 U	7.01 U	7.08 U	8.89 UJ	8.02 UJ	8.2 UJ	8.25 UJ
Aroclor 1221		7.85 U	7.25 U	6.7 U	7.01 U	7.08 U	8.89 UJ	8.02 UJ	8.2 UJ	8.25 UJ
Aroclor 1232		7.85 U	7.25 U	6.7 U	7.01 U	7.08 U	8.89 UJ	8.02 UJ	8.2 UJ	8.25 UJ
Aroclor 1242		7.85 U	7.25 U	6.7 U	7.01 U	7.08 U	8.89 U	8.02 U	8.2 U	8.25 U
Aroclor 1248		7.85 U	**118**	**15.7**	**17.6**	**25.4**	8.89 U	8.02 U	**48.6**	**3.06 J**
Aroclor 1254		7.85 U	**44.4**	**6.73**	**4.82 J**	**8.62**	8.89 U	8.02 U	**26.4**	8.25 U
Aroclor 1260		7.85 U	**10.2**	6.7 U	7.01 U	**2.68 J**	8.89 U	8.02 U	**7.02 J**	8.25 U
Total PCB Aroclors (U = 0)	1000	7.85 U	**172.6**	**22.43**	**22.42**	**36.7**	8.89 U	8.02 U	**82.02**	**3.06**

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Task:		SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SEDSTAGINGAREAS	SedStagingAreas	SedStagingAreas
Location ID:		CS-2-042309	CS-4101-042309	CS-101-042309	CS-104-042309	CS-A-11-040909	CS-A-23-000-040909	CS-A-28-040909	CS-A-1-041409
Sample Date:		4/23/2009	4/23/2009	4/23/2009	4/23/2009	4/9/2009	4/9/2009	4/9/2009	4/14/2009
Sample ID:		CS-207-000-042309	CS-4101-000-042309	CS-101-000-042309	CS-104-000-042309	CS-A-11-000-040909	CS-A-23-000-040909	CS-A-28-000-040909	CS-A-1-000-041409
Depth:		12 - 18 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	FD	N	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene		14.5 U	--	--	--	--	--	--	--
2-Methylnaphthalene		14.5 U	--	--	--	--	--	--	--
Acenaphthene		**48.1**	--	--	--	--	--	--	--
Acenaphthylene		14.5 U	--	--	--	--	--	--	--
Anthracene		**80**	--	--	--	--	--	--	--
Benzo(a)anthracene		**400 J**	--	--	--	--	--	--	--
Benzo(a)pyrene		**477**	--	--	--	--	--	--	--
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		**803**	--	--	--	--	--	--	--
Benzo(g,h,i)perylene		**317 J**	--	--	--	--	--	--	--
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--
Chrysene		**446 J**	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		**71.7**	--	--	--	--	--	--	--
Fluoranthene		**678 J**	--	--	--	--	--	--	--
Fluorene		**29.1**	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene		**377**	--	--	--	--	--	--	--
Naphthalene		**27**	--	--	--	--	--	--	--
Phenanthrene		**335 J**	--	--	--	--	--	--	--
Pyrene		**643 J**	--	--	--	--	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	**566.33**	--	--	--	--	--	--	--
PCB Aroclors (µg/kg)									
Aroclor 1016		--	7.9 UJ	8.09 UJ	7.35 UJ	7.62 U	7.34 U	7.63 U	7.67 U
Aroclor 1221		--	7.9 UJ	8.09 UJ	7.35 UJ	7.62 U	7.34 U	7.63 U	7.67 U
Aroclor 1232		--	7.9 UJ	8.09 UJ	7.35 UJ	7.62 U	7.34 U	7.63 U	7.67 U
Aroclor 1242		--	7.9 U	8.09 U	7.35 U	7.62 U	**68.9 J**	7.63 U	7.67 U
Aroclor 1248		--	**446**	**66.8**	**66.8 J**	7.62 U	**243**	**261**	**63.6**
Aroclor 1254		--	**131**	**20.1**	**32.1 J**	7.62 U	**215**	**95.1**	**29.6**
Aroclor 1260		--	**17.3**	**4.11 J**	**5.99 J**	7.62 U	**49.6**	7.63 U	**7.56 J**
Total PCB Aroclors (U = 0)	1000	--	**594.3**	**91.01**	**104.89**	7.62 U	**576.5**	**356.1**	**100.76**

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Task:		SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas
Location ID:		CS-A-2-041409	CS-A-3-041409	CS-A-5-041409	CS-A-6-041409	CS-A-7-041409	CS-A-8-041409	CS-A-9-041409	CS-A-10-041409	CS-A-11-041409
Sample Date:		4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009
Sample ID:		CS-A-2-000-041409	CS-A-3-000-041409	CS-A-5-000-041409	CS-A-6-000-041409	CS-A-7-000-041409	CS-A-8-000-041409	CS-A-9-000-041409	CS-A-10-000-041409	CS-A-11-000-041409
Depth:		0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	N	N	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene		--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		--	--	--	--	--	--	--	--	--
Acenaphthene		--	--	--	--	--	--	--	--	--
Acenaphthylene		--	--	--	--	--	--	--	--	--
Anthracene		--	--	--	--	--	--	--	--	--
Benzo(a)anthracene		--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene		--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--	--
Chrysene		--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		--	--	--	--	--	--	--	--	--
Fluoranthene		--	--	--	--	--	--	--	--	--
Fluorene		--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene		--	--	--	--	--	--	--	--	--
Naphthalene		--	--	--	--	--	--	--	--	--
Phenanthrene		--	--	--	--	--	--	--	--	--
Pyrene		--	--	--	--	--	--	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	--	--	--	--	--	--	--	--	--
PCB Aroclors (µg/kg)										
Aroclor 1016		8.96 U	8.64 U	8.4 U	6.8 U	7.94 U	7.29 U	7.42 U	9.14 U	8.69 U
Aroclor 1221		8.96 U	8.64 U	8.4 U	6.8 U	7.94 U	7.29 U	7.42 U	9.14 U	8.69 U
Aroclor 1232		8.96 U	8.64 U	8.4 U	6.8 U	7.94 U	7.29 U	7.42 U	9.14 U	8.69 U
Aroclor 1242		8.96 U	8.64 U	8.4 U	6.8 U	7.94 U	7.29 U	7.42 U	9.14 U	8.69 U
Aroclor 1248		**18.6**	**102**	**322**	6.8 U	7.94 U	**192**	**16.4**	**107**	**95.5**
Aroclor 1254		**9.78**	**75.1**	**166**	6.8 U	7.94 U	**69.5**	**17.1**	**157**	**222**
Aroclor 1260		8.96 U	**16.2**	**28.8**	6.8 U	7.94 U	**14**	**6.64 J**	**41.2**	**108**
Total PCB Aroclors (U = 0)	1000	**28.38**	**193.3**	**516.8**	6.8 U	7.94 U	**275.5**	**40.14**	**305.2**	**425.5**

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Task:		SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas
Location ID:		CS-A-12-041409	CS-A-13-041409	CS-A-14-041409	CS-A-15-041409	CS-A-16-041409	CS-A-4-042109	CS-B-1-041409	CS-B-2-041409
Sample Date:		4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/21/2009	4/14/2009	4/14/2009
Sample ID:		CS-A-12-000-041409	CS-A-13-000-041409	CS-A-14-000-041409	CS-A-15-000-041409	CS-A-16-000-041409	CS-A-42-000-042109	CS-B-1-000-041409	CS-B-2-000-041409
Depth:		0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	0 - 6 in	0 - 6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	N	N	N	FD	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene		--	--	--	--	--	--	--	--
2-Methylnaphthalene		--	--	--	--	--	--	--	--
Acenaphthene		--	--	--	--	--	--	--	--
Acenaphthylene		--	--	--	--	--	--	--	--
Anthracene		--	--	--	--	--	--	--	--
Benzo(a)anthracene		--	--	--	--	--	--	--	--
Benzo(a)pyrene		--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene		--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--
Chrysene		--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		--	--	--	--	--	--	--	--
Fluoranthene		--	--	--	--	--	--	--	--
Fluorene		--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene		--	--	--	--	--	--	--	--
Naphthalene		--	--	--	--	--	--	--	--
Phenanthrene		--	--	--	--	--	--	--	--
Pyrene		--	--	--	--	--	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	--	--	--	--	--	--	--	--
PCB Aroclors (µg/kg)									
Aroclor 1016		29.4 U	7.32 U	7.87 U	6.63 U	6.45 U	7.93 UJ	7.33 UJ	7.74 U
Aroclor 1221		29.4 U	7.32 U	7.87 U	6.63 U	6.45 U	7.93 UJ	7.33 UJ	7.74 U
Aroclor 1232		29.4 U	7.32 U	7.87 U	6.63 U	6.45 U	7.93 UJ	7.33 UJ	7.74 U
Aroclor 1242		29.4 U	7.32 U	7.87 U	6.63 U	6.45 U	7.93 U	7.33 UJ	7.74 U
Aroclor 1248		29.4 U	7.32 U	7.87 U	**204**	6.45 U	7.93 U	**20 J**	**18.8**
Aroclor 1254		29.4 U	7.32 U	7.87 U	**81.8**	6.45 U	7.93 U	**10.2 J**	**12.8**
Aroclor 1260		29.4 U	7.32 U	7.87 U	**13.9**	6.45 U	7.93 U	**3.29 J**	**3.93 J**
Total PCB Aroclors (U = 0)	1000	29.4 U	7.32 U	7.87 U	**299.7**	6.45 U	7.93 U	**33.49**	**35.53**

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Task:		SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas	SedStagingAreas
Location ID:		CS-B-3-041409	CS-B-4-041409	CS-B-44-041409	CS-B-5-041409	CS-B-6-041409	CS-B-7-041409	CS-B-8-041409	CS-B-9-041409
Sample Date:		4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009	4/14/2009
Sample ID:		CS-B-3-000-041409	CS-B-4-000-041409	CS-B-44-000-041409	CS-B-5-000-041409	CS-B-6-000-041409	CS-B-7-000-041409	CS-B-8-000-041409	CS-B-9-000-041409
Depth:		0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	FD	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene		--	--	--	--	--	--	--	--
2-Methylnaphthalene		--	--	--	--	--	--	--	--
Acenaphthene		--	--	--	--	--	--	--	--
Acenaphthylene		--	--	--	--	--	--	--	--
Anthracene		--	--	--	--	--	--	--	--
Benzo(a)anthracene		--	--	--	--	--	--	--	--
Benzo(a)pyrene		--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene		--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--
Chrysene		--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		--	--	--	--	--	--	--	--
Fluoranthene		--	--	--	--	--	--	--	--
Fluorene		--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene		--	--	--	--	--	--	--	--
Naphthalene		--	--	--	--	--	--	--	--
Phenanthrene		--	--	--	--	--	--	--	--
Pyrene		--	--	--	--	--	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	--	--	--	--	--	--	--	--
PCB Aroclors (µg/kg)									
Aroclor 1016		7.76 U	7.44 UJ	7.24 UJ	6.52 U	7.23 U	8.13 U	8.01 U	7.72 UJ
Aroclor 1221		7.76 U	7.44 UJ	7.24 UJ	6.52 U	7.23 U	8.13 U	8.01 U	7.72 UJ
Aroclor 1232		7.76 U	7.44 UJ	7.24 UJ	6.52 U	7.23 U	8.13 U	8.01 U	7.72 UJ
Aroclor 1242		7.76 U	7.44 UJ	7.24 UJ	6.52 U	7.23 U	8.13 U	8.01 U	7.72 UJ
Aroclor 1248		**101**	**484 J**	**160 J**	**114**	**74.4**	**142**	**6.24 J**	**9.83 J**
Aroclor 1254		**51.9**	**159 J**	**66.1 J**	**41.5**	7.23 U	**83.2**	**6.27 J**	**8.62 J**
Aroclor 1260		**11.5**	**27.5 J**	**14 J**	**7.96**	7.23 U	**14.6**	8.01 U	7.72 UJ
Total PCB Aroclors (U = 0)	1000	**164.4**	**670.5**	**240.1**	**163.46**	**74.4**	**239.8**	**12.51**	**18.45**

Table 2
Sediment Staging Areas - Soil Confirmation Samples
April 2009

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

Table 3
Modified Standard Proctor Test Results

Location	Maximum Dry Density (pcf)	Optimal Moisture Content (%)
North 1 Landfill (0-8 feet bgs)	125.5	10.3
North 2 Landfill (0-3 feet bgs)	123.7	9.7
North 2 Landfill (3-6 feet bgs)[1]	98.2	14.9

1. Based on the results of a sample collected from the North 3 Landfill with a similar field characterization.

Table 4
In-Place Density and Moisture Content Results

Depth (feet bgs)	Wet Density (pcf)	Dry Density (pcf)	Moisture Content (%)	Compaction (%)
North 1 Landfill				
0	131.3	114.4	14.7	91.2
1	126.1	111.1	13.5	88.5
2	143.2	123.0	16.4	98.0
3	142.7	122.2	16.8	97.4
4.5	140.8	122.1	15.3	97.3
6.5	146.7	130.5	12.4	100+
8	137.4	117.3	17.1	93.5
North 2 Landfill				
0	131.4	115.1	14.1	93.0
1	128.8	114.3	12.6	92.4
2	123.4	110.2	12.0	89.1
3	114.1	106.7	8.7	86.3
4.5	118.0	102.7	14.9	100+
6	118.4	101.3	16.9	100+
North 3 Landfill				
0	105.1	87.5	20.2	89.1
1.5	103.1	97.0	6.3	98.8
2.5	99.8	94.4	5.7	96.1
4	107.6	101.5	6.0	100+

Table 5

Summary of ENR Sand Placement Activities

Material Placement Unit	Material Placement Dates	Primary Equipment	Volume of ENR Sand Placed (cy)
MP 1	January 28, 2009 – January 30, 2009	Sea Horse 12 cy	265
MP 2A	January 27, 2009 – January 28, 2009	Sea Horse 12 cy	1,460
MP 2B	January 28, 2009 – February 9, 2009 February 12, 2009 – February 16, 2009	Sea Horse 12 cy Telebelt	30,980
MP 2C	January 30, 2009 – January 31, 2009	Sea Horse 12 cy	1,600

Table 6
Summary of Sediment Confirmation Sampling Results

Sample ID:	AV-02-SE-090217	AV-52-SE-090217	AV-04-SE-090217	AV-05-SE-090217	AV-06-SE-090218	AV-07-SE-090218	AV-08-SE-090218	AV-09-SE-090218	AV-10-SE-090218	AV-11-SE-090218
Sample Date:	2/17/2009	2/17/2009	2/17/2009	2/17/2009	2/18/2009	2/18/2009	2/18/2009	2/18/2009	2/18/2009	2/18/2009
Sample Type:	N	FD	N	N	N	N	N	N	N	N
Conventional Parameters (pct)										
Total organic carbon	**0.183**	**0.086**	**0.258**	**0.149**	**0.148**	**1.26**	**0.121**	**0.288**	**1**	**0.146**
Total solids	**77.7**	**75.8**	**76.6**	**76.3**	**78.9**	**76**	**79.2**	**77.6**	**76.2**	**80**
PCB Aroclors (µg/kg)										
Aroclor 1016	5.82 UJ	6.17 UJ	6.14 UJ	6.04 UJ	5.92 UJ	5.68 UJ	5.71 UJ	5 U	6.21 UJ	5.67 UJ
Aroclor 1221	5.82 UJ	6.17 UJ	6.14 UJ	6.04 UJ	5.92 UJ	5.68 UJ	5.71 UJ	5 U	6.21 UJ	5.67 UJ
Aroclor 1232	5.82 UJ	6.17 UJ	6.14 UJ	6.04 UJ	5.92 UJ	5.68 UJ	5.71 UJ	5 U	6.21 UJ	5.67 UJ
Aroclor 1242	**63.9**	**58.3**	6.14 U	**18.4**	**17.9**	5.68 U	5.71 U	5 U	6.21 U	5.67 U
Aroclor 1248	**54.7 J**	**33.8**	**17.4**	**22**	**26.1**	**2.23 J**	**9.13**	**25.5 J**	**12.7**	**3.93 J**
Aroclor 1254	5.82 U	6.17 U	6.14 U	6.04 U	5.92 U	5.68 U	5.71 U	5 U	6.21 U	5.67 U
Aroclor 1260	5.82 U	6.17 U	6.14 U	6.04 U	5.92 U	5.68 U	5.71 U	5 U	6.21 U	5.67 U
Total PCB (U = 0)	**118.6**	**92.1**	**17.4**	**40.4**	**44**	**2.23**	**9.13**	**25.5**	**12.7**	**3.93**

Notes:

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

N = Normal Field Sample FD = Field Duplicate

Level III validation applied

Table 7
Effluent Limitations for Outfall 001

Parameter	Average Monthly[1]	Maximum Daily[2]
Fluoride[3]	70.0 lb/day	154 lb/day
Aluminum[3]	14.0 lb/day	40.0 lb/day
TSS	172 lb/day	383 lb/day
Oil and Grease	5 mg/L	10 mg/L
pH[4]	Daily minimum is equal to or greater than 6.0 and the daily maximum is less than or equal to 9.0	

Notes:

1. The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during the month.
2. The maximum daily effluent limitation is defined as the highest allowable daily discharge.
3. Aluminum and fluoride were not significant contaminants at the Site. These contaminants are pertinent to the Evergreen Aluminum smelter.
4. Indicates the ranges of permitted values. The pH is continuously monitored, excursions between 5.0 and 6.0, or 9.0 and 10.0 are not considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month or the permittee can show to Ecology's satisfaction that the excursion was not caused by inorganic industrial contributions. Any excursion below 5.0 or above 10.0 is a violation.

Table 8
UST Gravel Characterization Sample
November 2008

Task:		**UST**
Location ID:		**UST-S1**
Sample ID:		**UST-S1-112008**
Sample Date:		**11/20/2008**
Matrix:		**GRAVEL**
Sample Type:		**N**
Sample Designation:	**Site Cleanup Level**	**CH**
Total Petroleum Hydrocarbons (mg/kg)		
Diesel Range Hydrocarbons	2000	21.5 U
Residual Range Hydrocarbons	4000	42.9 U

Notes:

Detected concentration is greater than site claeanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CH = Characterization

Table 9
Underground Storage Tank Removal Action Confirmation Samples
December 2008

Task:		UST	UST	UST	UST	UST	UST	UST	UST	UST
Location ID:		UST1-C1	UST1-C2	UST1-C3	UST1-C4	UST2-C1	UST2-C2	UST2-C3	UST2-C4	UST2-C4
Sample ID:		UST1-C1-121608	UST1-C2-121608	UST1-C3-121608	UST1-C4-121608	UST2-C1-121608	UST2-C2-121608	UST2-C3-121608	UST2-C4-121608	UST2-C42-121608
Sample Date:		12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008
Depth:		15 ft	12 ft	12 ft	12 ft	15 ft	12 ft	12 ft	12 ft	12 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)										
Aroclor 1016		8.4 U	8.47 U	8.29 U	10.4 UJ	11 U	10.4 U	9.41 U	10.3 U	9.88 U
Aroclor 1221		8.4 U	8.47 U	8.29 U	10.4 UJ	11 U	10.4 U	9.41 U	10.3 U	9.88 U
Aroclor 1232		8.4 U	8.47 U	8.29 U	10.4 UJ	11 U	10.4 U	9.41 U	10.3 U	9.88 U
Aroclor 1242		8.4 U	8.47 U	8.29 U	10.4 UJ	11 U	10.4 U	9.41 U	10.3 U	9.88 U
Aroclor 1248		8.4 U	**17.9**	**25.2**	10.4 UJ	11 U	10.4 U	**60.1**	**169**	9.88 U
Aroclor 1254		8.4 U	**27.6**	**40.5**	**36.8 J**	**19.3**	**19.8**	**83**	**99.5**	**12.4**
Aroclor 1260		8.4 U	**15.1**	**11.8**	10.4 UJ	11 U	10.4 U	9.41 U	10.3 U	9.88 U
Aroclor 1268		--	--	--	--	**17.6**	--	--	--	--
Total PCB Aroclors (U = 0)	1000	8.4 U	**60.6**	**77.5**	**36.8**	**36.9**	**19.8**	**143.1**	**268.5**	**12.4**
Total Petroleum Hydrocarbons (mg/kg)										
Diesel Range Hydrocarbons	2000	30.8 U	29 U	**38.9**	23.7 UJ	25.6 UJ	28 U	29.9 U	34.9 U	23.7 U
Residual Range Hydrocarbons	4000	61.7 U	58 U	52.6 U	47.4 U	51.2 U	56.1 U	59.8 U	69.9 U	47.4 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 9
Underground Storage Tank Removal Action Confirmation Samples
December 2008

Task:		UST	UST	UST	UST	UST	UST	UST	UST	UST
Location ID:		UST3-C1	UST3-C2	UST3-C3	UST3-C4	UST3-C4	UST3-C5	UST4-C1	UST4-C2	UST4-C3
Sample ID:		UST3-C1-121608	UST3-C2-121608	UST3-C3-121608	UST3-C4-121608	UST3-C42-121608	UST3-C5-121608	UST4-C1-121608	UST4-C2-121608	UST4-C3-121608
Sample Date:		12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008	12/16/2008
Depth:		15 ft	12 ft	12 ft	12 ft	12 ft	12 ft	15 ft	12 ft	12 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)										
Aroclor 1016		55.4 UJ	42.3 UJ	8.42 U	10.9 U	42.2 UJ	9.6 U	9.99 UJ	8.93 UJ	8.04 UJ
Aroclor 1221		55.4 UJ	42.3 UJ	8.42 U	10.9 U	42.2 UJ	9.6 U	9.99 UJ	8.93 UJ	8.04 UJ
Aroclor 1232		55.4 UJ	42.3 UJ	8.42 U	10.9 U	42.2 UJ	9.6 U	9.99 UJ	8.93 UJ	8.04 UJ
Aroclor 1242		55.4 UJ	42.3 UJ	8.42 U	10.9 U	42.2 UJ	9.6 U	9.99 UJ	8.93 UJ	8.04 UJ
Aroclor 1248		55.4 UJ	42.3 UJ	8.42 U	**189 J**	42.2 UJ	9.6 U	**174 J**	8.93 UJ	8.04 UJ
Aroclor 1254		**71.7 J**	42.3 UJ	8.42 U	**229 J**	42.2 UJ	9.6 U	9.99 UJ	**27.7 J**	**8.79 J**
Aroclor 1260		55.4 UJ	42.3 UJ	**11.5**	10.9 U	42.2 UJ	9.6 U	9.99 UJ	8.93 UJ	8.04 UJ
Aroclor 1268		--	--	--	--	--	--	--	--	--
Total PCB Aroclors (U = 0)	1000	**71.7**	42.3 UJ	**11.5**	**418**	42.2 UJ	9.6 U	**174**	**27.7**	**8.79**
Total Petroleum Hydrocarbons (mg/kg)										
Diesel Range Hydrocarbons	2000	**384 J**	**57.8 J**	24.7 UJ	**74.8**	**41.9 J**	30.8 U	**318 J**	22.3 U	21.8 U
Residual Range Hydrocarbons	4000	**94.9**	47.4 U	49.4 U	**119**	49.4 U	61.6 U	70.5 U	44.7 U	43.7 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 9
Underground Storage Tank Removal Action Confirmation Samples
December 2008

Task:		UST	UST	UST
Location ID:		UST4-C4	UST4-C4	UST4-C5
Sample ID:		UST4-C4-121608	UST4-C42-121608	UST4-C5-121608
Sample Date:		12/16/2008	12/16/2008	12/16/2008
Depth:		12 ft	12 ft	12 ft
Matrix:		SO	SO	SO
Sample Type:		N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO
PCB Aroclors (µg/kg)				
Aroclor 1016		40.4 UJ	7.65 UJ	9.37 UJ
Aroclor 1221		40.4 UJ	7.65 UJ	9.37 UJ
Aroclor 1232		40.4 UJ	7.65 UJ	9.37 UJ
Aroclor 1242		40.4 UJ	7.65 UJ	9.37 UJ
Aroclor 1248		**60.3 J**	7.65 UJ	**38 J**
Aroclor 1254		40.4 UJ	**33.7 J**	**21.5 J**
Aroclor 1260		40.4 UJ	7.65 UJ	9.37 UJ
Aroclor 1268		--	--	--
Total PCB Aroclors (U = 0)	1000	**60.3**	**33.7**	**59.5**
Total Petroleum Hydrocarbons (mg/kg)				
Diesel Range Hydrocarbons	2000	**315 J**	22.5 UJ	25.9 UJ
Residual Range Hydrocarbons	4000	**53.1**	45 U	51.8 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 10
Soluble Oil Area Confirmation Samples
November 2008

Task:		Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil
Location ID:		SSO-C1	SSO-C2	SSO-C3	SSO-C4	SSO-C5	SSO-C5	SSO-C6	SSO-C7	SSO-C8
Sample ID:		SSO-C1-110308	SSO-C2-110308	SSO-C3-110308	SSO-C4-110308	SSO-C45-110508	SSO-C5-110508	SSO-C6-111808	SSO-C7-110508	SSO-C8-110508
Sample Date:		11/3/2008	11/3/2008	11/3/2008	11/3/2008	11/5/2008	11/5/2008	11/18/2008	11/5/2008	11/5/2008
Depth:		9.5 - 10 ft	9.5 - 10 ft	9.5 - 10 ft	9.5 - 10 ft	10.5 - 11 ft	10.5 - 11 ft	12 - 12.5 ft	10 - 10.5 ft	10 - 10.5 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	FD	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)										
Aroclor 1016		85.5 U	93 U	8.2 U	179 UJ	144 U	138 U	233 U	99.3 U	127 U
Aroclor 1221		85.5 U	93 U	8.2 U	179 UJ	144 U	138 U	233 U	99.3 U	127 U
Aroclor 1232		85.5 U	93 U	15 U	179 UJ	144 U	138 U	233 U	99.3 U	127 U
Aroclor 1242		85.5 U	93 U	8.2 U	179 U	144 U	138 U	233 U	99.3 U	127 U
Aroclor 1248		**4880**	**3740**	**414**	**5620**	**1120**	**3870**	**7030**	**900**	**1870**
Aroclor 1254		85.5 U	93 U	**302**	179 U	144 U	138 U	233 U	**722**	**1250**
Aroclor 1260		85.5 U	93 U	8.2 U	179 U	144 U	138 U	233 U	99.3 U	127 U
Total PCB Aroclors (U = 0)	10000	**4880**	**3740**	**716**	**5620**	**1120**	**3870**	**7030**	**1622**	**3120**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 10
Soluble Oil Area Confirmation Samples
November 2008

Task:		Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil
Location ID:		SSO-C9	SS0-C10	SSO-C11	SSO-C11	SSO-C12	SSO-C13	SSO-C14	SSO-C15
Sample ID:		SSO-C9-110508	SSO-C10-110608	SSO-C11-110708	SSO-C411-110708	SSO-C12-110708	SSO-C13-110708	SSO-C14-111808	SSO-C15-110708
Sample Date:		11/5/2008	11/6/2008	11/7/2008	11/7/2008	11/7/2008	11/7/2008	11/18/2008	11/7/2008
Depth:		10 - 10.5 ft	7 - 7.5 ft	7 - 7.5 ft	7 - 7.5 ft	7 - 7.5 ft	8 - 8.5 ft	10 - 10.5 ft	8 - 8.5 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	FD	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		79.2 U	91.6 U	95.3 U	92.3 U	104 U	99.1 U	12 U	124 U
Aroclor 1221		79.2 U	91.6 U	95.3 U	92.3 U	104 U	99.1 U	12 U	124 U
Aroclor 1232		79.2 U	91.6 U	95.3 U	92.3 U	104 U	99.1 U	12 U	124 U
Aroclor 1242		79.2 U	91.6 U	95.3 U	92.3 U	104 U	99.1 U	12 U	124 U
Aroclor 1248		79.2 U	91.6 U	95.3 U	92.3 U	104 U	99.1 U	**15.6**	124 U
Aroclor 1254		**461 J**	91.6 U	95.3 U	92.3 U	104 U	99.1 U	12 U	124 U
Aroclor 1260		79.2 U	91.6 U	95.3 U	92.3 U	104 U	99.1 U	12 U	124 U
Total PCB Aroclors (U = 0)	10000	**461**	91.6 U	95.3 U	92.3 U	104 U	99.1 U	**15.6**	124 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 10
Soluble Oil Area Confirmation Samples
November 2008

Task:		Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil
Location ID:		SSO-C16	SSO-C17	SSO-C18	SSO-C19	SSO-C20	SSO-C20	SSO-C21	SSO-C21
Sample ID:		SSO-C16-110708	SSO-C17-111008	SSO-C18-111008	SSO-C19-111008	SSO-C20-111008	SSO-C420-111008	SSO-C21-111008	SSO-S21-110408
Sample Date:		11/7/2008	11/10/2008	11/10/2008	11/10/2008	11/10/2008	11/10/2008	11/10/2008	11/4/2008
Depth:		9 - 9.5 ft	7 - 7.5 ft	8 - 8.5 ft	8 - 8.5 ft	9.5 - 10 ft	9.5 - 10 ft	9.5 - 10 ft	7 - 7.5 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	FD	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		111 U	108 U	127 U	94.8 U	101 U	98.7 U	95.3 U	98.4 U
Aroclor 1221		111 U	108 U	127 U	94.8 U	101 U	98.7 U	95.3 U	98.4 U
Aroclor 1232		111 U	108 U	127 U	94.8 U	101 U	98.7 U	95.3 U	98.4 U
Aroclor 1242		111 U	108 U	127 U	94.8 U	101 U	98.7 U	95.3 U	98.4 U
Aroclor 1248		**2490**	**393**	127 U	**1830**	101 U	98.7 U	**160**	**1470**
Aroclor 1254		111 U	**393**	127 U	94.8 U	101 U	98.7 U	95.3 U	98.4 U
Aroclor 1260		111 U	108 U	127 U	94.8 U	101 U	98.7 U	95.3 U	98.4 U
Total PCB Aroclors (U = 0)	10000	**2490**	**786**	127 U	**1830**	101 U	98.7 U	**160**	**1470**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 10
Soluble Oil Area Confirmation Samples
November 2008

Task:		Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil
Location ID:		SSO-C22	SSO-C22	SSO-C22	SSO-C23	SSO-C23	SSO-C24	SSO-C24	SSO-C25
Sample ID:		SSO-C22-111008	SSO-S22-110408	SSO-S422-110408	SSO-C23-111008	SSO-S23-110408	SSO-C24-111808	SSO-S24-110408	SSO-C25-111808
Sample Date:		11/10/2008	11/4/2008	11/4/2008	11/10/2008	11/4/2008	11/18/2008	11/4/2008	11/18/2008
Depth:		9.5 - 10 ft	7 - 7.5 ft	7 - 7.5 ft	9.5 - 10 ft	7 - 7.5 ft	10.5 - 11 ft	7 - 7.5 ft	10.5 - 11 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	FD	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		104 U	90.2 U	82 U	98.9 U	90.8 U	12.3 U	9.28 U	50 U
Aroclor 1221		104 U	90.2 U	82 U	98.9 U	90.8 U	12.3 U	9.28 U	50 U
Aroclor 1232		104 U	90.2 U	82 U	98.9 U	90.8 U	12.3 U	9.28 U	50 U
Aroclor 1242		104 U	90.2 U	82 U	98.9 U	90.8 U	12.3 U	9.28 U	50 U
Aroclor 1248		104 U	**1600**	**956**	**240**	**616**	12.3 U	**185**	50 U
Aroclor 1254		104 U	90.2 U	82 U	**117**	90.8 U	12.3 U	9.28 U	50 U
Aroclor 1260		104 U	90.2 U	82 U	98.9 U	90.8 U	12.3 U	9.28 U	12.4 U
Total PCB Aroclors (U = 0)	10000	104 U	**1600**	**956**	**357**	**616**	12.3 U	**185**	50 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 10
Soluble Oil Area Confirmation Samples
November 2008

Task:		Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil
Location ID:		SSO-C26	SSO-C27	SSO-C28	SSO-C29	SSO-C30	SSO-C31	SSO-C31	SSO-C32
Sample ID:		SSO-C26-111008	SSO-C27-111808	SSO-C28-111008	SSO-C29-111208	SSO-C30-111208	SSO-C31-111808	SSO-C431-111208	SSO-C32-111208
Sample Date:		11/10/2008	11/18/2008	11/10/2008	11/12/2008	11/12/2008	11/18/2008	11/12/2008	11/12/2008
Depth:		9.5 - 10 ft	10.5 - 11 ft	9.5 - 10 ft	9.5 - 10 ft	9.5 - 10 ft	8 - 8.5 ft	7.5 - 8 ft	7.5 - 8 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	FD	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		512 U	9.79 UJ	10 U	59.4 U	58.7 U	128 U	309 U	61.3 U
Aroclor 1221		512 U	9.79 UJ	10 U	59.4 U	58.7 U	128 U	309 U	61.3 U
Aroclor 1232		512 U	9.79 UJ	10 U	59.4 U	58.7 U	128 U	309 U	61.3 U
Aroclor 1242		512 U	9.79 UJ	10 U	59.4 U	58.7 U	128 U	309 U	61.3 U
Aroclor 1248		**5790**	**91.6 J**	**595**	**1910**	**306**	**1170**	**7100**	**936**
Aroclor 1254		512 U	9.79 UJ	10 U	59.4 U	**134**	128 U	309 U	61.3 U
Aroclor 1260		512 U	9.79 UJ	10 U	59.4 U	58.7 U	128 U	309 U	61.3 U
Total PCB Aroclors (U = 0)	10000	**5790**	**91.6**	**595**	**1910**	**440**	**1170**	**7100**	**936**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 10
Soluble Oil Area Confirmation Samples
November 2008

Task:		Soluble Oil Soil	Soluble Oil Soil	Soluble Oil Soil
Location ID:		SSO-C33	SSO-C34	SSO-C34
Sample ID:		SSO-C33-111208	SSO-C34-111808	SSO-C434-111808
Sample Date:		11/12/2008	11/18/2008	11/18/2008
Depth:		7.5 - 8 ft	8 - 8.5 ft	8 - 8.5 ft
Matrix:		SO	SO	SO
Sample Type:		N	N	FD
Sample Designation:	Site Cleanup Level	CO	CO	CO
PCB Aroclors (µg/kg)				
Aroclor 1016		67.4 U	12.9 U	12.7 U
Aroclor 1221		67.4 U	12.9 U	12.7 U
Aroclor 1232		67.4 U	12.9 U	12.7 U
Aroclor 1242		67.4 U	12.9 U	12.7 U
Aroclor 1248		**659**	**76.7 J**	**102 J**
Aroclor 1254		67.4 U	12.9 U	12.7 U
Aroclor 1260		67.4 U	12.9 U	12.7 U
Total PCB Aroclors (U = 0)	10000	**659**	**76.7**	**102**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 11
Facility Demolition Vanexco Confirmation Soil Samples

Task:		Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils
Location ID:		S1	S1	S2	S3	S4	S5	S5	S5A	S5B	S5C
Sample ID:		S-1-000-032609	S-41-000-032609	S-2-000-032609	S-3-000-032609	S-4-000-032609	S-5-000-032609	S-5-012-032609	S-5A-012-032609	S-5B-012-032609	S-5C-012-032609
Sample Date:		3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009
Depth:		0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	FD	N	N	N	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene		--	--	--	--	--	--	**83.3 J**	437 U	77.7 U	**18.1**
2-Methylnaphthalene		--	--	--	--	--	--	**114 J**	**249 J**	77.7 U	**22.2**
Acenaphthene		--	--	--	--	--	--	**524**	**1750**	**139**	**114**
Acenaphthylene		--	--	--	--	--	--	155 U	437 U	77.7 U	15.7 U
Anthracene		--	--	--	--	--	--	**963**	**2760**	**241**	**198**
Benzo(a)anthracene		--	--	--	--	--	--	**2040**	**6800**	**364**	**436**
Benzo(a)pyrene		--	--	--	--	--	--	**2010**	**7300**	**338**	**448**
Benzo(b,k)fluoranthene		--	--	--	--	--	--	**3180**	**11600**	**523**	**671**
Benzo(g,h,i)perylene		--	--	--	--	--	--	**1020**	**3670**	**168**	**218**
Chrysene		--	--	--	--	--	--	**2540**	**9350**	**425**	**535**
Dibenzo(a,h)anthracene		--	--	--	--	--	--	**272**	**969**	**54.6 J**	**58.5**
Fluoranthene		--	--	--	--	--	--	**5670**	**20100**	**935**	**1100**
Fluorene		--	--	--	--	--	--	**416**	**1200**	**107**	**83**
Indeno(1,2,3-c,d)pyrene		--	--	--	--	--	--	**1200**	**4320**	**205**	**246**
Naphthalene		--	--	--	--	--	--	**256**	**637**	**89.9**	**46**
Phenanthrene		--	--	--	--	--	--	**4270**	**14000**	**868**	**803**
Pyrene		--	--	--	--	--	--	**5390**	**19100**	**891**	**1070**
Total cPAH TEF (7 minimum) (U = 0)	18000	--	--	--	--	--	--	**2386.6**	**8602.4**	**404.61**	**527.4**
PCB Aroclors (µg/kg)											
Aroclor 1016		8.72 U	7.79 U	8.38 U	9.28 U	8.65 U	8.69 U	8.74 U	10.6 U	9.34 U	9.11 U
Aroclor 1221		8.72 U	7.79 U	8.38 U	9.28 U	8.65 U	8.69 U	8.74 U	10.6 U	9.34 U	9.11 U
Aroclor 1232		8.72 U	7.79 U	8.38 U	9.28 U	8.65 U	8.69 U	8.74 U	10.6 U	9.34 U	9.11 U
Aroclor 1242		8.72 U	7.79 U	8.38 U	9.28 U	8.65 U	8.69 U	8.74 U	10.6 U	9.34 U	9.11 U
Aroclor 1248		17.4 U	13.2 U	**103**	18.6 U	8.65 U	**36.7**	**143 J**	**221 J**	18.7 U	**35.2 J**
Aroclor 1254		74.1 U	52.2 U	**93.8**	**12.6**	**3.75 J**	**42.7**	**209 J**	**374 J**	**13.8 J**	**31.9 J**
Aroclor 1260		**84.9**	**50.5**	**96**	**8.35 J**	**6.1 J**	**9.37**	**40.2**	**69.2**	**6.54 J**	**9.71**
Total PCB Aroclors (U = 0)	1000	**84.9**	**50.5**	**292.8**	**20.95**	**9.85**	**88.77**	**392.2**	**664.2**	**20.34**	**76.81**

Table 11
Facility Demolition Vanexco Confirmation Soil Samples

Task:		Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils	Vanexco Soils
Location ID:		S5D	S6	S6	S6A	S7	S7	S7A	S8	S9	S10
Sample ID:		S-5D-000-032609	S-6-000-032609	S-6-012-032609	S-6A-000-032609	S-7-000-032609	S-7-012-032609	S-7A-000-032609	S-8-000-032609	S-9-000-032609	S-10-000-032609
Sample Date:		3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009	3/26/2009
Depth:		0 - 6 in	0 - 6 in	12 - 18 in	0 - 6 in	0 - 6 in	12 - 18 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	N	N	N	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene		**66.5 J**	--	**325**	301 U	--	**34.9**	**202 J**	--	--	--
2-Methylnaphthalene		**95.5**	--	**465**	301 U	--	**36.3**	**271 J**	--	--	--
Acenaphthene		**516**	--	**2920**	**995**	--	**353**	**1630 J**	--	--	--
Acenaphthylene		83.5 U	--	322 U	301 U	--	30.3 U	174 U	--	--	--
Anthracene		**867**	--	**5200**	**1800**	--	**433**	**2690**	--	--	--
Benzo(a)anthracene		**1970**	--	**8950**	**3930**	--	**1120**	**5190**	--	--	--
Benzo(a)pyrene		**2270**	--	**8700**	**4050**	--	**1330**	**5340**	--	--	--
Benzo(b,k)fluoranthene		**3430**	--	**13000**	**6140**	--	**2120**	**7990**	--	--	--
Benzo(g,h,i)perylene		**1190**	--	**3930**	**1850**	--	**758**	**2540**	--	--	--
Chrysene		**2470**	--	**10500**	**5080**	--	**1480**	**6230**	--	--	--
Dibenzo(a,h)anthracene		**296**	--	**1170**	**561**	--	**178**	**703 J**	--	--	--
Fluoranthene		**5400**	--	**23900**	**11100**	--	**3360**	**14300**	--	--	--
Fluorene		**410**	--	**2170**	**729**	--	**191**	**1190 J**	--	--	--
Indeno(1,2,3-c,d)pyrene		**1310**	--	**4680**	**2280**	--	**833**	**2950**	--	--	--
Naphthalene		**219**	--	**1110**	**384**	--	**76.3**	**687 J**	--	--	--
Phenanthrene		**3890**	--	**20400**	**8250**	--	**2320**	**11400**	--	--	--
Pyrene		**5020**	--	**22400**	**10300**	--	**3030**	**13300**	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	**2652.3**	--	**10285**	**4777.9**	--	**1557.9**	**6286.6**	--	--	--
PCB Aroclors (µg/kg)											
Aroclor 1016		9.9 UJ	8.93 UJ	--	--	8.34 U	--	--	8.67 U	7.9 U	8.59 U
Aroclor 1221		9.9 UJ	8.93 UJ	--	--	8.34 U	--	--	8.67 U	7.9 U	8.59 U
Aroclor 1232		9.9 UJ	8.93 UJ	--	--	8.34 U	--	--	8.67 U	7.9 U	8.59 U
Aroclor 1242		9.9 UJ	8.93 UJ	--	--	8.34 U	--	--	8.67 U	7.9 U	8.59 U
Aroclor 1248		**63.7 J**	**33.3 J**	--	--	12.5 U	--	--	8.67 U	7.9 U	**29.7**
Aroclor 1254		**129 J**	**40.1 J**	--	--	**18.9**	--	--	8.67 U	7.9 U	**29**
Aroclor 1260		**20 J**	**10.9 J**	--	--	**5.32 J**	--	--	8.67 U	7.9 U	**6.33 J**
Total PCB Aroclors (U = 0)	1000	**212.7**	**84.3**	--	--	**24.22**	--	--	8.67 U	7.9 U	**65.03**

Table 11
Facility Demolition Vanexco Confirmation Soil Samples

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

Table 12
Facility Demolition Crushed Concrete Sample Results
December 2008 to April 2009

Task:			Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete
Location ID:			CC1	CC1	CC2	CC2	CC3	CC3	CC4
Sample ID:	Site Cleanup Level		CRCONC-C1-123108	CRCONC-C41-123108	CRCONC-C2-010709	CRCONC-C42-010709	CRCONC-C3-011409	CRCONC-C43-011409	CR CONC-C4-011509
Sample Date:			12/31/2008	12/31/2008	1/7/2009	1/7/2009	1/14/2009	1/14/2009	1/15/2009
Matrix:	Industrial Use Areas	Unrestricted Use Areas	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete
Sample Type:			N	FD	N	FD	N	FD	N
PCB Aroclors (µg/kg)									
Aroclor 1016			9.52 U	9.61 U	10.6 U	7.46 U	8.53 U	8.48 U	42.4 U
Aroclor 1221			9.52 U	9.61 U	10.6 U	7.46 U	8.53 U	8.48 U	42.4 U
Aroclor 1232			9.52 U	9.61 U	10.6 U	7.46 U	8.53 U	8.48 U	42.4 U
Aroclor 1242			9.52 U	9.61 U	10.6 U	7.46 U	8.53 U	8.48 U	42.4 U
Aroclor 1248			**278**	**217**	**130**	**93.6**	**187**	**177**	**913 J**
Aroclor 1254			9.52 U	9.61 U	**92.3**	**51**	**130**	**117**	42.4 U
Aroclor 1260			9.52 U	9.61 U	10.6 U	7.46 U	8.53 U	8.48 U	42.4 U
Total PCB Aroclors (U = 0)	10,000	1,000	**278**	**217**	**222.3**	**144.6**	**317**	**294**	**913**

Notes:

Detected concentration is greater than lowest site cleanup level (1,000 µg/kg)

Detected concentration is greater than highest site cleanup level (10,000 µg/kg)

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Sample Type: N = Normal Field Sample FD = Field Duplicate

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 12
Facility Demolition Crushed Concrete Sample Results
December 2008 to April 2009

Task:			Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete
Location ID:			CC4	CC4	CC4	CC4	CC4	CC4	CC4
Sample ID:	Site Cleanup Level		CR CONC-C44-011509	CRCONC-C44A-012409	CRCONC-C4A-012409	CRCONC-C4B-012409	CRCONC-C4C-012409	CRCONC-C4D-012409	CRCONC-C4E-012409
Sample Date:			1/15/2009	1/24/2009	1/24/2009	1/24/2009	1/24/2009	1/24/2009	1/24/2009
Matrix:	Industrial Use Areas	Unrestricted Use Areas	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete
Sample Type:			FD	FD	N	N	N	N	N
PCB Aroclors (µg/kg)									
Aroclor 1016			41.5 U	35.8 U	37.6 U	38 U	45.9 U	36.7 U	41.3 U
Aroclor 1221			41.5 U	35.8 U	37.6 U	38 U	45.9 U	36.7 U	41.3 U
Aroclor 1232			41.5 U	35.8 U	37.6 U	38 U	45.9 U	36.7 U	41.3 U
Aroclor 1242			41.5 U	35.8 U	37.6 U	38 U	45.9 U	36.7 U	41.3 U
Aroclor 1248			**759 J**	**751**	**692**	**1020**	**1230**	**1420**	**1660**
Aroclor 1254			41.5 U	35.8 U	37.6 U	38 U	45.9 U	36.7 U	41.3 U
Aroclor 1260			41.5 U	35.8 U	37.6 U	38 U	45.9 U	36.7 U	41.3 U
Total PCB Aroclors (U = 0)	10,000	1,000	**759**	**751**	**692**	**1020**	**1230**	**1420**	**1660**

Notes:

Detected concentration is greater than lowest site cleanup level (1,000 µg/kg)

Detected concentration is greater than highest site cleanup level (10,000 µg/kg)

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Sample Type: N = Normal Field Sample FD = Field Duplicate

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 12
Facility Demolition Crushed Concrete Sample Results
December 2008 to April 2009

Task:			Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete
Location ID:			CC4	CC4	CC4	CC4	CC4	CC5	CC5
Sample ID:	Site Cleanup Level		CRCONC-C4F-012409	CRCONC-C4G-012409	CRCONC-C4H-012409	CRCONC-C4I-012409	CRCONC-C4J-012409	CRCONC-C45-012009	CRCONC-C5-012009
Sample Date:			1/24/2009	1/24/2009	1/24/2009	1/24/2009	1/24/2009	1/20/2009	1/20/2009
Matrix:	Industrial Use Areas	Unrestricted Use Areas	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete
Sample Type:			N	N	N	N	N	FD	N
PCB Aroclors (µg/kg)									
Aroclor 1016			41.4 U	40.9 U	42.2 U	44.2 U	44.5 U	31.3 U	7.23 U
Aroclor 1221			41.4 U	40.9 U	42.2 U	44.2 U	44.5 U	31.3 U	7.23 U
Aroclor 1232			41.4 U	40.9 U	42.2 U	44.2 U	44.5 U	31.3 U	7.23 U
Aroclor 1242			41.4 U	40.9 U	42.2 U	44.2 U	44.5 U	31.3 U	7.23 U
Aroclor 1248			**1550**	**1040**	**1150**	**808**	**1060**	**566 J**	**258 J**
Aroclor 1254			41.4 U	40.9 U	42.2 U	44.2 U	44.5 U	31.3 U	7.23 U
Aroclor 1260			41.4 U	40.9 U	42.2 U	44.2 U	44.5 U	31.3 U	7.23 U
Total PCB Aroclors (U = 0)	10,000	1,000	**1550**	**1040**	**1150**	**808**	**1060**	**566**	**258**

Notes:

Detected concentration is greater than lowest site cleanup level (1,000 µg/kg)

Detected concentration is greater than highest site cleanup level (10,000 µg/kg)

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Sample Type: N = Normal Field Sample FD = Field Duplicate

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 12
Facility Demolition Crushed Concrete Sample Results
December 2008 to April 2009

Task:			Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete
Location ID:			CC6	CC6	CC7	CC7	CC8	CC8	CC9
Sample ID:	Site Cleanup Level		CRCONC-C46-012909	CRCONC-C6-012909	CRCONC-C47-020209	CRCONC-C7-020209	CRCONC-C48-020909	CRCONC-C8-020909	CRCONC-C49-021309
Sample Date:			1/29/2009	1/29/2009	2/2/2009	2/2/2009	2/9/2009	2/9/2009	2/13/2009
Matrix:	Industrial Use Areas	Unrestricted Use Areas	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete
Sample Type:			FD	N	FD	N	FD	N	FD
PCB Aroclors (µg/kg)									
Aroclor 1016			44 U	37.8 UJ	38.6 U	36.8 U	81 U	82.1 U	44 UJ
Aroclor 1221			44 U	37.8 UJ	38.6 U	36.8 U	81 U	82.1 U	44 UJ
Aroclor 1232			44 U	37.8 UJ	38.6 U	36.8 U	81 U	82.1 U	44 UJ
Aroclor 1242			44 U	37.8 UJ	38.6 U	36.8 U	81 U	82.1 U	44 U
Aroclor 1248			**551**	**347 J**	**441 J**	**540 J**	**2180**	**1990**	**661**
Aroclor 1254			44 U	37.8 UJ	38.6 U	36.8 U	**1510**	**1380**	**458**
Aroclor 1260			44 U	37.8 UJ	38.6 U	36.8 U	81 U	82.1 U	44 U
Total PCB Aroclors (U = 0)	10,000	1,000	**551**	**347**	**441**	**540**	**3690**	**3370**	**1119**

Notes:

Detected concentration is greater than lowest site cleanup level (1,000 µg/kg)

Detected concentration is greater than highest site cleanup level (10,000 µg/kg)

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Sample Type: N = Normal Field Sample FD = Field Duplicate

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 12
Facility Demolition Crushed Concrete Sample Results
December 2008 to April 2009

Task:			Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete
Location ID:			CC9	CC10	CC10	CC11	CC11	CC12	CC12
Sample ID:	Site Cleanup Level		CRCONC-C9-021309	CRCONC-C10-022009	CRCONC-C410-022009	CRCONC-C11-022709	CRCONC-C411-022709	CRCONC-C12-031109	CRCONC-C412-031109
Sample Date:			2/13/2009	2/20/2009	2/20/2009	2/27/2009	2/27/2009	3/11/2009	3/11/2009
Matrix:	Industrial Use	Unrestricted	Concrete	ST	ST	Concrete	FD	Concrete	FD
Sample Type:	Areas	Use Areas	N	N	FD	N	FD	N	FD
PCB Aroclors (µg/kg)									
Aroclor 1016			40.5 U	38.2 UJ	37.6 UJ	38 UJ	37.5 UJ	39.2 U	37.4 U
Aroclor 1221			40.5 U	38.2 UJ	37.6 UJ	38 UJ	37.5 UJ	39.2 U	37.4 U
Aroclor 1232			40.5 U	38.2 UJ	37.6 UJ	38 UJ	37.5 UJ	39.2 U	37.4 U
Aroclor 1242			40.5 U	38.2 U	37.6 U	38 U	37.5 U	39.2 U	37.4 U
Aroclor 1248			**802**	**288 J**	**214 J**	**595**	**1070**	**539**	**1110 J**
Aroclor 1254			**534**	38.2 U	37.6 U	38 U	37.5 U	39.2 U	37.4 U
Aroclor 1260			40.5 U	38.2 U	37.6 U	38 U	37.5 U	39.2 U	37.4 U
Total PCB Aroclors (U = 0)	10,000	1,000	**1336**	**288**	**214**	**595**	**1070**	**539**	**1110**

Notes:

Detected concentration is greater than lowest site cleanup level (1,000 µg/kg)

Detected concentration is greater than highest site cleanup level (10,000 µg/kg)

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Sample Type: N = Normal Field Sample FD = Field Duplicate

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 12
Facility Demolition Crushed Concrete Sample Results
December 2008 to April 2009

Task:			Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete
Location ID:			CC13	CC13	CC14	CC14	CC15	CC16	CC16
Sample ID:	Site Cleanup Level		CRCONC-C13-031709	CRCONC-C413-031709	CRCONC-C14-032309	CRCONC-C414-032309	CRCONC-C15-040209	CRCONC-C16-041509	CRCONC-C416-041509
Sample Date:			3/17/2009	3/17/2009	3/23/2009	3/23/2009	4/2/2009	4/15/2009	4/15/2009
Matrix:	Industrial Use Areas	Unrestricted Use Areas	Concrete	FD	ST	ST	ST	Concrete	Concrete
Sample Type:			N	FD	N	FD	N	N	FD
PCB Aroclors (µg/kg)									
Aroclor 1016			43.4 U	41.7 U	8.7 U	8.35 U	8.5 U	35.8 U	34.8 U
Aroclor 1221			43.4 U	41.7 U	8.7 U	8.35 U	8.5 U	35.8 U	34.8 U
Aroclor 1232			43.4 U	41.7 U	8.7 U	8.35 U	8.5 U	35.8 U	34.8 U
Aroclor 1242			43.4 U	41.7 U	8.7 U	8.35 U	8.5 U	35.8 U	34.8 U
Aroclor 1248			**609**	**365**	**16.4**	**20.4**	**224**	**567**	**562**
Aroclor 1254			43.4 U	41.7 U	**12.1**	**18.3**	**98.5**	**270**	**267**
Aroclor 1260			43.4 U	41.7 U	**6.28 J**	**6.43 J**	8.5 U	35.8 U	34.8 U
Total PCB Aroclors (U = 0)	10,000	1,000	**609**	**365**	**34.78**	**45.13**	**322.5**	**837**	**829**

Notes:

Detected concentration is greater than lowest site cleanup level (1,000 µg/kg)

Detected concentration is greater than highest site cleanup level (10,000 µg/kg)

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Sample Type: N = Normal Field Sample FD = Field Duplicate

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 12
Facility Demolition Crushed Concrete Sample Results
December 2008 to April 2009

Task:			Crushed Concrete	Crushed Concrete	Crushed Concrete	Crushed Concrete
Location ID:			CC17	CC17	CC18	CC18
Sample ID:	Site Cleanup Level		CRCONC-C17-042009	CRCONC-C417-042009	CRCONC-C18-042309	CRCONC-C418-042309
Sample Date:			4/20/2009	4/20/2009	4/23/2009	4/23/2009
Matrix:	Industrial Use	Unrestricted	Concrete	Concrete	ST	ST
Sample Type:	Areas	Use Areas	N	FD	N	FD
PCB Aroclors (µg/kg)						
Aroclor 1016			8.61 U	8.88 U	33 UJ	8.45 UJ
Aroclor 1221			8.61 U	8.88 U	33 UJ	8.45 UJ
Aroclor 1232			8.61 U	8.88 U	33 UJ	8.45 UJ
Aroclor 1242			8.61 U	8.88 U	33 UJ	8.45 U
Aroclor 1248			**455**	**397**	**660 J**	**443**
Aroclor 1254			**192**	**175**	**308 J**	**203**
Aroclor 1260			**30.9**	**26.2**	**50.8 J**	**27.2**
Total PCB Aroclors (U = 0)	10,000	1,000	**677.9**	**598.2**	**1018.8**	**673.2**

Notes:

Detected concentration is greater than lowest site cleanup level (1,000 µg/kg)

Detected concentration is greater than highest site cleanup level (10,000 µg/kg)

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Sample Type: N = Normal Field Sample FD = Field Duplicate

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 7	ACPC 9	ACPC 9	ACPC 9	ACPC 10	ACPC 11	ACPC 12	ACPC 12
Sample ID:		ACPC-C7-112508	ACPC-C9-112508	ACPC-C9B-120508	ACPC-C9C-120508	ACPC-C10F-030709	ACPC-C11-112508	ACPC-C12H-030709	ACPC-CB12A-010709
Sample Date:		11/25/2008	11/25/2008	12/5/2008	12/5/2008	3/7/2009	11/25/2008	3/7/2009	1/7/2009
Depth:		12 - 18 in	12 - 18 in	18 - 24 in	30 - 36 in	24 - 30 in	12 - 18 in	42 - 48 in	36 - 42 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		37.8 UJ	8.77 UJ	**-- R**	82.4 U	7.25 U	8.38 UJ	7.49 U	45.9 U
Aroclor 1221		37.8 UJ	8.77 UJ	**-- R**	82.4 U	7.25 U	8.38 UJ	7.49 U	45.9 U
Aroclor 1232		37.8 UJ	8.77 UJ	**-- R**	82.4 U	7.25 U	8.38 UJ	7.49 U	45.9 U
Aroclor 1242		37.8 UJ	8.77 U	**-- R**	82.4 U	7.25 U	8.38 U	7.49 U	45.9 U
Aroclor 1248		**708 J**	**384**	**271 J**	**795**	7.25 U	**223 J**	**184**	**811**
Aroclor 1254		37.8 UJ	8.77 U	**-- R**	82.4 U	7.25 U	8.38 U	7.49 U	45.9 U
Aroclor 1260		37.8 UJ	8.77 U	**-- R**	82.4 U	7.25 U	8.38 U	7.49 U	**42.5 J**
Total PCB Aroclors (U = 0)	1000	**708**	**384**	**271 J**	**795**	7.25 U	**223**	**184**	**853.5**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 19	ACPC 21	ACPC 22	ACPC 23	ACPC 24	ACPC 26	ACPC 30	ACPC 32
Sample ID:		ACPC-C19-120508	ACPC-C21-120508	ACPC-CB22A-010709	ACPC-CB23A-010709	ACPC-C24-120508	ACPC-C26-120508	ACPC-C30-120508	ACPC-C32-120508
Sample Date:		12/5/2008	12/5/2008	1/7/2009	1/7/2009	12/5/2008	12/5/2008	12/5/2008	12/5/2008
Depth:		12 - 18 in	12 - 18 in	30 - 36 in	30 - 36 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		52 U	51.9 U	8.86 UJ	8.14 UJ	10.4 U	50.6 U	48.4 U	51.5 U
Aroclor 1221		52 U	51.9 U	8.86 UJ	8.14 UJ	10.4 U	50.6 U	48.4 U	51.5 U
Aroclor 1232		52 U	51.9 U	8.86 UJ	8.14 UJ	10.4 U	50.6 U	48.4 U	51.5 U
Aroclor 1242		52 U	51.9 U	8.86 UJ	8.14 UJ	10.4 U	50.6 U	48.4 U	51.5 U
Aroclor 1248		**696**	**966**	**81.1 J**	**351 J**	**138**	**623**	**875**	**430**
Aroclor 1254		52 U	51.9 U	8.86 UJ	**75.6 J**	10.4 U	50.6 U	48.4 U	51.5 U
Aroclor 1260		52 U	51.9 U	8.86 UJ	8.14 UJ	10.4 U	50.6 U	48.4 U	51.5 U
Total PCB Aroclors (U = 0)	1000	**696**	**966**	**81.1**	**426.6**	**138**	**623**	**875**	**430**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 33	ACPC 35	ACPC 36	ACPC 37	ACPC 38	ACPC 39	ACPC 43	ACPC 44
Sample ID:		ACPC-C33-120508	ACPC-CB35A-010709	ACPC-C36-121208	ACPC-C37-121208	ACPC-C38-121208	ACPC-C39-121208	ACPC-C43G-030709	ACPC-C44-121608
Sample Date:		12/5/2008	1/7/2009	12/12/2008	12/12/2008	12/12/2008	12/12/2008	3/7/2009	12/16/2008
Depth:		12 - 18 in	30 - 36 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	30 - 36 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SN
Sample Type:		N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		10.2 U	8.66 UJ	7.48 U	7.9 UJ	39.1 U	7.35 U	7.31 U	50.8 U
Aroclor 1221		10.2 U	8.66 UJ	7.48 U	7.9 UJ	39.1 U	7.35 U	7.31 U	50.8 U
Aroclor 1232		10.2 U	8.66 UJ	7.48 U	7.9 UJ	39.1 U	7.35 U	7.31 U	50.8 U
Aroclor 1242		10.2 U	8.66 UJ	**274**	**76.3 J**	39.1 U	7.35 U	7.31 U	50.8 U
Aroclor 1248		**470**	**364 J**	**155**	**50.2 J**	**402**	**350**	**47.6 J**	**801**
Aroclor 1254		**241**	**122 J**	7.48 U	7.9 UJ	39.1 U	7.35 U	7.31 U	50.8 U
Aroclor 1260		10.2 U	8.66 UJ	7.48 U	7.9 UJ	39.1 U	7.35 U	7.31 U	50.8 U
Total PCB Aroclors (U = 0)	1000	**711**	**486**	**429**	**126.5**	**402**	**350**	**47.6**	**801**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 44	ACPC 48	ACPC 49	ACPC 49	ACPC 50	ACPC 52	ACPC 54	ACPC 54
Sample ID:		ACPC-C444-121608	ACPC-C48G-030709	ACPC-C449-121908	ACPC-C49-121908	ACPC-C50-121908	ACPC-C52-122808	ACPC-C54-122808	ACPC-C54F-030709
Sample Date:		12/16/2008	3/7/2009	12/19/2008	12/19/2008	12/19/2008	12/28/2008	12/28/2008	3/7/2009
Depth:		12 - 18 in	30 - 36 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	30 - 36 in
Matrix:		SN	SO	SO	SO	SO	SN	SN	SO
Sample Type:		N	N	FD	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		44.9 U	7.51 U	7.69 U	9.42 U	10.1 U	10.3 U	9.01 U	7.96 U
Aroclor 1221		44.9 U	7.51 U	7.69 U	9.42 U	10.1 U	10.3 U	9.01 U	7.96 U
Aroclor 1232		44.9 U	7.51 U	7.69 U	9.42 U	10.1 U	10.3 U	9.01 U	7.96 U
Aroclor 1242		44.9 U	7.51 U	7.69 U	9.42 U	10.1 U	10.3 U	9.01 U	7.96 U
Aroclor 1248		**999**	**85.6**	**373**	**344**	**486**	**543**	**251**	**265**
Aroclor 1254		44.9 U	7.51 U	**207**	**163**	**231**	10.3 U	9.01 U	7.96 U
Aroclor 1260		44.9 U	7.51 U	**33.6**	**21.4**	**35**	**24.5**	9.01 U	7.96 U
Total PCB Aroclors (U = 0)	1000	**999**	**85.6**	**613.6**	**528.4**	**752**	**567.5**	**251**	**265**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 55	ACPC 55	ACPC 56	ACPC 57	ACPC 58	ACPC 59	ACPC 60	ACPC 60
Sample ID:		ACPC-C455-122808	ACPC-C55-122808	ACPC-C56B-021409	ACPC-C57D-021909	ACPC-C58-010309	ACPC-C59-010309	ACPC-C460-010309	ACPC-C60-010309
Sample Date:		12/28/2008	12/28/2008	2/14/2009	2/19/2009	1/3/2009	1/3/2009	1/3/2009	1/3/2009
Depth:		12 - 18 in	12 - 18 in	18 - 24 in	30 - 36 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SN	SN	SO	SO	SO	SO	SO	SO
Sample Type:		FD	N	N	N	N	N	FD	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		9.01 U	8.41 U	62 U	7.6 U	8.94 U	9.02 U	9.4 U	8.09 U
Aroclor 1221		9.01 U	8.41 U	62 U	7.6 U	8.94 U	9.02 U	9.4 U	8.09 U
Aroclor 1232		9.01 U	8.41 U	62 U	7.6 U	8.94 U	9.02 U	9.4 U	8.09 U
Aroclor 1242		9.01 U	8.41 U	62 U	7.6 U	8.94 U	9.02 U	9.4 U	8.09 U
Aroclor 1248		**118**	**146**	**894**	**8.24**	**193**	**10.6**	**45.1**	**21.9**
Aroclor 1254		9.01 U	8.41 U	62 U	**5.65 J**	8.94 U	9.02 U	9.4 U	8.09 U
Aroclor 1260		9.01 U	**10.8**	62 U	7.6 U	8.94 U	9.02 U	9.4 U	8.09 U
Total PCB Aroclors (U = 0)	1000	**118**	**156.8**	**894**	**13.89**	**193**	**10.6**	**45.1**	**21.9**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 61	ACPC 62	ACPC 63	ACPC 64	ACPC 64	ACPC 65	ACPC 65	ACPC 66
Sample ID:		ACPC-C61E-021909	ACPC-C62E-021909	ACPC-C63D-021909	ACPC-C64-010709	ACPC-C64B-021409	ACPC-C65-010709	ACPC-C65B-021409	ACPC-C66D-021909
Sample Date:		2/19/2009	2/19/2009	2/19/2009	1/7/2009	2/14/2009	1/7/2009	2/14/2009	2/19/2009
Depth:		30 - 36 in	36 - 40 in	30 - 36 in	18 - 24 in	24 - 30 in	12 - 18 in	24 - 30 in	30 - 36 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		7.42 UJ	7.76 UJ	8.12 UJ	8.87 U	6.47 U	9.41 U	6.52 U	5.93 U
Aroclor 1221		7.42 UJ	7.76 UJ	8.12 UJ	8.87 U	6.47 U	9.41 U	6.52 U	5.93 U
Aroclor 1232		7.42 UJ	7.76 UJ	8.12 UJ	8.87 U	6.47 U	9.41 U	6.52 U	5.93 U
Aroclor 1242		7.42 U	7.76 U	8.12 U	8.87 U	6.47 U	9.41 U	6.52 U	5.93 U
Aroclor 1248		**13.9**	**7.38 J**	**14.7**	**338 J**	**312**	**412**	**308**	**2.12 J**
Aroclor 1254		7.42 U	7.76 U	8.12 U	8.87 U	**188**	**163**	**148**	5.93 U
Aroclor 1260		7.42 U	7.76 U	8.12 U	8.87 U	6.47 U	9.41 U	6.52 U	5.93 U
Total PCB Aroclors (U = 0)	1000	**13.9**	**7.38**	**14.7**	**338**	**500**	**575**	**456**	**2.12**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

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J = Estimated value

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Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

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Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 68	ACPC 68	ACPC 69	ACPC 70	ACPC 71	ACPC 72	ACPC 73
Sample ID:		ACPC-C468D-021909	ACPC-C68D-021909	ACPC-C69D-021909	ACPC-C70C-021909	ACPC-C71C-021909	ACPC-C72D-021909	ACPC-C73C-021909
Sample Date:		2/19/2009	2/19/2009	2/19/2009	2/19/2009	2/19/2009	2/19/2009	2/19/2009
Depth:		30 - 36 in	30 - 36 in	30 - 36 in	24 - 30 in	24 - 30 in	30 - 36 in	24 - 30 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		FD	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		6.7 U	6.16 U	5.73 U	33.7 U	31.3 U	6.15 U	7.82 U
Aroclor 1221		6.7 U	6.16 U	5.73 U	33.7 U	31.3 U	6.15 U	7.82 U
Aroclor 1232		6.7 U	6.16 U	5.73 U	33.7 U	31.3 U	6.15 U	7.82 U
Aroclor 1242		6.7 U	6.16 U	5.73 U	33.7 U	31.3 U	6.15 U	7.82 U
Aroclor 1248		**14**	**20.2**	5.73 U	**965**	**882**	**82.3**	**280**
Aroclor 1254		**5.46 J**	**6.69**	5.73 U	33.7 U	31.3 U	**95.3**	**259**
Aroclor 1260		6.7 U	6.16 U	5.73 U	33.7 U	31.3 U	**41.4 J**	**90.1**
Total PCB Aroclors (U = 0)	1000	**19.46**	**26.89**	5.73 U	**965**	**882**	**219**	**629.1**
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

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Matrix: SO = Soil

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Sample Designation: CO = Confirmation

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Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 76	ACPC 77	ACPC 78	ACPC 79	ACPC 79	ACPC 79	ACPC 80	ACPC 80
Sample ID:		ACPC-C76-010909	ACPC-C77E-021909	ACPC-C78-010909	ACPC-C479C-021909	ACPC-C79-010909	ACPC-C79C-021909	ACPC-C480-010909	ACPC-C80-010909
Sample Date:		1/9/2009	2/19/2009	1/9/2009	2/19/2009	1/10/2009	2/19/2009	1/10/2009	1/10/2009
Depth:		12 - 18 in	30 - 36 in	12 - 18 in	12 - 18 in	12 - 18 in	18 - 24 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	FD	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		51.7 U	15.6 U	41.4 U	5.89 U	40.7 U	30.9 U	10.2 U	19.5 U
Aroclor 1221		51.7 U	15.6 U	41.4 U	5.89 U	40.7 U	30.9 U	10.2 U	19.5 U
Aroclor 1232		51.7 U	15.6 U	41.4 U	5.89 U	40.7 U	30.9 U	10.2 U	19.5 U
Aroclor 1242		51.7 U	15.6 U	41.4 U	5.89 U	40.7 U	30.9 U	10.2 U	19.5 U
Aroclor 1248		**805**	**683**	**675**	**190 J**	**661**	**850 J**	**357**	**606**
Aroclor 1254		51.7 U	15.6 U	41.4 U	**13.8**	40.7 U	30.9 U	10.2 U	19.5 U
Aroclor 1260		51.7 U	15.6 U	41.4 U	5.89 U	40.7 U	30.9 U	10.2 U	19.5 U
Total PCB Aroclors (U = 0)	1000	**805**	**683**	**675**	**203.8**	**661**	**850**	**357**	**606**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

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Matrix: SO = Soil

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Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 81	ACPC 82	ACPC 84	ACPC 86	ACPC 87	ACPC 89	ACPC 90	ACPC 90
Sample ID:		ACPC-C81-010909	ACPC-C82-010909	ACPC-C84B-021409	ACPC-C86-010909	ACPC-C87-010909	ACPC-C89-010909	ACPC-C490-011009	ACPC-C90-011009
Sample Date:		1/10/2009	1/10/2009	2/14/2009	1/10/2009	1/10/2009	1/10/2009	1/10/2009	1/10/2009
Depth:		12 - 18 in	12 - 18 in	18 - 24 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	FD	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		9.82 U	8.77 U	6.32 U	9.84 U	8.2 U	7.82 U	7.87 U	10.8 U
Aroclor 1221		9.82 U	8.77 U	6.32 U	9.84 U	8.2 U	7.82 U	7.87 U	10.8 U
Aroclor 1232		9.82 U	8.77 U	6.32 U	9.84 U	8.2 U	7.82 U	7.87 U	10.8 U
Aroclor 1242		9.82 U	8.77 U	6.32 U	9.84 U	8.2 U	7.82 U	7.87 U	10.8 U
Aroclor 1248		**232**	**466**	**158**	**606**	**285**	**313**	7.87 U	10.8 U
Aroclor 1254		9.82 U	8.77 U	6.32 U	**145**	**124**	7.82 U	**59.4**	**59.6**
Aroclor 1260		9.82 U	8.77 U	31.6 U	9.84 U	8.2 U	7.82 U	7.87 U	10.8 U
Total PCB Aroclors (U = 0)	1000	**232**	**466**	**158**	**751**	**409**	**313**	**59.4**	**59.6**
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

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Matrix: SO = Soil

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Sample Designation: CO = Confirmation

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Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 91	ACPC 92	ACPC 97	ACPC 99	ACPC 101	ACPC 102	ACPC 103
Sample ID:		ACPC-C91D-021909	ACPC-C92C-021909	ACPC-C97B-021409	ACPC-C99B-021409	ACPC-C101-012309	ACPC-C102-012309	ACPC-C103D-021909
Sample Date:		2/19/2009	2/19/2009	2/14/2009	2/14/2009	1/23/2009	1/23/2009	2/19/2009
Depth:		24 - 30 in	18 - 24 in	18 - 24 in	18 - 24 in	12 - 18 in	12 - 18 in	24 - 30 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.18 U	6.37 U	52.7 U	5.28 U	42.4 U	40.9 U	36.7 U
Aroclor 1221		7.18 U	6.37 U	52.7 U	5.28 U	42.4 U	40.9 U	36.7 U
Aroclor 1232		7.18 U	6.37 U	52.7 U	5.28 U	42.4 U	40.9 U	36.7 U
Aroclor 1242		7.18 U	6.37 U	52.7 U	5.28 U	42.4 U	40.9 U	36.7 U
Aroclor 1248		**368 J**	**92.7**	**696**	**82.5**	**572**	**602**	**943**
Aroclor 1254		7.18 U	**48.5**	52.7 U	**54.5**	42.4 U	40.9 U	36.7 U
Aroclor 1260		7.18 U	**32.3**	52.7 U	5.28 U	42.4 U	40.9 U	36.7 U
Total PCB Aroclors (U = 0)	1000	**368**	**173.5**	**696**	**137**	**572**	**602**	**943**
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

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Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 104	ACPC 104	ACPC 105	ACPC 107	ACPC 108	ACPC 108	ACPC 109
Sample ID:		ACPC-C104H-030709	ACPC-C4104H-030709	ACPC-C105D-021909	ACPC-C107B-021409	ACPC-C108B-021409	ACPC-C108D-021909	ACPC-C109F-022809
Sample Date:		3/7/2009	3/7/2009	2/19/2009	2/14/2009	2/14/2009	2/19/2009	2/28/2009
Depth:		42 - 48 in	42 - 48 in	24 - 30 in	18 - 24 in	18 - 24 in	24 - 30 in	36 - 42 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	FD	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.17 U	7.05 U	7.81 U	60.6 U	5.82 U	5.99 U	8 U
Aroclor 1221		7.17 U	7.05 U	7.81 U	60.6 U	5.82 U	5.99 U	8 U
Aroclor 1232		7.17 U	7.05 U	7.81 U	60.6 U	5.82 U	5.99 U	8 U
Aroclor 1242		7.17 U	7.05 U	7.81 U	60.6 U	5.82 U	5.99 U	8 U
Aroclor 1248		**17.2 J**	**22.6 J**	**96.1**	**941**	**373 J**	**22.2**	**92.8 J**
Aroclor 1254		7.17 U	7.05 U	7.81 U	60.6 U	**59.4 J**	**16.4**	8 U
Aroclor 1260		7.17 U	7.05 U	7.81 U	60.6 U	5.82 U	**27.2**	8 U
Total PCB Aroclors (U = 0)	1000	**17.2**	**22.6**	**96.1**	**941**	**432.4**	**65.8**	**92.8**
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

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Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

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Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 110	ACPC 111	ACPC 113	ACPC 114	ACPC 115	ACPC 115	ACPC 116
Sample ID:		ACPC-C110D-021909	ACPC-C111C-021909	ACPC-C113D-021909	ACPC-C114D-021909	ACPC-C115-012909	ACPC-C115C-021909	ACPC-C116-012909
Sample Date:		2/19/2009	2/19/2009	2/19/2009	2/19/2009	1/29/2009	2/19/2009	1/29/2009
Depth:		24 - 30 in	18 - 24 in	24 - 30 in	24 - 30 in	12 - 18 in	18 - 24 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.05 U	7.73 U	6.87 U	7.59 U	9.44 U	7.59 U	8.1 U
Aroclor 1221		7.05 U	7.73 U	6.87 U	7.59 U	9.44 U	7.59 U	8.1 U
Aroclor 1232		7.05 U	7.73 U	6.87 U	7.59 U	9.44 U	7.59 U	8.1 U
Aroclor 1242		7.05 U	7.73 U	6.87 U	7.59 U	9.44 U	7.59 U	8.1 U
Aroclor 1248		**208**	**49.6**	**93.7 J**	**197**	**310**	**24.5**	8.1 U
Aroclor 1254		7.05 U	**38.3**	6.87 U	7.59 U	**180**	**21.9**	8.1 U
Aroclor 1260		7.05 U	**49.2**	6.87 U	7.59 U	9.44 U	7.59 U	8.1 U
Total PCB Aroclors (U = 0)	1000	**208**	**137.1**	**93.7**	**197**	**490**	**46.4**	8.1 U
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 117	ACPC 118	ACPC 119	ACPC 120	ACPC 120	ACPC 121	ACPC 122
Sample ID:		ACPC-C117-012909	ACPC-C118-012909	ACPC-C119-012909	ACPC-C120-012909	ACPC-C4120-012909	ACPC-C121-012909	ACPC-C122-020209
Sample Date:		1/29/2009	1/29/2009	1/29/2009	1/29/2009	1/29/2009	1/29/2009	2/2/2009
Depth:		12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	FD	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		8.17 U	7.57 U	7.94 U	7.88 U	8.02 U	7.31 U	7.17 U
Aroclor 1221		8.17 U	7.57 U	7.94 U	7.88 U	8.02 U	7.31 U	7.17 U
Aroclor 1232		8.17 U	7.57 U	7.94 U	7.88 U	8.02 U	7.31 U	7.17 U
Aroclor 1242		8.17 U	7.57 U	7.94 U	7.88 U	8.02 U	7.31 U	7.17 U
Aroclor 1248		**16.5**	7.57 U	7.94 U	**10.8**	**3.46 J**	7.31 U	7.17 U
Aroclor 1254		8.17 U	7.57 U	7.94 U	7.88 U	8.02 U	7.31 U	7.17 U
Aroclor 1260		8.17 U	7.57 U	7.94 U	7.88 U	8.02 U	7.31 U	7.17 U
Total PCB Aroclors (U = 0)	1000	**16.5**	7.57 U	7.94 U	**10.8**	**3.46**	7.31 U	7.17 U
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 123	ACPC 124	ACPC 125	ACPC 126	ACPC 127	ACPC 128	ACPC 129
Sample ID:		ACPC-C123-020209	ACPC-C124-020209	ACPC-C125-020209	ACPC-C126-020209	ACPC-C127-020209	ACPC-C128B-030709	ACPC-C129-030709
Sample Date:		2/2/2009	2/2/2009	2/2/2009	2/2/2009	2/2/2009	3/7/2009	3/7/2009
Depth:		12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	18 - 24 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.46 U	7.39 U	7.75 U	7.56 U	7.16 U	8.3 U	7.37 U
Aroclor 1221		7.46 U	7.39 U	7.75 U	7.56 U	7.16 U	8.3 U	7.37 U
Aroclor 1232		7.46 U	7.39 U	7.75 U	7.56 U	7.16 U	8.3 U	7.37 U
Aroclor 1242		7.46 U	7.39 U	7.75 U	7.56 U	7.16 U	8.3 UJ	7.37 U
Aroclor 1248		**7.99**	**8.23**	**4.71 J**	7.56 U	7.16 U	8.3 UJ	**5.18 J**
Aroclor 1254		7.46 U	**11.2**	**8.9**	7.56 U	7.16 U	8.3 UJ	7.37 U
Aroclor 1260		7.46 U	7.39 U	7.75 U	7.56 U	7.16 U	8.3 UJ	7.37 U
Total PCB Aroclors (U = 0)	1000	**7.99**	**19.43**	**13.61**	7.56 U	7.16 U	8.3 U	**5.18**
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	23.2 U	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	46.3 U	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 130	ACPC 130	ACPC 131	ACPC 131	ACPC 132	ACPC 133	ACPC 134
Sample ID:		ACPC-C130-030709	ACPC-C4130-030709	ACPC-C131-032609	ACPC-C4131-032609	ACPC-C132-030709	ACPC-C133-030709	ACPC-C134-030709
Sample Date:		3/7/2009	3/7/2009	3/26/2009	3/26/2009	3/7/2009	3/7/2009	3/7/2009
Depth:		12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	FD	N	FD	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.24 U	7.32 U	7.89 U	8.24 U	7.27 U	7.56 U	7.43 U
Aroclor 1221		7.24 U	7.32 U	7.89 U	8.24 U	7.27 U	7.56 U	7.43 U
Aroclor 1232		7.24 U	7.32 U	7.89 U	8.24 U	7.27 U	7.56 U	7.43 U
Aroclor 1242		7.24 U	7.32 U	7.89 U	8.24 U	7.27 UJ	7.56 UJ	7.43 UJ
Aroclor 1248		**23.3**	**53.1**	**21.9**	**14.6**	**15.1 J**	**47.9 J**	7.43 UJ
Aroclor 1254		7.24 U	**27.2**	**19.2**	**14**	**6.74 J**	**24.8 J**	7.43 UJ
Aroclor 1260		7.24 U	7.32 U	**7.29 J**	**6 J**	7.27 UJ	7.56 UJ	7.43 UJ
Total PCB Aroclors (U = 0)	1000	**23.3**	**80.3**	**48.39**	**34.6**	**21.84**	**72.7**	7.43 U
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC 135	ACPC 136	ACPC 137	ACPC C22SW	ACPC D1NE	ACPC D22NW	ACPC D22SE
Sample ID:		ACPC-C135-030709	ACPC-C136-032609	ACPC-C137-032609	ACPC-C-C22SW-030709	ACPC-C-D1NE-022309	ACPC-C-D22NW-030709	ACPC-C-D22SE-030709
Sample Date:		3/7/2009	3/26/2009	3/26/2009	3/7/2009	2/23/2009	3/7/2009	3/7/2009
Depth:		12 - 18 in	12 - 18 in	12 - 18 in	6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.42 U	7.32 U	8.55 U	7.25 U	7.36 U	7.51 U	7.22 U
Aroclor 1221		7.42 U	7.32 U	8.55 U	7.25 U	7.36 U	7.51 U	7.22 U
Aroclor 1232		7.42 U	7.32 U	8.55 U	7.25 U	7.36 U	7.51 U	7.22 U
Aroclor 1242		7.42 UJ	7.32 U	8.55 U	7.25 UJ	7.36 U	7.51 UJ	7.22 UJ
Aroclor 1248		**14.6 J**	7.32 U	**350**	**57.5 J**	**33.9**	**6.07 J**	7.22 UJ
Aroclor 1254		**13 J**	7.32 U	**259**	**46.9 J**	**17.6**	**3.33 J**	7.22 UJ
Aroclor 1260		7.42 UJ	7.32 U	8.55 U	7.25 UJ	7.36 U	7.51 UJ	7.22 UJ
Total PCB Aroclors (U = 0)	1000	**27.6**	7.32 U	**609**	**104.4**	**51.5**	**9.4**	7.22 U
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS
Location ID:		ACPC E12	ACPC F11	ACPC F11	ACPC H2E	ACPC H2EE	ACPC J6E	ACPC J6EE
Sample ID:		ACPC-CE12G-030709	ACPC-C-F11-1-022309	ACPC-C-F11-2-022309	ACPC-C-H2E-022309	ACPC-C-H2EE-022309	ACPC-C-J6E-022309	ACPC-C-J6EE-022309
Sample Date:		3/7/2009	2/23/2009	2/23/2009	2/23/2009	2/23/2009	2/23/2009	2/23/2009
Depth:		36 - 42 in	6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.36 U	7.81 U	7.38 U	7.32 U	7.56 U	38.8 U	7.94 U
Aroclor 1221		7.36 U	7.81 U	7.38 U	7.32 U	7.56 U	38.8 U	7.94 U
Aroclor 1232		7.36 U	7.81 U	7.38 U	7.32 U	7.56 U	38.8 U	7.94 U
Aroclor 1242		7.36 U	7.81 UJ	7.38 U	7.32 U	7.56 UJ	38.8 UJ	7.94 U
Aroclor 1248		**112**	**43 J**	**16.9**	**27.9**	**9.98 J**	**661 J**	**149**
Aroclor 1254		7.36 U	**16.2 J**	7.38 U	**8.73**	**10.3 J**	38.8 UJ	7.94 U
Aroclor 1260		7.36 U	7.81 UJ	7.38 U	7.32 U	7.56 UJ	38.8 UJ	7.94 U
Total PCB Aroclors (U = 0)	1000	**112**	**59.2**	**16.9**	**36.63**	**20.28**	**661**	**149**
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	**77.1**	23.8 U	--	--	--	--
Residual Range Hydrocarbons	4000	--	**1040**	47.7 U	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 13
Facility Demolition ACPC Soil Confirmation Samples
November 2008 to March 2009

Task:		ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC SOILS	ACPC	ACPC
Location ID:		ACPC L1W	ACPC L6W	ACPC L6W	ACPC M1W	ACPC M1W	ACPC M2E	ACPC M3W
Sample ID:		ACPC-C-L1W-030709	ACPC-C-4L6W-022309	ACPC-C-L6W-022309	ACPC-C-4M1W-030709	ACPC-C-M1W-030709	ACPC-C-M2E-030709	ACPC-C-M3W-022309
Sample Date:		3/7/2009	2/23/2009	2/23/2009	3/7/2009	3/7/2009	3/7/2009	2/23/2009
Depth:		6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in	6 - 12 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	FD	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.53 U	7.82 U	7.78 U	7.29 U	7.26 U	7.45 U	7.54 U
Aroclor 1221		7.53 U	7.82 U	7.78 U	7.29 U	7.26 U	7.45 U	7.54 U
Aroclor 1232		7.53 U	7.82 U	7.78 U	7.29 U	7.26 U	7.45 U	7.54 U
Aroclor 1242		7.53 UJ	7.82 U	7.78 U	7.29 UJ	7.26 UJ	7.45 UJ	7.54 UJ
Aroclor 1248		**3.47 J**	**7.18 J**	**6.47 J**	**10.7 J**	**21 J**	**5.72 J**	**64.8 J**
Aroclor 1254		7.53 UJ	**4.04 J**	**3.4 J**	**9.77 J**	**17.6 J**	**3.9 J**	**72 J**
Aroclor 1260		7.53 UJ	7.82 U	7.78 U	7.29 UJ	7.26 UJ	7.45 UJ	7.54 UJ
Total PCB Aroclors (U = 0)	1000	**3.47**	**11.22**	**9.87**	**20.47**	**38.6**	**9.62**	**136.8**
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range Hydrocarbons	2000	--	--	--	--	--	--	--
Residual Range Hydrocarbons	4000	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 14
Facility Demolition Building 408 and 416 Confirmation Soil Samples
March 2009

Task:		ACPC	ACPC	ACPC	ACPC	ACPC	ACPC	ACPC	ACPC
Location ID:		408-1	416-1	416-2	416-3	416-4	416-5	416-5	416-6
Sample ID:		ACPC-C1-408-032609	ACPC-C1-416-032009	ACPC-C2-416-032009	ACPC-C3-416-032009	ACPC-C4-416-032009	ACPC-C45-416-032009	ACPC-C5-416-032009	ACPC-C6-416-032009
Sample Date:		3/26/2009	3/20/2009	3/20/2009	3/20/2009	3/20/2009	3/20/2009	3/20/2009	3/20/2009
Depth:		12 - 18 in	6 - 12 in	12 - 18 in	6 - 12 in	6 - 12 in	12 - 18 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	N	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		10.8 U	--	--	--	--	--	--	--
Aroclor 1221		10.8 U	--	--	--	--	--	--	--
Aroclor 1232		10.8 U	--	--	--	--	--	--	--
Aroclor 1242		10.8 U	--	--	--	--	--	--	--
Aroclor 1248		10.8 U	--	--	--	--	--	--	--
Aroclor 1254		10.8 U	--	--	--	--	--	--	--
Aroclor 1260		**4.71 J**	--	--	--	--	--	--	--
Total PCB Aroclors (U = 0)	1000	**4.71**	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	**321 J**	22.9 U	29.6 U	**5.1 J**	25.5 U	21.3 U	21.7 U	22 U
Residual Range Hydrocarbons	4000	**902**	**17.7 J**	**51.1 J**	**52.1**	**12.5 J**	42.7 U	43.4 U	44.1 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 15
Facility Demolition East Plant Substation Confirmation Soil Samples
March 2009

Task:		E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation
Location ID:		EPSS 1	EPSS 1	EPSS 2	EPSS 2	EPSS 2	EPSS 3	EPSS 3	EPSS 4	EPSS 4
Sample ID:		EPSS-C1B-033009	EPSS-C1C-033009	EPSS-C2A-033009	EPSS-C2B-033009	EPSS-C2C-033009	EPSS-C3B-033009	EPSS-C3C-033009	EPSS-C44A-033009	EPSS-C4A-033009
Sample Date:		3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009
Depth:		12 - 18 in	24 - 30 in	0 - 6 in	12 - 18 in	24 - 30 in	12 - 18 in	24 - 30 in	0 - 6 in	0 - 6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	FD	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)										
Aroclor 1016		7.8 U	7.29 U	7.44 U	8.15 U	8.15 U	8.1 U	7.97 U	7.61 U	8.08 U
Aroclor 1221		7.8 U	7.29 U	7.44 U	8.15 U	8.15 U	8.1 U	7.97 U	7.61 U	8.08 U
Aroclor 1232		7.8 U	7.29 U	7.44 U	8.15 U	8.15 U	8.1 U	7.97 U	7.61 U	8.08 U
Aroclor 1242		7.8 U	7.29 U	7.44 U	8.15 U	8.15 U	8.1 U	7.97 U	7.61 U	8.08 U
Aroclor 1248		**135**	7.29 U	**8.02**	8.15 U	8.15 U	**3.82 J**	7.97 U	**432**	**336**
Aroclor 1254		**269**	**101**	**19.3**	8.15 U	8.15 U	8.1 U	7.97 U	**176**	**142**
Aroclor 1260		**99.5**	**59.4**	**12.4**	8.15 U	8.15 U	8.1 U	7.97 U	**71.3**	**70**
Total PCB Aroclors (U = 0)	1000	**503.5**	**160.4**	**39.72**	8.15 U	8.15 U	**3.82**	7.97 U	**679.3**	**548**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 15
Facility Demolition East Plant Substation Confirmation Soil Samples
March 2009

Task:		E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation
Location ID:		EPSS 4	EPSS 4	EPSS 5	EPSS 5	EPSS 6	EPSS 6	EPSS 6	EPSS 7	EPSS 8
Sample ID:		EPSS-C4B-033009	EPSS-C4C-033009	EPSS-C5B-033009	EPSS-C5C-033009	EPSS-C6A-033009	EPSS-C6B-033009	EPSS-C6C-033009	EPSS-C7C-033009	EPSS-C8B-033009
Sample Date:		3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009
Depth:		12 - 18 in	24 - 30 in	12 - 18 in	24 - 30 in	0 - 6 in	12 - 18 in	24 - 30 in	24 - 30 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)										
Aroclor 1016		7.36 U	7.69 U	7.68 U	8.19 U	7.66 U	7.32 U	8.23 U	8 U	8.55 U
Aroclor 1221		7.36 U	7.69 U	7.68 U	8.19 U	7.66 U	7.32 U	8.23 U	8 U	8.55 U
Aroclor 1232		7.36 U	7.69 U	7.68 U	8.19 U	7.66 U	7.32 U	8.23 U	8 U	8.55 U
Aroclor 1242		7.36 U	7.69 U	7.68 U	8.19 U	7.66 U	7.32 U	8.23 U	8 U	8.55 U
Aroclor 1248		7.36 U	7.69 U	7.68 U	8.19 U	7.66 U	7.32 U	**71.2**	8 U	**66.4**
Aroclor 1254		7.36 U	7.69 U	7.68 U	8.19 U	**11.8**	7.32 U	**22.2**	8 U	**60.7**
Aroclor 1260		**4.54 J**	7.69 U	**4.94 J**	**7.2 J**	**18.3**	**10.4**	**15.6**	8 U	**36.4**
Total PCB Aroclors (U = 0)	1000	**4.54**	7.69 U	**4.94**	**7.2**	**30.1**	**10.4**	**109**	8 U	**163.5**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 15
Facility Demolition East Plant Substation Confirmation Soil Samples
March 2009

Task:		E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation
Location ID:		EPSS 9	EPSS 10	EPSS 11	EPSS 12	EPSS 12	EPSS 13	EPSS 14	EPSS 17
Sample ID:		EPSS-C9B-033009	EPSS-C10B-033009	EPSS-C11B-033009	EPSS-C12C-033009	EPSS-C412C-033009	EPSS-C13C-033009	EPSS-C14B-033009	EPSS-C17B-033009
Sample Date:		3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009
Depth:		12 - 18 in	12 - 18 in	12 - 18 in	24 - 30 in	24 - 30 in	24 - 30 in	12 - 18 in	12 - 18 in
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	FD	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)									
Aroclor 1016		7.7 U	7.62 U	7.77 U	7.38 U	7.61 U	7.24 U	30.6 U	7.24 U
Aroclor 1221		7.7 U	7.62 U	7.77 U	7.38 U	7.61 U	7.24 U	30.6 U	7.24 U
Aroclor 1232		7.7 U	7.62 U	7.77 U	7.38 U	7.61 U	7.24 U	30.6 U	7.24 U
Aroclor 1242		7.7 U	7.62 U	7.77 U	7.38 U	7.61 U	7.24 U	30.6 U	7.24 U
Aroclor 1248		**100**	**315**	**233**	7.38 U	7.61 U	7.24 U	**556**	**4.9 J**
Aroclor 1254		**35**	**184**	**171**	7.38 U	7.61 U	7.24 U	**194**	7.24 U
Aroclor 1260		**5.43 J**	**43.6**	**228**	7.38 U	7.61 U	7.24 U	**92**	7.24 U
Total PCB Aroclors (U = 0)	1000	**140.43**	**542.6**	**632**	7.38 U	7.61 U	7.24 U	**842**	**4.9**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 15
Facility Demolition East Plant Substation Confirmation Soil Samples
March 2009

Task:		E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation	E. Plant Substation
Location ID:		EPSS 18	EPSS 19	EPSS 20	EPSS 20	EPSS 21	EPSS 22	EPSS 23
Sample ID:		EPSS-C18B-033009	EPSS-C19B-033009	EPSS-C20C-033009	EPSS-C420C-033009	EPSS-C21C-033009	EPSS-C22C-033009	EPSS-C23C-033009
Sample Date:		3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009	3/30/2009
Depth:		12 - 18 in	12 - 18 in	24 - 30 in	24 - 30 in	24 - 30 in	24 - 30 in	24 - 30 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	FD	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)								
Aroclor 1016		7.98 U	7.74 U	8.74 U	8.27 U	8.08 U	7.69 U	7.58 U
Aroclor 1221		7.98 U	7.74 U	8.74 U	8.27 U	8.08 U	7.69 U	7.58 U
Aroclor 1232		7.98 U	7.74 U	8.74 U	8.27 U	8.08 U	7.69 U	7.58 U
Aroclor 1242		7.98 U	7.74 U	8.74 U	8.27 U	8.08 U	7.69 U	7.58 U
Aroclor 1248		**102**	**62.7 J**	8.74 U	**3.95 J**	**6.15 J**	**3.5 J**	7.58 U
Aroclor 1254		**41.9**	**28 J**	8.74 U	8.27 U	8.08 U	**5.11 J**	7.58 U
Aroclor 1260		**20.1**	**18.6**	8.74 U	8.27 U	**3.15 J**	**9.8**	7.58 U
Total PCB Aroclors (U = 0)	1000	**164**	**109.3**	8.74 U	**3.95**	**9.3**	**18.41**	7.58 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 16
Facility Demolition East Plant Substation Confirmation Soil Samples
April 2009

Task:		ACPC Electrical Substation	ACPC Electrical Substation
Location ID:		ACPC CS3	ACPC CS3
Sample ID:		ACPC-CS3-042009	ACPC-CS43-042009
Sample Date:		4/20/2009	4/20/2009
Depth:		12 - 18 in	12 - 18 in
Matrix:		SO	SO
Sample Type:		N	FD
Sample Designation:	Site Cleanup Level	CO	CO
PCB Aroclors (µg/kg)			
Aroclor 1016		8.52 U	7.33 U
Aroclor 1221		8.52 U	7.33 U
Aroclor 1232		8.52 U	7.33 U
Aroclor 1242		8.52 U	7.33 U
Aroclor 1248		8.52 U	7.33 U
Aroclor 1254		8.52 U	**4.29 J**
Aroclor 1260		8.52 U	7.33 U
Total PCB Aroclors (U = 0)	1000	8.52 U	**4.29**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 17
Facility Demolition Building 430 Confirmation Soil Samples
February and March 2009

Task:		Bldg 430	Bldg 430	Bldg 430	Bldg 430
Location ID:		430-1	430-1	430-2	430-3
Sample ID:		ACPC-430-C1B-030909	ACPC-430-C41B-030909	ACPC-430-C2-022709	ACPC-430-C3B-030909
Sample Date:		3/9/2009	3/9/2009	2/27/2009	3/9/2009
Depth:		24 - 30 in	24 - 30 in	12 - 18 in	24 - 30 in
Matrix:		SO	SO	SO	SO
Sample Type:	Site Cleanup	N	FD	N	N
Sample Designation:	Level	CO	CO	CO	CO
PCB Aroclors (µg/kg)					
Aroclor 1016		7.35 U	7.05 U	35.9 UJ	7.2 U
Aroclor 1221		7.35 U	7.05 U	35.9 UJ	7.2 U
Aroclor 1232		7.35 U	7.05 U	35.9 UJ	7.2 U
Aroclor 1242		**5.31 J**	**7.08 J**	35.9 U	7.2 U
Aroclor 1248		7.35 U	**6.28 J**	**201**	7.2 U
Aroclor 1254		7.35 U	7.05 U	35.9 U	7.2 U
Aroclor 1260		7.35 U	7.05 U	35.9 U	7.2 U
Total PCB Aroclors (U = 0)	1000	**5.31**	**13.36**	**201**	7.2 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 18
Facility Demolition Water Treatment Sample Results
September and October 2008

Task:	ACPC	ACPC	ACPC	ACPC	ACPC	ACPC	ACPC
Location ID:	BATCH TREATED WATER	BATCH TREATED WATER	BATCH TREATED WATER	BATCH TREATED WATER	BATCH TREATED WATER	STORMWATER LAGOON	STORMWATER LAGOON
Sample ID:	ACPCW-BT1-091708	ACPCW-BT2-091708	ACPCW-BT3-092608	ACPC-BT4-100808	ACPC-BT5-101308	ACPCW-LG1-091708	ACPC-WL1-102808
Sample Date:	9/17/2008	9/17/2008	9/26/2008	10/8/2008	10/13/2008	9/17/2008	10/28/2008
Matrix:	W	W	W	W	W	W	W
Sample Type:	N	N	N	N	N	N	N
Sample Designation:	ND	ND	D	D	D	LG	LG
Conventional Parameters (mg/L)							
Amenable Cyanide	--	--	--	--	--	--	0.007 U
Cyanide	--	--	--	--	--	--	0.007 U
Fluoride	--	--	--	--	--	--	**8.75**
Conventional Parameters (su)							
pH	--	--	--	--	--	--	**8.76**
Temperature	--	--	--	--	--	--	**21**
Conventional Parameters (pct)							
Total Suspended Solids	--	--	--	--	--	--	**0.00145**
Metals (µg/L)							
Aluminum	--	--	--	--	--	--	**240**
Antimony	--	--	--	--	--	--	**1.14**
Arsenic	--	--	--	--	--	--	**2.02**
Lead	--	--	--	--	--	--	**1.21**
Nickel	--	--	--	--	--	--	**5.46**
Zinc	--	--	--	--	--	--	**6.06**
Aromatic Hydrocarbons (µg/L)							
Acenaphthene	--	--	--	--	--	--	0.0784 U
Acenaphthylene	--	--	--	--	--	--	0.0784 U
Anthracene	--	--	--	--	--	--	0.0784 U
Benzo(a)anthracene	--	--	--	--	--	--	0.0784 U
Benzo(a)pyrene	--	--	--	--	--	--	0.137 U
Benzo(b,k)fluoranthene	--	--	--	--	--	--	**0.16**
Benzo(g,h,i)perylene	--	--	--	--	--	--	0.0784 U
Chrysene	--	--	--	--	--	--	**0.0967**
Dibenzo(a,h)anthracene	--	--	--	--	--	--	0.0784 U
Fluoranthene	--	--	--	--	--	--	**0.203**
Fluorene	--	--	--	--	--	--	0.0784 U
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	0.0784 U
Naphthalene	--	--	--	--	--	--	0.0784 U
Phenanthrene	--	--	--	--	--	--	**0.121**
Pyrene	--	--	--	--	--	--	**0.139**
Total cPAH TEF (7 minimum) (U = 0)	--	--	--	--	--	--	**0.000967**

Table 18
Facility Demolition Water Treatment Sample Results
September and October 2008

Task:	ACPC	ACPC	ACPC	ACPC	ACPC	ACPC	ACPC
Location ID:	BATCH TREATED WATER	BATCH TREATED WATER	BATCH TREATED WATER	BATCH TREATED WATER	BATCH TREATED WATER	STORMWATER LAGOON	STORMWATER LAGOON
Sample ID:	ACPCW-BT1-091708	ACPCW-BT2-091708	ACPCW-BT3-092608	ACPC-BT4-100808	ACPC-BT5-101308	ACPCW-LG1-091708	ACPC-WL1-102808
Sample Date:	9/17/2008	9/17/2008	9/26/2008	10/8/2008	10/13/2008	9/17/2008	10/28/2008
Matrix:	W	W	W	W	W	W	W
Sample Type:	N	N	N	N	N	N	N
Sample Designation:	ND	ND	D	D	D	LG	LG
PCB Aroclors (µg/L)							
Aroclor 1016	1 U	1 U	0.5 U	0.0095 UJ	1.1 U	1 U	0.1 U
Aroclor 1221	1 U	1 U	0.5 U	0.0095 UJ	1.1 U	1 U	0.2 U
Aroclor 1232	1 U	1 U	0.5 U	0.0095 UJ	1.1 U	1 U	0.2 U
Aroclor 1242	1 U	1 U	0.5 U	**1.46 J**	1.1 U	1 U	0.2 U
Aroclor 1248	**17**	**18**	**1.3**	0.0095 U	1.1 U	1 U	0.2 U
Aroclor 1254	**4.3**	**5**	0.5 U	0.0095 U	1.1 U	1 U	0.1 U
Aroclor 1260	1 U	1 U	0.5 U	0.0095 U	1.1 U	1 U	0.1 U
Total PCB Aroclors (U = 0)	**21.3**	**23**	**1.3**	**1.46**	1.1 U	1 U	0.2 U
Total Petroleum Hydrocarbons (mg/L)							
Oil and grease	--	--	--	--	--	--	4.9 U

Notes:
Detected concentration is greater than 3 µg/L TSCA discharge criteria
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
Matrix: W = Water
Sample Type: N = Normal Field Sample FD = Field Duplicate
Sample Designation: ND = NOT DISCHARGED, LG = LAGOON, D = DISCHARGED
Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.
cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

Table 19
Rail Unloading Removal Action Confirmation Samples
October 2008

Task:		Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils
Location ID:		BLDG 36 C1	BLDG 36 C2	BLDG 36 C2	BLDG 36 C3	BLDG 36 C4	BLDG 36 C5	BLDG 36 C6
Sample ID:		BLDG 36 C1-SA-100908	BLDG 36 C2-SA-100908	BLDG 36 C42-SA-100908	BLDG 36 C3-SA-100908	BLDG 36 C4-SA-100908	BLDG 36 C5-SA-100908	BLDG 36 C6-SA-100908
Sample Date:		10/9/2008	10/9/2008	10/9/2008	10/9/2008	10/9/2008	10/9/2008	10/9/2008
Depth:		1 ft	1 ft	1 ft	1.5 ft	1 ft	1 ft	1 ft
Matrix:	Fluoride	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Remediation Level/	N	N	FD	N	N	N	N
Sample Designation:	PAH Cleanup Level	CO	CO	CO	CO	CO	CO	CO
Conventional Parameters (mg/kg)								
Fluoride	9000	**2350**	**106**	**303**	**115**	**579**	**501**	**107**
Metals (mg/kg)								
Lithium		--	--	--	--	--	--	--
Aromatic Hydrocarbons (µg/kg)								
1-Methylnaphthalene		--	--	--	--	--	--	--
2-Methylnaphthalene		--	--	--	--	--	--	--
Acenaphthene		--	--	--	--	--	--	--
Acenaphthylene		--	--	--	--	--	--	--
Anthracene		--	--	--	--	--	--	--
Benzo(a)anthracene		--	--	--	--	--	--	--
Benzo(a)pyrene		--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		--	--	--	--	--	--	--
Benzo(g,h,i)perylene		--	--	--	--	--	--	--
Chrysene		--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		--	--	--	--	--	--	--
Fluoranthene		--	--	--	--	--	--	--
Fluorene		--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene		--	--	--	--	--	--	--
Naphthalene		--	--	--	--	--	--	--
Phenanthrene		--	--	--	--	--	--	--
Pyrene		--	--	--	--	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	--	--	--	--	--	--	--

Notes:

Detected concentration is greater than site remediation/cleanup level

Non-detected concentration is above one or more identified site remediation/cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CH = Characterization

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 19
Rail Unloading Removal Action Confirmation Samples
October 2008

Task:		Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils
Location ID:		BLDG 36 C7	BLDG 36 C8	BLDG 36 C9	BLDG 36 C10	BLDG 36 C10	BLDG 36 C11	BLDG 36 C12	BLDG 36 C13
Sample ID:		BLDG 36 C7-SA-100908	BLDG 36 C8-SA-100908	BLDG 36 C9-SA-100908	BLDG36-C10-102308	BLDG36-C410-102308	BLDG36-C11-102308	BLDG36-C12-102308	BLDG36-C13-102308
Sample Date:		10/9/2008	10/9/2008	10/9/2008	10/23/2008	10/23/2008	10/23/2008	10/23/2008	10/23/2008
Depth:		1 ft	1 in	1 ft	1 ft	1 ft	1 ft	1 ft	1 ft
Matrix:	Fluoride	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Remediation Level/	N	N	N	N	FD	N	N	N
Sample Designation:	PAH Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
Conventional Parameters (mg/kg)									
Fluoride	9000	**163**	**611**	**111**	**1140**	**999**	**370**	**198**	**133**
Metals (mg/kg)									
Lithium		--	--	--	--	--	--	--	--
Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene		--	122 U	--	--	--	--	--	--
2-Methylnaphthalene		--	122 U	--	--	--	--	--	--
Acenaphthene		--	122 UJ	--	--	--	--	--	--
Acenaphthylene		--	122 U	--	--	--	--	--	--
Anthracene		--	122 UJ	--	--	--	--	--	--
Benzo(a)anthracene		--	**409 J**	--	--	--	--	--	--
Benzo(a)pyrene		--	**492 J**	--	--	--	--	--	--
Benzo(b,k)fluoranthene		--	**1460 J**	--	--	--	--	--	--
Benzo(g,h,i)perylene		--	**746 J**	--	--	--	--	--	--
Chrysene		--	**850 J**	--	--	--	--	--	--
Dibenzo(a,h)anthracene		--	**169 J**	--	--	--	--	--	--
Fluoranthene		--	**560 J**	--	--	--	--	--	--
Fluorene		--	122 U	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene		--	**617 J**	--	--	--	--	--	--
Naphthalene		--	122 U	--	--	--	--	--	--
Phenanthrene		--	**269 J**	--	--	--	--	--	--
Pyrene		--	**566 J**	--	--	--	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	--	**620 J**	--	--	--	--	--	--

Notes:

Detected concentration is greater than site remediation/cleanup level

Non-detected concentration is above one or more identified site remediation/cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CH = Characterization

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 19
Rail Unloading Removal Action Confirmation Samples
October 2008

Task:		Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils	Bldg 36 Soils
Location ID:		BLDG 36 C14	BLDG 36 S15	BLDG 36 C15	BLDG 36 C16	BLDG 36 C16	BLDG 36 S16	BLDG 36 17
Sample ID:		BLDG36-C14-102308	BLDG3615-SA-072408	BLDG36-C15-102308	BLDG 3616-SC-100608	BLDG36-C16-102308	BLDG3616-SA-072408	BLDG3617-SA-072408
Sample Date:		10/23/2008	7/24/2008	10/23/2008	10/6/2008	10/23/2008	7/24/2008	7/24/2008
Depth:		1 ft	1 ft	1 ft	2 ft	1 ft	1 ft	1 ft
Matrix:	Fluoride	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Remediation Level/	N	N	N	N	N	N	N
Sample Designation:	PAH Cleanup Level	CO	CO	CO	CO	CO	CO	CO
Conventional Parameters (mg/kg)								
Fluoride	9000	**430**	**1140**	**388**	**1420**	**193**	**684**	**429**
Metals (mg/kg)								
Lithium		--	--	--	**5.04**	--	--	--
Aromatic Hydrocarbons (µg/kg)								
1-Methylnaphthalene		--	--	--	192 U	--	--	--
2-Methylnaphthalene		--	--	--	192 U	--	--	--
Acenaphthene		--	--	--	**209**	--	--	--
Acenaphthylene		--	--	--	192 U	--	--	--
Anthracene		--	--	--	**224**	--	--	--
Benzo(a)anthracene		--	--	--	**1300**	--	--	--
Benzo(a)pyrene		--	--	--	**1530 J**	--	--	--
Benzo(b,k)fluoranthene		--	--	--	**2950 J**	--	--	--
Benzo(g,h,i)perylene		--	--	--	**1170 J**	--	--	--
Chrysene		--	--	--	**1690 J**	--	--	--
Dibenzo(a,h)anthracene		--	--	--	**269**	--	--	--
Fluoranthene		--	--	--	**2720 J**	--	--	--
Fluorene		--	--	--	192 U	--	--	--
Indeno(1,2,3-c,d)pyrene		--	--	--	**1140**	--	--	--
Naphthalene		--	--	--	192 U	--	--	--
Phenanthrene		--	--	--	**1530 J**	--	--	--
Pyrene		--	--	--	**2470 J**	--	--	--
Total cPAH TEF (7 minimum) (U = 0)	18000	--	--	--	**1817.8**	--	--	--

Notes:

Detected concentration is greater than site remediation/cleanup level

Non-detected concentration is above one or more identified site remediation/cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CH = Characterization

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 20
Carbon Storage Removal Action Confirmation Samples
October 2008 to April 2009

Task:		Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage
Location ID:		ECS C1	ECS C2	ECS C3	ECS C4	ECS C5	ECS C6	ECS C7	ECS C8	ECS C9	ECS C10	ECS C10
Sample ID:		ECS-C1-101708	ECS-C2-101708	ECS-C3-101708	ECS-C4-102308	ECS-C5-102308	ECS-C6-102308	ECS-C7-102308	ECS-C8-102308	ECS-C9-102308	ECS-C10-042809	ECS-C410-042809
Sample Date:		10/17/2008	10/17/2008	10/17/2008	10/23/2008	10/23/2008	10/23/2008	10/23/2008	10/23/2008	10/23/2008	4/28/2009	4/28/2009
Depth:	Fluoride	2.5 ft	5 ft	3 ft	2 ft	1 ft	1 ft	1 ft	1 ft	1 ft	1.5 ft	1.5 ft
Matrix:	Remediation	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Level/ PAH	N	N	N	N	N	N	N	N	N	N	FD
Sample Designation:	Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Conventional Parameters (mg/kg)												
Fluoride	9000	--	--	--	--	--	--	--	--	--	--	--
Aromatic Hydrocarbons (µg/kg)												
1-Methylnaphthalene		176 U	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	69.5 U	7.52 U	7.86 U
2-Methylnaphthalene		176 U	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	69.5 U	7.52 U	7.86 U
Acenaphthene		176 U	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	69.5 U	7.52 U	7.86 U
Acenaphthylene		176 U	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	69.5 U	7.52 U	7.86 U
Anthracene		176 U	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	69.5 U	7.52 U	7.86 U
Benzo(a)anthracene		**1010**	8.63 U	**131**	7.39 U	**23.1**	**45.4**	7.49 U	**33.4**	**403**	**10.3**	**8.05**
Benzo(a)pyrene		**1350**	8.63 U	**173**	7.39 U	**28.3**	**76.2**	7.49 U	**49**	**643**	**16.1**	**13.2**
Benzo(b)fluoranthene		--	8.63 U	--	--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		**1970**	--	**268**	14.8 U	**52**	**136**	15 U	**75.2**	**954**	**27.6**	**23.2**
Benzo(g,h,i)perylene		**1190**	8.63 U	**161**	7.39 U	**20.7**	**70.4**	7.49 U	**38.3**	**545**	**12.2**	**10.1**
Benzo(k)fluoranthene		--	8.63 U	--	--	--	--	--	--	--	--	--
Chrysene		**1450**	8.63 U	**182**	7.39 U	**30.1**	**62.4**	7.49 U	**43.2**	**510**	**11.5**	**8.7**
Dibenzo(a,h)anthracene		**195**	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	**77.9**	7.52 U	7.86 U
Fluoranthene		**1500**	8.63 U	**159**	7.39 U	**33.6**	**66.8**	7.49 U	**58.4**	**699**	**14.1**	**11**
Fluorene		176 U	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	69.5 U	7.52 U	7.86 U
Indeno(1,2,3-c,d)pyrene		**1040**	8.63 U	**150**	7.39 U	**21.3**	**71.2**	7.49 U	**35.5**	**501**	**9.47**	**6.62 J**
Naphthalene		176 U	8.63 U	94.6 U	7.39 U	6.98 U	16.9 U	7.49 U	6.92 U	69.5 U	7.52 U	7.86 U
Phenanthrene		**826**	8.63 U	94.6 U	7.39 U	**8.56**	**19.2**	7.49 U	**26.3**	**300**	**5.86 J**	7.86 U
Pyrene		**1760**	8.63 U	**187**	7.39 U	**31.1**	**76.8**	7.49 U	**59.5**	**765**	**15.7**	**11.8**
Total cPAH TEF (7 minimum) (U = 0)	18000	**1589**	8.63 U	**202.92**	7.39 U	**33.041**	**88.484**	7.49 U	**56.322**	**746.29**	**18.192**	**14.754**

Table 20
Carbon Storage Removal Action Confirmation Samples
October 2008 to April 2009

Task:		Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage
Location ID:		ECS C11	ECS C12	ECS C13	ECS C14	ECS C15	ECS C16	ECS C17	ECS C18	ECS C19	ECS C20
Sample ID:		ECS-C11-042809	ECS-C12-042809	ECS-C13-042809	ECS-C14-042809	ECS-C15-042809	ECS-C16-042809	ECS-C17-042809	ECS-C18-042809	ECS-C19-042809	ECS-C20-042809
Sample Date:		4/28/2009	4/28/2009	4/28/2009	4/28/2009	4/28/2009	4/28/2009	4/28/2009	4/28/2009	4/28/2009	4/28/2009
Depth:	Fluoride	1.5 ft	1 ft	1.5 ft	1.5 ft	1 ft	1 ft	1.5 ft	6 in	1 ft	1 ft
Matrix:	Remediation	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Level/ PAH	N	N	N	N	N	N	N	N	N	N
Sample Designation:	Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Conventional Parameters (mg/kg)											
Fluoride	9000	--	--	--	--	--	--	--	--	--	--
Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene		7.4 U	8.94 U	8.27 U	7.75 U	9.03 U	9.86 U	8 U	7.83 U	7.47 U	8.39 U
2-Methylnaphthalene		7.4 U	8.94 U	8.27 U	7.75 U	9.03 U	9.86 U	8 U	7.83 U	7.47 U	8.39 U
Acenaphthene		7.4 U	8.94 U	8.27 U	7.75 U	9.03 U	9.86 U	8 U	7.83 U	7.47 U	8.39 U
Acenaphthylene		7.4 U	8.94 U	8.27 U	7.75 U	9.03 U	9.86 U	8 U	7.83 U	7.47 U	8.39 U
Anthracene		7.4 U	8.94 U	8.27 U	7.75 U	9.03 U	9.86 U	8 U	7.83 U	7.47 U	8.39 U
Benzo(a)anthracene		**13.5**	**8.33 J**	**10.6**	**8.8**	**17.1**	**18.1**	**10.8**	**18.1**	**11.9**	**12.5**
Benzo(a)pyrene		**20.2**	**14.2**	**16.7**	**14.2**	**24**	**29.9**	**19**	**30.4**	**19.7**	**21.2**
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		**33.6**	**24.1**	**29.2**	**23.7**	**41.6**	**48.3**	**31.5**	**50.1**	**33**	**35.8**
Benzo(g,h,i)perylene		**14.4**	**11.1**	**12.9**	**10.6**	**17**	**21.4**	**14.9**	**22**	**14.4**	**15.7**
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--	--	--
Chrysene		**16.4**	**8.25 J**	**12.7**	**9.58**	**21**	**21.1**	**11.5**	**21.3**	**13.6**	**13.7**
Dibenzo(a,h)anthracene		**4.22 J**	8.94 U	8.27 U	7.75 U	**5.03 J**	**5.18 J**	**4.12 J**	**5.72 J**	**3.85 J**	8.39 U
Fluoranthene		**20.9**	**10.4**	**15.1**	**11.8**	**25.5**	**26.6**	**15.2**	**27.1**	**17.7**	**18.2**
Fluorene		7.4 U	8.94 U	8.27 U	7.75 U	9.03 U	9.86 U	8 U	7.83 U	7.47 U	8.39 U
Indeno(1,2,3-c,d)pyrene		**12.7**	**6.66 J**	**8.43**	**7.99**	**17.5**	**18.9**	**10.7**	**19.4**	**12**	**13.1**
Naphthalene		7.4 U	8.94 U	8.27 U	7.75 U	9.03 U	9.86 U	8 U	7.83 U	7.47 U	8.39 U
Phenanthrene		**7.8**	8.94 U	**6.5 J**	**5.25 J**	**10.4**	**11.1**	**8.09**	**9.68**	**7.01 J**	**6.46 J**
Pyrene		**23.1**	**11.6**	**16.7**	**13.3**	**27.7**	**29.6**	**16.2**	**30.5**	**19.4**	**19.7**
Total cPAH TEF (7 minimum) (U = 0)	18000	**23.406**	**15.7815**	**18.73**	**15.9748**	**28.173**	**34.329**	**21.677**	**34.935**	**22.611**	**23.897**

Table 20
Carbon Storage Removal Action Confirmation Samples
October 2008 to April 2009

Task:		Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage	Carbon Storage
Location ID:		ECS C20	ECS C21	NCS C1	NCS-C3	NCS-C4	NCS-C5	SCS C1	SCS C2	SCS C3	SCS C4
Sample ID:		ECS-C420-042809	ECS-C21-042809	NCS-C1-102308	NCS-C3-110408	NCS-C4-110408	NCS-C5-110408	SCS-C1-101608	SCS-C2-101608	SCS-C3-101608	SCS-C4-101608
Sample Date:		4/28/2009	4/28/2009	10/23/2008	11/4/2008	11/4/2008	11/4/2008	10/16/2008	10/16/2008	10/16/2008	10/16/2008
Depth:	Fluoride	1 ft	6 in	1 ft	1.5 ft	2 ft	2 ft	6 in	6 in	6 in	6 in
Matrix:	Remediation	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:	Level/ PAH	FD	N	N	N	N	N	N	N	N	N
Sample Designation:	Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Conventional Parameters (mg/kg)											
Fluoride	9000	--	--	--	--	--	--	**592**	**301**	**1090**	**114**
Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene		7.25 U	7.11 U	133 U	87.5 U	428 U	78.8 U	204 U	217 U	536 U	20.8 U
2-Methylnaphthalene		7.25 U	7.11 U	133 U	87.5 U	428 U	78.8 U	204 U	217 U	536 U	20.8 U
Acenaphthene		7.25 U	7.11 U	**151**	87.5 U	428 U	78.8 U	204 U	217 U	536 U	20.8 U
Acenaphthylene		7.25 U	7.11 U	133 U	87.5 U	428 U	78.8 U	204 U	217 U	536 U	20.8 U
Anthracene		7.25 U	7.11 U	**278**	87.5 U	**746**	78.8 U	**334**	217 U	**789**	20.8 U
Benzo(a)anthracene		**14.6**	**11.2**	**1980**	**435**	**7110**	**410**	**2270**	**685**	**6120**	**57.5**
Benzo(a)pyrene		**21.8**	**18**	**2790**	**493**	**8570**	**651**	**3110**	**771**	**8510**	**75.7**
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--	--	--
Benzo(b,k)fluoranthene		**35.4**	**30.6**	**4630**	**1030**	**17400**	**1160**	**5720**	**1470**	**15700**	**145**
Benzo(g,h,i)perylene		**14.7**	**13.8**	**2370**	**364**	**6320**	**540**	**2330**	**520**	**5680**	**72.1**
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--	--	--
Chrysene		**15.9**	**12.7**	**2580**	**497**	**8660**	**532**	**3550**	**904**	**8630**	**72.6**
Dibenzo(a,h)anthracene		**4.03 J**	**3.73 J**	**528**	87.5 U	**1300**	**101**	**543**	217 U	**1610**	20.8 U
Fluoranthene		**19.2**	**16.7**	**3050**	**842**	**14800**	**662**	**3550**	**948**	**10000**	**79.9**
Fluorene		7.25 U	7.11 U	133 U	87.5 U	428 U	78.8 U	204 U	217 U	536 U	20.8 U
Indeno(1,2,3-c,d)pyrene		**13.5**	**11**	**2380**	**358**	**5860**	**502**	**2860**	**657**	**7500**	**76.7**
Naphthalene		7.25 U	7.11 U	133 U	87.5 U	428 U	78.8 U	204 U	217 U	536 U	20.8 U
Phenanthrene		**7.6**	**6.71 J**	**1220**	**270**	**4390**	**185**	**1380**	**382**	**3600**	**27.6**
Pyrene		**21.3**	**17.6**	**3050**	**719**	**12600**	**752**	**3720**	**984**	**10800**	**82.8**
Total cPAH TEF (7 minimum) (U = 0)	18000	**25.172**	**20.72**	**3304.6**	**577.27**	**10083.6**	**757.62**	**3712.8**	**914.24**	**10119.3**	**89.846**

Table 20
Carbon Storage Removal Action Confirmation Samples
October 2008 to April 2009

Notes:

Detected concentration is greater than site remediation/cleanup level

Non-detected concentration is above one or more identified site remediation/cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

Table 21
Aboveground Storage Tanks Removal Action Confirmation Samples
April 2009

Task:		AST	AST	AST	AST
Location ID:		C1	C1	C2	C3
Sample ID:		AST-C1-042809	AST-C41-042809	AST-C2-042809	AST-C3-042809
Sample Date:		4/28/2009	4/28/2009	4/28/2009	4/28/2009
Depth:		4 ft	4 ft	6 ft	1 ft
Matrix:	Site	SO	SO	SO	SO
Sample Type:	Cleanup	N	FD	N	N
Sample Designation:	Leve	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)					
1-Methylnaphthalene		7.8 U	7.66 U	10.4 U	7.29 U
2-Methylnaphthalene		7.8 U	7.66 U	10.4 U	7.29 U
Acenaphthene		7.8 U	**8.48**	10.4 U	7.29 U
Acenaphthylene		7.8 U	7.66 U	10.4 U	7.29 U
Anthracene		7.8 U	**4.01 J**	10.4 U	7.29 U
Benzo(a)anthracene		**16.7**	**35.3**	**16.9**	**25**
Benzo(a)pyrene		**25.8**	**52.2**	**25.1**	**38.3**
Benzo(b,k)fluoranthene		**43.7**	**85.4**	**42.5**	**61.6**
Benzo(g,h,i)perylene		**19.4**	**37.6**	**17.6**	**27.1**
Chrysene		**19.9**	**43.5**	**18.4**	**32.4**
Dibenzo(a,h)anthracene		**4.48 J**	**8.91**	**5.28 J**	**6.69 J**
Fluoranthene		**26**	**60.1**	**27.5**	**46**
Fluorene		7.8 U	7.66 U	10.4 U	7.29 U
Indeno(1,2,3-c,d)pyrene		**16.3**	**40.3**	**13.1**	**28.1**
Naphthalene		7.8 U	**10.6**	10.4 U	7.29 U
Phenanthrene		**12.8**	**27.3**	**13.4**	**20.7**
Pyrene		**27.7**	**64.1**	**29.1**	**48.5**
Total cPAH TEF (7 minimum) (U = 0)	18000	**29.747**	**61.086**	**28.812**	**44.603**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

Table 22
AST Pipeline Removal Action Confirmation Samples
October 2008

Task:		AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench
Location ID:		C1	C2	C3	C4	C5	C6	C7	C8	C9
Sample ID:		ASTPT-C1-101608	ASTPT-C2-102908	ASTPT-C3-102908	ASTPT-C4-102908	ASTPT-C5-102908	ASTPT-C6-102908	ASTPT-C7-110408	ASTPT-C8-103108	ASTPT-C49-102908
Sample Date:		10/16/2008	10/29/2008	10/29/2008	10/29/2008	10/29/2008	10/29/2008	11/4/2008	10/31/2008	10/29/2008
Depth:		10 ft	4 ft	4 ft	10 ft	10 ft	8 ft	11 ft	6 ft	6 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N	FD
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
Total Petroleum Hydrocarbons (mg/kg)										
Diesel Range Hydrocarbons	2000	33 U	28.2 U	27.2 U	24.7 U	25.8 U	29.1 U	31.9 U	**76.5**	26.5 U
Residual Range Hydrocarbons	4000	66 U	56.4 U	**207**	49.4 U	51.6 U	58.2 U	63.8 U	**82.8**	53 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Table 22
AST Pipeline Removal Action Confirmation Samples
October 2008

Task:		AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench
Location ID:		C9	C10	C11	C12	C13	C14	C15	C16	C17
Sample ID:		ASTPT-C9-102908	ASTPT-C10-102908	ASTPT-C11-102908	ASTPT-C12-103008	ASTPT-C13-103008	ASTPT-C14-103008	ASTPT-C15-103008	ASTPT-C16-103008	ASTPT-C17-103008
Sample Date:		10/29/2008	10/29/2008	10/29/2008	10/30/2008	10/30/2008	10/30/2008	10/30/2008	10/30/2008	10/30/2008
Depth:		6 ft	5 ft	4 ft	4 ft	4 ft	6 ft	4 ft	4 ft	4 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
Total Petroleum Hydrocarbons (mg/kg)										
Diesel Range Hydrocarbons	2000	21.9 U	32.7 U	**109**	21.9 U	21.7 U	31.5 U	22 U	22.5 U	22.6 U
Residual Range Hydrocarbons	4000	**113**	65.4 UJ	**115 J**	43.8 U	43.4 U	63 U	44.1 U	44.9 U	45.2 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Table 22
AST Pipeline Removal Action Confirmation Samples
October 2008

Task:		AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench
Location ID:		C18	C19	C20	C21	C22	C22	C23	C24	NC1
Sample ID:		ASTPT-C18-103008	ASTPT-C19-103108	ASTPT-C20-103108	ASTPT-C21-103108	ASTPT-C22-110408	ASTPT-C422-110408	ASTPT-C23-110308	ASTPT-C24-110308	ACPC-NC1-102808
Sample Date:		10/30/2008	10/31/2008	10/31/2008	10/31/2008	11/4/2008	11/4/2008	11/3/2008	11/3/2008	10/28/2008
Depth:		4 ft	6 ft	6 ft	6 ft	7 ft	7 ft	6 ft	6 ft	10 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	N	N	N	N	FD	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO	CO
Total Petroleum Hydrocarbons (mg/kg)										
Diesel Range Hydrocarbons	2000	22 U	22.8 U	**92.4**	**684 J**	27.4 U	30.2 U	25.7 U	28.8 U	26.2 U
Residual Range Hydrocarbons	4000	44 U	45.5 U	**153**	**861 J**	54.9 U	60.3 U	**118**	57.6 U	52.5 U

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Table 22
AST Pipeline Removal Action Confirmation Samples
October 2008

Task:		AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench	AST Pipe Trench
Location ID:		NC2	NC2	NC3	NC4	NC5	NC6	NC7	NC8
Sample ID:		ACPC-NC2-102808	ACPC-NC42-102808	ACPC-NC3-102808	ACPC-NC4-102808	ACPC-NC5-102808	ACPC-NC6-102808	ACPC-NC7-102808	ACPC-NC8-102808
Sample Date:		10/28/2008	10/28/2008	10/28/2008	10/28/2008	10/28/2008	10/28/2008	10/28/2008	10/28/2008
Depth:		15 ft	15 ft	15 ft	12 ft	14 ft	14 ft	13 ft	14 ft
Matrix:		SO	SO	SO	SO	SO	SO	SO	SO
Sample Type:		N	FD	N	N	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO	CO	CO
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range Hydrocarbons	2000	37.9 U	37 U	36.1 U	42.2 U	34.7 U	31.9 U	34.4 U	**35**
Residual Range Hydrocarbons	4000	75.8 U	74.1 U	72.3 U	84.3 UJ	69.3 U	63.8 UJ	68.7 UJ	**150 J**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Table 23
Building 67 Remedial Action Confirmation Samples
November 2008

Task:		Bldg 67 Soils	Bldg 67 Soils	Bldg 67 Soils	Bldg 67 Soils	Bldg 67 Soils	Bldg 67 Soils	Bldg 67 Soils
Location ID:		C1	C1	C2	C3	C4	C5	C6
Sample ID:		BLG67-C1-111108	BLG67-C41-111108	BLG67-C2-111108	BLG67-C3-111108	BLG67-C4-111108	BLG67-C5-111108	BLG67-C6-111108
Sample Date:		11/11/2008	11/11/2008	11/11/2008	11/11/2008	11/11/2008	11/11/2008	11/11/2008
Depth:		1.5 ft	1.5 ft	1.5 ft	2.5 ft	1 ft	6 in	6 in
Matrix:		SO	SO	SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	FD	N	N	N	N	N
Sample Designation:	Level	CO	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)								
1-Methylnaphthalene		10.9 U	10.7 U	104 U	102 U	10 U	9.9 U	111 U
2-Methylnaphthalene		10.9 U	10.7 U	104 U	102 U	10 U	9.9 U	111 U
Acenaphthene		10.9 U	10.7 U	104 U	102 U	10 U	**12.5**	111 U
Acenaphthylene		10.9 U	10.7 U	104 U	102 U	10 U	9.9 U	111 U
Anthracene		10.9 U	10.7 U	104 U	102 U	10 U	**25.1**	111 U
Benzo(a)anthracene		**21.1**	**18.4**	**553**	**227**	10 U	**135**	**231**
Benzo(a)pyrene		**26.8**	**22.9**	**775**	**313**	10 U	**200**	**297**
Benzo(b)fluoranthene		--	--	--	--	10 U	--	--
Benzo(b,k)fluoranthene		**49.5**	**43.7**	**1170**	**566**	--	**317**	**736**
Benzo(g,h,i)perylene		**57**	**47**	**507**	**244**	10 U	**143**	**259**
Benzo(k)fluoranthene		--	--	--	--	10 U	--	--
Chrysene		**39.4**	**34.1**	**701**	**296**	10 U	**188**	**426 J**
Dibenzo(a,h)anthracene		10.9 U	10.7 U	**106**	102 U	10 U	**28.3**	111 U
Fluoranthene		**17.5**	**15.7**	**937**	**395**	10 U	**261**	**259**
Fluorene		10.9 U	10.7 U	104 U	102 U	10 U	9.9 U	111 U
Indeno(1,2,3-c,d)pyrene		**42.2**	**35.9**	**528**	**256**	10 U	**138**	**272**
Naphthalene		10.9 U	10.7 U	104 U	102 U	10 U	9.9 U	111 U
Phenanthrene		**34.5**	**26.3**	**386**	**143**	10 U	**116**	**115**
Pyrene		**27.7**	**22.4**	**1000**	**381**	10 U	**277**	**291**
Total cPAH TEF (7 minimum) (U = 0)	18000	**33.524**	**28.671**	**900.71**	**364.26**	10 U	**232.01**	**351.56**

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

Table 24
Facility Demolition Soluble Oil Pipeline Soil Confirmation Samples
April 2009

Task:		ACPC	ACPC	ACPC	ACPC	ACPC
Location ID:		CPT1	CPT1	CPT2	CPT3	CPT4
Sample ID:		ACPC-CPT1-042709	ACPC-CPT41-042709	ACPC-CPT2-042709	ACPC-CPT3-042709	ACPC-CPT4-042709
Sample Date:		4/27/2009	4/27/2009	4/27/2009	4/27/2009	4/27/2009
Depth:		3 ft	3 ft	5 ft	4 ft	3 ft
Matrix:		SO	SO	SO	SO	SO
Sample Type:	Site Cleanup	N	FD	N	N	N
Sample Designation:	Levels	CO	CO	CO	CO	CO
PCB Aroclors (µg/kg)						
Aroclor 1016		6.7 U	6.36 U	7.24 U	6.37 U	8.42 U
Aroclor 1221		6.7 U	6.36 U	7.24 U	6.37 U	8.42 U
Aroclor 1232		6.7 U	6.36 U	7.24 U	6.37 U	8.42 U
Aroclor 1242		6.7 U	6.36 U	7.24 U	6.37 U	8.42 U
Aroclor 1248		6.7 U	6.36 U	7.24 U	6.37 U	8.42 U
Aroclor 1254		6.7 U	6.36 U	7.24 U	6.37 U	**48.4**
Aroclor 1260		6.7 U	6.36 U	7.24 U	6.37 U	**31.7**
Total PCB Aroclors (U = 0)	1000	6.7 U	6.36 U	7.24 U	6.37 U	**80.1**

Notes:

Detected concentration is greater than site cleanup levels

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

R = Rejected

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

Table 25
Facility Demolition Ore Silo Soil Confirmation Samples
April 2009

Task:		ACPC	ACPC	ACPC	ACPC
Location ID:		OSC 1	OSC 2	OSC 2	OSC 3
Sample ID:		ACPC-OSC1-042709	ACPC-OSC2-042709	ACPC-OSC42-042709	ACPC-OSC3-042709
Sample Date:		4/27/2009	4/27/2009	4/27/2009	4/27/2009
Depth:		1 ft	1.5 ft	1.5 ft	1 ft
Matrix:		SO	SO	SO	SO
Sample Type:	Site Cleanup	N	N	N	N
Sample Designation:	Levels	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)					
1-Methylnaphthalene		10 U	8.28 U	6.89 U	7.75 U
2-Methylnaphthalene		10 U	8.28 U	**7.72**	7.75 U
Acenaphthene		10 U	8.28 U	6.89 U	7.75 U
Acenaphthylene		10 U	8.28 U	6.89 U	7.75 U
Anthracene		10 U	8.28 U	6.89 U	**3.92 J**
Benzo(a)anthracene		**11.5**	**17.5**	**21.6**	**38.3**
Benzo(a)pyrene		**19**	**27.1**	**32.5**	**60**
Benzo(b,k)fluoranthene		**32.5**	**45.4**	**53.6**	**98.5**
Benzo(g,h,i)perylene		**14.5**	**21**	**23.6**	**44**
Chrysene		**12.8**	**21.6**	**26.4**	**52.4**
Dibenzo(a,h)anthracene		10 U	**5.33 J**	**5.25 J**	**9.46**
Fluoranthene		**17.9**	**29.1**	**34.4**	**71.1**
Fluorene		10 U	8.28 U	6.89 U	7.75 U
Indeno(1,2,3-c,d)pyrene		**10.5**	**19.8**	**25**	**48.8**
Naphthalene		**5.72 J**	8.28 U	**3.73 J**	7.75 U
Phenanthrene		**12.5**	**13**	**13.6**	**26.4**
Pyrene		**18.5**	**30.4**	**37.4**	**72.6**
Total cPAH TEF (7 minimum) (U = 0)	18000	**21.328**	**31.579**	**37.949**	**70.18**

Table 25
Facility Demolition Ore Silo Soil Confirmation Samples
April 2009

Notes:

Detected concentration is greater than site cleanup level

Non-detected concentration is above one or more identified site cleanup levels

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Matrix: SO = Soil

Sample Type: N = Normal Field Sample FD = Field Duplicate

Sample Designation: CO = Confirmation

Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.

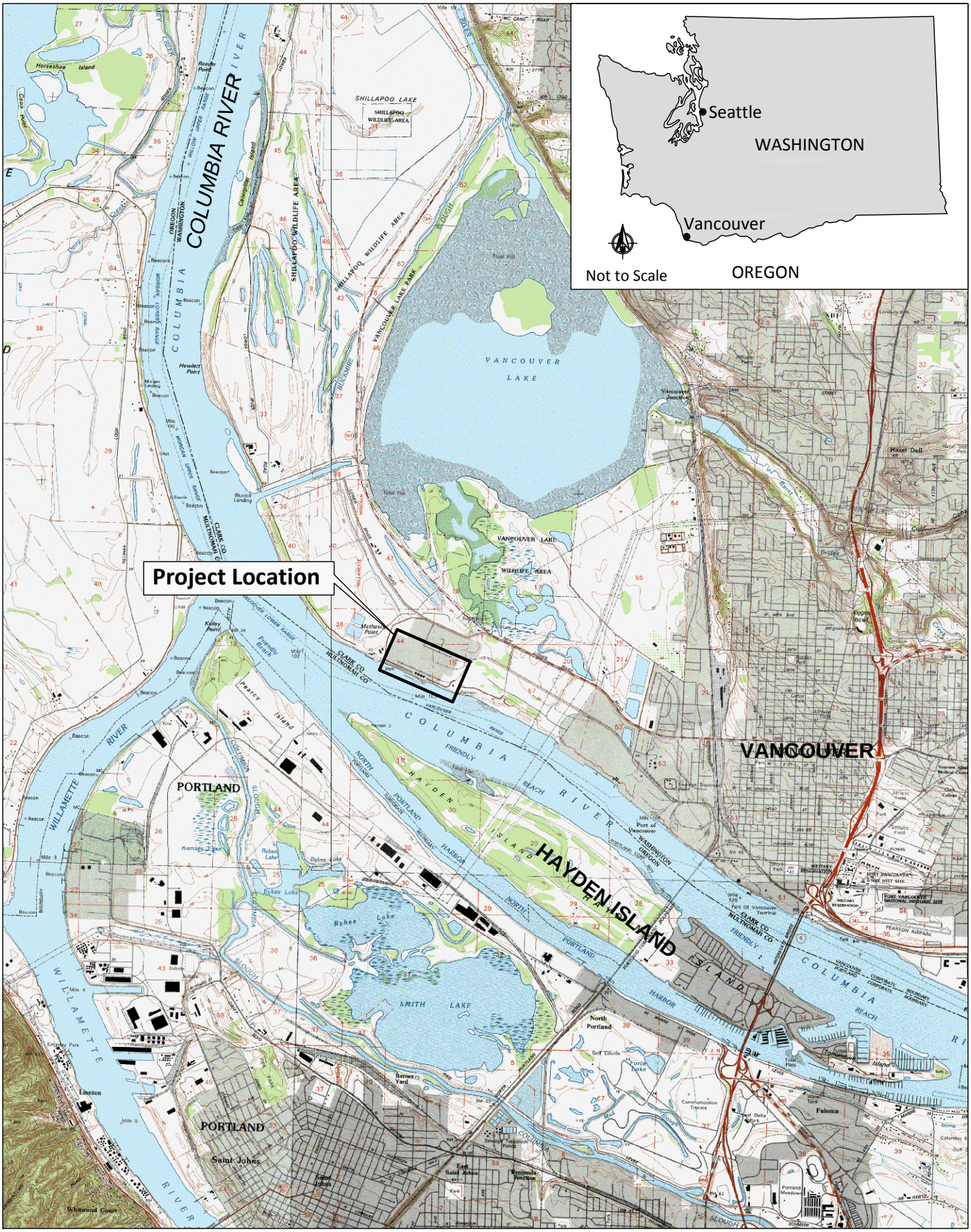
cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

Table 26
North Soluble Oil Area Soil Confirmation Samples
December 2008

Task:		CSO	CSO	CSO	CSO	CSO	CSO
Location ID:		CSO 1	CSO 1	CSO 2	CSO 3	CSO 4	CSO 5
Sample ID:		CSO-C1-120908	CSO-C41-120908	CSO-C2-120908	CSO-C3-120908	CSO-C4-120908	CSO-C5-120908
Sample Date:		12/9/2008	12/9/2008	12/9/2008	12/9/2008	12/9/2008	12/9/2008
Depth:		10 ft	10 ft	10 ft	7 ft	18 ft	11 ft
Matrix:		SO	SO	SO	SO	SO	SO
Sample Type:		N	FD	N	N	N	N
Sample Designation:	Site Cleanup Level	CO	CO	CO	CO	CO	CO
Aromatic Hydrocarbons (µg/kg)							
1-Methylnaphthalene		9.92 U	**23.4**	9.31 U	9.54 U	9.33 U	180 U
2-Methylnaphthalene		9.92 U	**30.7**	9.31 U	9.54 U	9.33 U	180 U
Acenaphthene		9.92 U	**69.5**	9.31 U	9.54 U	9.33 U	180 U
Acenaphthylene		9.92 U	18.7 U	9.31 U	9.54 U	9.33 U	180 U
Anthracene		9.92 U	**121**	9.31 U	9.54 U	9.33 U	180 U
Benzo(a)anthracene		9.92 U	**201**	9.31 U	9.54 U	9.33 U	**524**
Benzo(a)pyrene		9.92 U	**172**	9.31 U	9.54 U	9.33 U	**759**
Benzo(b)fluoranthene		9.92 U	--	9.31 U	9.54 U	9.33 U	--
Benzo(b,k)fluoranthene		--	**280**	--	--	--	**1090**
Benzo(g,h,i)perylene		9.92 U	**104**	9.31 U	9.54 U	9.33 U	**649**
Benzo(k)fluoranthene		9.92 U	--	9.31 U	9.54 U	9.33 U	--
Chrysene		9.92 U	**212**	9.31 U	9.54 U	9.33 U	**699**
Dibenzo(a,h)anthracene		9.92 U	**22.5**	9.31 U	9.54 U	9.33 U	180 U
Fluoranthene		**12**	**558**	9.31 U	9.54 U	9.33 U	**1110**
Fluorene		9.92 U	**64**	9.31 U	9.54 U	9.33 U	180 U
Indeno(1,2,3-c,d)pyrene		9.92 U	**111**	9.31 U	9.54 U	9.33 U	**570**
Naphthalene		9.92 U	**56.7**	9.31 U	9.54 U	9.33 U	180 U
Phenanthrene		**11.1**	**538**	9.31 U	9.54 U	9.33 U	**638**
Pyrene		**11.2**	**519**	9.31 U	9.54 U	9.33 U	**1300**
Total cPAH TEF (7 minimum) (U = 0)	18000	9.92 U	**207.57**	9.31 U	9.54 U	9.33 U	**875.39**

Notes:
Detected concentration is greater than site cleanup level
Non-detected concentration is above one or more identified site cleanup levels
Bold = Detected result
U = Compound analyzed, but not detected above detection limit
Matrix: SO = Soil
Sample Type: N = Normal Field Sample FD = Field Duplicate
Sample Designation: CO = Confirmation
Totals are calculated as the sum of all detected results (U=0). If all results are not detected, the highest reporting limit value is reported as the sum.
cPAH minimum seven analytes calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 "Toxicity Equivalency Factors for Minimum Required Carcinogenic Polyaromatic Hydrocarbons (cPAHs) under WAC 173-340-708(e)."

FIGURES



K:\Jobs\090002-Alcoa\090002-07\09000207-RP-004.dwg F1

Dec 29, 2009 1:54pm heriksen

Note: Base map prepared from Terrain Navigator Pro USGS 7.5 minute quadrangle maps of Linnton, Sauvie Island, and Vancouver, Washington, and Portland, Oregon.

ANCHOR QEA

Figure 1
Vicinity Map
Project Completion Report
Alcoa/Evergreen Vancouver Site

1	Sludge Pond	7	Carbon Plant	13	Carbon Storage	19	Soluble Oil Area		Site Boundary
2	Stormwater Lagoons	8	Carbon Plant Emission Control System	14	Scrap Metal Recycling Area	20	North Landfills		
3	Crowley Site	9	Alumina and Raw Material Handling	15	SPL Storage Area	21	Northeast Parcel (Clark County Jail)		
4	Transformer/Rectifier Yards	10	Dock	16	Bonneville Power Station	22	East Landfill		
5	Potlines	11	Vanexco/Rod Mill Facilities	17	Clark County Public Utility	23	South Bank Area		
6	Dike UST	12	ACPC Facilities	18	Hydraulic Oil Lagoons	24	Clark County PUD Outfall		

0 400
Scale in Feet

K:\Jobs\090002-Alcoa\090002-07\09000207-RP-005.dwg F2

Dec 14, 2009 9:20am heriksen

ANCHOR QEA

Figure 2
Site Boundaries and Historical Layout
Project Completion Report
Alcoa/Evergreen Vancouver Site

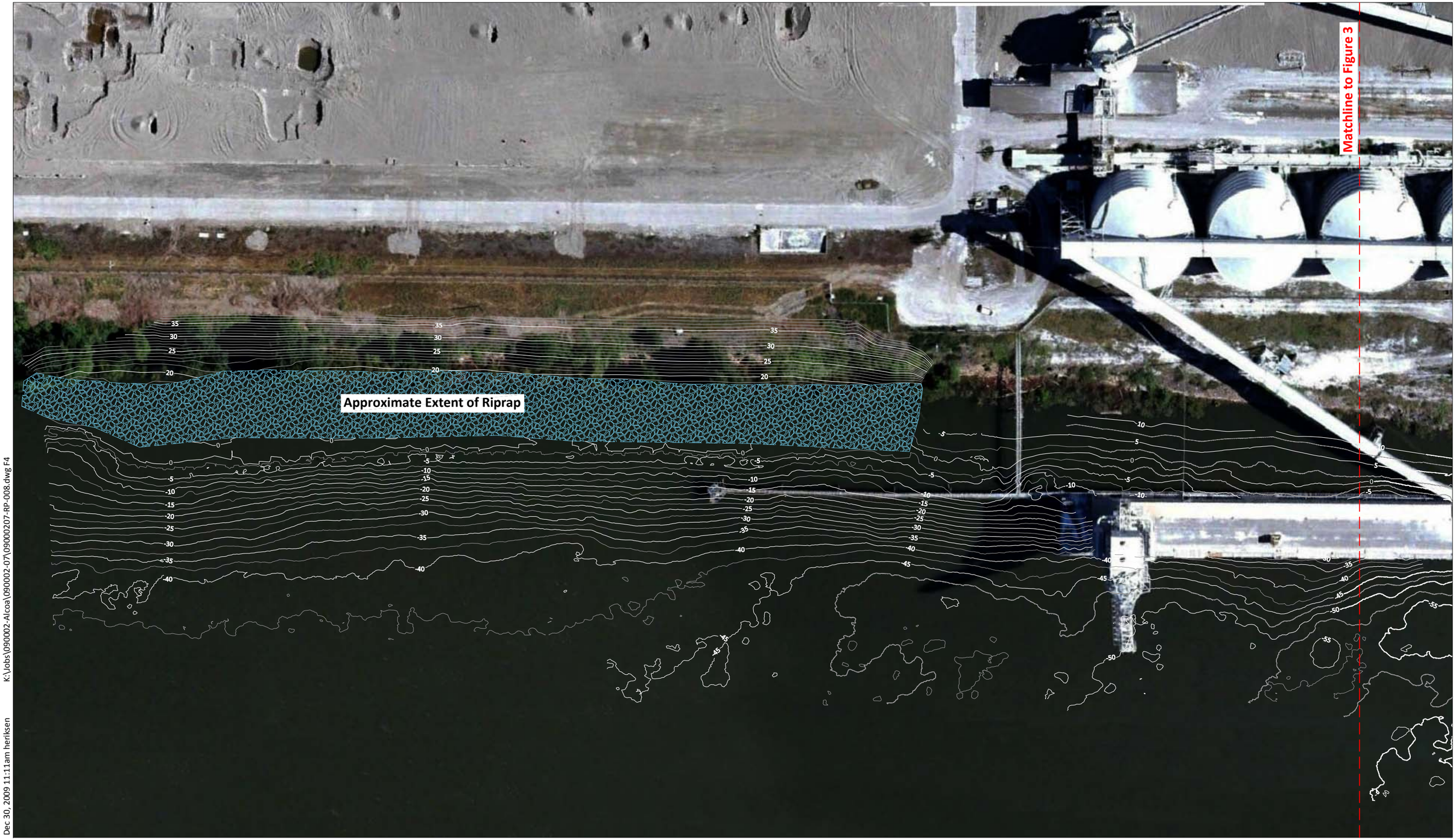
K:\Jobs\090002-Alcoa\090002-07\09000207-RP-008.dwg F3
Dec 30, 2009 11:12am heriksen

ANCHOR QEA

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83), U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
SURVEY INFORMATION:
Bathymetric data based on surveys by Etrac Engineering, LLC. performed between 1/28/09 and 3/17/09.
Topographic survey by KPFF dated 3/30/09.
NOTES: Aerial from Google Earth 2009.

0 100
Scale in Feet

Figure 3
Sediment and Shoreline Remediation As-built (East of Dock)
Project Completion Report
Alcoa/Evergreen Vancouver Site



K:\Jobs\090002-Alcoa\090002-07\09000207-RP-008.dwg F4

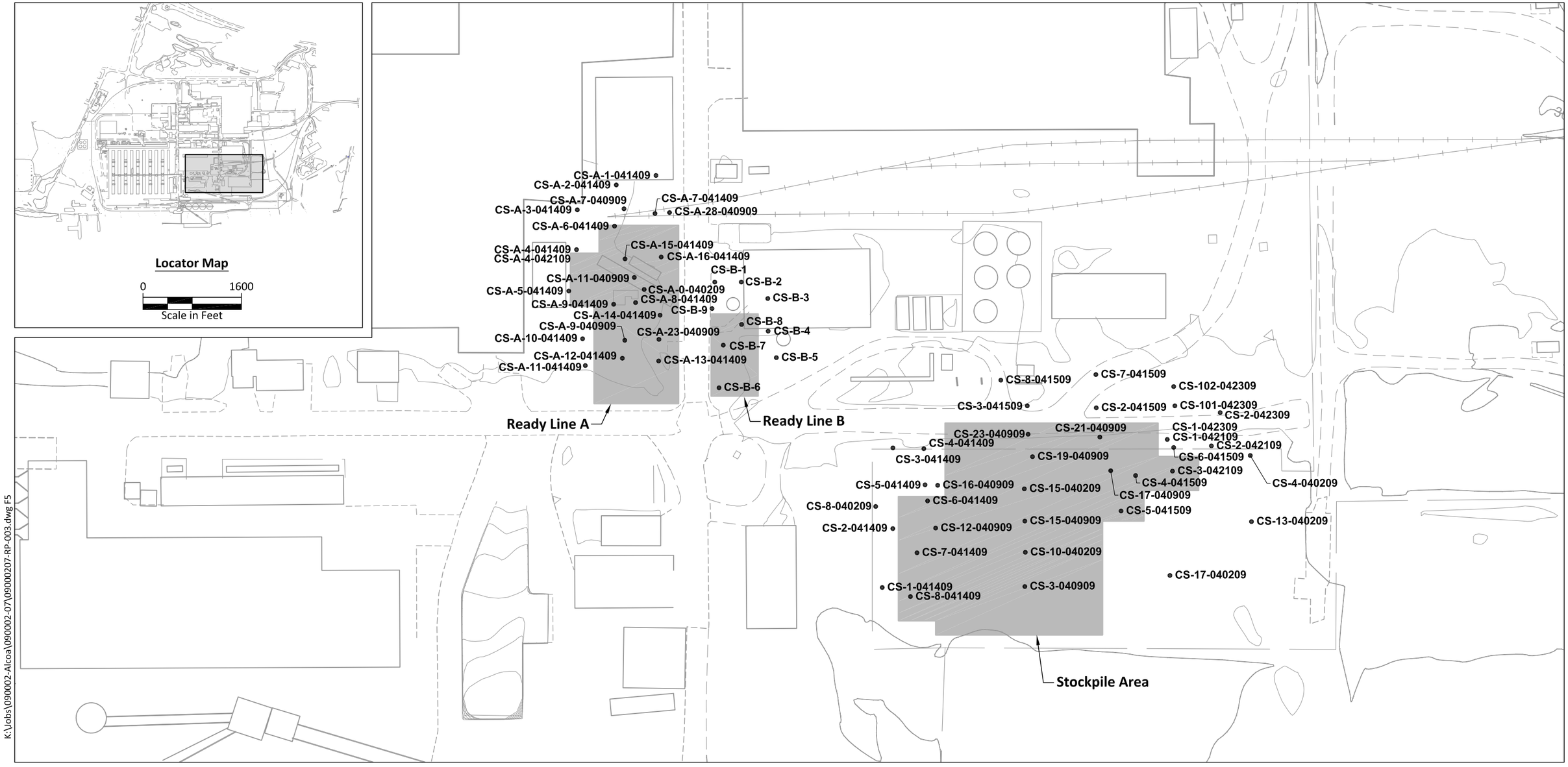
Dec 30, 2009 11:11am herlksen

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83), U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
SURVEY INFORMATION:
Bathymetric data based on surveys by Etrac Engineering, LLC. performed between 1/28/09 and 3/17/09.
Topographic survey by KPFF dated 3/30/09.
NOTES: Aerial from Google Earth 2009.

ANCHOR QEA

0 100
Scale in Feet

Figure 4
Sediment and Shoreline Remediation As-built (West of Dock)
Project Completion Report
Alcoa/Evergreen Vancouver Site



K:\Jobs\090002-Alcoa\090002-07\09000207-RP-003.dwg F5

Dec 15, 2009 3:47pm heriksen

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83) U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
TOPOGRAPHIC SURVEY: Orion GPS dated November 2007.
BATHYMETRIC SURVEY: ETRAC dated October 2008.

LEGEND:

CS-3-040909 • Sample Location and Identification

Approximate Extent of Excavation

0 80
Scale in Feet

ANCHOR QEA

Figure 5
Excavation and Sample Locations for Staging Area Removal
Project Completion Report
Alcoa/Evergreen Vancouver Site

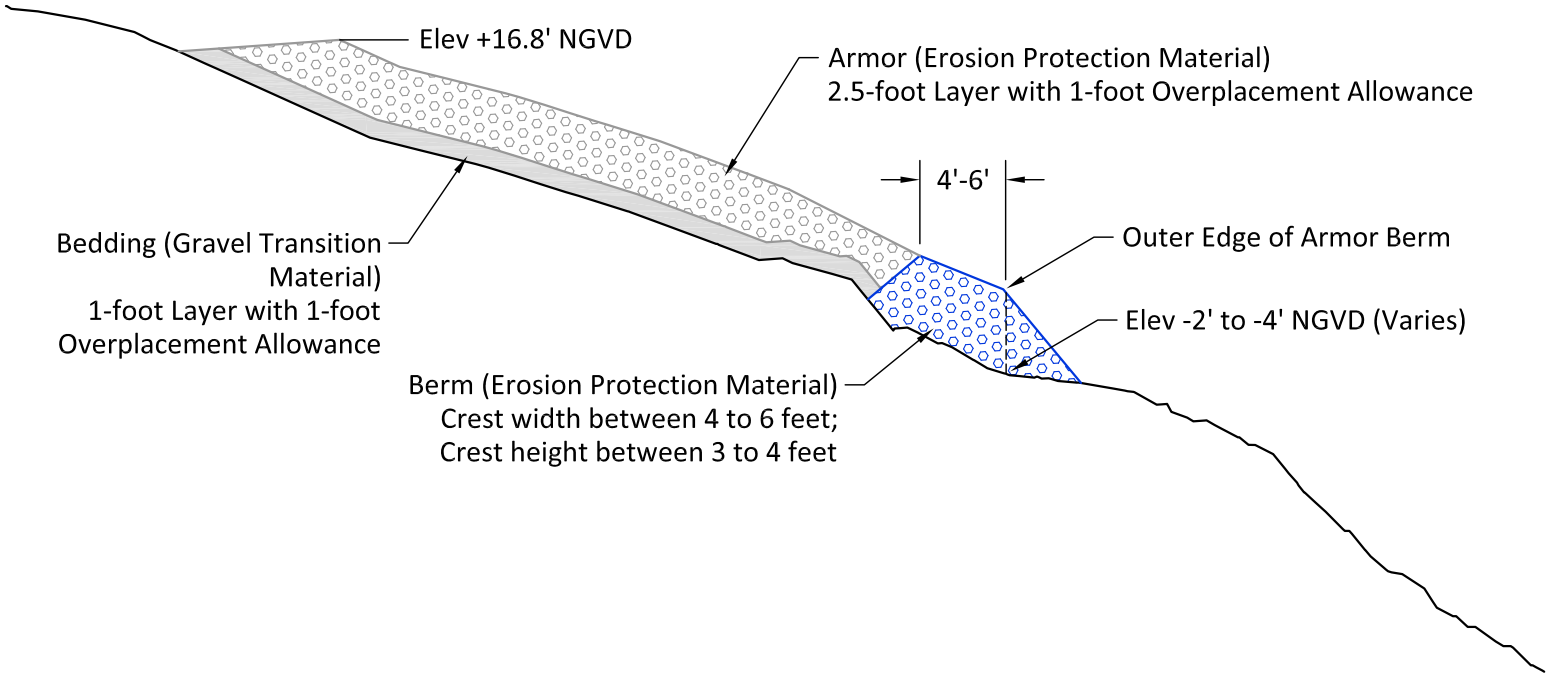
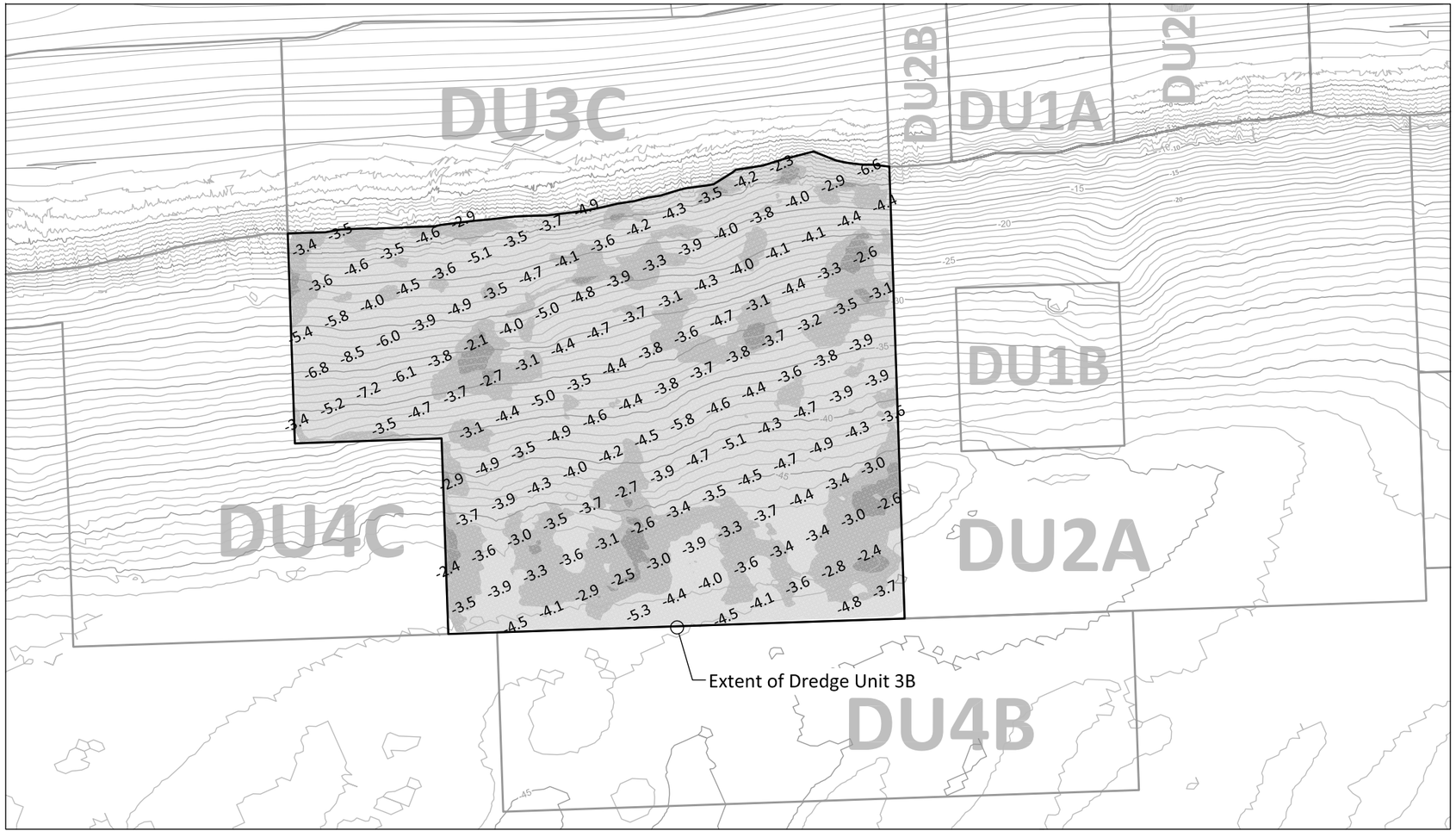


Figure 6
Typical Armor Berm Cross Section
Project Completion Report
Alcoa/Evergreen Site



Dredge Unit Summary	3B
Removal Thickness	2.5'
Payable Overdepth	1.0'
Sediment Contamination Level	Industrial
Design Volume Calculation (with Overdredge)	3,116 CY
Total Volume Removed	3,151 CY
Excessive Dredge Volume	470 CY
Post-Dredge Survey Date	12-31-08

Pre-Dredge vs. Post-Dredge Survey Comparison

- Post-Dredge Above Required Limit
- Post-Dredge Within Limits
- Post-Dredge Below Overdredge Limit

Note: Numbers indicate difference in feet between pre-conditions survey and post-dredge survey (i.e., the thickness of the final dredge cut at that location).

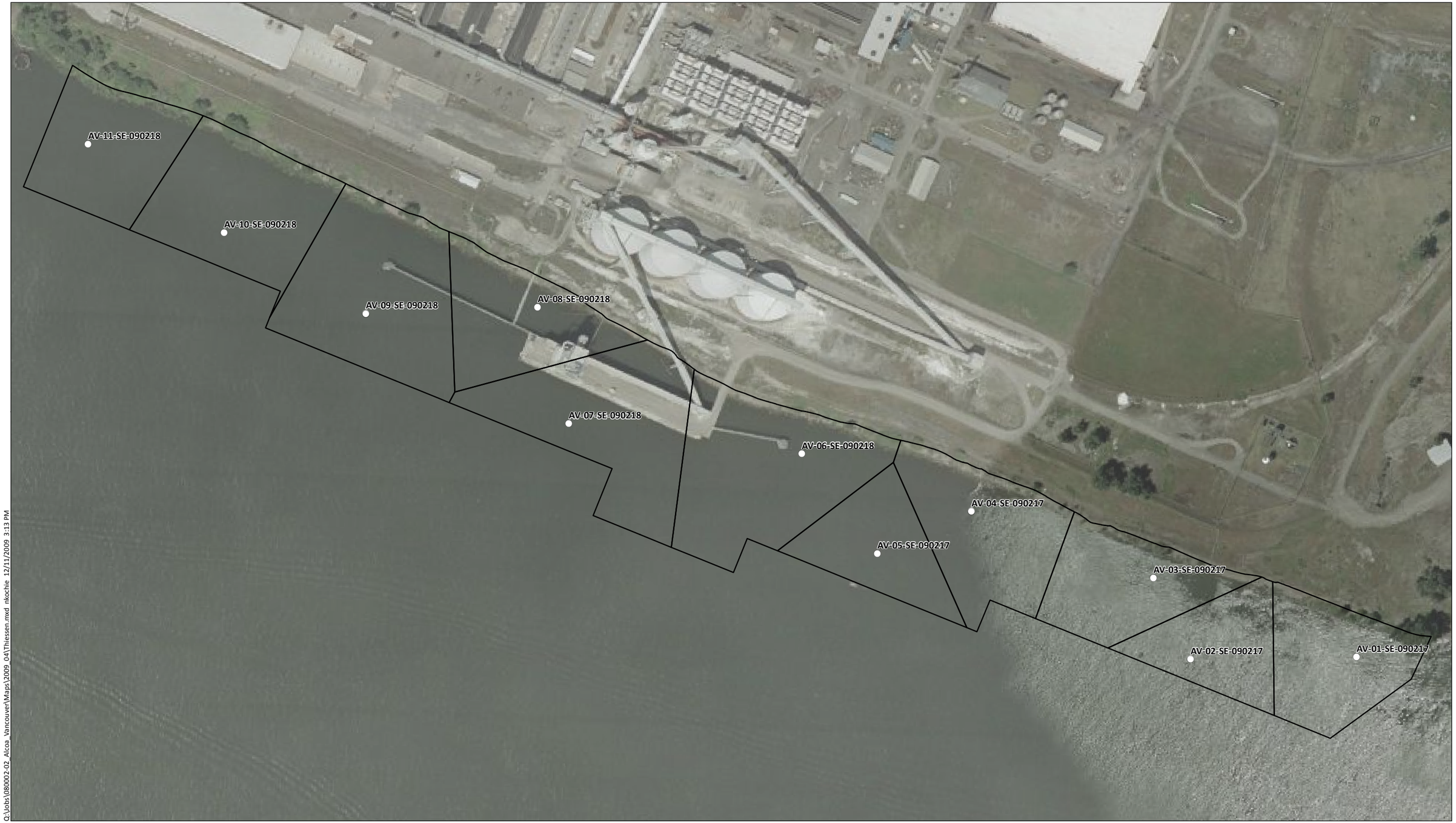
0 40
Scale in Feet

Notes:
1. Pre-Conditions survey: Topography provided by KPFF dated November 2008. Bathymetry provided by eTrac dated October 2008.
2. Post-Conditions survey: Bathymetry provided by eTrac.
3. Horizontal datum is Washington State Plane - South Zone (NAD 83) U.S. Survey feet.
4. Vertical datum is NGVD29.

Dec 11, 2009 4:08pm heriksen K:\Jobs\090002-Alcoa\090002-07\09000207-RP-007.dwg F7

ANCHOR QEA

Figure 7
Example Dredge Cut Verification Survey
Project Completion Report
Alcoa/Evergreen Site



Q:\Jobs\080002-02_Alcoa_Vancouver\Maps\2009_04\Thiessen.mxd nkochie 12/11/2009 3:13 PM

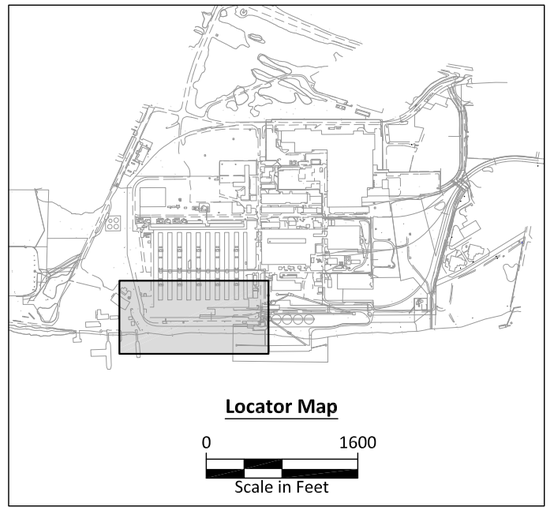
ANCHOR QEA

Feet
0 100 200 300 400

Sample Location and I.D.

Thiessen Polygon Boundary

Figure 8
Sediment Confirmation Sample Locations
Project Completion Report
Alcoa/Evergreen Vancouver Site



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Dec 15, 2009 3:50pm heriksen

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83) U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
TOPOGRAPHIC SURVEY: Orion GPS dated November 2007.
BATHYMETRIC SURVEY: ETRAC dated October 2008.

LEGEND:

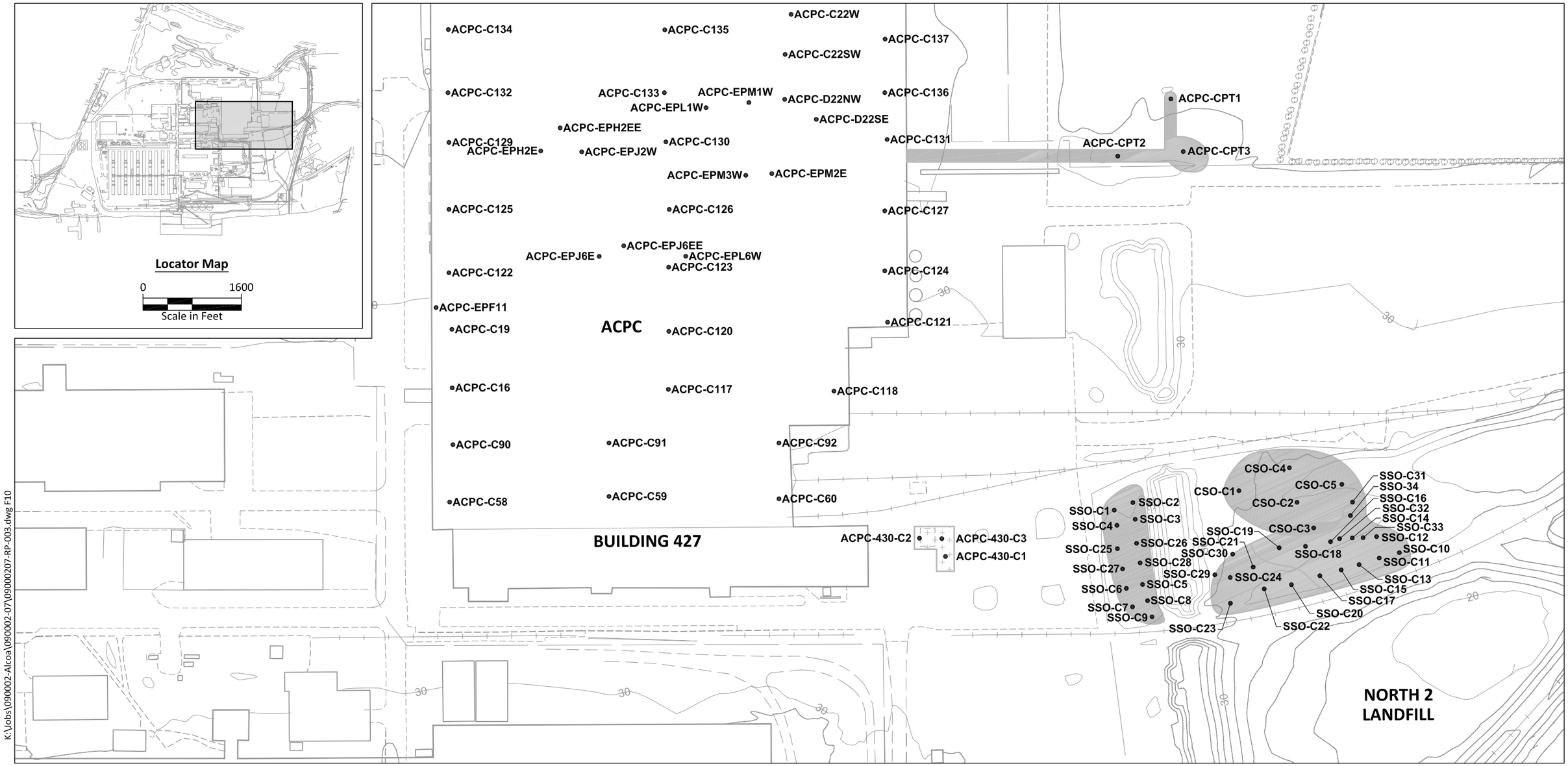
UST4-C5 ● Sample Location and Identification

Approximate Extent of Excavation

0
100
Scale in Feet

ANCHOR QEA

Figure 9
Dike UST Excavation and Sample Locations
Project Completion Report
Alcoa/Evergreen Vancouver Site



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Dec 15, 2009 3:52pm heriksen

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83) U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
TOPOGRAPHIC SURVEY: Orion GPS dated November 2007.
BATHYMETRIC SURVEY: ETRAC dated October 2008.

LEGEND:

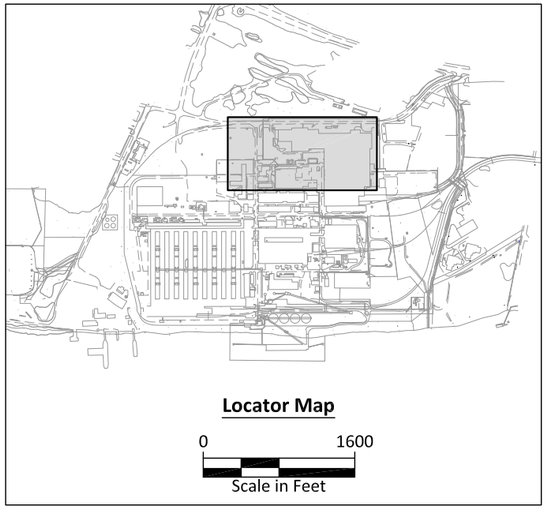
ACPC-430-C2 • Sample Location and Identification

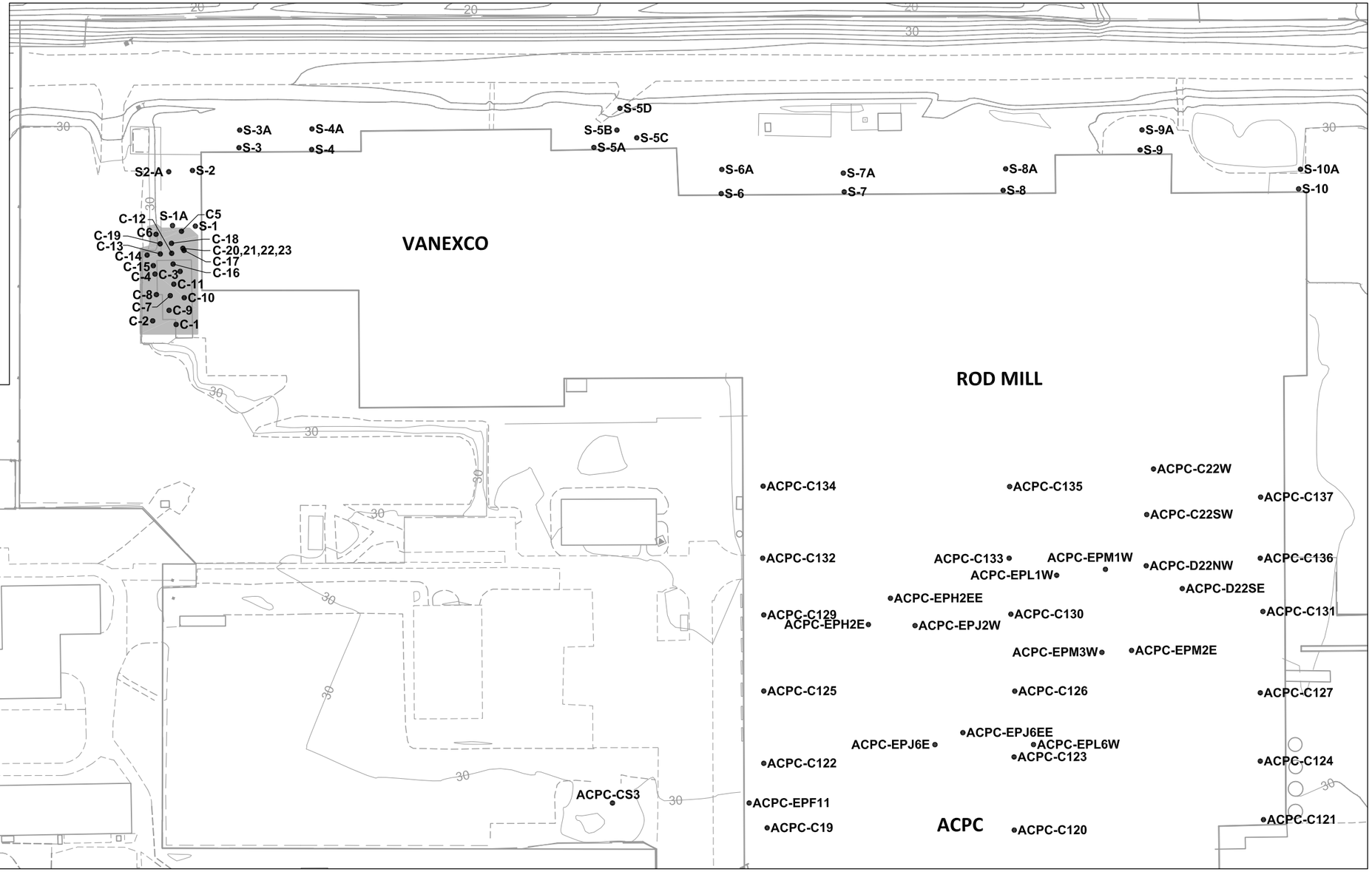
Approximate Extent of Excavation

0 100
Scale in Feet

Figure 10
Removal Areas and Sample Locations for Soluble Oil Area, North Soluble Oil Area, Soils Under ACPC Floor Slab, Building 430, and ACPC Settling Lagoons
Project Completion Report
Alcoa/Evergreen Vancouver Site

ANCHOR QEA





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Dec 15, 2009 3:53pm heriksen

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83) U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
TOPOGRAPHIC SURVEY: Orion GPS dated November 2007.
BATHYMETRIC SURVEY: ETRAC dated October 2008.

LEGEND:

ACPC-C19 • Sample Location and Identification

Approximate Extent of Excavation

0 100
Scale in Feet

Figure 11
Excavation and Sample Locations for Vanexco Soils, Soils Under ACPC Floor Slab, Vanexco Electrical Plant Substation, ACPC Electrical Substation, and Building 408
Alcoa Completion Report
Alcoa/Evergreen Vancouver Site

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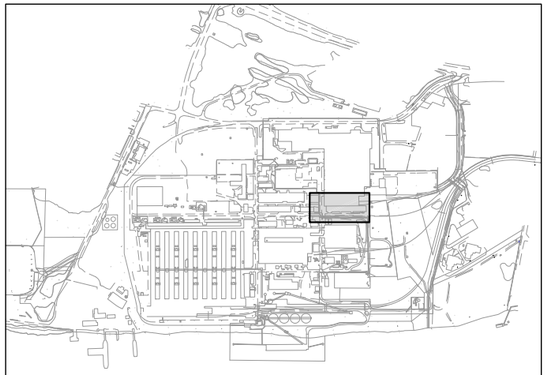

Locator Map

0 1600

Scale in Feet

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83) U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
TOPOGRAPHIC SURVEY: Orion GPS dated November 2007.
BATHYMETRIC SURVEY: ETRAC dated October 2008.

LEGEND:

45 • Sample Location and Identification

Approximate Extent of Excavation

0 40

Scale in Feet

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Dec 15, 2009 3:53pm heriksen

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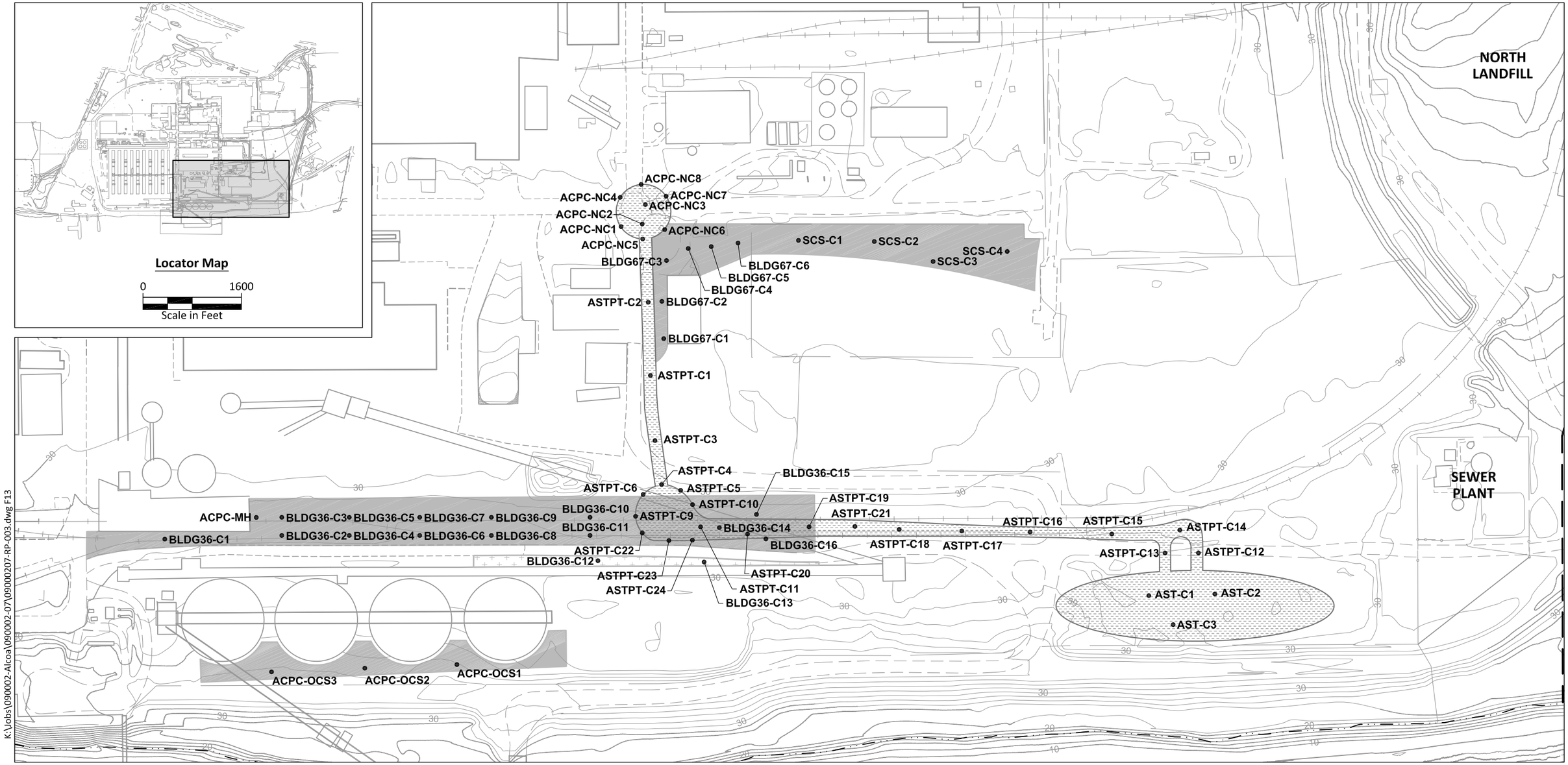
Figure 12
Excavation and Sample Locations for Soils
Under ACPC Floor Slab, Building 427
Project Completion Report
Alcoa/Evergreen Vancouver Site



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Dec 15, 2009 3:54pm heriksen

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83) U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
TOPOGRAPHIC SURVEY: Orion GPS dated November 2007.
BATHYMETRIC SURVEY: ETRAC dated October 2008.

LEGEND:

ASTPT-C3 • Sample Location and Identification

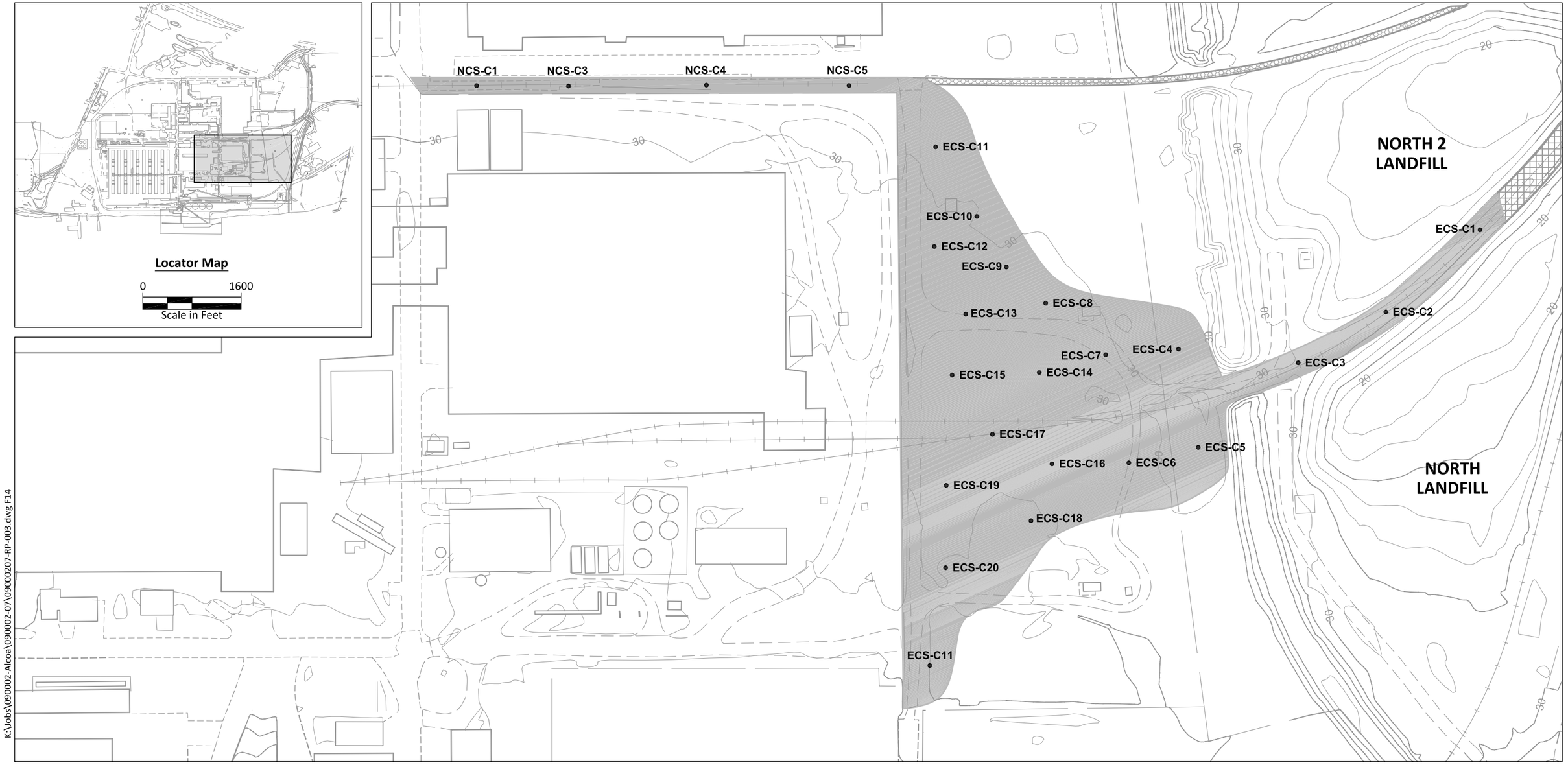
Approximate Extent of Excavation for Alumina Ore Rail Unloading, Coal Tar Pitch at Ore Silos, South Carbon Storage, and Building 67

Approximate Extent of Excavation for Above-Ground Storage Tanks and Pipeline

0 120
Scale in Feet

Figure 13
Excavation and Sample Locations for Above-ground Storage Tanks and Pipeline, Alumina Ore Rail Unloading, Coal Tar Pitch at Ore Silos, Carbon Storage Soil Removal, and Building 67
Project Completion Report
Alcoa/Evergreen Vancouver Site

ANCHOR QEA



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Dec 15, 2009 3:55pm heriksen

HORIZONTAL DATUM: Washington State Plane - South Zone (NAD 83) U.S. Survey Feet.
VERTICAL DATUM: NGVD29.
TOPOGRAPHIC SURVEY: Orion GPS dated November 2007.
BATHYMETRIC SURVEY: ETRAC dated October 2008.

LEGEND:

ECS-C19 • Sample Location and Identification

Vacuumed to Remove Contaminants

Approximate Extent of Excavation (Completed by Alcoa)

Approximate Extent of Excavation (Completed by Port of Vancouver)

0 100
Scale in Feet

ANCHOR QEA

Figure 14
Carbon Storage Removal and Sample Locations (East and North)
Project Completion Report
Alcoa/Evergreen Vancouver Site