B&L Woodwaste Site

Ditch Bank Excavation

Prepared for

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LIMITATIONS

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Ditch Bank Excavation
Construction Completion Report

ENGINEER CERTIFICATION

0+The cleanup actions described in this document were performed under my responsible charge and, to my knowledge and belief, were constructed in substantial compliance with the plans and specifications and related documents in accordance with Washington Administrative Code (WAC) 173-340-400(6)(b).

Name: Megan McCullough

Date: March 1, 2016

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
AESI	Associated Earth Sciences Incorporated
bgs	Below ground surface
BMP	Best Management Practice
CAP	Cleanup Action Plan
CESCL	Certified Erosion and Sediment Control Lead
Consent Decree	Consent Decree No. 082106107
CUL	Cleanup level
Ecology	Washington State Department of Ecology
GAC	Granular activated carbon
GWTP	Groundwater Treatment Plant
gpm	Gallons per minute
IO	IO Environmental and Infrastructure, Inc.
Landfill	B&L Landfill
mg/kg	Milligrams per kilogram
mg/L	Milligram per liter
MTCA	Model Toxics Control Act
NPDES	National Pollutant Discharge Elimination System
Site	B&L Woodwaste Site, Pierce County, Washington
SWPPP	Stormwater Pollution Prevention Plan
TPH	Total petroleum hydrocarbon
Trust	B&L Woodwaste Site Custodial Trust
TSS	Total suspended solids
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1.0 Introduction

In 2008, the Washington State Department of Ecology (Ecology) issued a Cleanup Action Plan (CAP; hereafter referred to as the 2008 CAP) to implement a comprehensive remedy to remediate groundwater and impacted sediments associated with the B&L Woodwaste Site, in Pierce County, Washington (Site; Figure 1.1). Woodwaste placed in the B&L Landfill (Landfill) is mixed with slag from a copper smelter. The slag has leached arsenic to groundwater beneath the Landfill, which subsequently migrated downgradient, impacting groundwater beneath a wetlands area. Groundwater also discharged into an adjacent agricultural ditch system, causing arsenic contamination to accumulate in ditch sediments. The 2008 CAP specified implementation of a remedy requiring construction of a low-permeability barrier wall around the Landfill, recovery of groundwater from the contained area beneath the Landfill and from the arsenic plume emanating from the Landfill, and removal of contaminated ditch sediments and soil. The B&L Woodwaste Site Custodial Trust (Trust) commenced implementation of the remedy specified in the 2008 CAP in 2008, under the terms of Consent Decree No. 082106107 (Consent Decree; Ecology 2008).

As described in the Consent Decree, the Trust implemented the 2008 CAP in a phased program. Phase 1 was completed in September 2010. Phase 1 included site characterization and construction of the barrier wall, and in situ treatment of the leading edge of the arsenic plume. Phase 2 of the implementation program was completed in 2012 and consisted of two parts: design and construction of a groundwater recovery system and groundwater treatment plant (Phase 2 Part 1), and excavation and off-site disposal of contaminated sediments from the agricultural drainage ditches adjacent to the Landfill (Phase 2 Part 2).

Two areas of soil contamination were identified beneath the ditch banks during the 2012 ditch excavation and confirmation sampling. These two areas, referred to as the South Ditch and West Ditch, underwent additional investigation and remedial evaluation to support a decision by Ecology on the remedial approach (Floyd|Snider and AMEC 2014a). The cleanup of contaminated ditch bank soil, referred to as the Ditch Bank Excavation, was conducted by the Trust in 2015 as an adaptive element of the ongoing site remediation under the Consent Decree, and an extension of work described in the Engineering Design Report (EDR) Addendum 4 (Floyd|Snider and AMEC 2012). Plans and specifications were prepared based on additional remedial design elements developed with Ecology and documented in a Remedial Design Basis memorandum (Floyd|Snider and AMEC 2014b).

This Ditch Bank Excavation Construction Completion Report (Completion Report) documents construction activities associated with the removal and off-site disposal of contaminated soil from the banks of the South Ditch and West Ditch. The Ditch Bank Excavation was completed in accordance with the requirements of the Model Toxics Control Act (MTCA) regulations for implementation of the cleanup action specified in Washington Administrative Code (WAC) 173-340-400. This Completion Report addresses the requirements for construction documentation specified in WAC 173-340-400(6)(b).

1.1 DITCH BANK EXCAVATION OBJECTIVES

The primary objectives of Ditch Bank Excavation were to remove contaminated soil from beneath portions of a residential apartment property (the GRE Greenwood Property) and an agricultural field adjacent to the agricultural ditches and Landfill to restore the environmental quality of soil, groundwater, and surface water. Removal of soil with elevated concentrations of arsenic was intended to prevent potential direct exposure to the soil, prevent leaching of arsenic to groundwater at concentrations greater than cleanup levels (CULs) at the Site, and reduce discharge of contaminated groundwater from the ditch bank areas to surface water in the ditch system. These steps are consistent with site cleanup goals of remediating areas of groundwater and surface water arsenic contamination outside the Landfill, and protecting the quality of ditch sediments that were cleaned up in 2012. Cleanup of the contaminated soil was the preferred action by property owners of both the GRE Greenwood Property and the agricultural field (Washington State Department of Transportation [WSDOT]).

2.0 Project Implementation

The ditch bank excavation remedial activities were conducted by IO Environmental and Infrastructure, Inc. (IO) and subcontractors beginning on August 10, 2015, and concluding on October 26, 2015. All construction activities were completed in accordance with the *Ditch Bank Soil Excavation Construction Plans and Specifications* (Floyd|Snider 2015). Ditch Bank Excavation As-Built drawings are presented in Appendix A. Construction photographs and daily field logs are included as Appendix B. Weekly Progress Reports completed by the Engineer are included in Appendix C.

2.1 PERMITS AND AGREEMENTS

Permits, agreements, and supporting documentation related to the Ditch Bank Excavation are included in Appendix D. Implementation of the remedy met the substantive requirements for applicable regulations and standards, and complied with all action-, chemical-, and location-specific Applicable or Relevant and Appropriate Requirements (ARARs) as described in the 2008 CAP. Local permitting requirements for construction were within the jurisdiction of Pierce County, as the Landfill is within unincorporated Pierce County. The remediation design complied with the substantive requirements of local governmental agencies and no permits were required.

Temporary impacts to the ditch and wetland areas were permitted under a Nationwide #38 Permit issued by the U.S. Army Corps of Engineers (USACE). A Joint Aquatic Resources Permit Application (JARPA) was prepared to obtain approval under Nationwide #38 Permit for the Ditch Bank Excavation. The application was submitted to USACE on April 8, 2015, and was approved on August 18, 2015. The application is included in Appendix D. The temporarily impacted areas were restored in accordance with the permit, and a Certificate of Compliance with the Department of the Army Permit form was submitted to the USACE on December 29, 2015, indicating that the terms of the permit had been met.

A Construction Stormwater General Permit was obtained at Ecology request because the Ditch Bank Excavation construction activities were associated with a cleanup site with potential to release toxic constituents to waters of the State. Monitoring and implementation of Best Management Practices (BMPs) was maintained in accordance with the approved Stormwater Pollution Prevention Plan (SWPPP; Appendix E) to ensure stormwater discharges from the Site did not adversely impact surface waters of the state. Further detail on stormwater management is summarized below in Section 2.6.

2.2 SITE PREPARATION AND ENGINEERING CONTROLS

2.2.1 Best Management Practices

In this section, BMPs that were implemented as part of the Ditch Bank Excavation are described. BMPs were implemented in accordance with the plans and specifications, to establish construction access and mark clearing limits of the construction activities, and prevent stormwater affected by construction from entering waters of the State.

2.2.1.2 West Ditch

At the West Ditch, an existing dirt road from 20th Street East was used as the ingress/egress route to the work area for all trucks, equipment, and employees. In order to access the West Ditch excavation area, IO constructed a road across the agricultural field. To stabilize and prepare the road for truck traffic, it was compacted with water and repeatedly driven on to provide a firm, competent surface and to reduce dust generation. In one section of the road that was less firm, 25 yards of wood chips were placed in an approximately 30-foot section to provide a more competent surface for truck and equipment traffic. A heavy-duty steel rumble pad was placed just before the entrance to 20th Street East to prevent track out of soil onto the road.

Per the plans and specifications, IO installed a silt fence at the southern edge of Wetland F to prevent migration of contaminated soil from the excavation area into the wetland (as shown on Drawing C-02 of the Design Drawings in Appendix A).

2.2.1.3 South Ditch

At the South Ditch, IO installed 6-foot-tall chain-link fencing along the southern side of the excavation adjacent to the portion of the ditch that was actively being excavated. The fencing served to keep GRE Greenwood Property residents from accessing the open portion of the excavation. As the excavation progressed to the west, fencing was added to the western end. During active loading of soil, IO swept spilled soil back into the excavation and was careful not to sweep material over completed sections of the excavation. In order to control dust, a water truck was on-site and IO periodically sprayed down the bottom of the excavation to minimize dust.

Per the SWPPP and the plans and specifications, a plug was inserted into the catch basin in the GRE Greenwood Property driveway to prevent stormwater runoff from the work area from entering the conveyance system. The catch basin is located at a low point between the east and west parking areas in the main driveway at the GRE Greenwood Property. With Ecology approval, the plug was removed during inactivity (i.e., nights and weekends), and the catch basin was cleaned out prior to plug removal. IO installed a silt fence to protect Wetland A from construction activities and prevent contaminated soil from entering the wetland. The catch basin and silt fence are shown on Drawings EC-01 and C-01 of the Design Plans in Appendix A.

2.2.2 Vegetation Removal

To prepare the South Ditch for excavation, all the trees within the excavation footprint were cut down close to the base and then chipped on-site. The chips were transported off-site for recycling. The stumps were kept in place until excavation and were then direct-loaded into trucks and transported off-site to LRI Landfill in Graham, Washington, for disposal with contaminated material, as discussed in Section 2.3.6.

As required in the plans and specifications, effort was made to protect trees and vegetation rooted in the top of bank, beyond the area to be excavated.

2.2.3 Asphalt, Concrete, and Fencing Removal

Prior to excavation in the South Ditch, the asphalt and concrete curbing and sidewalk were removed and sent off-site for recycling. The permanent fencing along the southern wall of the excavation area was also removed and sent off-site to LRI Landfill for disposal.

2.2.4 Trailer Removal

The plans and specifications instructed the Contractor to temporarily relocate an existing trailer adjacent to the southwestern wall of the South Ditch prior to excavation, and return the trailer upon excavation completion. Due to the poor condition of the trailer, the Contractor was not able to move the trailer without damage. With property owner permission, the trailer and its contents were instead demolished and sent to LRI Landfill for disposal on August 14, 2015.

2.2.5 Surface Water Controls

To control surface water flow into the excavation area in the West Ditch, surface water was dammed and diverted around the excavation area prior to excavation activities. IO constructed dams at locations upstream and downstream of the excavation area (refer to Figure 1.1 for ditch water flow directions). The upgradient diversion and downgradient check dams consisted of 1-cubic yard super sacks filled with sand and armored with plastic. The sacks were placed on the toe of the plastic to anchor and seal the base of the dam against the ditch surface. Plastic was draped back over the top of the super sacks and anchored with sand bags. A pump was placed upgradient of the upstream dam and water was pumped downstream of the downstream dam at the northern end of the construction area. The pump was run continuously during active construction and periodically throughout the project to manage water levels in the ditch until backfilling was complete and the super sacks were removed.

In the South Ditch, a check dam consisting of two super sacks was placed at the downgradient end of the excavation to prevent water from flowing upstream into the excavation from the western agricultural ditch. A pump was placed upgradient of the dam to periodically pump ponded water around the dam.

To prevent turbid water from leaving the West Ditch construction area, multiple straw wattle dams and geotextile silt fences were installed on the downgradient side of the excavation area and checked periodically for evidence of any discharge (refer to discussion of Stormwater Management BMPs in Section 2.6). Excavation in the South Ditch area was conducted with no standing water in the adjacent ditch, and did not require downgradient surface water controls.

2.2.6 Pre-construction Baseline Survey

Prior to excavation, and consistent with the project plans and specifications, a pre-excavation survey was conducted on August 13, 2015, by True North Land Surveying to mark out excavation limits and install control points.

2.2.7 Utility Location

Prior to excavation work, IO conducted a public utility location request through the Utilities Underground Location Center for Pierce County. The utility locate was conducted in June 2015 prior to advancing geotechnical borings for shoring assessment.

2.3 DITCH BANK EXCAVATION

Excavation activities started at the West Ditch and then proceeded to the South Ditch. Approximately 4,300 tons of soil were removed from the two excavation areas during construction activities. Soils were removed via an excavator and dewatered as described in Section 2.3.2. In the West Ditch, excavation moved from north to south and was completed in approximately 2 days (including over-excavation). In the South Ditch, excavation started at the eastern end of the excavation and moved westward and took approximately 17 days (including over-excavation). In some areas, verification sampling data indicated contaminated soil remained in place following excavation to the extents outlined by the project plans. Additional soil was removed from these areas at the direction of the Engineer, as described in Section 2.3.4.

2.3.1 Shoring in the South Ditch

Per the plans and specifications, shoring was required along the south sidewall of the South Ditch excavation. Associated Earth Sciences, Inc. (AESI) provided a geotechnical analysis that provided recommendations for shoring installation (Appendix F). Prior to excavation in the South Ditch, AESI installed high-load soldier piles that were up to 30 feet below ground surface (bgs). As excavation progressed down to excavation limits, IO installed lagging between the soldier piles according to AESI's recommendations.

2.3.2 Dewatering Methods

Prior to excavation, the ditches were dewatered to minimize the potential for transport of contamination and to reduce the moisture content of the excavated material and reduce soil weight. In order to dewater the excavation area in the West Ditch, a diversion dam consisting of two super sacks was placed upgradient of the excavation extent, as described in Section 2.2.5. At the northern, downgradient end of the excavation, a temporary check dam was installed (similar to the upgradient diversion dam). A sump pump was placed upstream of the diversion dam and water was pumped around the excavation area. To prepare the ditch for excavation, ditch water between the dams was pumped around the downgradient dam. Once the ditch was dewatered sufficiently, excavation commenced. Per the plans and specifications, all water from the active work area was to be treated for arsenic removal prior to discharge. Once excavation started, water entering the excavation was no longer diverted but was pumped to a Baker tank in the agricultural field. Water pumped to the Baker tank was transferred to the Groundwater Treatment Plant as described in Section 2.5.

2.3.3 Initial Ditch Excavation

During initial excavation, contaminated soil was removed down to the excavation limits, as specified in the plans and specifications. For both the West and South Ditches, soil was loaded directly onto trucks that ran continuously between the Site and LRI Landfill during excavation.

2.3.4 Over-Excavation

Once the initial limits of excavation were reached and confirmed by the Engineer, verification samples were collected from the base and sidewalls at approximately 25-foot intervals, as described in detail in Section 4.0. In some areas, analytical results indicated contaminated soil remained following initial excavation. Under the supervision of Floyd|Snider, IO returned to these areas to over-excavate horizontally and/or vertically to a distance or depth directed in the field by the Engineer (refer to Figures 2.1 and 2.2 for verification sample results and contingent excavation sections).

Due to an exceedance in the north wall of the West Ditch excavation (sample location WD-0'-N), prior to over-excavation, Floyd|Snider advanced four hand augured soil borings to a depth of 4 feet bgs to delineate the contamination. Based on the results of samples collected from 1.5 to 2 feet and 3.5 to 4 feet bgs from these soil borings, the West Ditch was over-excavated 25 feet to the north, to a depth of approximately 3.5 feet bgs. West Ditch verification sample results and over-excavation areas are shown on Figure 2.1.

In the South Ditch, four separate areas required over-excavation. South Ditch verification sample results and over-excavation areas are shown on Figure 2.2. Exceedances in the north wall between locations SD-58'-N and SD-8'-N required additional sampling and over-excavation. To delineate the contamination, a test pit was dug extending north to the property line and down into the north bank and samples were collected at multiple depths. Sample results indicated that over-excavation was necessary and the north bank was over-excavated to the property line, from approximately 10 feet east of SD-58'-N to the northeastern corner of the excavation. In an additional area in the north wall of the South Ditch, exceedances of the CUL in samples collected from between SD-183'-N and SD-83'-N required over-excavation. In coordination with Ecology, it was determined that this area, located on the property parcel where the Landfill is located (B&L Property), would be over-excavated to remove contaminated soil and apparent woodwaste, but would not exceed 655 cubic yards in the event that contamination extended a greater-than-expected distance into the B&L Property. Over-excavation was conducted from approximately 25 feet east of location SD-183'-N eastward to approximately half way between locations SD-83'-N and SD-58'-N. Additional verification samples were collected after over-excavation of the north bank, as described in Section 4.1.1.

Exceedances in the south wall between locations SD-180'-S and SD-216'-S required additional over-excavation. Over-excavation was conducted approximately 3 feet south between SD-180'-S and SD-216'-S to the location of previous investigation boring locations. Samples from boring locations AV-19 and AV-20, collected during the 2013 investigation, were used to provide verification of the excavation extent in this area.

In the base of the South Ditch, concentrations in samples collected from the base of the initial excavation at SD-10'-C, SD-30'-C, and SD-50'-C exceeded the CUL. The samples were all collected within material resembling woodwaste. Test pits were completed to approximately 2 feet below the initial excavation at the three locations that exceeded the CUL. The test pits penetrated through the apparent woodwaste into a grey, native silty sand that was used as a visual indicator for over-excavation. Additional verification samples were collected from the base of each test pit in the silty sand unit, as described in Section 4.1.1. Over-excavation to approximately 2 feet bgs was conducted from the east sidewall to approximately half way between locations SD-75'-C and SD-50'-C.

2.3.5 Soil Characterization and Profiling

Soil characterization at the Landfill for the South and West Ditches was conducted in 2013 and 2014. Detected arsenic concentrations ranged from 1.1 to 612 milligrams per kilogram (mg/kg). To evaluate the leaching potential of soil encountered at the Site, the sample with the greatest arsenic concentration measured during the 2013 investigation (612 mg/kg) was submitted for Toxicity Characteristics Leaching Procedure (TCLP) analysis. The resulting TCLP analysis was non-detect (less than a reporting limit of 1 milligram per liter [mg/L]) for arsenic. Soil collected during the 2014 investigation had a maximum arsenic concentration of 204 mg/kg; therefore, the 2013 TCLP data are considered conservatively representative of the material removed from the South and West Ditches, indicating it to be non-hazardous material suitable for Subtitle D landfilling. In June 2015, Ecology approved the use of LRI Landfill in Graham, Washington, for the disposal of excavated soil from the Landfill. IO obtained a waste disposal authorization (WDA), WDA No. 1928, from Tacoma-Pierce County Health Department for disposal of soil at the LRI Landfill facility (refer to Appendix G for Waste Disposal Authorization).

2.3.6 Soil Transport and Disposal

All soil hauled off-site for disposal was transported by PGH Excavating, Inc., and Harlow Construction Company, Inc., to LRI Landfill in Graham, Washington, under the WDA.

In total, the Contractor hauled approximately 4,300 tons of contaminated soil off-site for disposal between August 19 and September 11, 2015. A disposal summary from the waste disposal facility is included in Appendix G.

2.3.7 Backfilling

Following verification sampling and the Engineer's acceptance of ditch excavation, the South and West Ditches were backfilled according to the requirements in the plans and specifications. In the West Ditch, quarry spalls were placed on the bottom of the ditch to 1 foot above the groundwater table. Select borrow material meeting the WSDOT Standard Specification for Select Borrow and gradation requirements of the plans and specifications was then placed in 8-inch lifts and compacted with the excavator between lifts, up to a depth of 6 inches below grade. Finally, 6 inches of bioretention topsoil meeting the requirements of the plans and specifications were

placed to restore the grade of the excavation area to be consistent with the surrounding ground surface and ditch bank. The topsoil was not compacted.

Similarly, in the South Ditch, quarry spalls were placed on the bottom of the ditch to 1 foot above the groundwater table. Select borrow was placed in 8-inch lifts and compacted with a single drum soil compactor according to the requirements in the plans and specifications. AESI was on-site periodically throughout backfilling to ensure the lifts were compacted to a minimum of 92 percent of the maximum density in accordance with the plans and specifications. In areas to be landscaped, select borrow was placed to a depth of 15 inches below grade and then topsoil was places to 3 inches below grade. The final surface was then covered with 3 inches of mulch and compost and planted, as described in Section 2.4.2.

2.4 SITE RESTORATION

After verification sampling and backfilling of the ditch excavation, the excavation and construction access areas were restored to their original conditions according to the requirements in the plans and specifications.

2.4.1 West Ditch Restoration

The West Ditch excavation area was backfilled to the existing grade of the ditch base, ditch bank, agricultural field, and Wetland F. The excavator bucket was used to tamp the surface, which minimized the potential for soil transport.

After the ditches were backfilled to existing grade, jute mat was placed from the knoll of the reconstructed ditch bank to the base of the ditch. Wetland seed mix was hand-spread along the ditch banks and sidewalls to cover bare areas and exposed soil. Photographic documentation of the jute mat placement and vegetation re-establishment is provided in Appendix B.

Due to the onset of the rainy season and flooding of the agricultural field west of the ditch, tilling of the agricultural field, which was planned to restore an area of Wetland F temporarily affected by compaction from construction vehicle, was not able to be completed by the project team. Tilling of the area is done regularly by the farmer who cultivates the adjacent fields, to prevent the establishment of trees.

2.4.2 South Ditch Restoration

The South Ditch excavation area was backfilled to the existing grade of the ditch base and ditch bank. The excavator bucket was used to tamp the surface, which minimized the potential for soil transport.

After the ditches were backfilled to existing grade, jute mat was placed from the knoll of the reconstructed ditch bank to the base of the ditch. Wetland seed mix was hand-spread along the ditch banks and sidewalls to cover bare areas and exposed soil. Photographic documentation of the jute mat placement and vegetation re-establishment is provided in Appendix B.

The concrete sidewalk and curbing, and asphalt impacted by construction activities were repaired or replaced. The tree-covered area north of the apartment driveway was landscaped with mulch to prevent erosion and impacts to the wetland. A variety of trees and shrubs were planted at the South Ditch. IO will maintain landscaping for 1 year from the completed site work.

2.5 WATER MANAGEMENT AND DISPOSAL

Prior to the start of excavation activities, Ecology issued a modified National Pollutant Discharge Elimination System (NPDES) Permit No. WA0040321 to allow treated groundwater from the pump and treat system, treated groundwater, and construction stormwater generated from the South and West Ditches during remediation to be discharged via Outfall 001 (refer to Figure 1.1 for outfall location; the NPDES permit is provided in Appendix D). Groundwater seepage and/or surface water that entered the excavation at the South and West Ditches were collected and processed at the Groundwater Treatment Plant (GWTP) to remove total suspended solids (TSS) and arsenic. Following treatment, the commingled water was discharged to surface water in compliance with the facility's modified NPDES permit. Ditch water collection, treatment, and disposal is described below.

2.5.1 Water Collection

Prior to the start of excavation activities, the West and South Ditch work areas were isolated from surface water by diversion and check dams. Ditch water was pumped around the dams to dewater the excavation area. During excavation activities, the water that entered the excavation area at the West Ditch was pumped to a Baker tank and transported in a vactor truck to Baker tanks located at the GWTP. Water from the South Ditch was pumped directly from the excavation through 2-inch-diameter polyvinyl chloride (PVC) pipes to the Baker tanks located at the GWTP. The dewatering water was allowed to settle to remove turbidity before being pumped to the GWTP for treatment.

2.5.2 Pretreatment and Groundwater Treatment Plant Use

All water sent to the GWTP for processing was required to be below 25 mg/L for TSS and pumped at a flow rate of 10 gallons per minute (gpm) or less. After settling at the GWTP Baker tanks, the dewatering water was initially pumped through 50-micron filters prior to entering the GWTP. Due to the presence of silt in the ditch sediments, the influent being transferred from the Baker tanks to the GWTP exceeded the GWTP influent limit of 25 mg/L TSS. The 50-micron in-line filters were replaced with 25-micron and subsequently 10-, 5-, and 1-micron filters. These filtering adjustments successfully reduced the influent to less than 25 mg/L TSS. The filter housing units were stored in secondary containment to contain leaks. The flexible hose used for water transfer was placed through the GWTP doorway and was disconnected nightly to allow the building to be secured. The filtered dewatering water was sampled weekly to insure TSS was less than GWTP limits. The flow rate of the dewatering water to the GWTP was monitored with a digital flow rate totalizer to ensure a discharge rate of 10 gpm or less.

After filtration outside the GWTP, dewatering water was pumped to the GWTP head tank where it commingled with groundwater from the recovery well network at the Landfill. Further treatment was performed in the same manner as groundwater received from the recovery well network, as described in the annual operations report (Floyd|Snider and AFW 2015). In this process, a series of reagents—including a coagulant, sulfuric acid, potassium permanganate, lime slurry, and polymer—are employed to isolate arsenic and precipitate it out of groundwater. The last step in the treatment process included filtration and polishing by activated alumina adsorbers. All GWTP operations, water testing, and discharge were conducted by Floyd|Snider.

After processing, the commingled water was discharged to surface water in compliance with the facility's modified NPDES Permit. Weekly sampling is conducted for pH and arsenic of the effluent from the GWTP.

2.5.2.1 Petroleum Contamination of Collected Water

On August 26, 2015, a vactor truck was used to transfer construction dewatering water from a Baker tank adjacent to the West Ditch to pre-treatment tanks located adjacent to the GWTP. During the transfer of water from the vactor truck to the Baker tank ("Tank 1") at the GWTP, the filtration system became clogged after approximately 1,000 gallons had been transferred to the Baker tank. Upon inspection of the filtration unit, metal shavings and a petroleum odor were detected by Floyd|Snider staff. Visual inspection of the construction dewatering water in the Baker tank did not identify any metal shavings. A sample of the water in the Baker tank was analyzed by Friedman & Bruya, Inc., for gasoline-, diesel-, and heavy oil-range total petroleum hydrocarbons (TPH) by method NWTPH-HCID. Petroleum hydrocarbons were not detected in the construction dewatering water collected from the Baker tank and the water was pumped to the GWTP for processing (Appendix H).

On September 15, 2015, a vactor truck was used to transfer construction dewatering water from the Baker tank adjacent to the West Ditch to pre-treatment tanks located adjacent to the GWTP. Construction dewatering water treatment tanks were arranged so that two pre-treatment tanks ("Tank 1" and "Tank 3") were used to receive water for settling. Water was then pumped through bag and cartridge filters and transferred into a third tank ("Tank 2"). The filtered water in Tank 2 was then pumped into the GWTP's head tank at a low flow rate of less than 5 gpm, where it was mixed with 20 gpm of influent groundwater from recovery wells.

During transfer of the second 3,000-gallon load of the day from the West Ditch construction area, Floyd|Snider staff observed gravel in the water being transferred into Tank 3 and a gasoline odor emanating from the vactor truck. The vactor truck was later determined to have contained residual petroleum contamination from use at another site. Use of this vactor truck and transfer of water to Tank 3 was immediately halted. It was later determined that water from the first 3,000-gallon load that the vactor truck had emptied into Tank 1 had mixed with the water stored in Tank 1, and some affected water had been transferred from Tank 1 into Tank 2. As a result, some gasoline-affected water had been pumped into the GWTP head tank and mixed with influent groundwater from site recovery wells prior to treatment in the plant. Water samples were taken from Tank 1, Tank 2, and Tank 3. Water from Tank 1, considered the most affected

tank, was also sampled for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs). Results indicated low levels of polycyclic aromatic hydrocarbons and light fraction TPH components including gasoline-range organics (GRO) and benzene, toluene, ethylbenzene and xylenes (BTEX).

The GWTP was shut down beginning the weekend of September 19 to 20, 2015, as a result of repeated failures of pH process probes, which are sensitive to petroleum hydrocarbons. The plant remained shut down for an extended period for troubleshooting. On September 30, 2015, during preparation to restart the GWTP, the presence of low concentrations of petroleum hydrocarbons inside the GWTP were identified and determined to be the most likely cause of the pH process probe failures. Analytical samples taken from the tank where the pH process probes were housed indicated the presence of petroleum hydrocarbons (GRO and BTEX). Analytical laboratory reports are included in Appendix H.

2.5.2.2 Treatment of Petroleum-Affected Water

To address water in the treatment plant that had been affected by the TPH, a granular activated carbon (GAC) vessel was used to treat all water for TPH within the GWTP on October 2, 2015. The treated water was stored in a new Baker tank, "Tank 4," while the treated water was being characterized and confirmed to be clean by analytical samples taken from the water treated by the GAC unit. The plant was subjected to a thorough cleaning with hot water, and the pH process probes were replaced. Treated water was discharged from Tank 4 back into the plant and the plant was restarted on October 5, 2015.

Treatment of water from Tanks 1 through 3 was conducted in batches. Each tank was processed using bag filters and the GAC vessel. The treated water was discharged into Tank 4 for confirmation sampling prior to transfer to the GWTP. Samples were also collected midway and at the end of discharges through the GAC unit from each affected tank for additional confirmation. Confirmation results for each tank indicated TPH had been removed from the dewatering water and the water was sent to the GWTP for processing. Treatment of the dewatering water was completed on October 23, 2015. Analytical laboratory reports are included in Appendix H.

2.5.3 Tank Cleanout, Sludge and Carbon Handling, and Disposal

After pumping all contaminated water from the Baker tanks through a carbon filter to the GWTP, Tanks 1 through 4 were washed and removed from the Site on October 28, 2015. The spent GAC, filtration units, and piping were removed from the Site along with the Baker tanks. Approximately 700 gallons of waste water was collected from the tanks and disposed of off-site by Marine Vacuum Services, Inc.

2.6 STORMWATER MANAGEMENT

Stormwater management was implemented as described in the SWPPP (refer to Appendix E). Secondary soil control BMPs were also implemented during construction. The following sections describe the implementation and monitoring of stormwater management BMPs.

2.6.1 Construction Stormwater Best Management Practice Implementation

Temporary Erosion and Soil Controls (TESC) were implemented around the construction area to control run-on and runoff of stormwater into and from the construction area. The following BMP elements were implemented during construction activities, in accordance with the plans and specifications, the SWPPP, and the Construction Stormwater General Permit:

- **Control of Flow Rates.** The grade of most of the construction area is flat; therefore, minimal controls were necessary to slow runoff rates. Additionally, as active construction occurred during the dry season, the minimal amount of rain that fell infiltrated naturally.
- **Soil Controls and Soil Stabilization.** The work was completed with zero discharge of untreated stormwater runoff from all active work areas. A silt fence was used behind active work adjacent to Wetland F and Wetland A (as described in Section 2.2.1) to prevent transport of contaminated soil. To prevent turbid water from leaving the construction area, multiple straw wattle dams and geotextile silt fences were installed on the downgradient side of the dam in the West Ditch and checked periodically for evidence of any discharge, as described in Section 2.6.2.

  Dust control was achieved by periodic spraying of water over all roads during dry weather. Water was also sprayed on dry excavated soil to prohibit the transport of material by wind during the direct load process. Because soil was direct-loaded during excavation, stockpiles were generally not created. However, if a temporary stockpile was created, it was placed within the excavation and below ground surface so any stormwater falling on the stockpile would run directly into the excavation.

  Final soil stabilization was accomplished by placing jute mat over exposed, sloped areas in both the West Ditch and the South Ditch and then seeding with wetland seed mix.
- **Control of Pollutants.** All pollutants, including waste materials and construction debris, were handled and disposed of in a manner that did not cause contamination of stormwater. Good housekeeping and preventative measures were taken throughout construction activities to ensure the construction area was well organized and free of debris.
- **Management of the Project.** A Certified Erosion and Sediment Control Lead (CESCL) was available and on-call throughout construction activities. Inspection and monitoring were conducted to ensure that appropriate BMPs were implemented and maintained.

2.6.2 Site Inspections and Monitoring

Weekly visual inspections of the construction area were performed to ensure BMPs were functioning properly in conjunction with weekly CESCL inspections. Weekly inspections were completed by the on-site Floyd|Snider CESCL to monitor site conditions, maintain BMPs, and monitor water quality at the point of discharge either north of the West Ditch excavation or west of the South Ditch excavation. Turbidity measurements were checked weekly when water was actively being discharged, per the requirements of the Construction Stormwater General Permit. For documentation purposes, turbidity measurements and water level measurements were also periodically collected upstream and downstream of any installed surface water diversion or check dam. All measurements were compared to a surface water benchmark of 25 nephelometric turbidity units (NTU). Inspection notes (included in the daily field logs) and CESCL inspection forms are attached in Appendix B. Although there were measurements exceeding the benchmark value of 25 NTU, there were no exceedances of 250 NTU, which would have required reporting to Ecology. If the benchmark value of 25 NTU was exceeded, Floyd|Snider immediately instructed IO to stop work and modify BMPs in order to bring the surface water into compliance.

2.6.3 Final Site Stabilization

As described in Section 2.6.1, all exposed, sloped surfaces were covered with jute mat and seeded in general accordance with the plans and specifications for erosion control. Once all exposed soils were seeded and stabilized, all temporary BMPs were removed, construction-related stormwater discharges were eliminated, and the construction area was determined to be stabilized. A letter from Ecology documenting termination of coverage under the Construction Stormwater General Permit is included in Appendix D.

2.7 DEMOBILIZATION AND SITE RESTORATION

Following completion of excavation activities and confirmation of the excavation extent, IO demobilized from the Site. Demobilization included decontamination and removal of all equipment, cleanup of work areas, and restoration of all disturbed areas of the Site including the agricultural fields. Baker tanks and temporary water connections were emptied, cleaned, and removed. Roadway improvements conducted in the agricultural fields were left in place.

3.0 Deviations from the Project Plans and Specifications and Unanticipated Project Conditions

During site preparation, IO compacted an area of soil in the agricultural field adjacent to the West Ditch with vehicle traffic and temporarily impacted vegetation in Wetland F. Floyd|Snider instructed IO to avoid driving through the wetland to access the construction area and to extend the silt fence to clearly delineate the construction area from the wetland area. The affected area was revegetating naturally prior to project completion.

During restoration of the West Ditch, the constructed bank began to erode due to surface water that bypassed the upstream diversion dam. In order to limit the amount of erosion, IO placed quarry spalls on the constructed ditch bank for stabilization and some of the quarry spalls sloughed into the ditch. Use of quarry spalls for bank stabilization was not described in the project plans and specifications. After removing the quarry spall that had fallen in the ditch and pumping water around the construction area, IO placed backfill and topsoil on top of the bank quarry spalls. The topsoil was covered with jute mat and reseeded.

In mid-October, after excavation was complete and site restoration was underway, rain flooded the back lot area of the GRE Greenwood Property above the level of a catch basin inlet and would not drain. The cause of the catch basin blockage was thought to be the inadvertent pushing of debris into a catch basin at the western end of the lot, during clearing activities by IO earlier in the project. After attempts to find a drainage pipe and clean out the drain by hand, it was determined that the ponded water should be pumped into the South Ditch and the buried drainage line should be jet vacuumed in order to clean any debris that may have entered the drain. Under IO's oversight, Marine Vacuum Services, Inc., cleaned out the drain and the area was restored to the satisfaction of the GRE Greenwood Property manager.

4.0 Performance Monitoring

4.1 VERIFICATION SAMPLING AND ANALYSIS

Verification sampling was performed in accordance with MTCA requirements (WAC 173-340-740(7)(b)) as applied to site conditions in the November 21, 2014 Remedial Design Basis memorandum (Floyd|Snider and AMEC 2014b) to confirm that remediation objectives were attained. Verification sampling is summarized below. Analytical results are presented in Appendix H. Long-term monitoring of groundwater and ditch surface water is being performed as part of the remediation program being implemented under the 2008 CAP.

Ditch bank soil samples were collected and analyzed for arsenic after initial and over-excavation in order to verify that the 95 percent upper percentile concentrations for soil left in place ("in situ concentrations") did not exceed the site CUL or violate other MTCA verification sampling provisions. The following sections describe the West and South Ditch verification sampling and results in further detail; analytical data are presented in Tables 4.1 and 4.2. In general, all soil samples were collected and analyzed in accordance with the procedures described in the Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP), which was Appendix B to the Groundwater Remediation Work Plan (Floyd|Snider and AMEC Geomatrix 2009). Additional procedures not described in the SAP/QAPP or Design Basis Memorandum are described below.

4.1.1 Sample Collection Methods

After initial excavation at the West and South Ditches, soil verification samples were collected at 25-foot intervals along the ditch lengths. In general, three samples were collected at each location, including a sample from each sidewall and from the approximate center of the excavation base. Samples were also collected from the sidewalls at the ends of each excavation. At the South Ditch, sidewall samples were not collected from the south wall of the excavation along areas where shoring was installed (between approximately SD-165'-S and SD-10'-S; refer to Figure 2.2). In areas that required over-excavation, the corresponding locations were re-sampled where CUL exceedances were measured during the initial verification sampling (e.g., one bank, base only, etc.). Samples were collected from the excavation sidewall and base surfaces to a depth of 6 inches. Samples were collected using a decontaminated trowel or hand auger, or from the excavator bucket, homogenized in decontaminated stainless steel bowls, placed into laboratory-provided clean jars, and transported under chain-of-custody procedures to Friedman & Bruya, Inc., in Seattle, Washington. Samples were analyzed for arsenic by USEPA Method 200.8.

In areas where verification samples exceeded the CUL, additional soil samples were collected from deeper intervals in order to further define the extents of contamination. Additional sampling was performed at the north sidewall of the West Ditch, the excavation base in the eastern portion of the South Ditch between locations SD-50'-C and SD-10'-C, and a segment of

the north sidewall of the South Ditch between locations SD-183'-N and SD-8'-N. Areas of additional sampling are shown on Figures 2.1 and 2.2 and described below.

In the West Ditch, a sidewall sample collected at the northern edge of the excavation exceeded the CUL. Hand auger samples were collected from 1.5 to 2 and 3.5 to 4 feet bgs at 13.5 feet and 25 feet north of the initial excavation along the centerline (locations WD-13.5'-C and WD-25'N-C) and west sidewall (locations WD-13.5'-W and WD-25'N-W).

In the South Ditch, three additional excavation base samples were collected at approximately 1.5 to 2 feet bgs along the centerline, at locations SD-50'-C, SD-30'-C, and SD-10'-C in the eastern portion of the excavation.

In the South Ditch, to delineate CUL exceedances in the north wall, eight additional samples were collected from two test pit transects at intervals north of the original excavation, four at approximately 7.5 feet bgs (SD-11'-N-5, SD-11'-N-10, SD-11'-N-15, and SD-11'-N-20) and four farther west at approximately 4 to 5 feet bgs (SD-30'-N-2.5, SD-30'-N-5, SD-30'-N-7.5, and SD-30'-N-10).

Farther west, 10 additional samples were collected from the base and north sidewall of the over-excavation at five intervals (SD-183'-N-B, SD-183'-N-5, SD-158'-N-B, SD-158'-N-5, SD-133'-N-B, SD-133'-N-5, SD-108'-N-B, SD-108'-N-5, SD-83'-N-B, and SD-83'-N-5).

Results of these additional South and West Ditch samples were used to instruct additional soil removal from the base of the excavation and sidewalls or characterize soil to remain in place, as described in Section 2.3.4.

4.1.2 Analytical Results

A total of 87 samples were analyzed for total arsenic; three samples were archived for later analysis if needed. These samples include ditch verification sampling locations (spaced 25 feet apart) and additional samples described above that were collected to further define the extents of contamination. Soil results for samples that remain in place are presented in Table 4.1 for the West Ditch and in Table 4.2 for the South Ditch.

Arsenic concentrations in soil samples were compared to the MTCA Method A CUL of 20 mg/kg, and were the subject of a statistical compliance evaluation, as described in Section 4.2.

4.1.3 Data Validation Summary

A Compliance Screening, Tier 1 data quality review was performed on arsenic data resulting from laboratory analysis. The analytical data was validated in accordance with the USEPA *National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2014).

A total of 90 soil samples (including three archive samples) were submitted, in 13 sample delivery groups: FB508341, FB508354, FB508378, FB508403, FB508450, FB508511, FB508552, FB509003, FB509050, FB509075, FB509083, FB509112, and FB409189, to Friedman & Bruya, Inc., of Seattle,

Washington. For all sample delivery groups, the method blanks, internal standards, matrix spike, matrix spike duplicate and laboratory control sample recoveries, and matrix spike/matrix spike duplicate relative percent differences all met USEPA requirements.

No qualifiers were added to the analytical results based on the data quality review. Data were determined to be of acceptable quality for use as reported by the laboratory.

4.1.4 Environmental Information Management System

Following completion of data validation, all verification data were successfully loaded and accepted into Ecology's Environmental Information Management system on January 11, 2016.

4.2 MODEL TOXICS CONTROL ACT COMPLIANCE DEMONSTRATION

As stated in WAC 173-340-740(7)(c)(iv)(A), "an upper percentile soil concentration shall be used to evaluate compliance with cleanup levels." The upper percentile soil concentration used for this evaluation was the 95 percent upper quartile range (Floyd|Snider and AMEC 2014b), calculated using the MTCAStat statistical analysis program. A MTCAStat output summary of statistical analysis results is presented in Appendix I.

Site data for in situ arsenic concentrations, including applicable results for samples collected during previous investigations conducted in May and June 2013 (AV-19-3-4, AV-19-5-6, AV-20-3-4, and AV-20-5-6; Floyd|Snider and AMEC 2013) were input into the MTCAStat statistical analysis program. Sample results were only included in the statistical evaluation if the soil remained in place at the completion of the excavation. With Ecology and property owner concurrence, and consistent with the Remedial Design Basis memorandum (Floyd|Snider 2014), two verification samples with arsenic concentrations exceeding 20 mg/kg from the north sidewall, located on the Landfill property, were excluded from the evaluation. Compliance for soil represented by these samples (SD-83'-N-5 and SD-30'-N-10) is addressed under the 2008 CAP and the environmental covenant for the property, separately from the Ditch Bank Excavation remedial action. Both samples are located on the Landfill property side of the property boundary, as marked in the field based on surveyed control points.

The statistical evaluation of South and West Ditch verification data resulted in a 95 percent upper quartile range concentration of 10.3 mg/kg, less than the MTCA CUL of 20 mg/kg. A best-fit analysis confirmed that the data followed a log-normal distribution, with a correlation coefficient (r-squared) of 0.984.

MTCA also requires that no samples left in place have a contaminant concentration in excess of two times the CUL and that not more than 10 percent of the total sample concentrations exceed the CUL. Of the 65 site-wide in situ samples used in the evaluation, 6 exceeded the CUL (<10 percent) with concentrations ranging from 20.3 to 69.7 mg/kg. Two samples (SD-30'-N-10 and WD-25'-C-2) exceeded 40 mg/kg, twice the Site CUL of 20 mg/kg, and are discussed in Section 4.3.

Additional information describing soil remaining in place at arsenic concentrations greater than the Site CUL is provided in the following section.

4.3. SOIL REMAINING GREATER THAN SITE CLEANUP LEVELS

Soil samples left in place with arsenic concentrations greater than the Site CUL of 20 mg/kg following the Ditch Bank Excavation, including the two samples not included in the statistical evaluation, are shown on Figures 2.1 and 2.2, presented in Tables 4.1 and 4.2, and summarized here.

At the South Ditch, six soil samples were left in place with arsenic concentrations greater than 20 mg/kg but less than 2 times the CUL of 40 mg/kg. One soil sample was left in place at more than 40 mg/kg arsenic (2 times the CUL) on the Landfill Property at the South Ditch. This sample, SD-30'-N-10, is located on the Landfill Property, as marked in the field based on surveyed control points. Compliance for soil represented by this sample is addressed in accordance with the 2008 CAP and the environmental covenant for the property, separately from this evaluation.

At the West Ditch, one sample was left in place with a concentration of 69.7 mg/kg arsenic. Sample WD-25'-C-2 is located on WSDOT property. This exceedance was located less than 10 feet away from the groundwater treatment system extraction piping, and left in place to avoid damage to the groundwater treatment infrastructure. Contaminated soil represented by the sample will be removed when these remedial components are removed from the WSDOT property, consistent with the environmental covenant.

Sample ID	Arsenic Concentration (mg/kg)	Washington State Plane South Coordinates	
		Northing (feet NAD 83/98)	Easting (feet NAD 83/98)
SD-0'-E	21.3	701550.58	1186656.11
SD-30'-C-2	35.0	701564.69	1186630.94
SD-30'-N-10	47.6	701582.94	1186644.74
SD-83'-N-5	23.5	701576.84	1186332.76
SD-325'-C	33.1	701582.92	1186332.33
SD-333'-N	22.4	701582.70	1186307.15
SD-358'-N	20.3	701588.45	1186590.43
WD-25'-C-2	69.7	702066.68	1185674.84

Abbreviation:
NAD 83/98 North American Datum of 1983/1998

Soil left in place with arsenic concentrations greater than the cleanup level at the conclusion of the Ditch Bank Excavation is in full compliance with MTCA rules for post-remedial verification sampling and environmental covenants implemented under the 2008 CAP for the two affected properties, the Landfill Property and the WSDOT property. The compliance evaluation included all samples collected from the GRE Greenwood Property, and demonstrates that soil on this property has been fully cleaned up in accordance with MTCA. The small quantity of residual contaminated soil represented by these samples is not expected to have a substantial effect on the arsenic concentration or remediation of groundwater or surface water.

5.0 References

Floyd|Snider. 2015. *Ditch Bank Soil Excavation Construction Plans and Specifications for B&L Woodwaste Site, Pierce County, Washington*. Prepared by Floyd|Snider. May.

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_____. 2014a. *Memorandum: Ditch Bank Remedial Action*. B&L Woodwaste Site, Pierce County, Washington. From Brett Beaulieu, Megan McCullough, and Erin Murray, Floyd|Snider, to Mohsen Kourehdar, Washington State Department of Ecology. 21 May.

_____. 2014b. *Memorandum: Ditch Bank Soil Extent Investigation Results and Remedial Design Basis*. B&L Woodwaste Site, Pierce County, Washington. From Brett Beaulieu, Megan McCullough, and Jenny Graves, Floyd|Snider, to Mohsen Kourehdar, Washington State Department of Ecology. 21 November.

Floyd|Snider and Amec Foster Wheeler (AFW). 2015. *2014 Annual Operations & Maintenance Report*. B&L Woodwaste Site, Pierce County, Washington. Prepared for B&L Custodial Trust. March.

Floyd|Snider and AMEC Geomatrix. 2009. *B&L Woodwaste Site Groundwater Remediation Work Plan*. Prepared for B&L Custodial Trust. January.

U.S. Environmental Protection Agency (USEPA). 2014. *National Functional Guidelines for Inorganic Superfund Data Review*. Office of Superfund Remediation and Technology Innovation. OSWER 9355.0-131, EPA-540-R-013-001. August.

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Tables

Table 4.1
West Ditch Soil Arsenic Verification Results

Location	Sample ID	Sample Date	Sample Depth Range	Arsenic Concentration (mg/kg)
West Ditch				
WD-13.5'-C	WD-13.5’-C-4	8/20/2015	3.5–4 ft	1.01
WD-13.5'-W	WD-13.5’-W-2	8/20/2015	1.5–2 ft	2.24
	WD-13.5’-W-4	8/20/2015	3.5–4 ft	1 U
WD-25'N-C	WD-25’-C-2	8/20/2015	1.5–2 ft	**69.7**
	WD-25’-C-4	8/20/2015	3.5–4 ft	1 U
WD-25'N-W	WD-25’-W-2	8/20/2015	1.5–2 ft	4.62
	WD-25’-W-4	8/20/2015	3.5–4 ft	1 U
WD-25'S-C	WD-25’-C	8/19/2015	0–6 in	3.46
	WD-25a’-C	8/19/2015	0–6 in	3.54
WD-25'S-E	WD-25’-E	8/19/2015	0–6 in	4.27
WD-25'S-W	WD-25’-W	8/19/2015	0–6 in	5.61
WD-50'-C	WD-50’-C	8/19/2015	0–6 in	13.7
WD-50'-E	WD-50’-E	8/19/2015	0–6 in	9.95
WD-50'-W	WD-50’-W	8/19/2015	0–6 in	13.5
WD-75'-C	WD-75’-C	8/19/2015	0–6 in	2.53
WD-75'-E	WD-75’-E	8/19/2015	0–6 in	4.97
WD-75'-W	WD-75’-W	8/19/2015	0–6 in	4.08
WD-125'-C	WD-125’-C	8/19/2015	0–6 in	2.20
WD-125'-E	WD-125’-E	8/19/2015	0–6 in	3.34
WD-125'-W	WD-125’-W	8/19/2015	0–6 in	4.98
WD-145'-S	WD-145’-S	8/20/2015	0–6 in	6.87

Notes:

Bold Indicates concentration is greater than the cleanup level of 20 mg/kg.

1 Sample WD-25a'-C is a field duplicate.

Abbreviations:

ft Feet

in Inches

mg/kg Milligrams per kilogram

Qualifier:

U Analyte was not detected, concentration given is reporting limit.

Table 4.2
South Ditch Soil Arsenic Verification Results

Location	Sample ID	Sample Date	Sample Depth Range[1]	Arsenic Concentration (mg/kg)
South Ditch				
SD-0'-E	SD-0’-E	8/21/2015	0–6 in	**21.3**
SD-10'-C	SD-10’-C-2	8/21/2015	1.5–2 ft	12.8
SD-10'-S	SD-10’-S	8/21/2015	0–6 in	1.97
SD-11'-N-20'	SD-11’-N-20	8/31/2015	7.5–8 ft	8.64
SD-30'-C	SD-30'-C-2	9/10/2015	1.5–2 ft	**35.0**
SD-30'-N-10'	SD-30’-N-10	8/31/2015	4–5 ft	**47.6**
SD-50'-C	SD-50’-C-2	9/10/2015	1.5–2 ft	1 U
SD-75'-C	SD-75’-C	8/27/2015	0–6 in	9.32
SD-83'-N-5'	SD-83-N-5	9/10/2015	0–6 in	**23.5**
SD-83'-N-B	SD-83’-N-B	9/10/2015	0–6 in	3.29
SD-100'-C	SD-100’-C	8/27/2015	0–6 in	11.8
SD-108'-N-5'	SD-108’-N-5	9/10/2015	0–6 in	2.90
SD-108'-N-B	SD-108’-N-B	9/10/2015	0–6 in	15.5
SD-125'-C	SD-125’-C	8/28/2015	0–6 in	2.53
SD-125'-C	SD-140’-A	8/28/2015	0–6 in	2.76
SD-133'-N-5'	SD-133’-N-5	9/10/2015	0–6 in	2.45
SD-133'-N-B	SD-133’-N-B	9/10/2015	0–6 in	2.06
SD-150'-C	SD-150’-C	8/28/2015	0–6 in	2.52
SD-158'-N-5'	SD-158’-N-5	9/10/2015	0–6 in	2.24
SD-158'-N-B	SD-158’-N-B	9/10/2015	0–6 in	2.75
SD-165'-S	SD-165’-S	8/31/2015	0–6 in	14.8
SD-175'-C	SD-175’-C	8/31/2015	0–6 in	2.95
SD-183'-N-5'	SD-183’-N-5	9/10/2015	0–6 in	1.71
SD-183'-N-B	SD-183’-N-B	9/10/2015	0–6 in	1.07
AV-19	AV-19 3-4	6/7/2013	3–4 ft	1.88
	AV-19 5-6	6/7/2013	5–6 ft	15.9
AV-20	AV-20 3-4	6/7/2013	3–4 ft	1.53
	AV-20 5-6	6/7/2013	5–6 ft	15.3
SD-200'-C	SD-200’-C	9/1/2015	0–6 in	2.21
SD-208'-N	SD-208’-N	9/1/2015	0–6 in	3.54
SD-225'-C	SD-225’-C	9/2/2015	0–6 in	1.23
SD-233'-N	SD-233’-N	9/2/2015	0–6 in	8.41
SD-240'-S	SD-240’-S	9/2/2015	0–6 in	6.53
SD-250'-C	SD-250’-C	9/2/2015	0–6 in	1.78
SD-258'-N	SD-258’-N	9/2/2015	0–6 in	6.24
SD-265'-S	SD-265’-S	9/3/2015	0–6 in	17.9
SD-275'-C	SD-275’-C	9/3/2015	0–6 in	2.97
SD-283'-N	SD-283’-N	9/3/2015	0–6 in	4.36

Table 4.2
South Ditch Soil Arsenic Verification Results

Location	Sample ID	Sample Date	Sample Depth Range[1]	Arsenic Concentration (mg/kg)
South Ditch (cont.)				
SD-290'-S	SD-290’-S	9/3/2015	0–6 in	7.80
SD-300'-C	SD-300’-C	9/3/2015	0–6 in	2.91
SD-308'-N	SD-308’-N	9/3/2015	0–6 in	2.95
SD-315'-S	SD-315’-S	9/4/2015	0–6 in	15.6
SD-325'-C	SD-325’-C	9/4/2015	0–6 in	**33.1**
SD-333'-N	SD-333’-N	9/4/2015	0–6 in	**22.4**
SD-340'-S	SD-340’-S	9/4/2015	0–6 in	7.89
SD-350'-C	SD-350’-C	9/4/2015	0–6 in	4.84
SD-358'-N	SD-358’-N	9/4/2015	0–6 in	**20.3**
SD-375'-W	SD-375’-W	9/4/2015	0–6 in	6.11

Notes:

Bold Indicates concentration is greater than the cleanup level of 20 mg/kg.

1 Depth below exposed excavation surface. For the two samples collected from test pits, SD-11’-N-20 was collected from approximately 7.5 feet bgs and SD-30’-N-10 was collected from approximately 4 to 5 feet bgs.

2 Sample SD-140'-A is a field duplicate.

Abbreviations:

bgs Below ground surface

ft Feet

in Inches

mg/kg Milligrams per kilogram

Qualifier:

U Analyte was not detected, concentration given is reporting limit.

B&L Woodwaste Site

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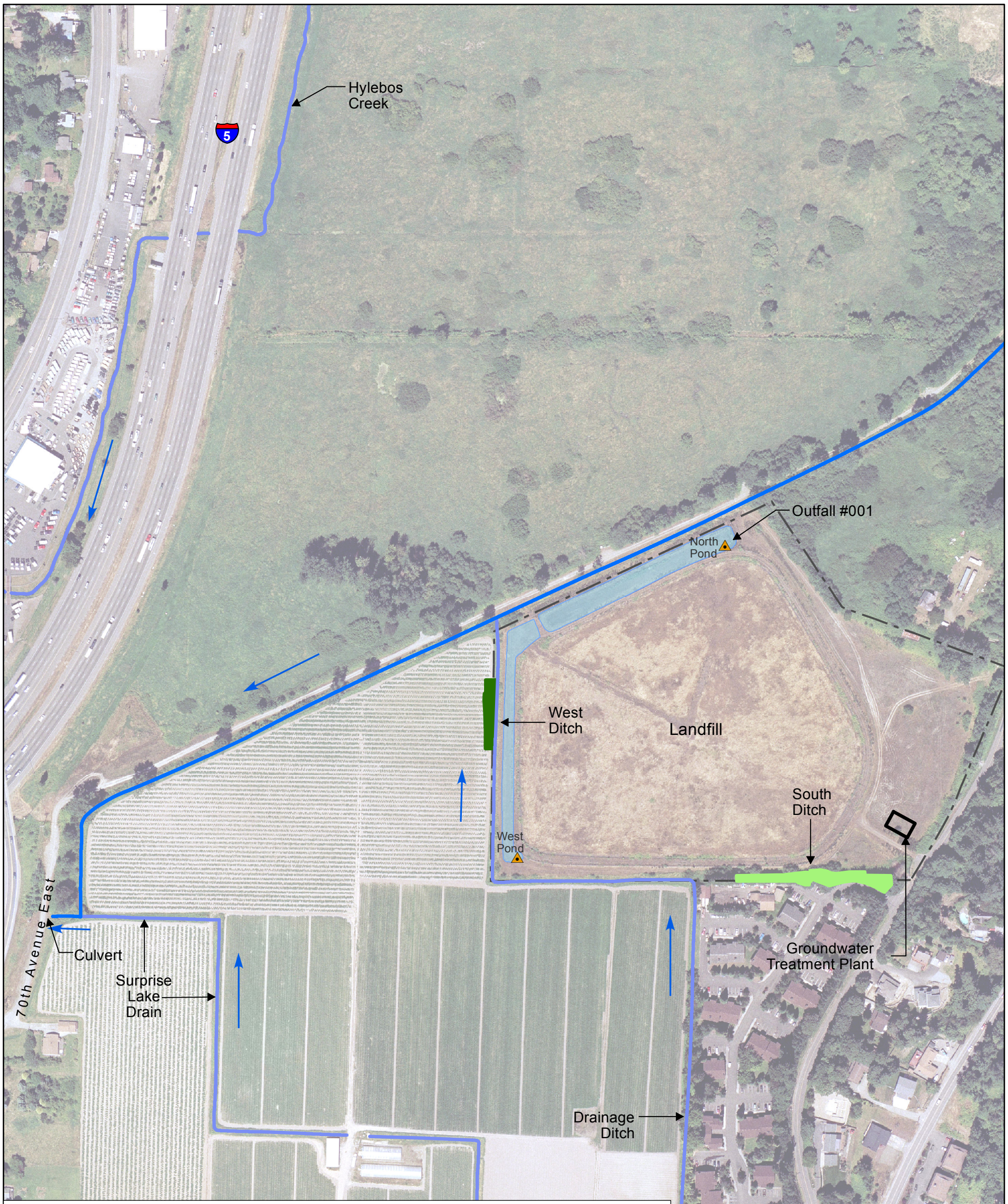
Figures



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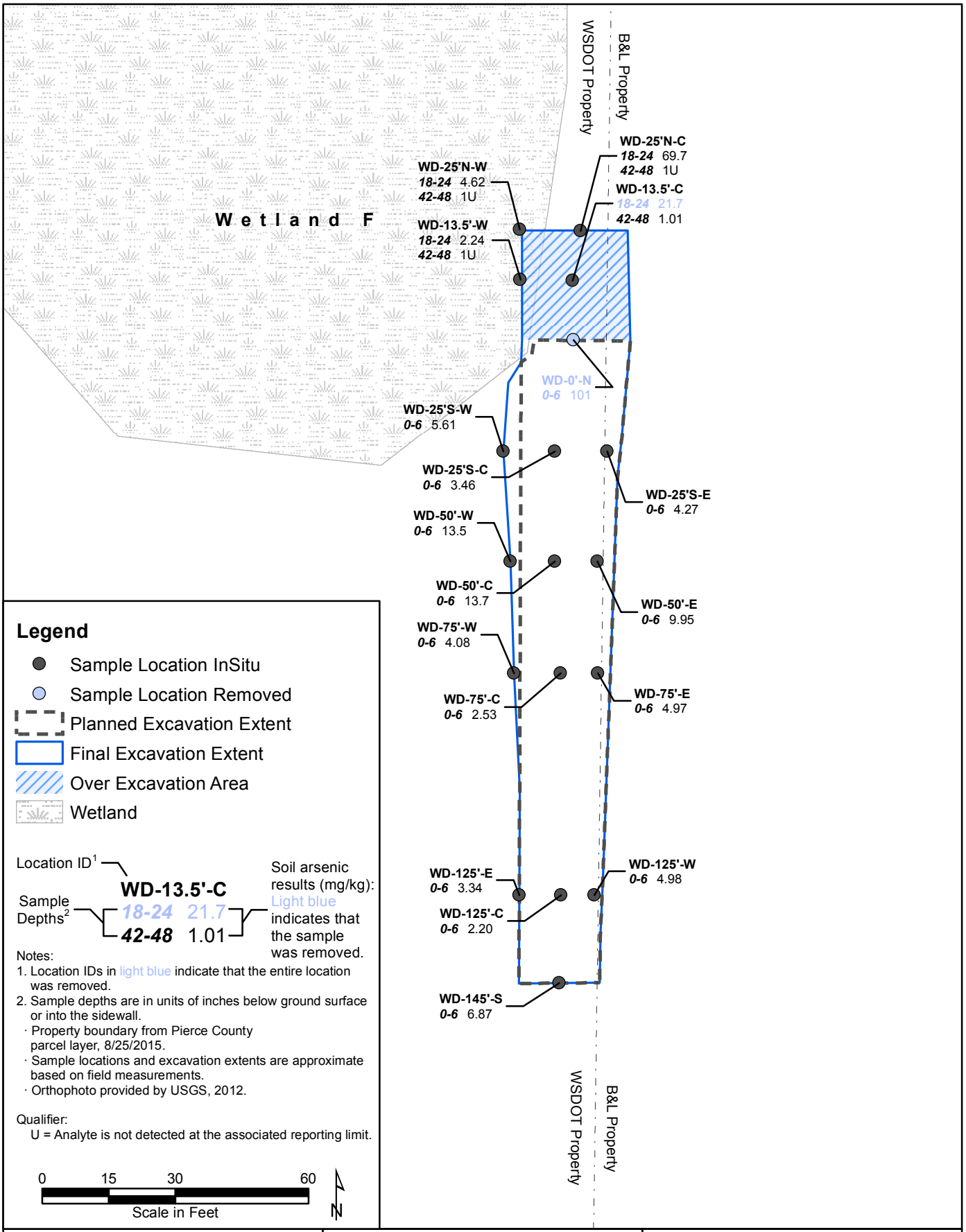
Ditch Bank Excavation
Construction Completion Report
B&L Woodwaste Site
Pierce County, Washington

Figure 1.1
Site Map

Path: I:\GIS\Projects\B&L-O&M\MXD\Ditch Bank Completion Report\Figure 1.1 Site Map.mxd
Date: 2/26/2016



Legend

- Sample Location InSitu
- Sample Location Removed
- Planned Excavation Extent
- Final Excavation Extent
- Over Excavation Area
- Wetland

Location ID[1] — **WD-13.5'-C**

Sample Depths[2] — *18-24* 21.7; *42-48* 1.01

Soil arsenic results (mg/kg): Light blue indicates that the sample was removed.

Notes:
1. Location IDs in light blue indicate that the entire location was removed.
2. Sample depths are in units of inches below ground surface or into the sidewall.
- Property boundary from Pierce County parcel layer, 8/25/2015.
- Sample locations and excavation extents are approximate based on field measurements.
- Orthophoto provided by USGS, 2012.

Qualifier:
U = Analyte is not detected at the associated reporting limit.

0 15 30 60
Scale in Feet

N

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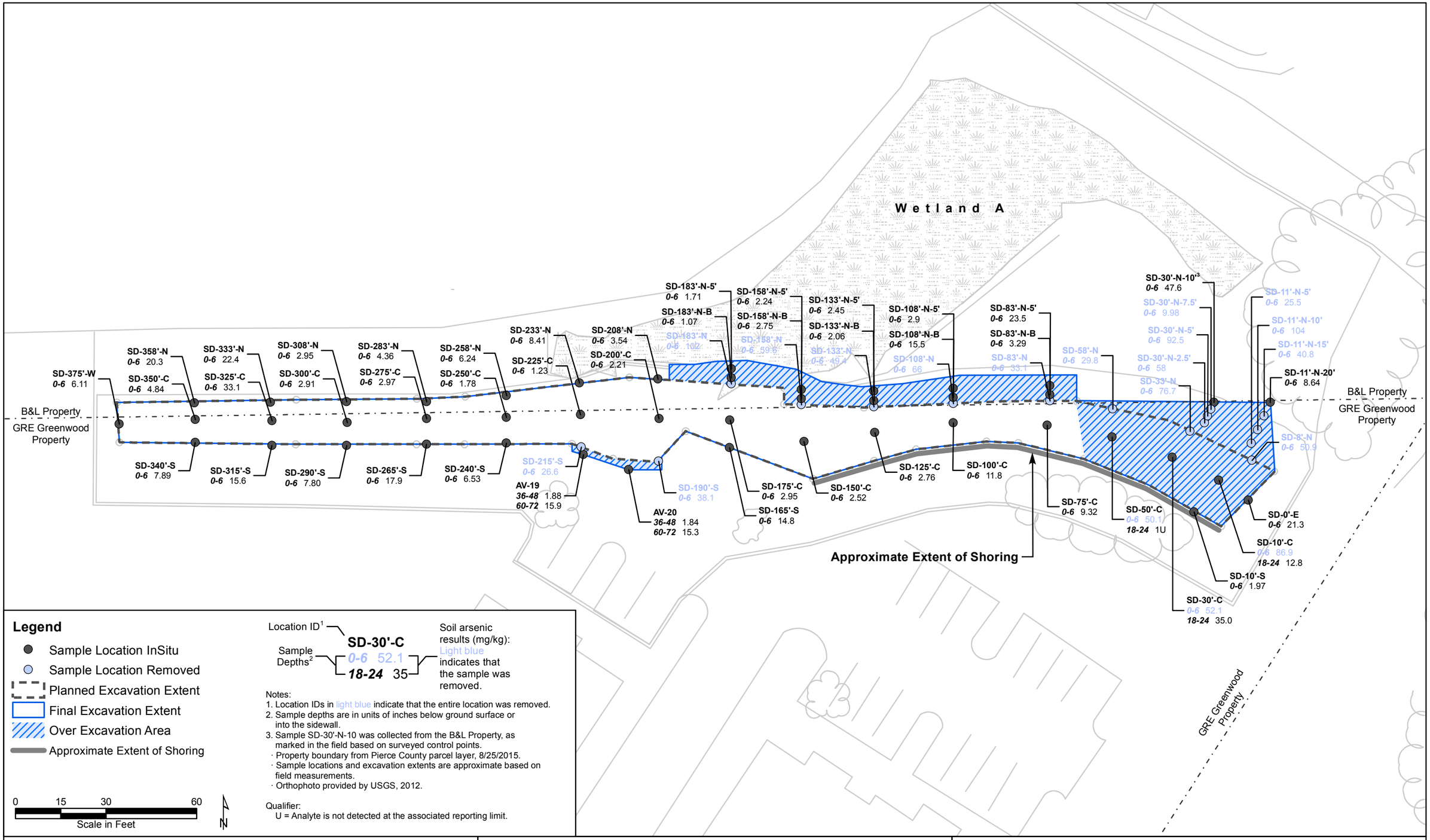
Ditch Bank Excavation Construction Completion Report
B&L Woodwaste Site
Pierce County, Washington

Figure 2.1
West Ditch Soil Arsenic Verification Sample Results and Excavation Areas

I:\GIS\Projects\B&L-O&M\MXD\Ditch Bank Completion Report\Figure 2.1 West Ditch Soil Arsenic Verification Sample Results and Excavation Areas.mxd
2/26/2016



Legend

- Sample Location InSitu
- Sample Location Removed
- Planned Excavation Extent
- Final Excavation Extent
- Over Excavation Area
- Approximate Extent of Shoring

0 15 30 60
Scale in Feet

N

Location ID[1]
SD-30'-C
Sample Depths[2]
0-6 52.1
18-24 35

Soil arsenic results (mg/kg): Light blue indicates that the sample was removed.

Notes:
1. Location IDs in light blue indicate that the entire location was removed.
2. Sample depths are in units of inches below ground surface or into the sidewall.
3. Sample SD-30'-N-10 was collected from the B&L Property, as marked in the field based on surveyed control points.
   · Property boundary from Pierce County parcel layer, 8/25/2015.
   · Sample locations and excavation extents are approximate based on field measurements.
   · Orthophoto provided by USGS, 2012.

Qualifier:
U = Analyte is not detected at the associated reporting limit.

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Ditch Bank Excavation Construction Completion Report
B&L Woodwaste Site
Pierce County, Washington

Figure 2.2
South Ditch Soil Arsenic Verification Sample Results and Excavation Areas

I:\GIS\Projects\B&L-O&M\MXD\Ditch Bank Completion Report\Figure 2.2 South Ditch Soil Arsenic Verification Sample Results and Excavation Areas.mxd
2/26/2016

B&L Woodwaste Site

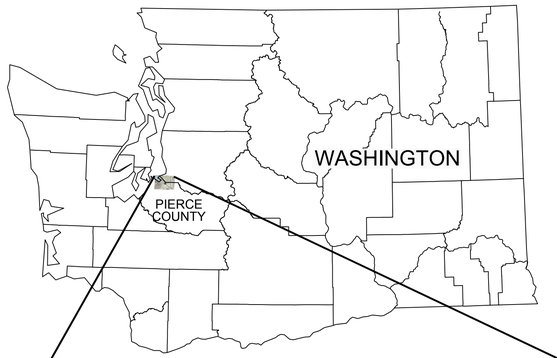
Ditch Bank Excavation
Construction Completion Report

Appendix A
Project Plans and As-Built Documentation

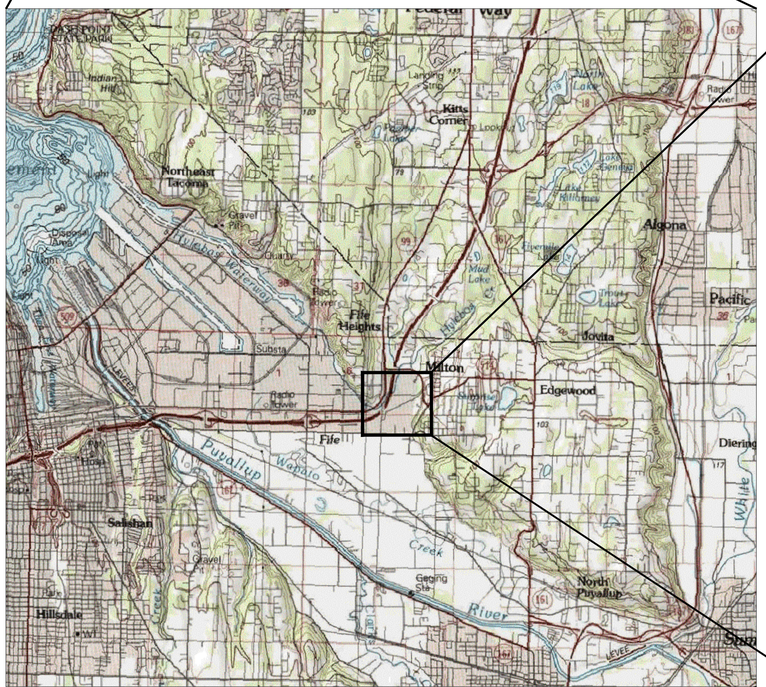
Construction Drawings—
Ditch Bank Soil Excavation

CONSTRUCTION DRAWINGS
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

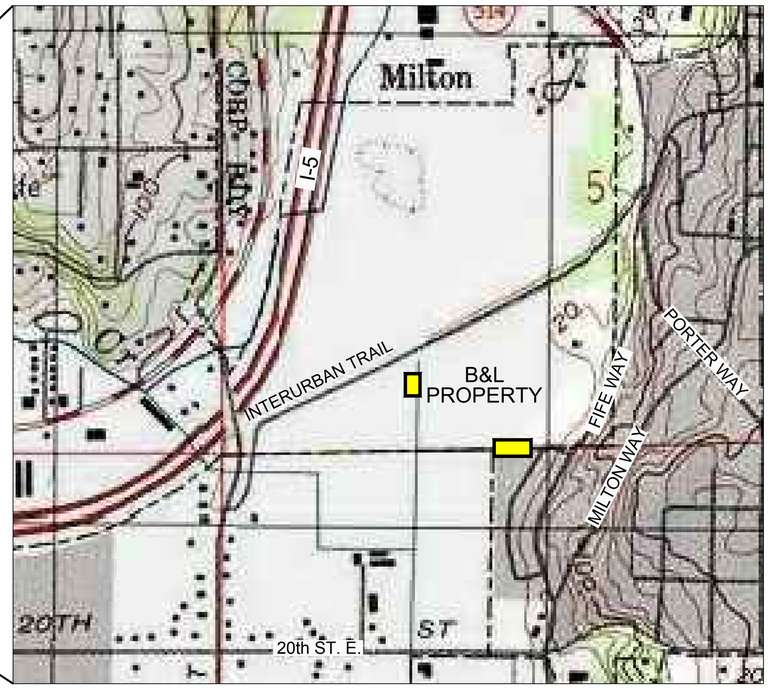


LOCATION MAP



VICINITY MAP

0 1 2
APPROXIMATE SCALE IN MILES



PROJECT SITE MAP

0 500 1000
APPROXIMATE SCALE IN FEET

DRAWING INDEX	
DWG NO.	TITLE
G-01	COVER SHEET AND DRAWING INDEX
EC-01	TESC AND WATER MANAGEMENT PLAN
EC-02	TESC DETAILS
C-01	SOUTH DITCH EXCAVATION PLAN
C-02	WEST DITCH EXCAVATION PLAN
C-03	SOUTH DITCH CROSS SECTIONS
L-01	SOUTH DITCH PLANTING PLAN
L-02	PLANTING DETAILS
P-01	SOUTH DITCH PAVING PLAN
P-02	PAVING DETAILS

FINAL BID DOCUMENTS

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

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COVER SHEET AND DRAWING INDEX
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525

DRAWING
G-01

Plot Date: 04/23/15 - 11:16am, Plotted by: Sang
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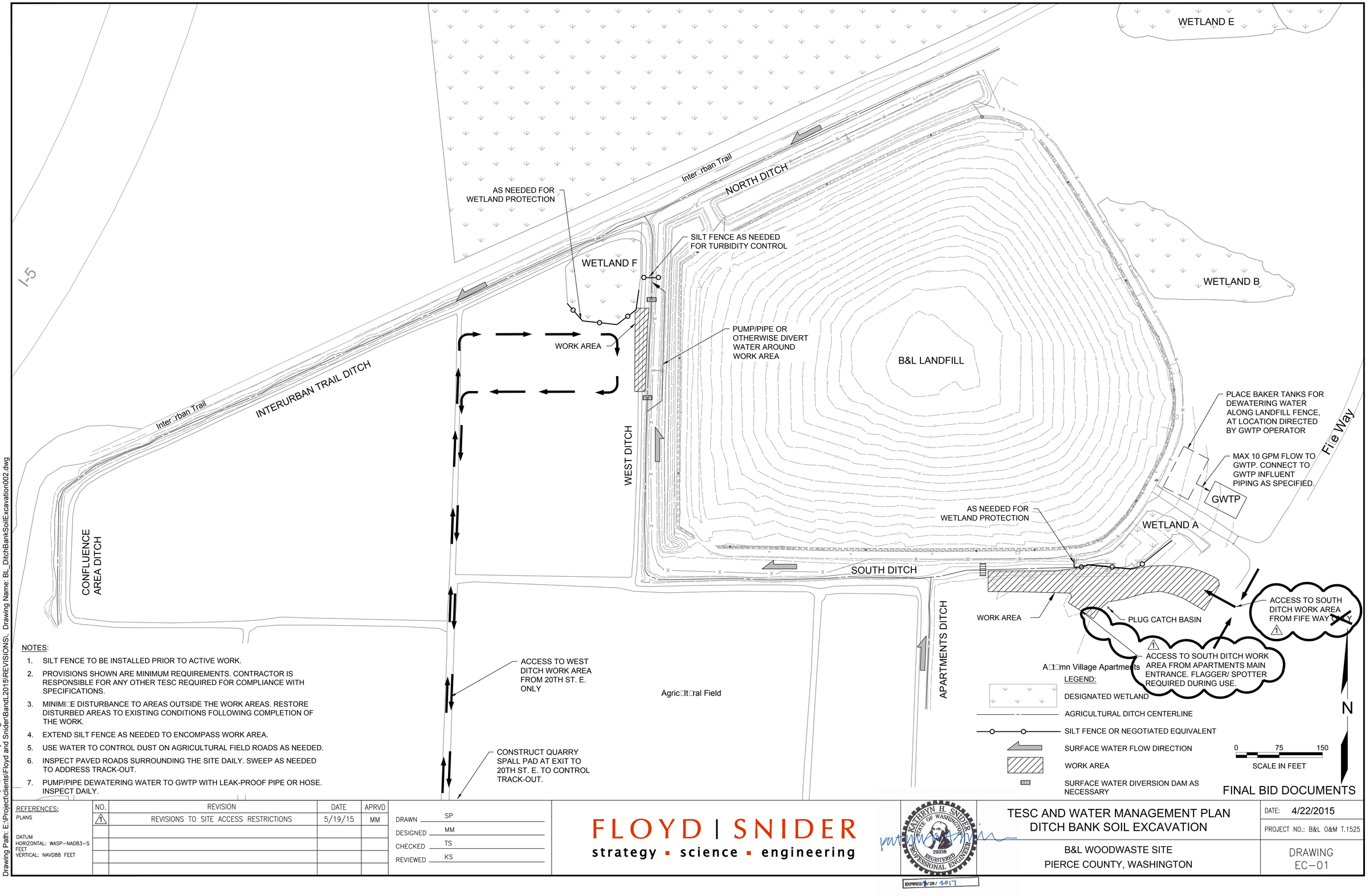

NOTES:

1. SILT FENCE TO BE INSTALLED PRIOR TO ACTIVE WORK.
2. PROVISIONS SHOWN ARE MINIMUM REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR ANY OTHER TESC REQUIRED FOR COMPLIANCE WITH SPECIFICATIONS.
3. MINIMI□E DISTURBANCE TO AREAS OUTSIDE THE WORK AREAS. RESTORE DISTURBED AREAS TO EXISTING CONDITIONS FOLLOWING COMPLETION OF THE WORK.
4. EXTEND SILT FENCE AS NEEDED TO ENCOMPASS WORK AREA.
5. USE WATER TO CONTROL DUST ON AGRICULTURAL FIELD ROADS AS NEEDED.
6. INSPECT PAVED ROADS SURROUNDING THE SITE DAILY. SWEEP AS NEEDED TO ADDRESS TRACK-OUT.
7. PUMP/PIPE DEWATERING WATER TO GWTP WITH LEAK-PROOF PIPE OR HOSE. INSPECT DAILY.

FINAL BID DOCUMENTS

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	REVISIONS TO SITE ACCESS RESTRICTIONS	5/19/15	MM

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

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TESC AND WATER MANAGEMENT PLAN DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525
DRAWING EC–01

Plot Date: 05/19/15 - 1:44pm, Plotted by: Sang
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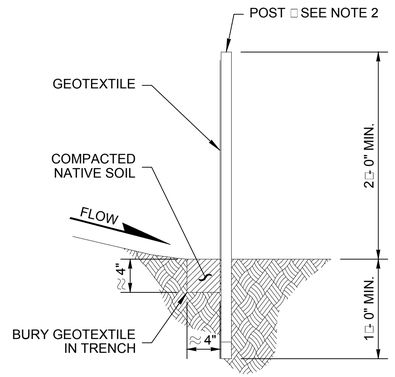
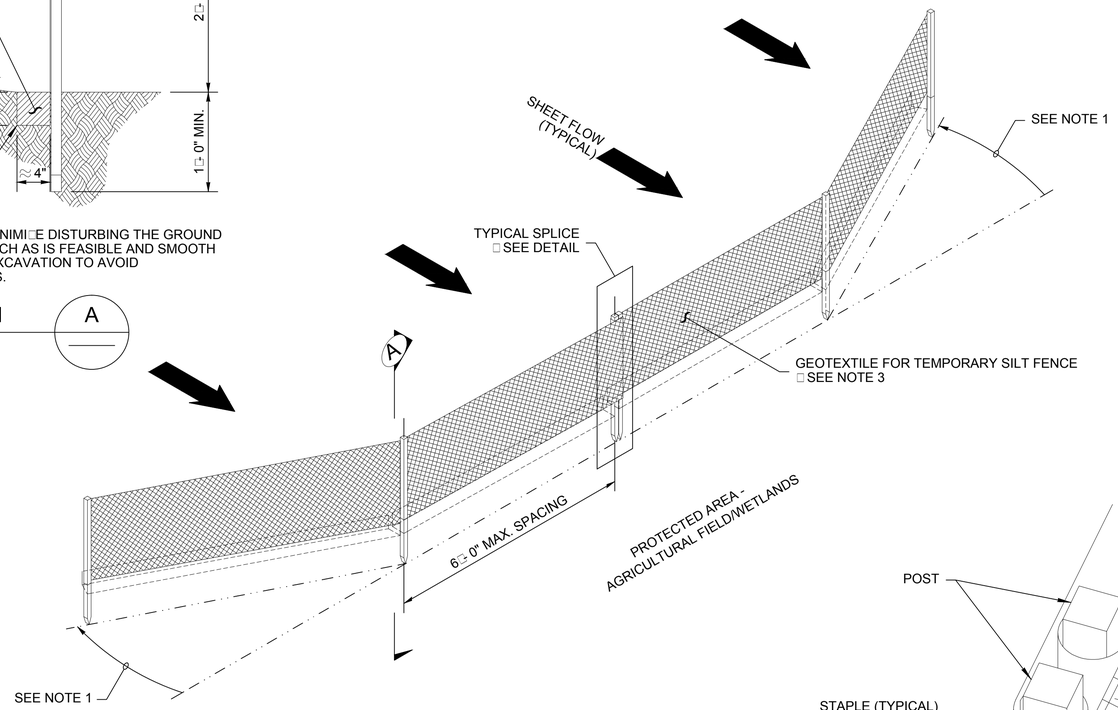
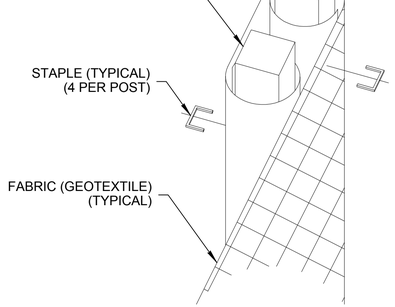


DURING EXCAVATION, MINIMI□E DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS.

SECTION A

SCALE: NONE





SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP. JOINING SECTIONS SHALL NOT BE PLACED IN LOW SPOTS OR IN SUMP LOCATIONS.

NOTES:

1. INSTALL THE ENDS OF THE SILT FENCE TO POINT SLIGHTLY UP-SLOPE TO PREVENT SEDIMENT FROM FLOWING AROUND THE ENDS OF THE FENCE.
2. POSTS SHALL BE HARDWOOD OF SOUND QUALITY. MIN 1-1/4 INCH BY 1-1/4 INCH.
3. GEOTEXTILE FOR TEMPORARY SILT FENCE:

GEOTEXTILE PROPERTY	ASTM TEST METHOD	GEOTEXTILE PROPERTY REQUIREMENTS	
		UNSUPPORTED BETWEEN POSTS	SUPPORTED BETWEEN POSTS WITH WIRE OR POLYMERIC MESH
AOS	D 4751	NO. 30 MAX. FOR SLIT WOVENS, NO. 50 FOR ALL OTHER GEOTEXTILE TYPES, NO. 100 MIN.	
WATER PERMITTIVITY	D 4491	0.02 SEC MIN.	
GRAB TENSILE STRENGTH, IN MACHINE AND X-MACHINE DIRECTION	D 4632	180 lb min. in machine direction, 100 lb min. in x-machine direction	100 LB MIN.
GRAB TENSILE STRAIN, IN MACHINE AND X-MACHINE DIRECTION	D 4632	30□ MAX. AT 180 LB OR MORE	
ULTRAVIOLET (UV) RADIATION STABILITY	D 4355	70□ STRENGTH RETAINED MIN. AFTER 500 HOURS IN XENON ARC DEVICE	

4. INSTALL SILT FENCING AROUND WORK AREAS AS CLOSE AS POSSIBLE TO EDGE OF DISTURBED WORK □ONES.

FINAL BID DOCUMENTS

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

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TESC DETAILS
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525

DRAWING
EC-02

Plot Date: 04/23/15 - 11:18am, Plotted by: Sang
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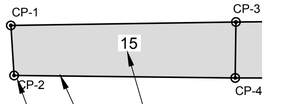
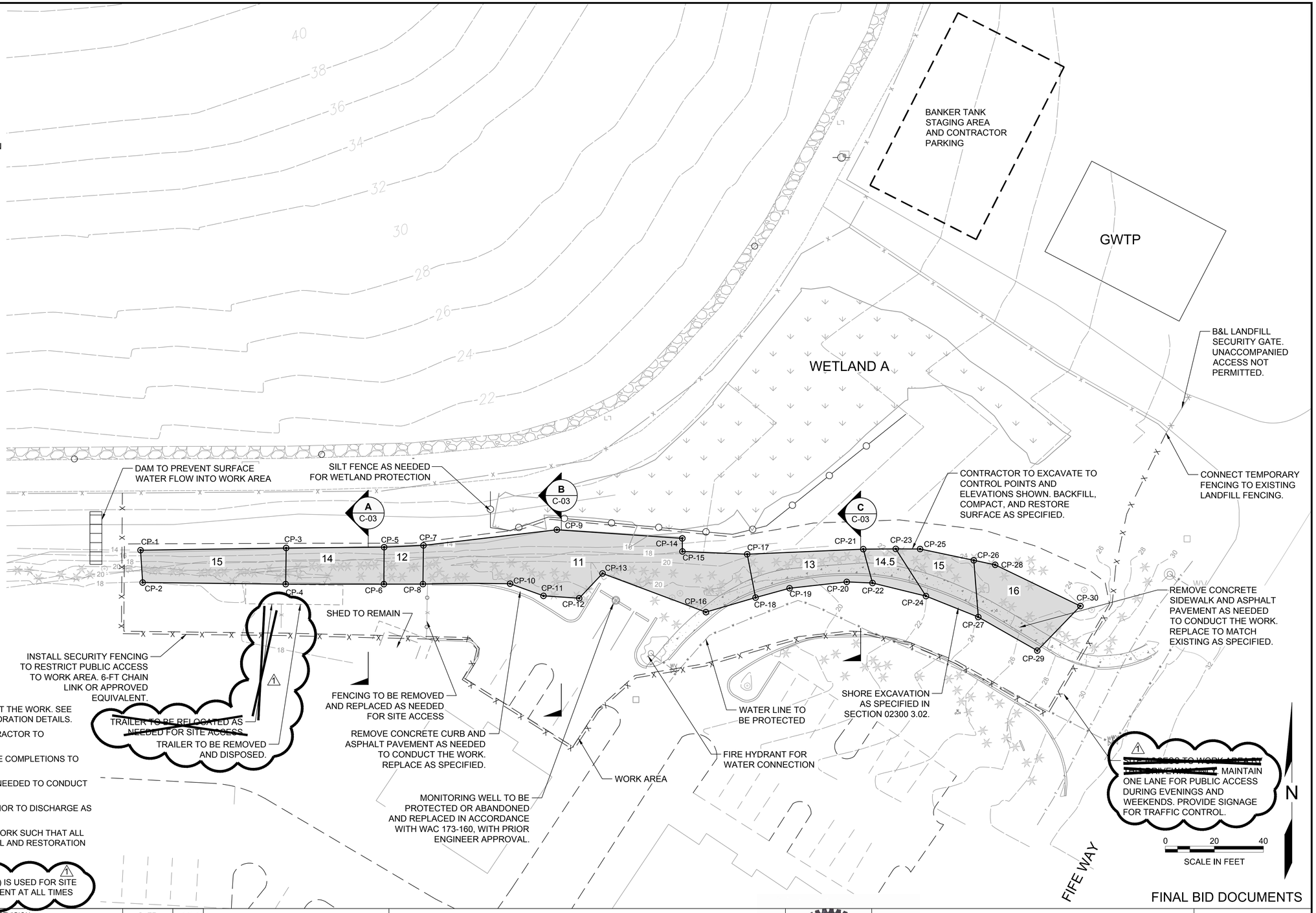
LEGEND



CONTROL POINT ID	EASTING	NORTHING
CP-1	1,186,281	701,583
CP-2	1,186,282	701,570
CP-3	1,186,341	701,584
CP-4	1,186,341	701,569
CP-5	1,186,381	701,584
CP-6	1,186,381	701,569
CP-7	1,186,397	701,585
CP-8	1,186,397	701,569
CP-9	1,186,451	701,591
CP-10	1,186,432	701,569
CP-11	1,186,446	701,564
CP-12	1,186,460	701,563
CP-13	1,186,470	701,573
CP-14	1,186,502	701,588
CP-15	1,186,502	701,582
CP-16	1,186,512	701,558
CP-17	1,186,529	701,581
CP-18	1,186,532	701,564
CP-19	1,186,546	701,567
CP-20	1,186,569	701,570
CP-21	1,186,576	701,583
CP-22	1,186,580	701,570
CP-23	1,186,589	701,583
CP-24	1,186,602	701,564
CP-25	1,186,599	701,583
CP-26	1,186,621	701,579
CP-27	1,186,623	701,556
CP-28	1,186,630	701,577
CP-29	1,186,647	701,542
CP-30	1,186,665	701,560

NOTES:

1. REMOVE VEGETATION AS NEEDED TO CONDUCT THE WORK. SEE DRAWINGS L-01 AND L-02 FOR PLANTING RESTORATION DETAILS.
2. UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD-VERIFY PER SPECIFICATIONS.
3. RESTORE ELEVATIONS, GRADES, AND SURFACE COMPLETIONS TO MATCH EXISTING, OR AS SPECIFIED.
4. PUMP GROUNDWATER FROM EXCAVATION AS NEEDED TO CONDUCT THE WORK.
5. ALL EXTRACTED WATER MUST BE TREATED PRIOR TO DISCHARGE AS SPECIFIED.
6. CONTRACTOR TO SEQUENCE AND CONDUCT WORK SUCH THAT ALL EXCAVATION, STOCKPILING, STAGING, BACKFILL AND RESTORATION OCCURS WITHIN THE WORK AREA IDENTIFIED.
7. IF MAIN APARTMENTS ENTRANCE (NOT SHOWN) IS USED FOR SITE ACCESS, A FLAGGER/ SPOTTER MUST BE PRESENT AT ALL TIMES DURING USE. (1)



FINAL BID DOCUMENTS

NO.	REVISION	DATE	APRVD
1	REVISIONS TO SITE ACCESS RESTRICTIONS	5/19/15	MM

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

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EXPIRES: 9/28/2017

SOUTH DITCH EXCAVATION PLAN
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525
DRAWING C-01

Plot Date: 05/19/15 - 1:53pm, Plotted by: Sang
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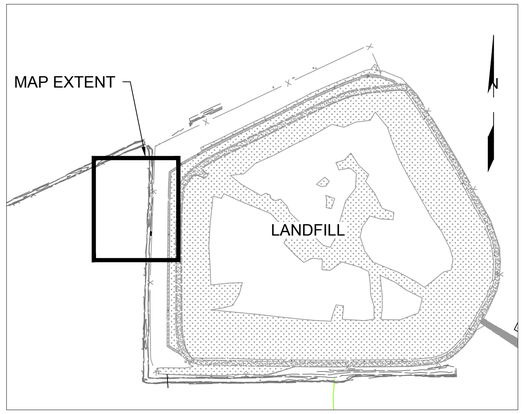
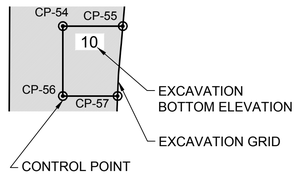


CONTROL POINT ID	EASTING	NORTHING
CP-50	1,185,662	702,037
CP-51	1,185,664	702,039
CP-52	1,185,664	702,042
CP-53	1,185,686	702,042
CP-54	1,185,672	702,019
CP-55	1,185,684	702,019
CP-56	1,185,672	702,006
CP-57	1,185,683	702,006
CP-58	1,185,682	701,991
CP-59	1,185,671	701,991
CP-60	1,185,671	701,976
CP-61	1,185,682	701,976
CP-62	1,185,661	701,935
CP-63	1,185,671	701,935
CP-64	1,185,671	701,920
CP-65	1,185,680	701,920
CP-66	1,185,679	701,897
CP-67	1,185,661	701,897

LEGEND



SILT FENCE

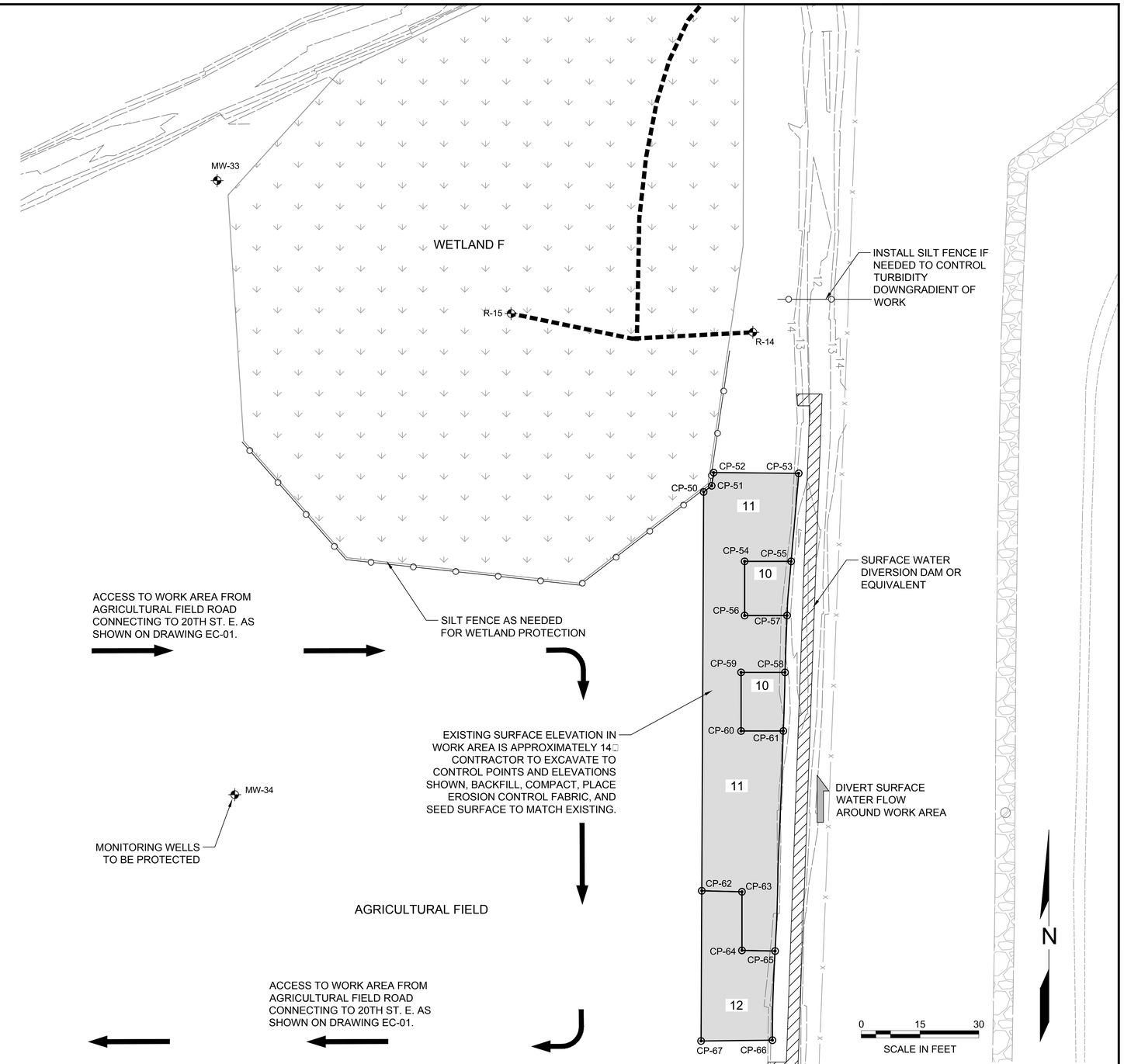
WETLAND

MONITORING WELL - TO BE PROTECTED

EXTRACTION SYSTEM PIPING

NOTES:

1. INSTALL SURFACE WATER DIVERSION DAMS AS NEEDED TO PROTECT EXCAVATION FROM INFLUENT SURFACE WATER.
2. CONTRACTOR TO DIRECT-LOAD EXCAVATED MATERIAL, OR STOCKPILE PER SPECIFICATIONS.
3. IF DISTURBANCE OF WETLAND F IS REQUIRED DUE TO OVER-EXCAVATION, EXCAVATION AND DISTURBANCE OF WETLAND F SHALL BE CONDUCTED AT DIRECTION OF THE ENGINEER.
4. RESTORE DITCH BANK TO ALIGN WITH UPSTREAM AND DOWNSTREAM BANKS.
5. SEED DISTURBED AREA AS SPECIFIED.
6. UTILITY LOCATIONS ARE APPROXIMATED.
7. SURFACE WATER DOWNSTREAM OF THE WORK AREA MUST COMPLY WITH SURFACE WATER STANDARDS SPECIFIED. PROVIDE CONTROLS AS NEEDED TO MEET TURBIDITY STANDARD.



FINAL BID DOCUMENTS

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Drawing Path: E:\projectClients\Floyd and Snider\BandL 2015\, Drawing Name: BL_DitchBankSoilExcavation005.dwg

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

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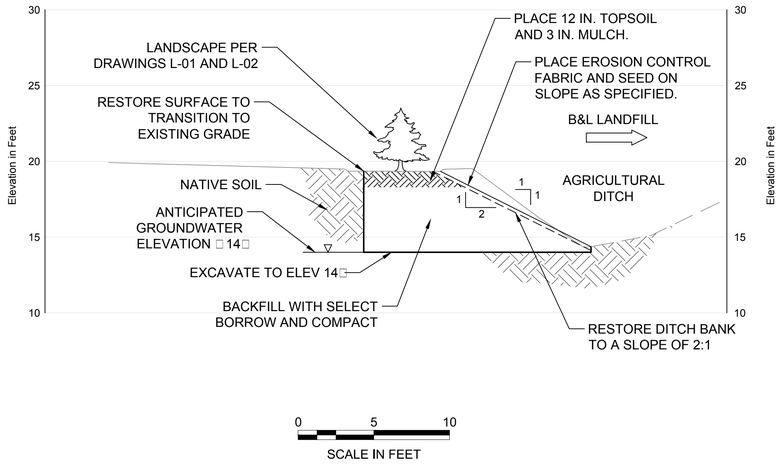
WEST DITCH EXCAVATION PLAN
DITCH BANK SOIL EXCAVATION

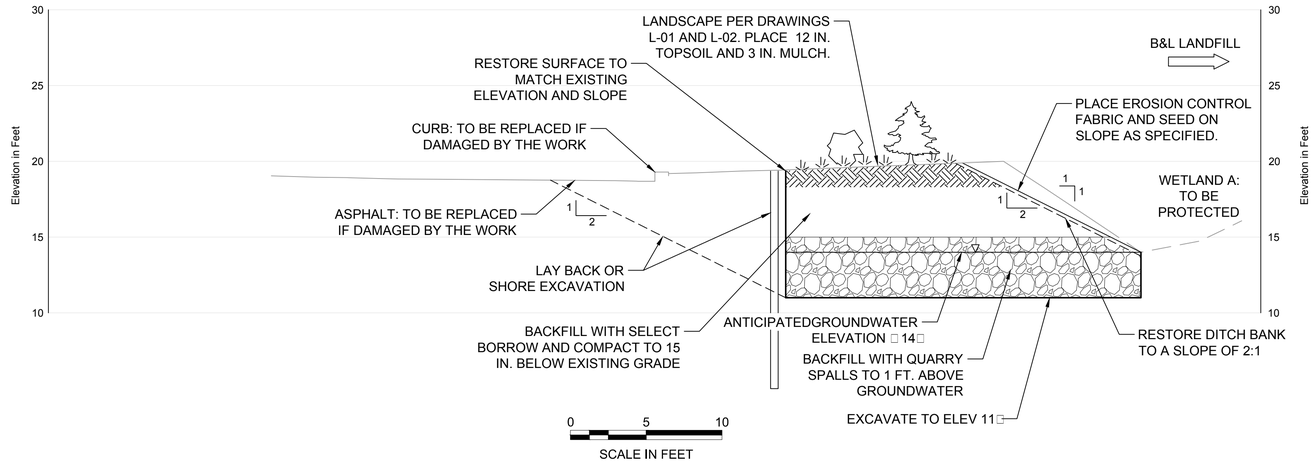
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525

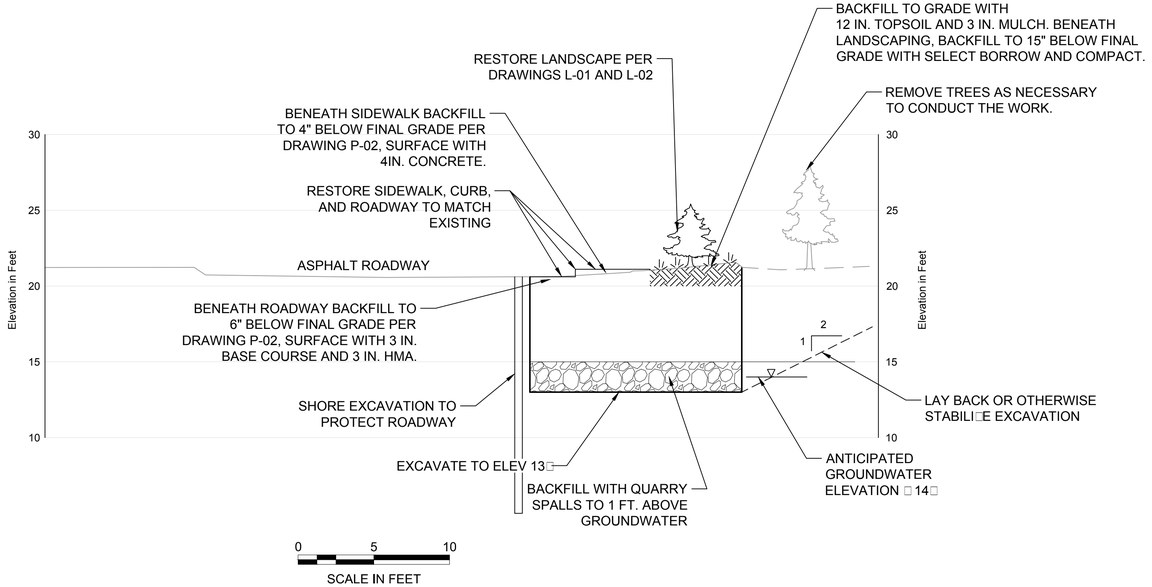
DRAWING
C-02



TYPICAL SOUTH DITCH CROSS SECTION — A — C-01 | C-03



TYPICAL SOUTH DITCH CROSS SECTION — B — C-01 | C-03



TYPICAL SOUTH DITCH CROSS SECTION — C — C-01 | C-03

FINAL BID DOCUMENTS

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS				
DATUM HORIZONTAL: WASP–NAD83–S FEET VERTICAL: NAVD88 FEET				

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SOUTH DITCH CROSS SECTIONS
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525

DRAWING
C–03

Plot Date: 04/23/15 - 11:27am Plotted by: Sang
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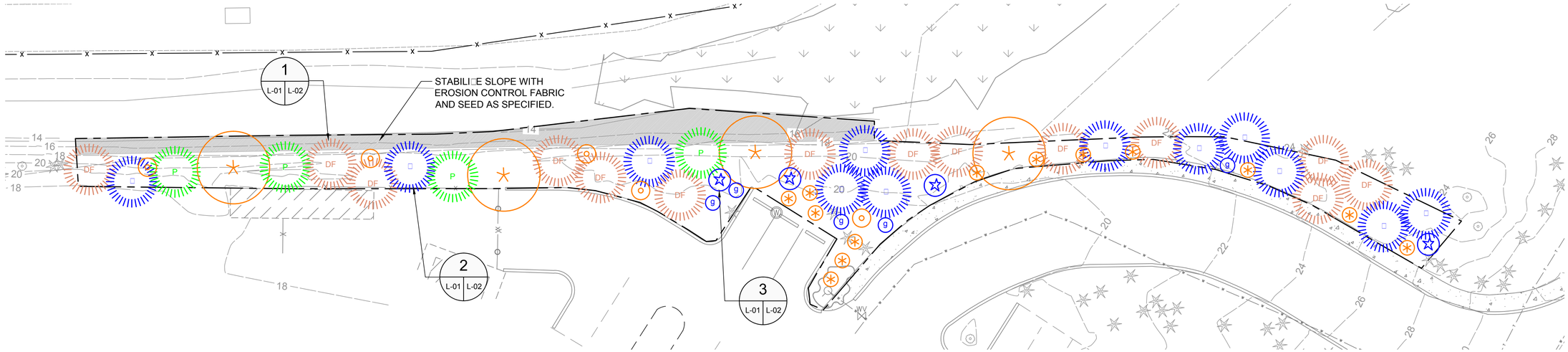

PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	CONTAINER SIZE	PLANT SIZE
TREES				
P	Pinus concorta var. contorta	Shore Pine	B&B	5-6' ht.
	Prunus emarginata v. mollis	Bitter Cherry	B&B	5 GAL.
DF	Pseudotsuga menziesii	Douglas Fir - not sheared	B&B	5-6' ht.
	Thuja plicata	Western Red Cedar	B&B	4-5' ht.
SHRUBS				
4' DIA g	Mahonia aquifolium	Tall Oregon Grape	#3	24" H
6' DIA	Myrica californica	Pacific Wax Myrtle	#3	36" H
5' DIA	Philadelphus lewisii	Mock Orange	#3	15" H x 15"W
4' DIA	Symphoricarpos albus	Snowberry	#3	24" H

LEGEND:

——— – ——— LANDSCAPED AREA WITHIN WORK AREA

NOTES:

1. FINAL EXCAVATION EXTENT IS DEPENDENT ON CONFIRMATION SAMPLING RESULTS AND EXCAVATION METHODS. RESTORE ALL DISTURBED LANDSCAPE AREAS TO MATCH PLANT DENSITY AND VARIETY SHOWN, OR AS DIRECTED BY THE ENGINEER.
2. IF PLANTING OCCURS BETWEEN MAY 1 - OCT. 1, SUPPLY TREES WITH WATERING BAGS (TREEGATOR JR. PRO, AS SUPPLIED BY TREEGATOR.COM) REFILL WATER WEEKLY AT A MINIMUM DURING DRY PERIODS.
3. CONTRACTOR TO PROVIDE WARRANTY/PLANT ESTABLISHMENT PERIOD AS SPECIFIED.
4. FINISH SURFACE OF LANDSCAPED AREA WITH MULCH AS SPECIFIED.
5. PLANTING METHODS SPECIFIED ON DRAWING L-02.

N

0 15 30

SCALE IN FEET

FINAL BID DOCUMENTS

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

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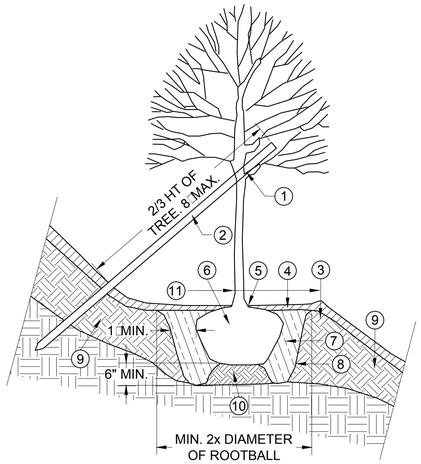
STATE OF WASHINGTON
29938
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: 9/28/2017

SOUTH DITCH PLANTING PLAN
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525
DRAWING L-01

Plot Date: 04/23/15 - 11:24am, Plotted by: Sang
Drawing Path: E:\project\Clients\Floyd and Snider\Bandl.2015\, Drawing Name: BL_DitchBankSoilExcavation006.dwg

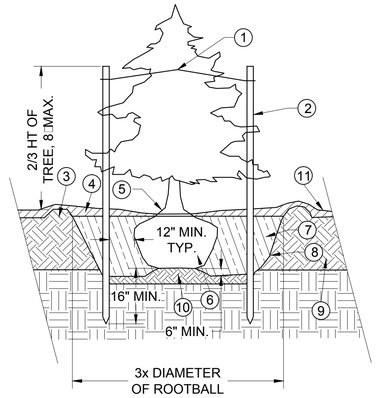


1. GUY TRUNK TO STAKE.
2. 2" X 2" X 10□PRE-STAINED STAKE. CUT TOP OF STAKE.
3. 6" BERM
4. 3" MIN. MULCH LAYER - DO NOT PLACE MULCH DIRECTLY AGAINST TREE TRUNK.
5. TOP OF ROOTBALL CROWN TO BE SLIGHTLY ABOVE GRADE OF PLANTING SITE.
6. REMOVE TOP 1/3 TO 1/2 OF BURLAP AND ALL NON-BIODEGRADABLE MATERIAL.
7. BACKFILL WITH SOIL FROM PIT EXCAVATION. WATER SETTLE SOIL AFTER PLANTING.
8. ROUGHEN SIDES AND BOTTOM OF THE HOLE.
9. PREPARED SUBGRADE AND PLANTING SOIL
10. RETAIN UNDISTURBED NATIVE SOIL OR COMPACT PREPARED SUBGRADE FOR FIRM BASE.
11. CREATE FLAT SHELF FOR PLANTING AREA.

NOTE:

A. DO NOT PLANT IN WET CONDITIONS. PROVIDE DRAINAGE FROM EACH PLANTING PIT IF NECESSARY.

TREE ON SLOPE
NOT TO SCALE
1 | L-01 | L-02

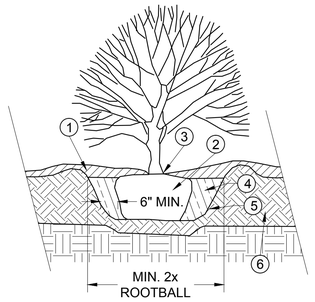


1. GUY TRUNK TO STAKE WITH □12 GALVANI□ED WIRE AND 1/2" DIAMETER RUBBER HOSE
2. 2" X 2" X 10□PRE-STAINED STAKE. CUT TOP OF STAKE
3. 6" BERM.
4. 3" MIN. COMPOST MULCH LAYER - DO NOT PLACE MULCH DIRECTLY AGAINST TREE TRUNK. 6" DIA. CIRCLE OF MULCH AROUND TREE.
5. TOP OF ROOTBALL CROWN TO BE SLIGHTLY ABOVE GRADE OF PLANTING SITE.
6. REMOVE TOP 1/3 TO 1/2 OF BURLAP, AND ALL NON-BIODEGRADABLE MATERIAL.
7. BACKFILL WITH SOIL FROM PIT EXCAVATION. WATER SETTLE SOIL AFTER PLANTING.
8. ROUGHEN SIDES AND BOTTOM OF THE HOLE.
9. PREPARED SUBGRADE AND PLANTING SOIL.
10. RETAIN. UNDISTURBED NATIVE SOIL OR COMPACT PREPARED SUBGRADE FOR FIRM BASE.
11. WHEN PLANTING TREES WITHIN PLANTING BED, EXTEND COMPOST MULCH TO EDGE OF BED.

NOTES:

A. CONIFERS WITH 24" OR LARGER ROOTBALL NEED NOT BE STAKED.
B. DO NOT PLANT IN WET CONDITIONS. PROVIDE DRAINAGE FROM EACH PLANTING PIT IF NECESSARY.

CONIFEROUS TREE
NOT TO SCALE
2 | L-01 | L-02



1. 3" MIN. MULCH - FEATHER BACK FROM STEM.
2. CUT AND REMOVE TOP 1/3 TO 1/2 OF BURLAP AND ALL NON-BIODEGRADABLE MATERIAL.
3. PLACE ROOTBALL CROWN LEVEL WITH PLANTING SITE.
4. BACKFILL WITH SOIL FROM PIT EXCAVATION. WATER SETTLE SOIL AFTER PLANTING.
5. ROUGHEN SIDES AND BOTTOM OF THE HOLE.
6. PREPARED SUBGRADE AND PLANTING SOIL.

NOTE:

A. DO NOT PLANT IN WET CONDITIONS. PROVIDE DRAINAGE FROM EACH PLANTING PIT IF NECESSARY.

SHRUB
NOT TO SCALE
3 | L-01 | L-02

PLANTING NOTES:

1. PREPARE SOIL FOR NEW PLANTINGS AS FOLLOWS:
   A. RIP EXISTING NATIVE SOIL TO DEPTH OF 8 INCHES. REMOVE ROCKS 3" AND GREATER.
   B. SPREAD TWO AND A HALF (2.5) INCHES OF COMPOST MEETING SPECIFICATION ON EXISTING CLEARED GRADE.
   C. FOR AREAS WITH SLOPES LESS THAN 2.5:1 TILL COMPOST INTO THE EXISTING SOIL TO A DEPTH OF 8 INCHES. TILL TWICE, THE SECOND TIME PERPENDICULAR TO THE FIRST. DO NOT TILL WITHIN DRIPLINE OF EXISTING TREES AND SHRUBS TO REMAIN□PLACE COMPOST ONLY.
   D. FOR SLOPES 2.5:1 OR GREATER, DO NOT DISTURB GROUND UNTIL TILLING. PREPARE SLOPES BY TRACKING TO CREATE 2" DEEP DEPRESSION/RIDGES PARALLEL TO THE CONTOURS OF THE SLOPE AS PER WSDOT STD. SPECIFICATION SECTION 8-01.3(2)A.
2. INSTALL TEMPORARY EROSION CONTROL FABRIC ON SLOPES GREATER THAN 2.5:1 PER WSDOT STANDARD SPECIFICATION 8-01.3(3). EROSION CONTROL BLANKET TO HAVE OPEN AREA OF 60□ OR GREATER.
3. PROCEED WITH PLANTING AND INSTALLATION ONLY AFTER APPROVAL OF SOIL PREPARATION AND EROSION CONTROL HAS BEEN PROVIDED BY ENGINEER.
4. ALL PLANT MATERIAL SHALL BE NURSERY GROWN (NOT FIELD COLLECTED), CONTAINERI□ED OR BALLED AND BURLAPPED. PROVIDE ONLY SOUND, HEALTHY, VIGOROUS PLANTS, FREE OF DEFECTS, DISEASE, AND ALL FORMS OF INFESTATION. MEASUREMENTS, CALIPER, BRANCHING, GRADING QUALITY, BALLING AND BURLAPPING PLANT MATERIAL SHALL CONFORM TO MINIMUM STANDARDS OF ANSI □60.1, LATEST EDITION.
5. ALL CONTAINER GROWN NURSERY STOCK SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED, AND ESTABLISHED IN THE CONTAINER IN WHICH IT IS GROWING. CONTAINER GROWN NURSERY STOCK SHALL HAVE A WELL-ESTABLISHED ROOT SYSTEM REACHING THE SIDES OF THE CONTAINER TO MAINTAIN A FIRM BALL WHEN THE CONTAINER IS REMOVED, BUT SHALL NOT HAVE EXCESSIVE ROOT GROWTH ENCIRCLING THE INSIDE OF THE CONTAINER.
6. PRIOR TO INSTALLATION, ALL PLANT MATERIAL PROPOSED FOR USE ON THE PROJECT SHALL BE APPROVED BY THE ENGINEER AT THE TIME OF DELIVERY TO THE SITE FOR CONFORMANCE WITH THE REQUIREMENTS OF THE PLANT SCHEDULE, PLANT SPECIFICATIONS, AND STORAGE AND HANDLING REQUIREMENTS. CONTRACTOR IS TO PROVIDE A MINIMUM OF TWO DAYS NOTICE PRIOR TO DELIVERY.
7. TREES SHALL BE STAKED OR GUYED PER DETAILS WITHIN 24 HOURS OF INSTALLATION.
8. CONTRACTOR SHALL BEGIN ONE YEAR MAINTENANCE AND PLANT ESTABLISHMENT PERIOD IMMEDIATELY FOLLOWING INSTALLATION AND ACCEPTANCE BY ENGINEER.
9. PLANT ESTABLISHMENT PROCEDURES SHALL INCLUDE WATERING, PROTECTION FROM INSECTS OR DISEASE, WEEDING, PRUNING, AND REMULCHING AS NECESSARY. CONTRACTOR SHALL IMMEDIATELY REPLACE ANY PLANT MATERIALS THAT ARE NOT VIGOROUS OR TYPICAL OF SI□E AND SPECIES. TREE STAKES SHALL BE KEPT SECURE AT ALL TIMES. DEFECTIVE MATERIAL AS DETERMINED BY THE ENGINEER SHALL BE REPLACED IMMEDIATELY WITH PLANT MATERIALS OF THE SAME SPECIES AND SI□E TO MATCH EXISTING ADJACENT MATERIALS.
10. UPON COMPLETION OF THE WARRANTY/PLANT ESTABLISHMENT PERIOD, REPLENISH MULCH TO 3" DEPTH.
11. UPON COMPLETION OF THE WARRANTY PERIOD, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR FINAL INSPECTION TO THE ENGINEER. AN INSPECTION SHALL BE CONDUCTED WITH THE ENGINEER AND THE CONTRACTOR PRESENT, AND FOLLOWING REPLACEMENT OR REPAIR OF DEFICIENT ITEMS NOTED IN THE INSPECTION, A NOTIFICATION OF ACCEPTANCE OF ALL WORK SHALL BE ISSUED BY THE ENGINEER TO THE CONTRACTOR.

FINAL BID DOCUMENTS

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

FLOYD | SNIDER
strategy ▪ science ▪ engineering

KATHRYN H. SNIDER
STATE OF WASHINGTON
29338
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: 9/28/2017

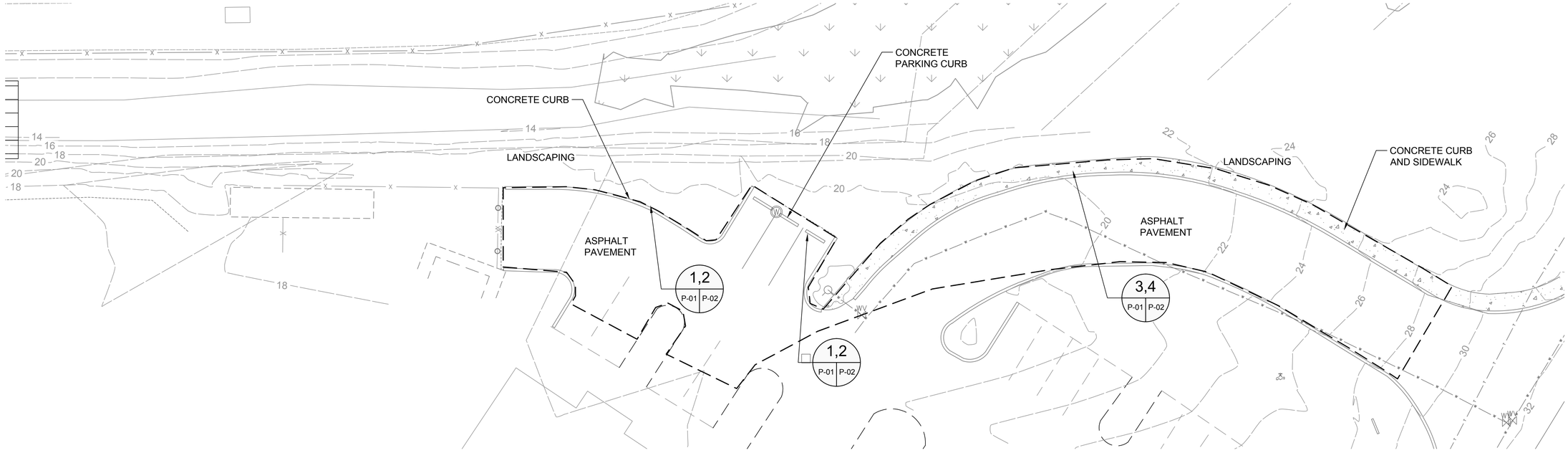
PLANTING DETAILS
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525

DRAWING
L-02

Plot Date: 04/23/15 - 11:25am, Plotted by: Sang
Drawing Path: C:\Users\Sang\appdata\local\temp\AcP˙blish_5204\. Drawing Name: BL_DitchBankSoilExcavation007.dwg



LEGEND

— — — — PAVED AREA WITHIN WORK AREA

NOTES:

1. FINAL EXCAVATION EXTENT IS DEPENDENT ON CONFIRMATION SAMPLING RESULTS AND EXCAVATION METHODS. RESTORE CURBS, SIDEWALKS, AND ASPHALT PAVEMENT DISTURBED BY THE WORK AS SPECIFIED TO MATCH EXISTING.
2. SEAL ANY CRACKS IN ASPHALT WITHIN THE WORK AREA.
3. JOINT SEAL NEW ASPHALT TO EXISTING ASPHALT ON CLEAN, VERTICAL CUTS.
4. REPLACE ANY PARKING PAINT MARKINGS DISTURBED BY THE WORK TO MATCH EXISTING.

FINAL BID DOCUMENTS

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

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KATHRYN H. SNIDER
STATE OF WASHINGTON
29338
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: 9/28/2017

SOUTH DITCH PAVING PLAN
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525

DRAWING
P–01

Plot Date: 04/23/15 - 11:20am, Plotted by: Sang
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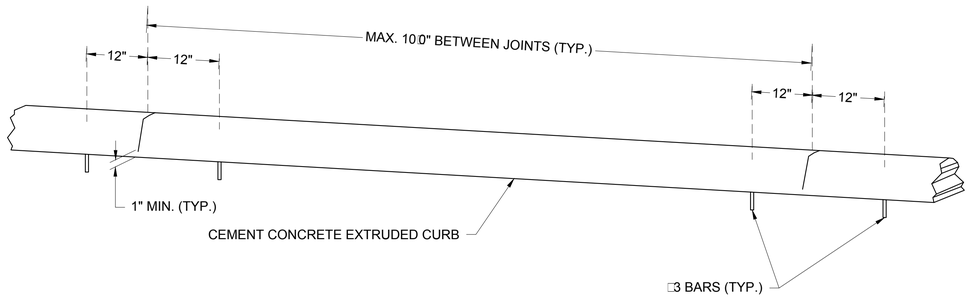
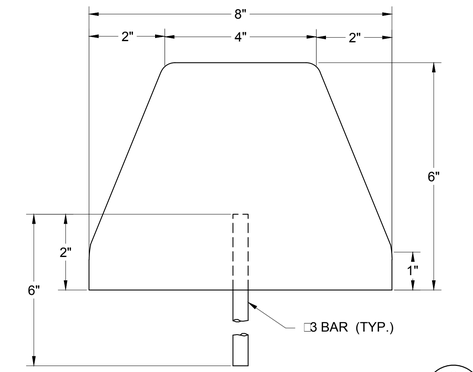
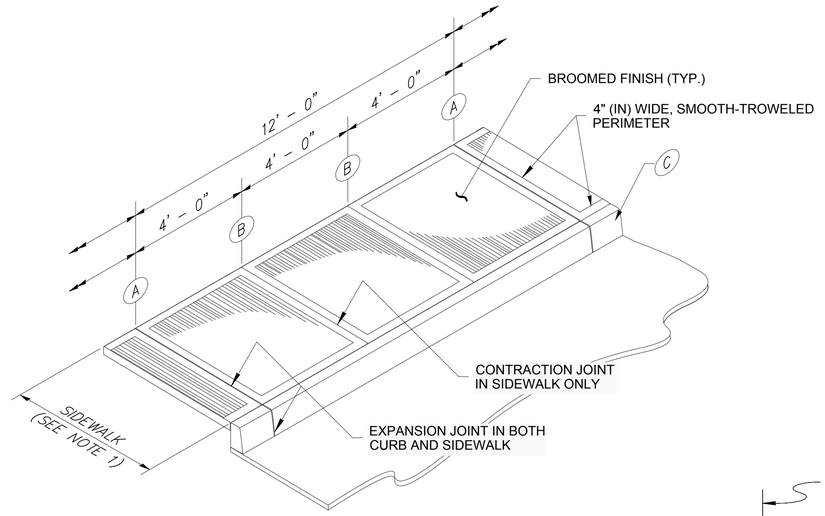


CONCRETE CURB DETAIL: SPACING OF ANCHOR BARS — 1 / P-02 | P-02
NOT TO SCALE

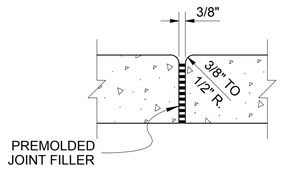
NOTE: JOINTS MAY BE FORMED DURING INSTALLATION USING A RIGID DIVIDER OR SAWCUT AFTER CONCRETE CURES TO MINIMUM STRENGTH.



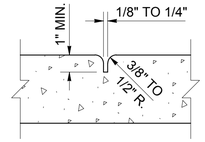
CONCRETE CURB DETAIL — 2 / P-02 | P-02
NOT TO SCALE



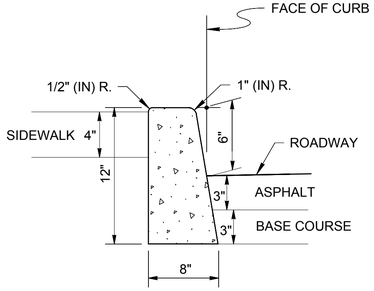
ISOMETRIC VIEW



(A) EXPANSION JOINT

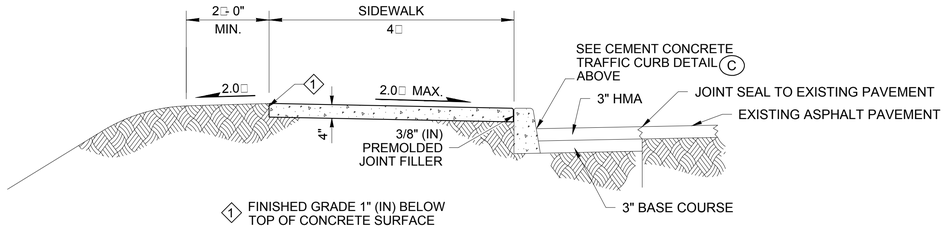


(B) CONTRACTION JOINT



(C) CEMENT CONCRETE TRAFFIC CURB

JOINT AND FINISH DETAIL — 3 / P-02 | P-02
NOT TO SCALE



CONCRETE SIDEWALK AND HMA ROADWAY DETAIL — 4 / P-02 | P-02
NOT TO SCALE

FINAL BID DOCUMENTS

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS				
DATUM				
HORIZONTAL: WASP–NAD83–S FEET				
VERTICAL: NAVD88 FEET				

DRAWN SP
DESIGNED MM
CHECKED TS
REVIEWED KS

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KATHRYN H. SNIDER — STATE OF WASHINGTON — 28338 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 9/28/2017

PAVING DETAILS
DITCH BANK SOIL EXCAVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

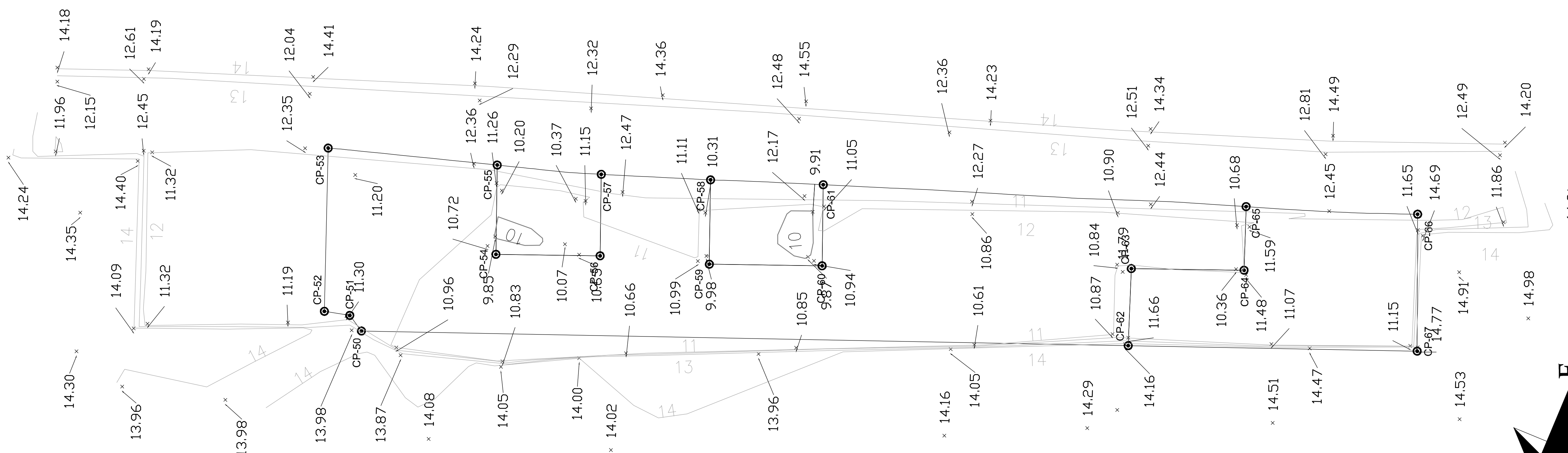
DATE: 4/22/2015
PROJECT NO.: B&L O&M T.1525
DRAWING P-02

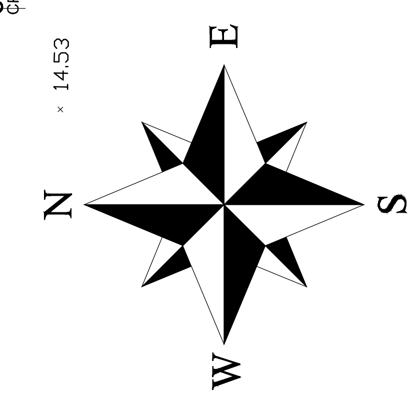
Plot Date: 04/23/15 - 11:25am, Plotted by: Sang
Drawing Path: C:\Users\Sang\appdata\local\Temp\AcP˙blish_5204\˙Drawing Name: BL_DitchBankSoilExcavation007.dwg

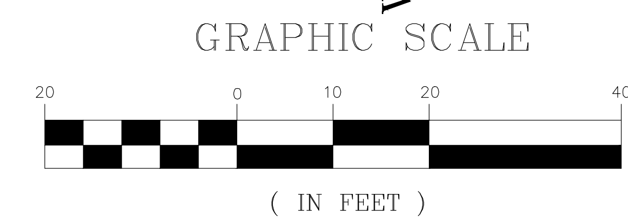
Excavated As-Built Area—
West Ditch Excavation Area

AS-BUILT EXCAVATED AREA

WEST DITCH EXCAVATION AREA







SURVEYED: surv
DRAWN: xxx
CHECKED: Ckd

REV	REVISION	DATE	BY	APP'D

True NORTH LAND SURVEYING, INC.
815 S. Weller Street
S□ite 200
Seattle, WA 98104-3023
206.332.0800

Date: Date 9-1-2015
Scale: 1" = 20'
Book: J15131-ASBUILT

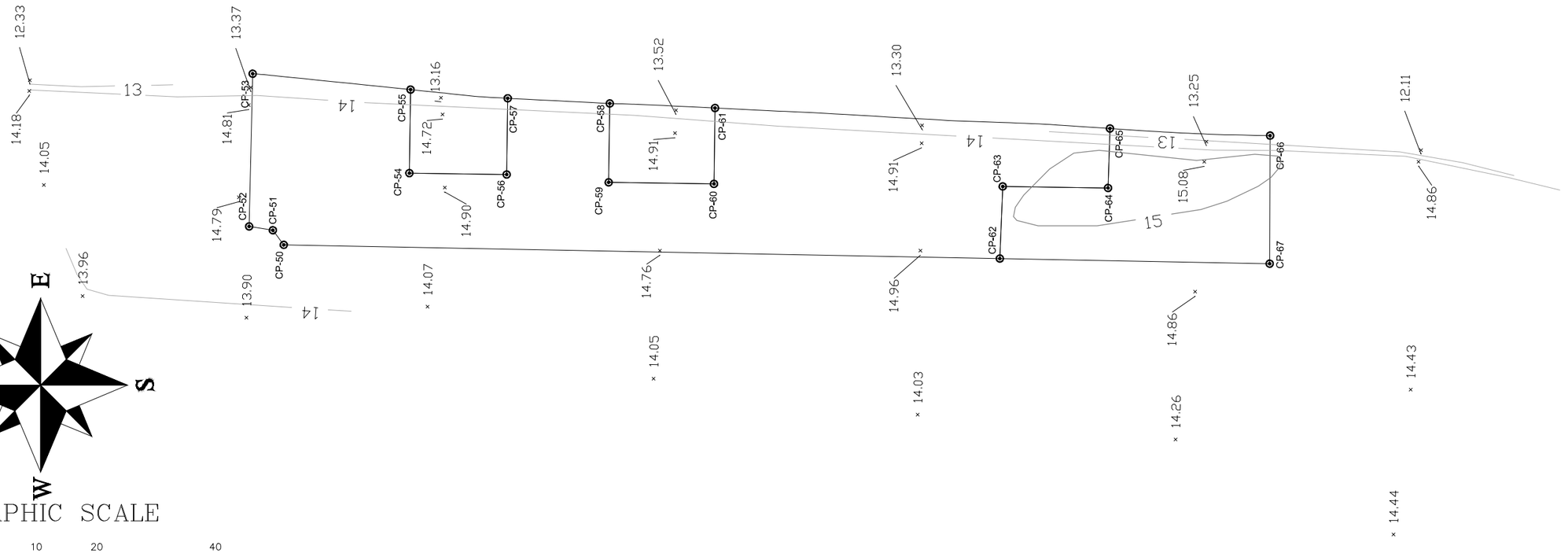
B & L WOODWASTE ASBUILT
2212 6TH AVENUE
MILTON, WA

Job Number: J15131
Sheet: 1 of 1

Final As-Built—
West Ditch Excavation Area

FINAL AS-BUILT

WEST DITCH EXCAVATION AREA



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

SURVEYED: surv	REV	REVISION	DATE	BY	APP'D
DRAWN: xxx					
CHECKED: Ckd					

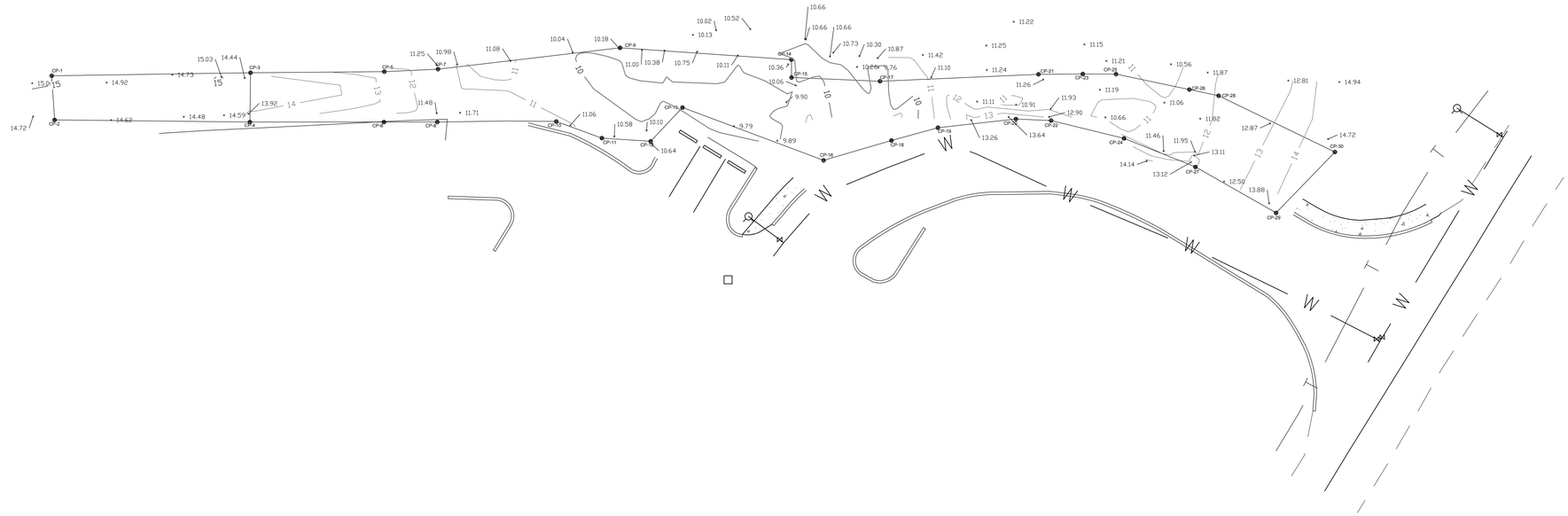
True NORTH LAND SURVEYING, INC.
815 S. Weller Street
Suite 200
Seattle, WA 98104-3023
206.332.0800

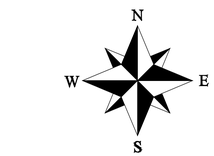
Date: Date 9-1-2015
Scale: 1"=20'
Book: J15131-ASBUILT

B & L WOODWASTE SITE
2212 6TH AVENUE
MILTON, WA

Job Number: J15131
Sheet: 1 of 1

Excavated As-Built Area—
South Ditch Excavation Area





GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

SURVEYED: JC/AS DRAWN: TI CHECKED: TI	REV	REVISION	DATE	BY	APP'D

True NORTH LAND SURVEYING, INC.
815 S. Weller Street
Suite 200
Seattle, WA 98104-3023
206.332.0800

Date: 11/20/2015

Scale: 1" = 20'

Book: J15131.DWG

B&L WOODWASTE SITE

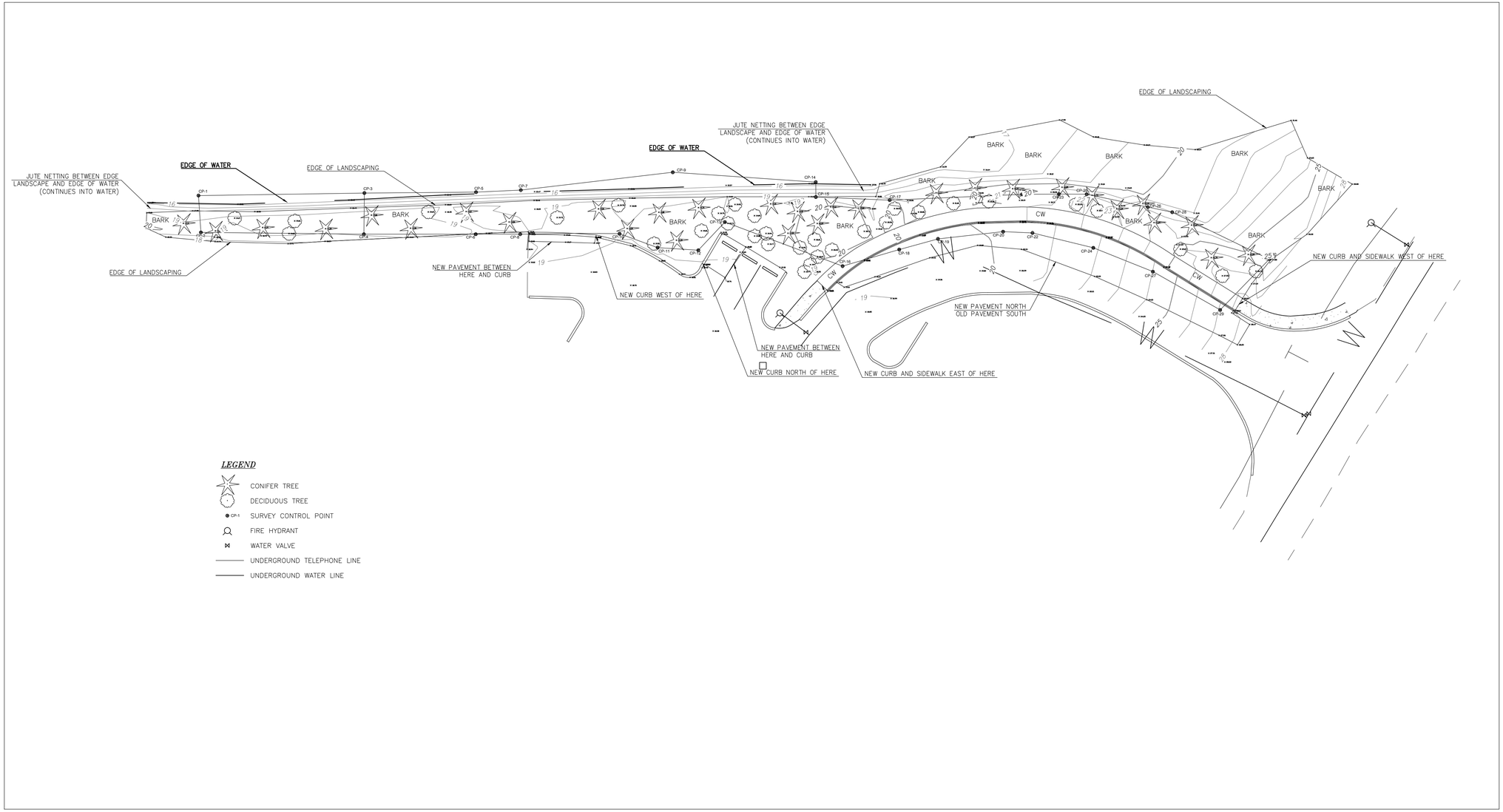
2216 6TH AVENUE, MILTON, WA

For: IO ENVIRONMENTAL

Job Number: J15131.00

Sheet: 1 of 1

Final As-Built—
West Ditch Excavation Area



LEGEND

- CONIFER TREE
- DECIDUOUS TREE
- CP-1 SURVEY CONTROL POINT
- FIRE HYDRANT
- WATER VALVE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND WATER LINE

N

W E

S

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

SURVEYED: JC/AS
DRAWN: TI
CHECKED: TI

REV	REVISION	DATE	BY	APP'D

True NORTH LAND SURVEYING, INC.
815 S. Weller Street
Suite 200
Seattle, WA 98104-3023
206.332.0800

Date: 11/20/2015
Scale: 1" = 20'
Book: J15131.DWG

B&L WOODWASTE SITE

2216 6TH AVENUE, MILTON, WA

For: IO ENVIRONMENTAL

Job Number: J15131.00
Sheet: 1 of 1

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix B
Site Construction Photographs, Daily Field Logs, and CESCL Inspection Forms

Site Construction Photographs

Photograph 1. Upgradient check dam in the South Ditch

Photograph 2. Water diversion in the South Ditch

Photograph 3. Excavation in the West Ditch

Photograph 4. West Ditch excavation prior to dewatering

Photograph 5. Straw wattle dams in the South Ditch

Photograph 6. Quarry spall in the West Ditch

Photograph 7. Jute mat in the West Ditch

Photograph 8. New grass growing in the West Ditch

Photograph 9. South Ditch after tree removal

Photograph 10. Woodwaste present in the South Ditch

Photograph 11. Close-up of woodwaste

Photograph 12. Test pit in bottom of South Ditch showing clean material underlying woodwaste

Photograph 13. South Ditch excavation and shoring

Photograph 14. Test pit in northern side of the South Ditch to delineate contamination

Photograph 15. Quarry spall in South Ditch excavation

Photograph 16. Over-excavation on the South Wall between CP-10 and CP-12

Photograph 17. Metal shaving in filter housing

Photograph 18. Installed catch basin plug

Photograph 19. Backfill and compaction in the South Ditch

a

Photograph 20. Storm drain and flooding adjacent to the South Ditch

Photograph 21. Storm drain and adjacent area after storm line cleanout

Photograph 22. South Ditch restoration and plantings

Photograph 23. New grass seedlings in the South Ditch

Daily Field Logs

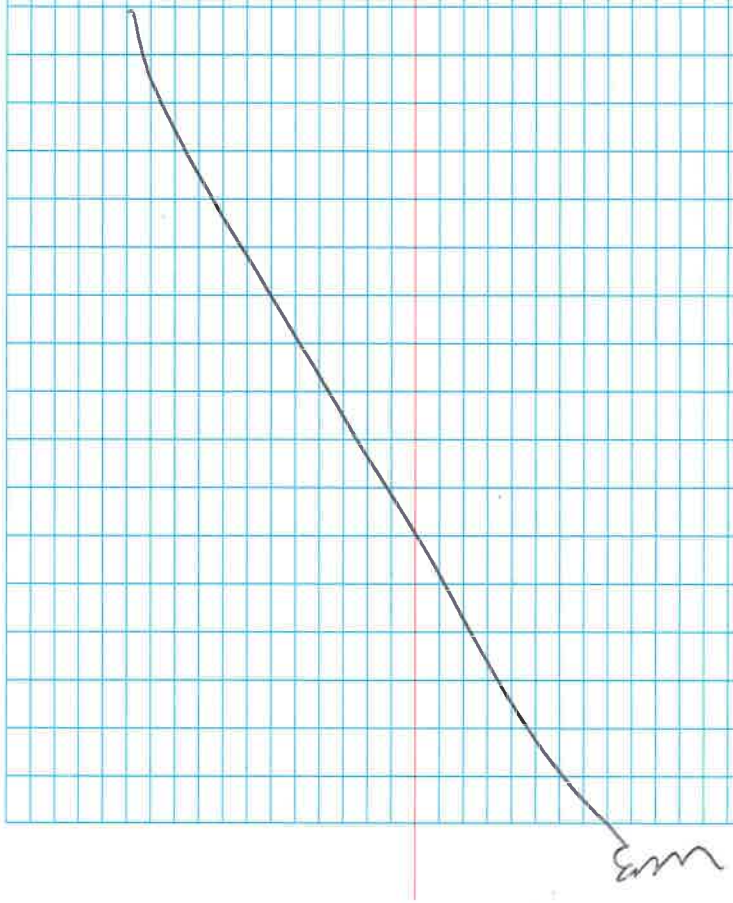
B&L Ditch Bank Ex. 2015 8/13/15 ①

1015 Corey W. & Erin M arrive onsite.
To onsite setting up piping to GWTP
-walk site - take pictures

1045 Discuss the following things with Brian H.
① He wants to know if the top 2' in West Ditch is dirty. F/S tells him yes
② He wants to know if they can place quarry spall in back of W. Ditch after samples are collected (while waiting for results). F/S tells him he shouldn't bc they will need to be removed if sample exceeds & quarry spall would have to go offsite for disposal.
③ Concerned about trailer - full of stuff. Tim & Ryan from Autumn V. onsite. They want trailer gone but are maybe willing to remove items. Brian concerned the trailer may be hard to dispose of w/out title. He's going to call different disposal & recycling places to see if they will take it.

8/13/15 ②

1130 Erin & Corey offsite back to office.



B&L Ditch Bank Excavation 2015

08/19/15

0745 Erin onsite
Truck onsite for direct loading removal
To onsite - Jeremy, Brian, flaggers & water truck
0800 Erin realizes control points in S. ditch seem wrong. The northern control points are in the bottom of the ditch rather than at the base of the bank.
- call Megan
- Decide to measure between CP's CP-7 to CP-8 supposed to be 15.6' it is 22'.

Brian Hickam called their surveyor to have them look into

0825 Start removal of top 2' to 3' of east side of south ditch in staging area.

8930 Truck off site to LR1 - supposed to take 2 hrs round trip

B&L Ditch Bank Excavation 8/14/15 (4)

0950 Brian receives call from surveyor- there are offsets off control point stakes in ditch because surveyors didn't want to place stakes in the water.
- Going to measure a few to be sure but think were good.

0955 Start demo of trailer

1030 Rolloff arrives to collect trailer pieces

1100 Truck arrives for 2nd load of T

1200 Truck leaves for LRI
- small hydraulic spill on driveway - Id covers with absorbant pads. Brian offsite to get kitty litter

1300 Site walk to discuss SW controls over weekend. Plan is to make sure excavation is

B&L - Ditch Bank Ex. 2015 8/14/15 (5)

sloped downward so no contaminated exposed soil washes down to ditch or to apts. driveway.

Discussed plugging catch basin - emailed Megan. It also has to be plugged entire project.
Brian may have to drive home to get one.

1400 Starts to rain - water starts to trickle down driveway towards catch basin.
Erin asks Brian if they have catch basin plug in place - no.
Brian asks why they need it if they are not always going to have active construction. They don't want to have to manage the water.
- Erin will call Megan to discuss. Megan says that per the permit we have to have insert in at all times. Erin directs Id to get plug installed ASAP.

B&L Ditch Bank Excavation 2015 ⑥

1500 Water running down drive is turbid. Erin asks if it could be from dirt on drive from loading out (contaminated) Brian says dirt is from trucks after being in back lot and by apartments.

- Erin decides to collect sample to check turbidity. Brian and Erin follow catch basins around back of apartments to outfall that runs into South Ditch (adjacent to Apt. Ditch.

Turbidity 67 NTU.

1530 Erin instructs IO to continue sweeping road. Raining Heavily

1545 Erin inspects BMPs to prepare for incoming storm. Everything is good. Straw wattles like asphalt and they have dug trench next to drive to collect any water. IO plugged catch basin with wattles to prevent turbidity. EM offsite

B&L Ditch Bank Excavation 8/18/15 ⑦

1400 E. Murray & C. Wilson onsite Upon arrival in the West Ditch Excavation area; F/S determined construction road was in the limits of Wetland F. E. Murray called M. McCullough to discuss mitigation plan. F/S instructed IO environmental to delineate the extent of the wetland and install a silt fence outside of the wetland boundary

1500 IO installing silt fence at boundary of wetland. Per approval from E. Murray IO installed wire re-inforced silt fence ~~to~~ CW staple w/ stakes every 10 feet

1612 IO installs dam on northside of ditch excavation. Dam consists of large sand sacks wrapped in V. squeen. IO installed straw waddles downstream of dam to assist w/ and control turbidity, resulting from surface water diversion around the excavation area

1624 IO creates sump on south dam to prevent creating turbid water during

B+L Ditch Excavation 8/18/15 (8)

diversion pumping. IO requested permission to create sump. Sump creation was approved by F/S.

IO installed two straw waddle dams downstream of North dam. Water in ditch is clear down stream of waddle dam prior to start of pumping.

1701 IO began diversion pumping of water between two dams; turbid water began to flow past waddle dams ~~dams~~ and IO stopped pumping CW 8/18/15 to install additional dam stakes and sand bags on straw waddle dams for more Control. IO installs an additional waddle dam down Stream.

IO will continue to pump water out of the dammed ditch to prepare for excavation on 8/19

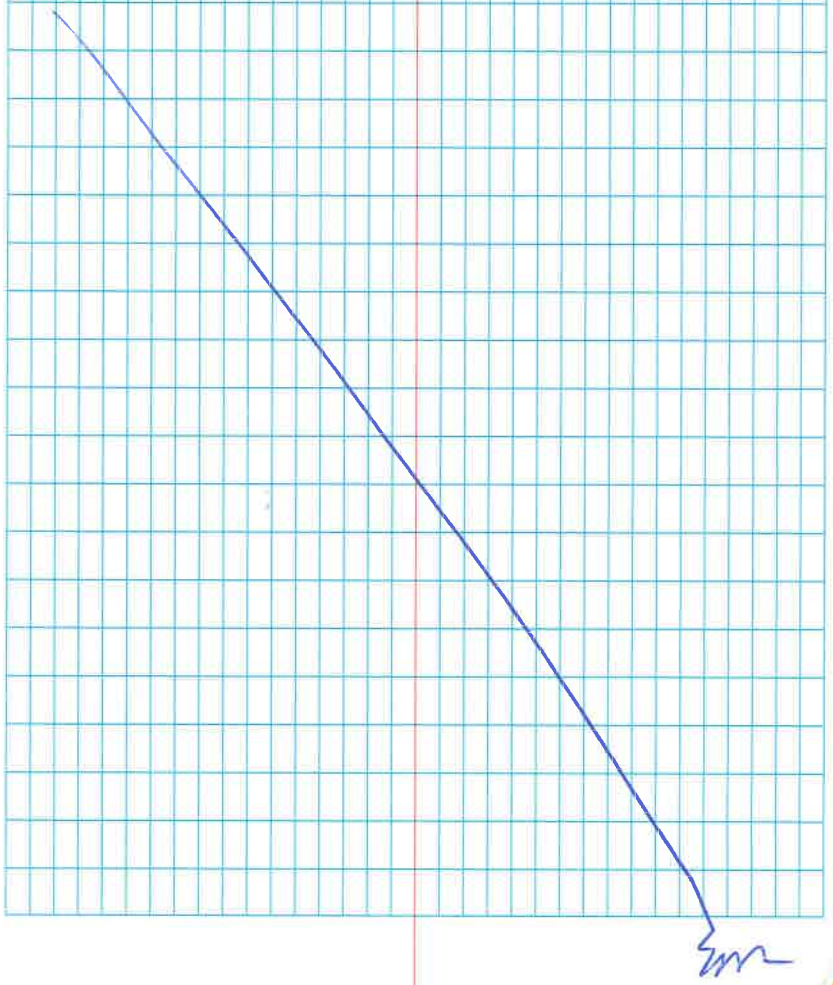
Earlier in the afternoon ~1445, Daniel (IO) and Brian discussed the wetland area near the constructed road w/ a Sterino employee. The employee indicated that Sterino farmed the area last year and tilled

B&L Ditch Bank Excavation 2015 8/18/15 (9)

the land 2 months ago.

1700 IO will continue to pump surface water from the ditch to be excavated through the evening.

1715 C. Wilson + E. Murray off site.



B&L Ditch Bank Excavation 2015
8/19/15 (10)

0600 Erin M onsite. IO onsite staking earthen dams in West Ditch
- Determined that control points are off. current eastern CP's show excavation moving 5 to 7' into ditch
- Emailed with Megan ~~the~~. Confirmed excavation is supposed to start at base of sidewalls and move west into ag fields.
- Erin remeasured and shifted control points and directed IO to use new placed stakes.

0615 Trucks arrive at South Ditch. IO directs them to ~~to~~ to field.

0700 Start ~~ex~~ at CP 52 & 53 and moving South.

0730 Erin ~~~~ inspects straw wattle dams. Water downgradient of dams is clear. Going to do CESCL inspection and monitoring tomorrow.
(Site dump)

0830 4th truck offsite to LRI
Round trip takes ~2 hrs.

B&L Ditch Excavation 2015
8/19/2015 (11)

0850 Erin offsite to get survey flagging for samples locations.

0920 1st truck back onsite. Start direct loading.

0950 Workers at ~~Thompson~~ excavation between CP 54/55 CP-60/61
Emailed Brett to verify we're not "chasing" it. He confirmed we are not.

1100 4th truck offsite to LRI

1115 Erin prepping for sampling

1130 1st & 2nd arrive back onsite
- Start direct loading.

1232 Mohsen onsite Mohsen offsite at 1300

1320 ~~All trucks offsite~~
Erin does walk thru w/ Mohsen
Observed turbidity downgradient of straw wattle dams.
Erin directs IO to stop pumping and add straw wattles

- Receive 3 extra trucks from

B&L Ditch Excavation 2015 8/19/15 (12)

ID job in Enumclaw – Brian informs Erin that due to extra probe ID will finish WD ex today and all sampling can occur.

Call Brent at office to request samplers.

1400 Amanda on way

1420 Trucks leave to LRI.

1450 Amanda arrive onsite
Start sample collection

1600 Cory arrive onsite to help.

Sample ID	Sample Time
WD-0'-N	1215
WD-25'-E	1545
WD-25'-W	1510
WD-25'-C	1525
WD-50'-W	1600
WD-50'-C	1605
WD-50'-E	1610

8/19/15 (13)

Sample ID	Time	
WD-~~25~~'-C	1520	DUP
WD-75'-W	1630	
WD-75'-C	1625	
WD-75'-E	1615	
WD-100'-W	1640	
WD-100'-E	1650	
WD-100'-C	1645	
WD-125'-E	1705	
WD-125'-C	1715	
WD-125-W	1700	

Last truck leaves site – was not able to collect last 2 feet of southern end of excavation. Going to have 1 truck come tomorrow at 0700.

1730 Vac truck full. Brian informs Erin that he will not be renting vac truck tomorrow & if we need excavation empty it will be change order for him to get vac truck out.

Erin calls Mega and she

8/19/2015

B&L Ditch Excavation 2015 (14)

OK's water in excavation during sample collection

Brian expresses concern about sediments in Vac truck — they cannot go in Baker tank and cannot go offsite in vac truck. Brian suggests IO scooping out solids and transporting back to West Ditch to go in remaining small stockpile at southern

1755 Erin inspects BMPs — straw wattle dams are functioning and no turbidity present. Brian moved discharge hosing from ditch to top of ditch bank so water could infiltrate down prior to entering surface water

Discuss sequencing for tomorrow — IO is going to get trucks with gravel spoils to arrive at 0630. After dumping spoils IO will load remaining stockpile soil.

B&L Ditch Excavation 2015 (15)

1820 Erin inspect BMPs downgradient excavation. Water is very clear

1830 Erin offsite

Erin

B+L Ditch Bank Excavation 2015 8/20/15

0640 C. Wilson + E. Murray onsite
IO mobilizing at west Ditch; Export truck onsite. IO excavated remaining soil at the southern portion of ditch. Soil sample collected from South Sidewall

Sample ID
WD-145'-S

0730 E. Murray performed CESCL inspection and collected turbidity sample downstream of straw waddle dams. Turbidity = 3.61 NTU

0745 Two truckloads of Quarry Spalls delivered onsite to west Ditch. E. Murray and C. Wilson called M. McCullough to discuss standing water in excavation and placement of Quarry Spalls. If samples are below CUL, IO may place Quarry Spalls in excavation w/o dewatering. If samples exceed CUL, ditch must be dewatered and over excavated.

0920 C. Wilson conveyed this message to B. Hickman

B+L Ditch Excavation 2015 8/20/15

0929 B. Hickman placed catch basin plug in catch basin near the S. Ditch at the Apartments
IO continues excavation in South Ditch at the eastern extent of the Ditch.
B. Hickman asked if an FIS personnel had to be present onsite at all time during excavation. C. Wilson Confirmed that FIS must be onsite to oversee excavation operations
IO is spraying excavation w/ water for dust suppression

0958 Second export truck onsite at South Ditch for soil removal

1017 Export truck off site

1021 Courrier onsite to take sample to laboratory Friedman + Bruya.

1045 IO installing cribbing/shoring at eastern side of South Ditch

1300 Geotechnical onsite to discuss need for lagging on South Ditch South wall. IO is forced to dig cocks + cobble out of sidewall to install lagging.

B+L Ditch Excavation 8/20/15

Geotech determined lagging will not be needed in areas w/ cobble and rock w/ 2' pile spacing. Lagging is needed in the fill area below ~8' excavation and again at 4' pile spacing.

1345 E. Murray & C. Wilson called M. McCullough to discuss additional sampling at west Ditch. The sidewall sample at the north extent returned at 110 mg/kg. FIS determined 6 additional samples will be collected along the centerline and western ditch extent to delineate the contaminated zone. The excavation will extend no closer than w/ in 10 ft of R-14, to protect well integrity. 8/20/2015

1430 FIS began hand augering 4 borings. North of the excavation.

Sample IDs

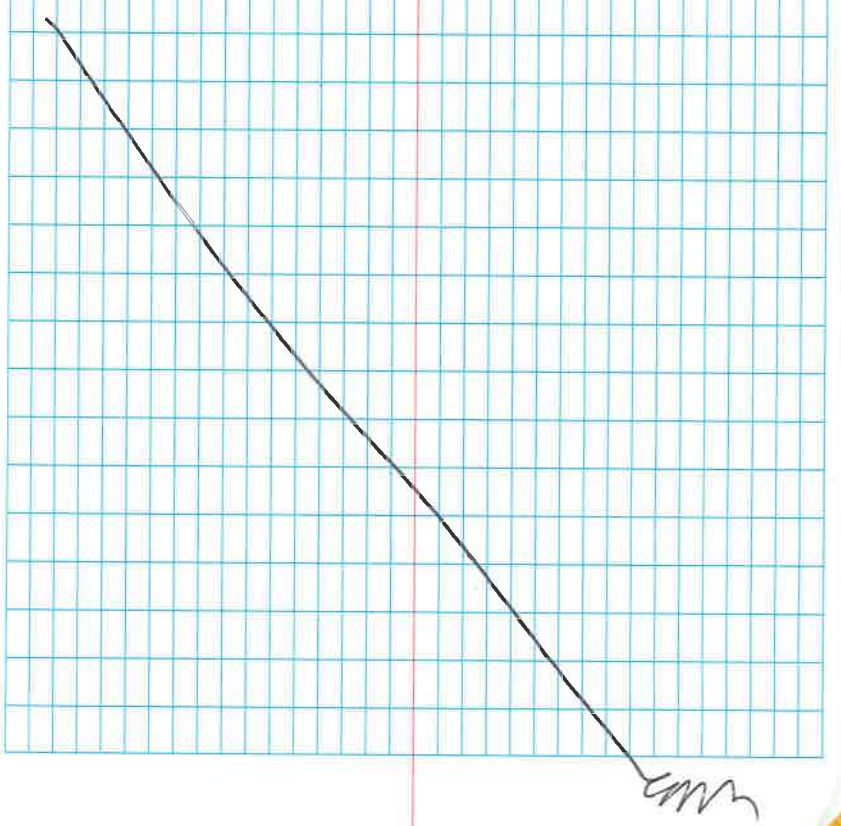
WD-13.5'-C-2
WD-13.5'-C-4
WD-13.5'-W-2
WD-13.5'-W-4
WD-25'-C-2
WD-25'-C-4
WD-25'-W-2
WD-25'-W-4

B+L Ditch Excavation 8/20/15

2 Samples were collected from each boring location from 1.5 to 2' and from 3.5' to 4' labeled -2 and -4, respectively.

1615 FIS completed Sampling and demobilized

1640 C. Wilson and E. Murray offsite.



B&L Ditch Bank Excavation 2015 8/24/15 (2)

0700 ID onsite. Erin arrive. Safety meeting & discuss days plans.

- Brian asks about scraping S. Ditch to make seal where check dam will be. Ask MM.
- Brian asks what we will do with solids in Baker tank (hoses) & filter bags at end of project? Ask MM.

0800 ID setting silt fence adjacent to Wetland in S. Ditch.

0810 Trucks arrive to load (continue) upstream end (CP-29 to CP-30) and west ~ 25 feet.

0900 Brian informs Erin they are to ex limits in this area so Erin can proceed with sample collection.

Erin calls Megan to confirm sample must be collected with the excavator bucket.

B&L Ditch Bank Excavation 8/24/15 (2)

Base and sidewalls are dark brown/black wood waste — email Megan & Brett to get direction on sample collection if slag apparent.

Megan says if after sample collection I notice slag, we should dig a test pit to determine how deep it goes.

1038 Have ID dig test pit

Sample Collection — collected using Ex. Bucket

Sample ID		Time	
SD-0'-E	Brown wood debris gravel sand	1100	* collected 1' up sidewall
SD-10'-S	silty sand w/ gravel FILL	1105	* collected 3' up sidewall
SD-8'-N	* collected approx 3' up sidewall	1120	
SD-8'-N	Dup	1130	

↳ description Brown silty sand mixed with wood debris - dark black/brown. No slag present. Moist.

SD-10'-C	Same as above but charcoal like burned wood present.	1135

B&L Diton Bank Excavation 2015 (22)
8/15/21

SP-10-C-2 Collected 2' below base of ex and below woodwaste. If woodwaste would sample comes back high this could be used as clean bounding sample.
Sample is poorly graded gray fine silty sand.

1130 Side dump truck arrives to continue load out.
IO continuing to put up silt fence adjacent to Wetland A.

1150 Truck leaves another truck & pump arrive for load out.

1200 Erin to inspect check dams and straw wattle dams. Pump is cycling on and off from upgradient south check dam. Water is clear coming out of upgradient

1220 Erin over to West Ditch to inspect check dams and straw wattle

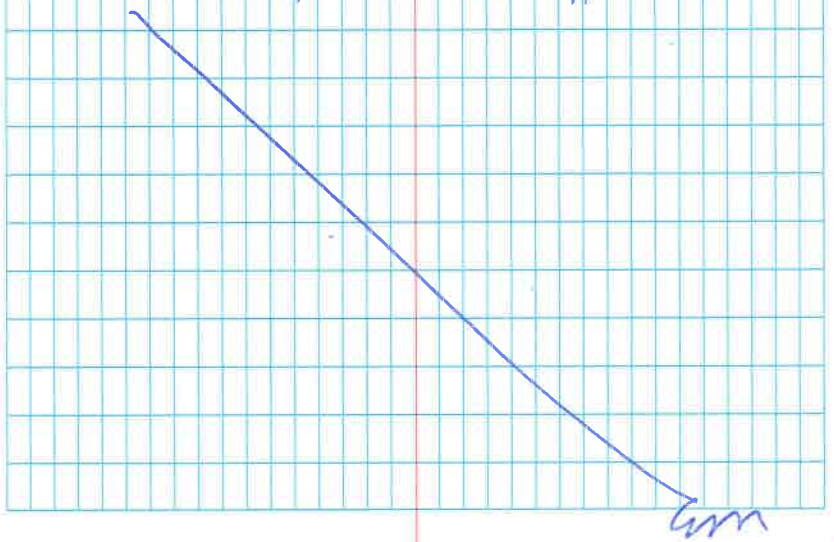
West Ditch

B&L Diton Bank Excavation 2015 (23)
8/15/21

downgradient dam. Pump going to run all weekend and Brian going to monitor rainfall (none expected) and come back if needed to modify BMPs.

1230 IO cleaning up site - putting up fencing, BMPs — pushing excavated soil onto slope of excavation in case it rains.
- make trench along asphalt to collect any water and prevent from running along asphalt.

1300 Earth offsite to office



8/24/15 B&L Ditch Bank Ex. 2015 (24)

0725 Erin and Corey to lab
0800 Erin and Corey onsite
IO onsite
- Truck and pup onsite
0810 Start direct load of South ditch
0820 Side dump arrives - direct load and offsite.

0845 Erin, Corey and Brian head to West Ditch mark of over-ex extents and discuss sequencing for dam setting, dewatering, surveying and backfill.

- checked water downgradient of check dam - clear.
- ~~DISCARD~~
0920 Head back to South Ditch

1040 Truck and pup back onsite for direct loading
- IO starting to set downgradient check dam
- continuing to set silt fence

8/24/15 B&L Ditch Bank Ex. 2015 (25)

1100 Side dump truck arrives for load out

1130 Corey and Erin offsite for lunch

1200 IO over to West Ditch to re-set check dam.

1215 Vac truck on-site (Certified Cleaning Services) to start dewatering West Ditch
- Brian says they are expecting a 10,000 gal tank on-site tomorrow

18 loads out of West Ditch on 8/20
1 load out on 8/21 from West Ditch
~~3 loads of stumps~~
24 tons concrete on 8/13
3 loads of stumps/dirt on 8/14 from S Ditch
8/17

B&L Ditch Bank Excavation 8/24/15 (24)

1250 Truck and pup arrive

1255 Vac truck full - head to GWTP to transfer to Baker tank

1330 Side dump truck arrives.

1400 IO starts logging - cobble between eye beams turns sandy.

1500 IO continuing to log and Vac truck is dewatering West Ditch

1540 Truck and pup arrive

Arsenic results in from Friday 8/21 Erin and Megan discuss continuing to dig down through woodwaste to clean sand layer

1545 Side dump truck arrive - load out & offsite

1615 IO sweep road - set BMPs and button up site

1630 Erin & Corey offsite

B&L Ditch Bank Ex. 2015 8/25/15 (2)

0630 Erin & Corey arrive onsite to West Ditch. West Ditch filled with water overnight - discuss option for removal and treatment

0720 Trucks arrive onsite - IO moves to over excavation area

0730 Start excavation.

1000 Continuing to excavate - waiting for Baker tank to arrive so they can start pumping out West Ditch.

1036

1100 Finish West Ditch. IO cleans up spilled soil on ground.

1140 Baker Bank (2100 Gallon) arrives W. Ditch

1145 Move over to S. Ditch to continue excavation. Utilizing groundwater - per conversation with Megan yesterday we need to dig past woodwaste but encountering groundwater - IO determining appropriate sequencing

1210 Truck leaves - IO starts by logging

(28)

B+L Ditch Excavation 8/25/15

1230 True North Surveyors on site and conducting survey of West Ditch

1304 Side dump truck arrives

1313 Second Truck and pup arrives

1318 Side dump truck covers load and leaves site

1320 Brian informs Corey and Enri that IO is still waiting for approval of material (select borrow). Corey called Megan for status.

1402 Enri inspects S. Ditch downgradient creek dam – no turbidity present.

1533 Begin collection of verification samples

Samples	Time
SD-33'-C	1535
SD-50'-C	1536
SD-33'-N	1540
SD-58'-N	1542

All samples consisted of silty sand with silt, trace small gravels and dense wood debris.

B&L Ditch Excavation 8/25/15 (2)

1605 Side dump Truck arrival

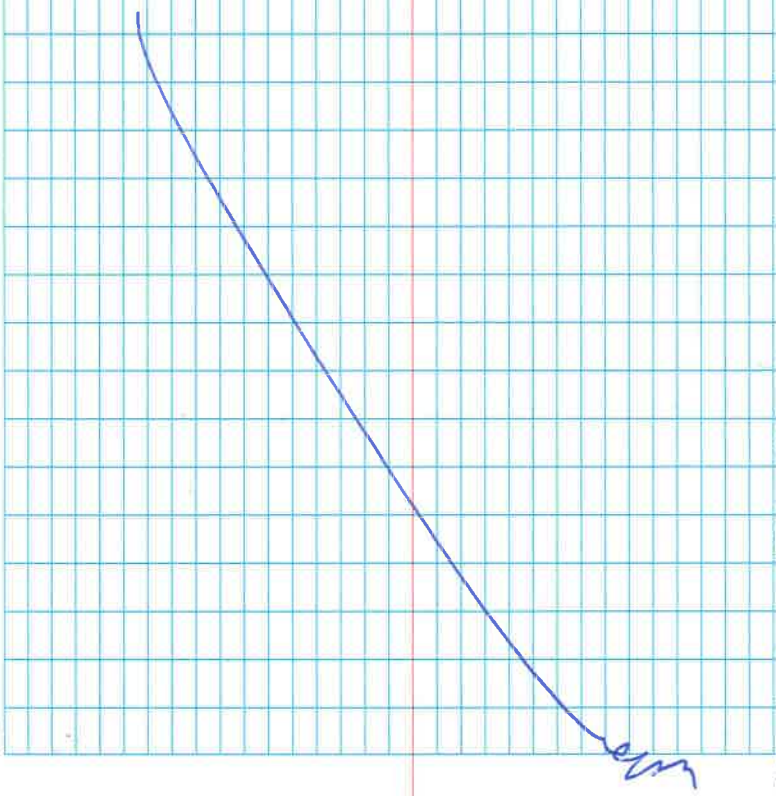
1619 " " " Covered and offs

Truck + Pup on site

1640 Truck + Pup offsite

IO sweeping and cleaning site driveway

17 Enri & Corey offsite to lab



(30) B&L Ditch Bank Excavation 8/26/15

0745 Erin on site at West Ditch
Pumping of excavation water into Baker tank commenced at 0600.
Brian asked if southern end of excavation (12' elevation) could be filled directly with select borrow rather than quarry spalls since there was no standing water and groundwater level below. Erin says yes.
0830 Baker tank 3/4 full

Excavation occurring at South Ditch.
0845 Baker tank full — start to fill ditch with borrow on S. end and quarry spalls in area with standing water

0909 Trucks leave S. Ditch. Crew starts to do lagging.

- Brian over to treatment plant to set up pump to GWTP.

B&L Ditch Bank Excavation 8/26/15 (31)
0930 ~~Brian~~ Corey collects TSS - 96 NTU
1015 Truck arrives on-site
1032 2nd truck arrives onsite
1100 Erin to GWTP to coordinate with Corey and Bill on Baker tank.
Filter housing full of small metal shavings and sheen — appears to be TPH. To filtered ~1,000 G through filters and into Baker tank before filters clogged. Remaining 20,000 G went into tank unfiltered.
- Called Charles. He would like sample collected from the Baker tank for metals and TPH.
- called Megan to get approval — she okays
- Corey collected representative sample (after re-circulation) and Bill drove to FBI for 24-hr. turn.

1145 Mahsen and Don Silver on-site. Erin takes them on site walk of south and west ditches.

1230 Mahsen and Don off-site.

B&L Ditch Bank Excavation 8/26/15 (32)

1245 Trucks arrive on-site

1300 IO continuing to lag - kristin A onsite.

1330 Trucks on site

1400 Continuing to load trucks

1450 Results come in from yesterdays samples - all above 20 mg/kg.

1500 Erin sends email to Brett and megan asking for direction.

- Erin asks Jeremy to do test pit east of ~~west~~ of cp-21 to see extent of woodwaste. Silty gray sand is approx 6" below woodwaste.

1530 Erin has conversation with Brian regarding water management and plan moving forward - he is very concerned about doing additional excavation into water. Erin tells him overex was part of the spec and water management is also part

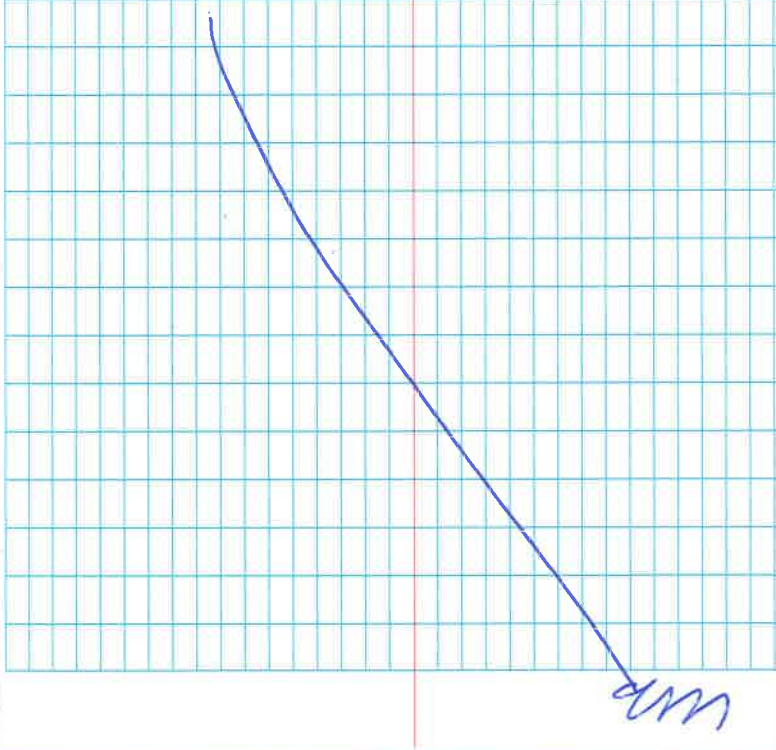
B&L Ditch Bank Excavation (33)

of the expected work.

1600 Crew starts to clean up site and continue lagging. Washed down asphalt and soil into excavation. Jeremy is going to do clean up on excavation bottom tomorrow so samples can be collected.

1605 Erin does CESCL inspection

1700 Erin off site



B+L Ditch Bank Excavation 8/27/15

0745 C. Wilson onsite
IO loading stumps into open top container hauled by DM Disposal

~~800~~ DM Disposal onsite to assess need for tarping

845 B. Hickman IC requested TSS evaluation. He replaced 50 µm filters w/ 25 µm filters.
TSS = 61 mg/L

910 Container truck loaded tarped and offsite
Solo truck on site

918 ~~B. Hickman~~ C. Wilson notified B. Hickman of TSS exceedance and discussed modifying filtration system to reduce TSS. C. Wilson recommended stepping down w/ 25 µm filters inline to 10 µm filters prior to connecting to treatment system.

0926 Solo tarped and offsite
Solo on site

0940 Solo offsite

0945 IO perform column cut approx 30' west of CP#30
Sample collected at 2.5' & 5' from

B+L Ditch Bank Excavation 8/27/15

excavation sidewall.

Sample ID	Time	
SD-30'-N-2.5	0950	Dark brown silty s
SD-30'-N-5	0955	

Additional samples collected at ba and north sidewall of the excavation

Sample ID	Time	
SD-83'-N	1005	Dark brown silty
SD-75'-C	1010	Gray sand w/ co
SD-105'-N	1015	Dark brown silty s w/ wood
SD-100'-C	1020	Gray sand w/ si

1120/1142 Solo onsite; silo loaded and offsi
1143 Solo onsite
1148 Solo offsite
1215 IO continues shoring on South wall
1300 C. Wilson drove out to West ditch for inspection. Upon arrival, observed turbid water in ditch between check dams and migrating downstrea past check dam 1 storm waddle
1345 B. Hickman onsite to install additional straw waddles downs

(36)

B+L Ditch Bank Excavation 7/27/15

1700 C. Wilson Communicated to B. Hickman ~~the need to manage~~ the need to manage turbidity in the ditch. IO directed upstream water around the dams overnight and will manage dam removal and turbidity on 7/28.

1730 C. Wilson offsite.

(37)

B&L Ditch Excavation 2015 8/28/15

0740 Erin onsite at West Ditch. Pat from Kelly onsite manning the pumps. Erin directs them to place more straw wattles. Water level has dropped but quarry spalls are now visible extending into the middle of the ditch.

0800 Trucks arrive and IO starts loading at S. Ditch.

0915 Erin over to West Ditch to check on turbidity

0930 Erin & Corey discuss W. Ditch plan. IO is going to add additional straw wattle dams downgradient current ones and add more wattles on top of existing to raise them above current water level and expected rain over weekend from rain.

0945 Erin sends pictures of West Ditch to Megan.

Erin and Megan all have call

discuss plan – remove downgradient dam slowly. Bank will stay as is over ~~weekend~~ weekend and into next ~~week~~ week. Jute matting not expected until Friday.

Megan is going to decide what we should do with quarry spalls in ditch. We will communicate to IO in todays meeting or next week.

1015 Erin back to S. Ditch. Continue to load trucks and install lagging between breaks.

1100 Erin inspects silt fence adjacent to Wetland A. The silt fence is not buried in trench. When it rains water will pool below and flow out other side into wetland.
- Erin calls Brian to tell him it needs to be buried before weekend.
- Silo arrives – leaves. Another arrives – ~~has~~ has dirt on ground from loading trucks. Erin instructs IO to sweep dirt back into excavation

1140 Silo arrives

1200 Erin offsite to get lunch

1210 Erin to W. Ditch to check on silt fences and status of ditch - ditch very ~~very~~ turbid extending downgradient of first few silt wattle dams – water downgradient of last straw wattle dam is approaching clear – crew was recently in ditches setting dams so this could be why this is still turbid.

1220 Silo trucks arrive

1300 Erin, Carey, and Brian on team call

1400 Erin to S. Ditch to mark off samples. Excavation base is out of groundwater so decide to collect base samples at elevation rather than in test pit visible

sand on base surface.

Sample ID	Time	Description
SD-125'-C	1445	Gray poorly graded fine SAND, moist.
~~SD-135'-N~~	~~1450~~	~~Silty sand mixed w/ woodmulch and charcoal-like pieces~~
SD-140'-A (DUP)	1455	Duplicate of SD-125'-C
SD-133'-N	1450	Silty sand mixed w/ woodmulch and charcoal-like pieces
SD-150'-C	1545	Gray poorly graded silty sand, moist
SD-158'-N	1540	↳ Same as above mixed with trace wood debris

1545 IO starts cleaning out catch basin - approx 2' of accumulated dirt (mostly here before project start).

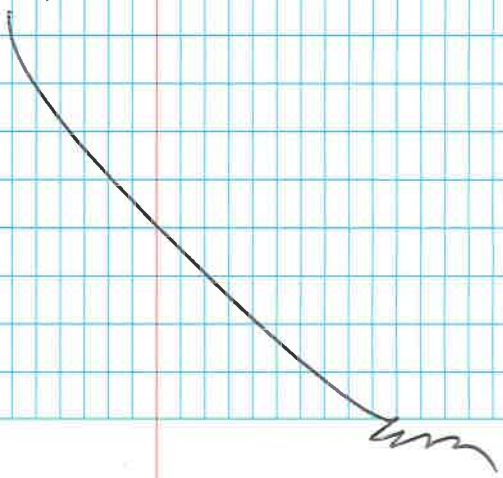
1600 Catch basin clean - IO starting to bury silt fence

- Corey offsite. GWTP is locked and he says we need to close hatch on Baker tank and one on 2nd containment area around filters.

- Erin tells Ryan from IO to clean out 2nd containment area around filter housing and to close hatch on Baker tank.

- Erin checks BMPs and goes over ex test pits with Pat.

PRS Erin offsite



B+L Ditch Bank Excavation 8/31/15 (42)

0735 C. Wilson onsite; IO already onsite mobing for the day

0800 IO reinstalled catch basin plug at Apartments parking lot. The site received approximately 1.31" of rain between Friday 8/28 and Monday morning. Current weather is dry, ~65°, and cloudy.

0807 Two Solo trucks on site; excavation continues to the east. IO loaded

0900 5 total solo trucks

0949 Solo onsite
B. Hichman + C. Wilson inspected the west Ditch. The water level in the ditch was at the upstream dam height. The downstream straw waddles were intact w/ some overtopped by ditch water. Turbidity in the ditch was low and the bottom of the ditch appeared to be visible. C. Wilson approved B. Hichman's request to decrease the height of various straw waddles to help drop the water level in the ditch.

1000 Solo offsite

B+L Ditch Bank Excavation 8/31/15 (43)

1011 Solo onsite

1025 Solo offsite
Solo onsite

1047 Solo offsite

1100 Collect sidewall and base excavation samples

Sample ID	Time	Description
SD-165'-S	1110	Gray silty sand + brown silty WD
SD-175'-C	1105	Gray silty sand
SD-183'-N	1100	Gray silty sand

1240 Solo onsite

1256 Solo offsite / solo onsite

1302 Solo offsite

1337 Solo onsite
IO spraying excavation to help w/ dust control.

1344 Solo offsite
Sidewall soil in the area near sample location SD-165'-S is sluffing off into excavation. IO had excavated to the base elevation in the sluffing area and may use the sluff material as fill. The sidewall sample SD-165'-S does not exceed the CUL.

B+L Ditch Excavation 8/31/15

1415 IO delivers smaller excavator to site to assist w/ test pit sampling

1449 Mobilizing to collect over excavation Samples on Northeast corner

	Sample ID	Time	
CHW 1645 8/31/15	~~SD-0'-N-5~~ SD-11'-	1515	Dark brown sandy silt w/ woody debris 5' from sidewall + 7.5' deep
	SD-11' ~~SD-0'~~-N-10	1523	Dark brown sandy silt w/ woody debris 10' from sidewall + 7.5' deep
	SD-11' ~~SD-0'~~ N-15	1535	Dark brown sandy silt. Little to no woody debris observed, 15' in 7.5' deep
	SD-11' ~~SD-0'~~-N-20	1542	Dark brown sandy silt little to no woody debris 20' in 7.5' deep
	SD-30'-N-7.5	1630	Dark brown Sandy w/ woody debris
	SD-30'-N-10	1635	"

B+L Ditch Excavation 8/31/15

1645 IO completed installing silt fence protective of the wetland

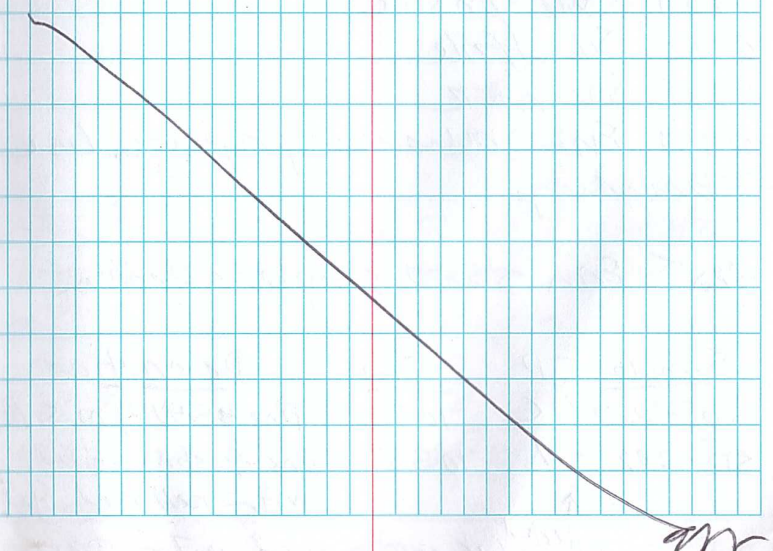
IO installed 10 um filters downstream of the 25 um filters pumping excavation water from the Baker Tank

TSS = 17 mg/L

1729 C. Wilson offsite

Excavation extent

5 feet east of CP-13 and 20 feet east of CP-9 and down to 11' elevation.



B&L Ditch Bank Excavation (46) 9/1/15

0745 Erin M onsite.
IC prepping for excavation

0800 Solo onsite

0815 Solo offsite
- Erin walks excavation & notices sheen coming out of S. sidewall between CP-13 & CP-16 approx. 4' X 7'. Did sheen test - appears organic - no odor.

0910 Solo onsite
0920 Solo offsite
0925 Solo onsite
0930 Solo offsite
0935 Solo onsite
0942 Solo offsite
0945 Solo onsite
0950 Erin measures property line boundary

1025 Erin starts sample collection

Sample ID	Time	Description
SD-200'-C	1030	Fine SAND, no silt
SD-208'-N	1035	Same as above mixed with med. grain sand with trace silt.

↑ collected 3.5' feet up from base

B&L Ditch Bank Excavation (47) 9/1/15

1100 Solo onsite
1115 Solo offsite
1116 Solo onsite
1120 Solo offsite
1130 Solo onsite

1200 Solo onsite
1208 Solo offsite
1225 Erin prepare for sampling

Sample ID	Time	Description
SD-190'-S	1230	sample collected 4' up from base in dark wood debris - silty sand mixed w/ dark brown wood debris/waste

1300 Erin and Brian to W. Ditch for Erin to do CESCL inspection and check out ditch. Discuss plan for grassy swale in ditch.
1425 No more trucks. IC clean up site for tag
1440 Erin offsite to office
Excavation extent CP-11 to CP-9
Erin

9/2/15

B&L Ditch Bank Excavation (48)

0730 K. Andersen + C. Wilson on-site. Site walk. contractors on-site. mark South ditch eastern ext to PZ
- discuss plan for day/week w/ Brian. completing ext of S. ditch w/ mini excavator, stockpiling in ditch. continuing to direct load from ditch working west in am, then will start at west end + remove stumps in pm. stumps will be stockpiled on paved area near former shed. contractor placing catch basin plug

0800 direct loading soil. 6 trucks running loads to LREI

0847 finish first round of direct load (6 trucks)

0855 discuss stump stockpile plan w/ Brian. will pile on bank north of South of control points, scrape underlying top of bank soil during removal. operator removing stumps. beginning ext at east end of S. ditch to PZ

0956 trucks on-site. offsite 1000

1020 truck on-site. 1024

1024 truck on-site, offsite 1032

9/2/15 B&L ditch excavation (49)

1032 truck on-site, offsite 1038

1038 truck on-site, offsite 1044

1115 discussion with DB re: drums of soil on-site. called Megan to discuss - likely left by geotechnical investigation. if geotech confirms, ok to commingle w/ ditch ext - soil + haul offsite. Brian to confirm source w/ geotech sub

1145 truck on-site, offsite 1152

1200 collected confirmation samples w/ excavator bucket. collected bank samples from midway up height b/c no woodwaste observed.

SD-233'-N @ 1205. moist, grey-brown fine SAND w/ little silt

SD-225'-C @ 1210. moist, gray-brown poorly graded fine SAND w/ little silt

SD-215'-S @ 1215 moist, gray-brown fine SAND w/ peat + rootlets. pockets of well graded fine to course gray sand.

9/2/15 B+L ditch ex [50]

1215 received confirmation that drums on-site are left from geotech investigation. will commingle soil w/ ditch ex soil.

1221 truck on-site, offsite 1228
1228 truck on-site, offsite 1234
1234 truck on-site, offsite 1241
- checking w/ ditch. no pumping occurring, no visible turbidity
1242 truck on-site, offsite 1250
1330 discuss sequencing for 9/3. Will direct load from ditch, load stumps + shed debris, then shift back to ditch. in afternoon, will move excavator to east to begin loading over-ex soil
1340 truck on-site, offsite 1348
1400 K 1417 K. Anderson off site for ice for sample coolers, one truck on-site being loaded at 1417, add'l ~~2 trucks~~ truck leaving site.
1420 truck offsite
1430 excavator operator reports tires encountered in fill soil at northeast

9/2/15 B+L ditch ex [51]

corner of S. ditch (photos)
1439 truck on-site, offsite 1448
1450 collected north, base + south confirmation samples w/ excavator bucket. Sampled from midway up bank b/c no woodwaste encountered

SD-258'-N @ 1455. moist, gray-brown, poorly graded fine SAND w little silt and trace fine black oxidized wood fragments

SD-250'-C @ 1500. moist, gray-brown poorly graded fine SAND w/ little silt. trace wood fragments

SD-240'-S @ 1505. moist, gray-brown poorly graded fine SAND w/ silty pockets. trace fine oxidized wood fragments

- end excavation 7.5' east of CP 6 leaving plug in catch basin overnight. <0.01" rain forecast, directed IE to place straw wattle along south side

9/2/15 B+L ditch ex. 52

of stockpiled stumps on top of ex bank @ west end of S. ditch.

finished ex to east in S. ditch, to sand layer below

1525 contractors offsite. JC. Anderson checking SW controls, debriefing Corey for 9/3 oversight.

1545 JC. Anderson offsite

9/3/15 B+L Ditch Excavation 53

0730 C. Wilson onsite
B. Beaulieu sending ditch water to GWTP

0750 Solo onsite

0830 IO excavating at CP-8 west and over excavation at Northeast corner

0810 Solo offsite; Solo onsite

0818 Solo offsite; Solo onsite

0826 Solo offsite; Solo onsite

0831 Solo offsite; Solo onsite

0840 Solo offsite

0906 Solo onsite;

0913 Solo offsite

0917 IO is prepping paved area along the west side of the South ditch to assist w/ Stump loading into container trucks

1000 C. Wilson discussed and requested info on clean baker tanks for decanting water. J. Keller indicated he would provide information.
Solo onsite - loading at CP-6

1009 Solo offsite

9/3/15 B+L Ditch Bank Excavation

C. Wilson collect samples from ex bucket

1010 SD-275'-C -Gray fine grained silty Sand collected 0-6" below base of excavation

1013 SD-283'-N ~~Gay~~ Gray fine grained silty Sand collected 1' up from base on north sidewall

1015 SD-265'-S Gray fine grained silty sand w/ brown sand collected from base of south sidewall

1010 Solo onsite

1020 Solo offsite; Solo onsite

1037 Container truck onsite for stump removal

1059 IO is loading Solo w/ over-excavated soil from Northeast South ditch

1109 Solo offsite; Solo onsite

1119 Solo offsite, Container truck w/ stumps offsite

1121 Solo onsite - loaded out of western extent of excavation

1128 Solo offsite

1142 Solo onsite

1148 Rain begins to fall - heavy at times C. Wilson instructed IO to install straw waddles along excavation edge where overexcavation soil is being loaded.

Catch basin plug remains inserted

1151 Solo offsite

1230 Solo onsite.

IO was pumping collected stormwater at the catch basin to the excavated ditch area. C. Wilson instructed them to stop pumping to the ditch and collect the water for treatment at GWTP. IO planned to vac the water and dispose of at a regulated facility offsite

1250 IO loading stumps into container truck

1300 Weekly conference call

1330 Solo onsite;

1434 Solo offsite; Solo onsite

IO loading at bench west edge and north east over excavation

1746 Roll off onsite; Solos offsite

1754 Catch basin plug released ~~and~~ with new

9/3/15 B+L Ditch Excavation

1405 Container truck offsite

1410 Sample collection w/ excavator bucket
SD-308'-N - grayish brown silty sand collected from ~0.5' up on north bank sidewall

1415 SD-309'-C - grayish brown silty sand collected from 0.5' below base excavation

1420 SD-390'-S - grayish brown silty sand collected from 1' up on south ditch sidewall

1430 Solo truck onsite

1440 Solo truck offsite
IO demobing near northeast overexcavation

1450 IO completed excavation to CP-4

1455 IO securing CB plug to 75 psi; C.Wilson inspected Catch basin plug and Catch

9/3/15 B+L Ditch Bank Excavation

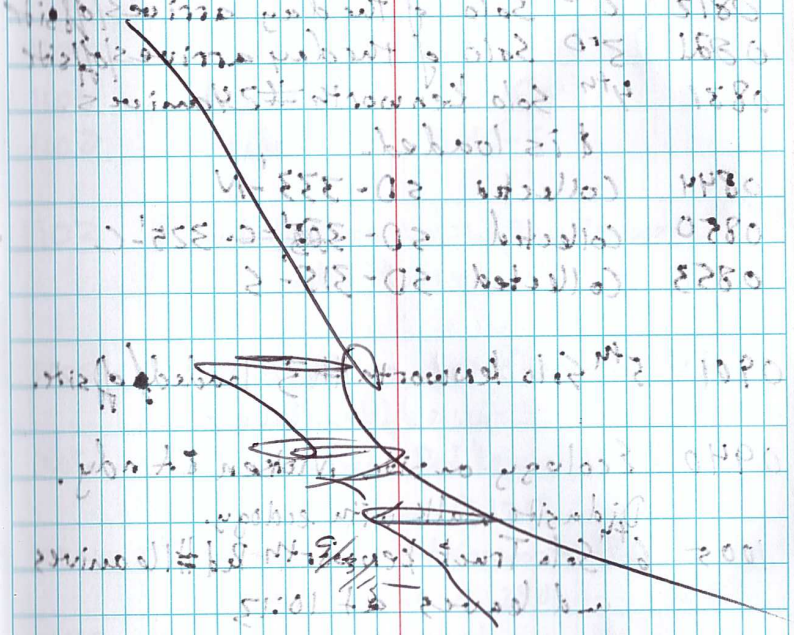
basin appears to have a leak where the basin connects to the pipe. Leakage area is not clearly visible

1517 Container truck onsite for remaining stump pile

1530 Container w/ stumps offsite.

1551 C. Wilson offsite to FBI

1652 C. Wilson delivered samples to FBI



9/4/15 B&L

0715 G. Cisneros & C Wilson onsite. conducted walkthrough & the day's plan with the crew

0800 Start excavating west side of ditch, just west of CP-4

0805 1st Solo of the day loaded offsite
0812 2nd Solo of the day arrives/offsite
0821 3rd Solo of the day arrives/offsite
0831 4th Solo Kenworth #24 arrives & is loaded.
0844 Collected SD-333'-N
0850 Collected SD-~~305'-C~~ 325'-C
0853 Collected SD-315'-S

0901 5th Solo Kenworth #3 loaded & offsite.

0940 Ecology onsite. Moken & Andy. Did a site walk with ecology.

1005 6th Solo Truck Kenworth Red #16 arrives and leaves at 10:13

1009 Corey & Brian take ecology to see west ditch.

9/4/15 B&L

1015 7th Solo truck arrives. Red Kenworth #15. Loaded & leaves @ 1022

1024 8th Solo arrives. White and blue Kenworth #7. Loaded & leaves @ 1031

1034 9th Solo arrives. Red Kenworth #24. Loaded & leaves @ 1041

1045 Ecology off site.

1100 Collected SD-358'-N
1104 Collected SD-350'-C
1108 Collected SD-340'-S

1103 10th Solo arrives. White & Blue Kenworth #3 is loaded & leaves @ 1110

1155 11th Solo arrives. Red Kenworth #16 Loaded and left @ 1205

1206 12th Solo arrives. Red Kenworth #15 Loaded & leaves @ 1215

1231 13th Solo arrives. Red Kenworth #24 loaded & leaves @ 1240

1245 Collected SD-375'-W
Finished western extent of south ditch.

60 9/4/15 B&L

~~[illegible]~~

1250. Started loading Solos from ~~Eastern~~ end of South Ditch with "soil" from NE over-excavation.

1259 (14th) Solo arrives. Blue & White Kenworth #7. Loaded with soil from over excavation in NE portion of South Ditch.

1314 Kenworth #7 off site.

1321. (15th) Solo arrives Blue & White Kenworth #3. ~~Loads~~ Soil from Over-excavation. Soil NE corner of south Ditch.

B+L Ditch Bank Excavation 9/5/15 Cr.

0700

0715 Erin on site

0740 Debrief with Brian.

0800 Truck on site

0820 Erin hikes site walk to check progress

0840 Truck on site

0850 Truck on site – truck off site

0930 Erin working with Megan on north bank over-excavation - Surveyors on site to do western extent and base of excavation down to CP-25.

1002 Continuing to load out stockpiled soil in eastern end of S. Ditch

1050 Truck on site

Truck off site, truck on site @

1130 Erin discuss additional off-site excavation - get map from Megan

1200 Erin making off north tx

60 9/4/15 B&L

~~[illegible]~~

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B+L Ditch Bank Excavation 9/5/15 Cr.

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1050 Truck on site

Truck off site, truck on site @

1130 Erin discuss additional off-site excavation - get map from Megan

1200 Erin making off north tx

B&L Ditch Bank Excavation 9/8/2015

1300 Brian shows Erin area of asphalt that is starting to crack with all the repeated excavator load. Needs to be discussed - does it need to replace this asphalt or can it be ~~patched~~ patches or sealed where cracks are?

1305 Truck onsite to unload gravel spall and load out soil.

1315 Truck offsite

1330 Erin walk site with ~~Jesse~~ to discuss re-doing silt fencing

1400 Trucks (4) arrive for loadout

1440 All trucks offsite. Waiting for Lloyd's trucks to arrive ~~and~~ with gravel spall and loadout.

~~Walk north excavation area with Jesse~~ Em

1505 Truck onsite to drop spall and load out

B&L Ditch Bank Excavation 9/8/2015

1510 Truck offsite

1520 Truck onsite to drop spall & load out.

1530 Truck offsite, waiting for 1 more truck for day

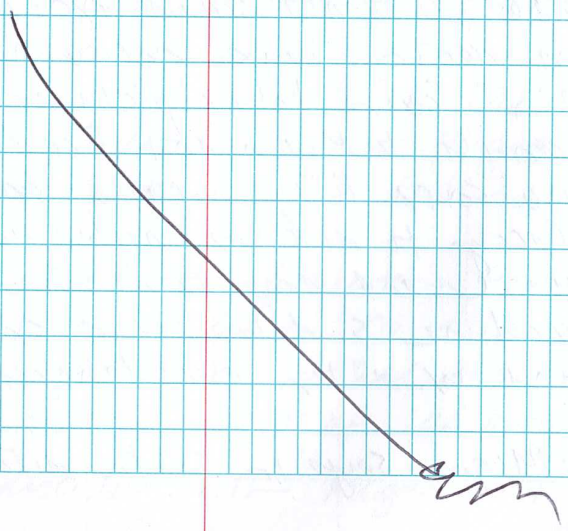
1531 Last truck onsite for gravel spall drop off & load out

1545 Erin does CESCL inspection.

1600 Discuss plan for tomorrow

1630 Erin check BMPs.

1700 All offsite



B&L Ditch Bank Excavation 9/9/15

0745 Erin onsite
IO has been onsite moving silt fence to accomodate north bank excavation.

0800 Truck onsite to continue load out.
0807 Truck offsite
Truck onsite.
0830 Truck onsite

0948 Truck onsite
0950 Truck offsite, truck onsite

1000 IO starts small excavator on north bank excavation
1005 Erin takes pictures and emails to Megan and Brad.
1010 Megan calls Erin & Corey to discuss visible wood-waste and how to remove as well as S. ditch over ex and W. ditch exceedances.

-Megan says in South ditch -

B&L ~~Wood Waste~~ Ditch Bank Excavation 9/9/15

We have to get contamination between CP-10 & CP-12 but don't have to go more than 3 feet. Chase woodwaste and then stop at 3 feet and will use previous boring data as verification samples.

-W. Ditch Exceedances
- Don't have to get as they are on the landfill property.

N. Bank Over Excavation
-should chase visible wood waste and not go past 10 feet back from bank. Should try to minimize volume and not re-contaminate clean areas. IO going to do final pass of excavation bottom to get any material that has fallen.

Between CP-14 end of western end of N. over ex there is no visible woodwaste yet this area had the highest arsenic result of 102 ppm.
- Erin discussed with Megan that

B&L Ditch Bank Excavation 9/9/15

we should remove at least 5 feet here even though no visible woodwaste to capture material that exceeds.

1445 Truck onsite
1458 truck offsite

1230 Truck onsite
1300 truck offsite
1315 Brian offsite to doctor's appointment

1350 Truck onsite
1354 Truck offsite

1415 Discuss western end of S. Ditch northbank over ex with Pat. Instructs them to remove mix 5' unless visible woodwaste.

- Erin observes soil spilling into already clean base of adjacent ditch. Erin ~~instructs~~ instructs IO to do cleanup pass when done.

B&L Ditch Bank Excavation 9/9/15

1500 Carol Jordan onsite

1620 Complete N. bank for day.

1630 Carol offsite

1635 Erin inspect BMPs

1640 All offsite

Excavation extent: ~~ep-25~~ ep-17 to ~~ep-17~~ and then W. extent to ep-14.

Sample locations should be marked

Inspection Observations: tomorrow.

- ditch
- top of (rim) trucks need to be swept back into bed prior to covering and departure from site.
- silt fence needs to be keyed in when done with N. bank over ex.
- Stockpile of N. bank should be covered.
- Backhaul of ~~ep~~ ep-17 adjacent to S. Ditch should be stabilized before end of project.
- High velocity sweeper should be used on ~~paved~~ roads prior to plug removal in catch basin.

B+L Ditch Excavation 9/10/15

0745 C. Wilson onsite
Discussed ECY CSWGP inspection on 9/9 w/ E. Murray

0800 Solo truck onsite; IO continues to load out

0805 Discussed ECY concerns w/ overeo B. Hickman regarding track out, Soil stockpile coverage, potential need for high velocity sweeper, and Quarry Spall spillage/cleanup in the west ditch.
B. Hickman would instruct laborers to increase sweeping to prevent track out. Visqueen was on site yesterday but was not accessible due to a locked gate at the GWTP. IO will look into a high power pressure washer + vac truck to clean pavement at end of construction and before CB plug removal.

0810 Solo offsite & B. Hickman said he Solo onsite would wait for further direction regarding Quarry Spalls in the west ditch.

0815 Solo offsite; Solo onsite

0825 Solo offsite

B+L Ditch Excavation 9/10/15

0855 Solo onsite

0905 Solo offsite

0925 Solo onsite
C. Wilson conducted a TSS test on Ditch water being sent to the GWTP. TSS = 85 mg/L
F/S shut down ditch water

0935 Solo offsite; Solo onsite

0943 Solo offsite; Solo onsite
Lloyd's Solo trucks being in loads of Quarry Spalls and haul out contaminated Soils.

0946 Solo offsite

0952 Solo w/ Quarry Spalls onsite

1000 Solo offsite; Solo onsite

1005 Solo offsite; Solo onsite

1014 Solo onsite

1020 Collected base samples at 30' and 50' from the east sidewall approx 6" below surface

1024 SD-30'-C-2 Consists of dark brown Sand + some wood debris

1026 SD-50'-C-2 consists of grayish brown silty sand

1128 Begin over ex sample collection

B+L Ditch Excavation 9/10/15

on North wall at SD83'-N

1135 SD-83'-N-B collected 0-6" of base and 3 to 4' off over ex sidewall. Sample consists of grayish brown silty Sand.

1140 SD-83'-N-5 collected 3 to 4' up from base of excavation. Sample consisted of light brown sand, gray course sand w/ cobble and dark brown silty Sand.

1145 SD-108'-N-B Collected 0-6" of base and 3 to 4' off over ex sidewall Sample consists of grayish brown silty sand

1150 SD-108'-N-5 collected 3 to 4' up from base of excavation. Sample Consists of gray and brown Coarse grained sand w/ Cobble

1155 SD-133'-N-B collected 0-6" of base and 3 to 4' off over ex Sidewall. Sample consists of grayish brown silty Sand.

1205 SD-133'-N-5 collected 2' up from base of excavation. Sample Consists of gray + brown course Sand w/ cobble

1320 Did not track trucks during Sampling

1322 Solo truck onsite

1332 Solo offsite

IO waiting for additional trucking

1427 Solo truck onsite w/ Quarry Spalls

Solo did not leave w/ excavated soil; Solo offsite

1435 Solo onsite w/ Quarry Spalls

1437 Additional Solo truck onsite w/ Quarry Spalls

1530 Begin collecting Samples at 158' and 183'

1535 SD-183'-N-B collected ~~0-6"~~ 0-6" of base and 2' off over ex side wall Sample consists of grayish brown silty sand

1542 SD-183'-N-5 collected 2' up from base of excavation. Sample consists of gray course grained sand and cobble

1547 SD-158'-N-B collected 0-6" of base and 2' off over ex sidewall. Sample Consists of grayish brown silty sand

9/10/15

1549 SD-158'-N-5 2' up from base of excavation. Sample consists of brown and gray coarse grained sand w/ cobble

1600 IO secured the site.

1628 Inspecting West Ditch. IO is pumping down water level to prepare for earthwork on 9/11. Diversion water is flowing both downstream of waddles and upstream back to ditch. Water is clear to the bottom after the downstream waddle.

1645 C. Ellison offsite

0845 Erin onsite

IO onsite prepping W. Ditch for quarry spall removal.

- Erin inspect W. Ditch and discuss plan with Brian.
- most of the water has been pumped upgradient the upgrad. check dam. IO going to add two more sand packs to reinforce check dam.
- Brian & Erin discuss site matshould try to get onsite prior to spall removal

0930 Erin to S. Ditch

1000 Erin calls Megan to discuss S. Ditch south bank over ex between control points CP-12 & CP-10.

10:15 truck onsite delivering spall.

Between CP-12 & CP-11 IO will chase woodwaste but go a max of 3 feet (due to bounding previous clean samples). Between CP-11 &

B4L Ditch Bank Ex. 9/11/15 74

CP-10 ID will remove slough at bottom of bank (that contains exceedance material) and scrap sidewall approx 6 inches to curb and will stop. Clean bounding sample at curb.

1055 Truck 4 pup onsite to drop spall.

1100 Solo onsite to drop spall and load out S. bank over-ex.

1115 Start over-ex of S. Ditch

1135 Finish 1 truck load of material - still have approx ~4 feet to go to CP-12.

1150 Over to W. Ditch
- Brian tells Erin Pat started query spall removal prior to check dam reinforcement.
Turbid water ran upgradient into clean area upgrad. check dam and was sucked into hose and diverted downstream. Water

B4L Ditch Bank Excavation 9/11/15 75

downgradient & very turbid - Water ~100 feet of corner of W. Ditch/ITD ditch is somewhat turbid.
- Erin calls Roger. Roger instructs Erin to tell Brian to stop work and install additional wattles. Roger wants to introduce clean water from upgradient into area to dilute.

1215 Erin to GWTP to pick up turbidity meter.

1230 Collect turbidity measurement downstream of last straw wattle ~50' Reading 14.2 NTU.

1320 Corey over to W. Ditch to help troubleshoot.
Erin instructs ID to get geotextile fabric to put in ditch as additional BMPs to straw wattle dams.

1330 ID taking out upgradient

B&L Ditch Bank Excavation 9/11/15 pg

check dam and re-setting it to get a better seal.
- Plan is to pump water from upgradient new check dam around third run to introduce clean water
1410 Erin back to S. Ditch to observe IO taking last cut of woodwaste from around CP-12

1445 Brian offsite to get geotextile.
1500 IO cleanup S. Ditch area.
~~[illegible]~~
- Erin instructs IO/Kelly to keep catch basin plug in over weekend. Next week we should consider getting Bravo or equiv. to sweep & ~~keep~~ vac apartments prior to pulling catch basin plug.

1530 Erin over to W. Ditch.
Pumping water downgradient. water is slowly clearing up
1546 IO start to install geotextile fabric
Turbidity Measurement: 19.7 NTU

B&L Ditch Bank Ex. 9/11/15 pg

~50' downgradient straw wattles.

1605 ~~[illegible]~~ - IO installing geotextile

1710 IO done installing geotextile. They installed two - one across ditch after last straw wattle dam and final one downgradient 6 feet at narrowest point of ditch prior to curve into ITD.
- ~~Erin~~ Erin inspects - water is starting to slowly clear. Erin notices hole in last silt dam - Erin instructs IO to fix by installing more geotextile over.

1715 Fix to dam works. Erin takes turbidity measurement downgradient ~50 feet. 7.41 NTU

Erin takes measurement ~~between~~ directly after last dam - 6.3 NTU.
- IO shuts off pump water should equalize over weekend. - em

0800 Erin onsite

0805 Trucks arrive with gunny sprd.

0811 - Brian informs Erin that geotextile dams in W. Ditch have started to hold back water creating a dam - water not over bank.
- Removed geotextile to relieve pressure
- no increase of turbidity

0900 Trucks onsite dropping Sprd.

0915 Erin over to West Ditch.
- currently pumping from upgradient upgradient check dam around ex. area to straw wattle dam.
- trying to lower level so ex. area water can be pumped out to allow for jute mat placement
- Erin says she thinks jute can be placed as is without removing water.

1000 Erin call Megan to say we

need to get results of start analyses ASAP because sub is onsite ready to take additional eastern ex. if needed

1015 Megan calls to say that SD-30-0-2 can be left in place - IO continues to spread gunny sprd over entire ditch.
- Erin asks Megan if it is okay to roll out jute mat lengthwise and staple every 4 feet - Megan says yes.

1030 trucks delivering topsoil to W. Ditch

1100 Erin on conference call with team and IO.

1200 Erin collects turbidity measurements downstream of last straw wattle

1.96* NTU 5' downgradient
* water clear - recalibrate
1.52 NTU 5' downgradient
5.69 NTU 50' downgradient

B&L Ditch Bank Excavation 9/14/15 80

1210 Jute matting complete. Matting below waterline is floating. If it doesn't sink well need to come back and staple down.

1215 IC starting to spread mT top soil 4 to 6" thick

1220 Erin to ~~GWP~~ GWTP

1300 Remark, creek down from West Ditch

1400 Starting to remove straw wattle dams.

1420 Starting to create too much turbidity. Erin instructs IC to only remove 2 of 7. will finish the rest over next few days

1435 Lloyd truck onsite on W. Ditch to deliver last load of topsoil.

Strieck Brothers onsite 11am to cut eye beam. So truck didn't pop.

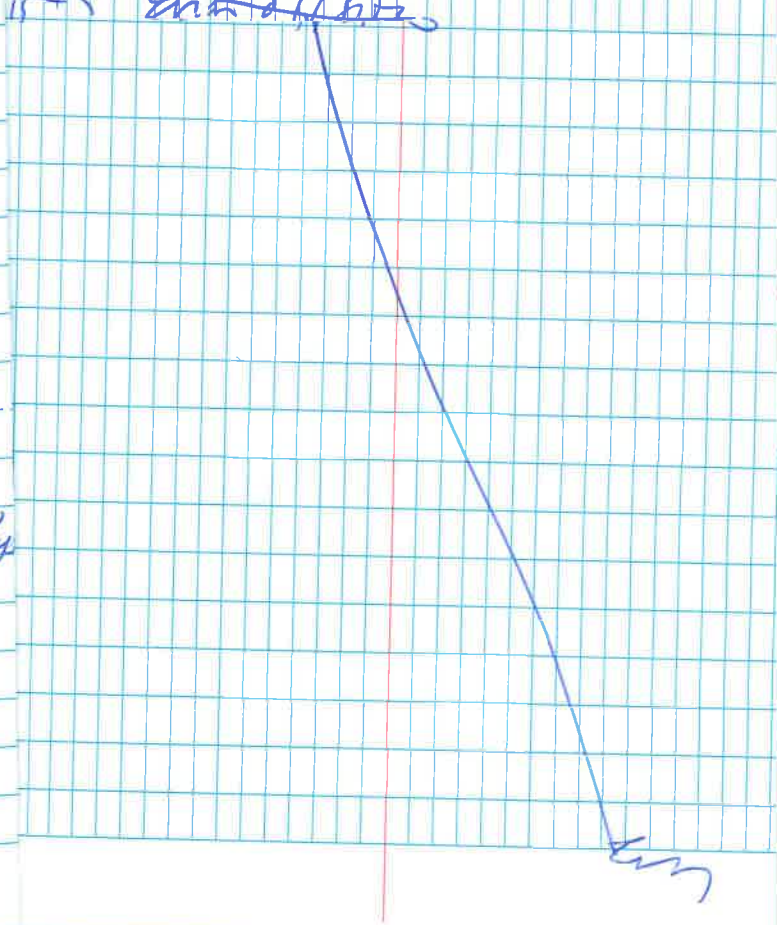
1500 Erin to S. Ditch

B&L Ditch Bank Excavation 9/14/15 8

1520 Last truck of day delivering backfill

1540 IC start to cleanup site — put up fencing.

1545 ~~End of Exhibit~~



B&L Ditch Bank Excavation 9/15/15 82

0700 Erin onsite
I0 onsite at west Ditch moving hoses and prepping for straw wattle removal.
0736 I0 removing straw wattles turbidity present downgradient of straw wattles
0800 Truck arrived ~~to~~ with select borrow at S. Ditch.
0830 Erin and Brin decide to have last 2 wattle dams in place to prevent increased turbidity.
0845 In order to prevent topsoil present at top of bank from falling into ditch during rain event, Erin instructs I0 to place layer of jute matting on top of bank & overlapping with matting on slope.
0900 Certified cleaning services onsite to start vacing out Baker tank in W. Ditch.
1000 Erin offsite to get water
1025 Erin onsite
Pike King onsite to get pictures of arms
1020 21,000 G Baker tank at GWTF

B&L Ditch Bank Excavation 9/15/15 8

of eye beam piles.
1040 Truck onsite for backfill delivery
Baker tank continuing to get vac'd out.
1050 Truck offsite
1102 Truck onsite
1130 I0 continuing to build backfill ramp.
1155 Bill notices sheen in ~~water~~ water coming into new Baker tank at GWTP - calls Erin.
1202 Erin confirms presence of sheen - ~~does not appear to be organic~~ is not organic.
1207 Erin directs Brin to stop vac truck.
1210 Erin and Bill confirm minor sheen in top of 1st Baker tank at GWTP ~21,000
- 3,000 Gallons have been pumped to this tank from the tank in

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B&L Ditch Bank Excavation

the Ag fields.

- Erin calls Megan and she says we should direct IO to place absorbent pads in tank and to take TPH analytical samples.

1220 Brian calls CCS and requests new 6,500 G tank that has not transported petroleum.

1245 GWTP continuing to process ditch water from 9100 G tank (that has ~ 4,200 gallons left to pump into GWTP).

1315 ~~1305~~ Truck onsite

1320 truck offsite

1325 truck onsite

1335 Truck offsite

truck onsite

1345 Bill, Erin, and Brian discuss continuing to vac water from Ag. field Baker tank. option

B&L Ditch Bank Excavation 9/15/2015 8

Brian wants to pump water to 9100 G tank since the water will be in a "certified" clean vac truck.
- we are waiting for this truck to arrive onsite
- the rest of the water will be pumped into 2nd tank at GWTP. IO will then place absorbent pads on surface and FIS will collect samples for TPH

1415 Erin back to S ditch. Continuing to compact 8" lifts and backfill.

Erin, Kelly, and Brian walk ditch and discuss process for re-construction of ditch and bank.
- Kelly will compact ditch ~ 1' to 2 feet below grade and will then use smaller excavator and pull back slope at ~ 2:1.

1445 Erin contact weekly CESCL inspection.

B&L Ditch Bank Excavation 9/15/15
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1515 Erin to W. Ditch.
all runs of ditch are clear
- ID picking up straw waddle from bank
- Vac truck (6,200 G) pumping out of Baker tanks
1530 Truck onsite at S. Ditch
1540 Vac truck arrives at GWTP to start pumping to 9,100 G tank.

1600 ID continuing to Mesic backfill and compact 8th lift.

1620 Erin and ID over to West Ditch to remove last 2 straw Wattle dams.
- Erin tells Brian they need to complete 2nd layer
- turbidity exceeds in creek but not visible 50' downstream
- Vac truck vacuuming out tank in AD field.
1705 Erin offsite.

B&L Ditch Bank Excavation 87 9/16/15

0800 Erin onsite
ID compacting lifts
Trucks arriving

0845 Brendan Young from AES onsite for compaction testing.

0900 ID continuing to compact - trucks (50/hr) arriving every few minutes

0915 SPI here to start cutting eye beams 4' bgs.

0930 Erin to W. Ditch to check on ditch / turbidity.
- Ditch water clear
Rumble strip removed.
1135 AES offsite - will come back ~~tomorrow~~ 5th this afternoon to do 2nd compaction test.

1030 Landscaper onsite.
1100 Erin goes over to W. Ditch w/ Landscaper to discuss plan for

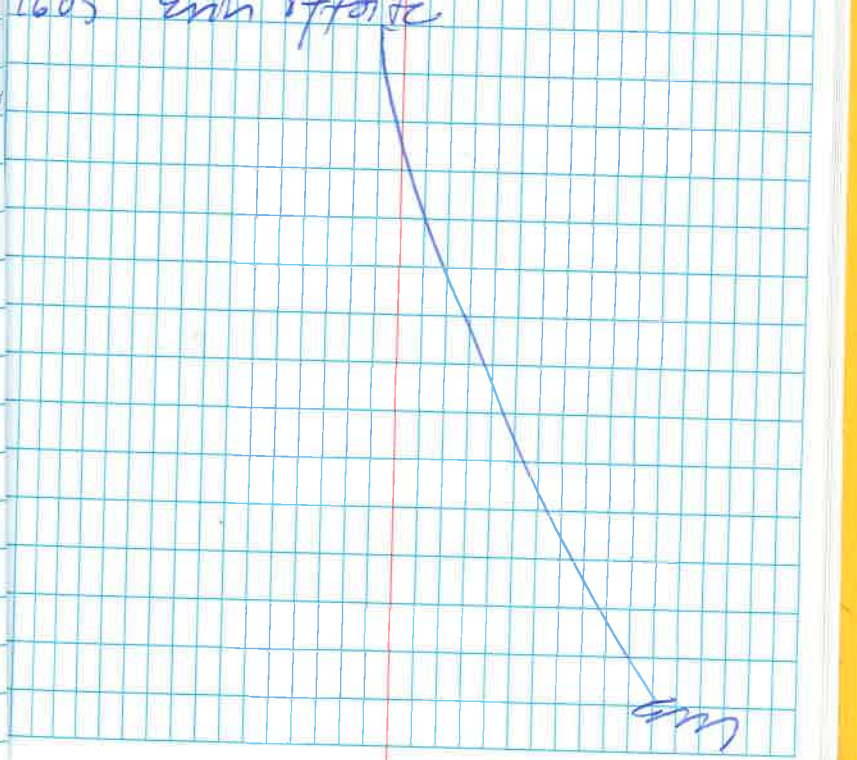
B&L Ditch Bank Excavation 9/16/15

planting.
- Specify wetland seed mix wherever land is disturbed by work however, Erin called Megan to discuss not doing all access roads (unless in wetland B) because they will be filled and will re-seed naturally.

1130 Brian shuts off trucks for 1 hour - dirt coming too fast.
1135 Brian to W. Ditch to vac out solids in Baker tank.
1230 Trucks resume
1235 Erin and Kelly discuss plan for re-routing ditch bank - will likely relocate out Friday
- trucks resume
1250 Best street sweeping onsite to clean track out area
1330 Best cleaning offsite
1400 Trucking in of backfill continues.
1430 AES back onsite for compaction testing.

B&L Ditch Bank Excavation

1515 AES offsite - compaction results good
1528 Brian H. offsite
Discuss removal of catch basin
1530 Last 3 trucks arriving plug.
1600 Kelly finishing last compaction pass.
1605 Erin offsite



0755 C. Wilson onsite
0800 Solo from Lloyds onsite w/ backfill
0805 Solo offsite; Solo onsite
0808 Solo offsite
0817 Solo onsite
0814 Solo offsite; Solo offsite
0820 Solo onsite
0824 Solo offsite; Solo onsite
IO is sweeping ~~track out~~ on to apt driveway back into the work area
0827 Solo offsite
IO spreading and setting lifts of imported back fill at Northeast Section of excavation
0833 Solo onsite
Lloyd's trucks include #110, #138, #112
0840 Solo onsite
0843 " offsite; Solo onsite
0846 Solo offsite
0851 Solo onsite
0855 Solo offsite
0858 Solo onsite
Seatac airport received approx 0.10" of precipitation between

9/16/15 2200 and 9/17/15 0500. The ~~site~~ airport received trace amounts of precip. ~~around~~ between 0800 and 0900. this morning
0905 Solo offsite; Solo onsite; SPI onsite
0909 Solo offsite to cut I-Be
0913 Solo onsite; 0916 Solo offsite 4' bgs
0930 Light rain begins to fall
0944 Solo onsite
0946 Solo offsite; Solo onsite
0950 Solo offsite
0957 C. Wilson discussed removing catch bas- plug and installing filter sock w/ bat.
1004 Solo onsite; 1007 Solo offsite; Solo onsite
1009 Solo offsite; Solo ~~onsite~~ offsite; Solo offsite
Received sample results back for Baker Tank water analysis. Gasoline was detected in the sample collected from Baker Tank 1 located along landfill fence. F/S will sample additional tanks for TPH-gasoline
1056 SPI completed cutting I Beams to 4' bgs
Solo trucks continued importing backfill material

9/17/15 B+L Ditch Excavation

1120 IO continues rolling and compacting Northeast portion of S. Ditch Solo onsite; 1123 Solo offsite

1126 Solo onsite; 1127 Solo offsite; Solo onsite

1136 Solo offsite

1150 Collected water sample from 10,000 gallon Baker tank to run for TPH-Gx. Sample ID BT-03-W

1230 Collected water sample from open top Baker Tank to run for TPH-Gx. Sample ID BT-04-W

1250 D. Young from AES onsite to conduct compaction testing. First two compaction tests were on North side of Ditch -3' South side of Ditch -5' were at 93%; Second Round were at -1.5' bgs and 93%

1325 Solo continue to import Backfill to site Baker was onsite to remove pump used to divert water around West Ditch. Baker removed 21,000 gallon Baker Tank at west Ditch on 9/16/15

1400 Compaction Testing Completed additional Testing near South wall

at 96%

1500 IO continued to import back fill

1510 IO completed import and began buttoning up

1530 IO uses water truck to spray down apts driveway to remove trackout. IO sweeps washdown water into back fill area

IO had previously removed catch basin plug after vacing out material in the catch basin

IO installed a Filter Sock and Geotextile for filtering out turbid water

1537 Co Wilson spoke w/ Charles Mann about ponding area near the western portion of the South Ditch. Charles indicated ponding occurs during all rain events and that water overflows the ag ditch through a gated culvert. The culvert may have been blocked during construction activities. The south wall berm will need to be higher than the ponding water level.

1603 CHW offsite

0800 Erin onsite

Solo onsite from Lloyds with backfill

-discuss plan with Pat - 2 trucks running today. May not need them all day - at grade requirements throughout most of ditch.

0945 Erin to W Ditch for CESCL inspection. Ditch is clear. 2 sandbags remain in ditch that will need to be removed.

0950 Discuss plan with Kelly

1000 Still onsite

Ponding ~~in~~ adjacent to S Ditch on Western end. ID will need to reconstruct the berm up to level of ponding - as indicated from check of Apts. Otherwise water will flow between this area and the ditches ~~the~~ during rain events, causing erosion.

1010 Solo onsite 1015 solo offsite

1022 Solo onsite 1028 Solo offsite

1030 Kelly and Erin discuss sidewalk and road placement. Road width varies slightly according to project plans.

1045 Erin calls Megan

- fine to measure out road rather than have it surveyed - just cannot make the drive more narrow.

- Erin tells Megan Kelly recommends base course under sidewalk. Review specs - at least 2" minimum of base course under all paved surface (Plans don't show this).

1100 Solo onsite; solo offsite 1104

1150 Discuss plan for day. Going to sign out last truck. Kelly will continue to spread and compact dirt to prepare for sidewalk/road forming

- they want to go out to West Ditch and get remaining straw wattles, sand bags, etc. and bring them to S. Ditch.

9/18/15 B&L Ditch Bank Excavation

1220 Kellys prepping S. Ditch for closure

1300 Mob to W. Ditch to pull out straw wattles and misc debris from area. Erin walks ditch to check slope stability.

1330 Mob back to S. Ditch to close up and drop wattles off at GWTP. Covered in Vigueen.

1500 Erin to SW W ditch to do final stability visual before weekend.

Erin Infinite

9/B&L Ditch Bank Excavation 9/21/15 97

0845 Erin onsite
Kellys grading S. Ditch.
Erin at Kelly discuss pulling back 2:1 slope.

0926 Baker at GWTP - discuss pulling water sample from small Baker tank. It has run through carbon drum 2 times since 9/20/15 AM.

0950 Kelly pulling back slope

1010 Collect sample at 10,000 gal tank
2 VOAs
BT-05-W 1000
Bill to take to PBI for 24-hr. turn.

1110 Erin and Kelly walk ditch to fix over boom and 2:1 slope.

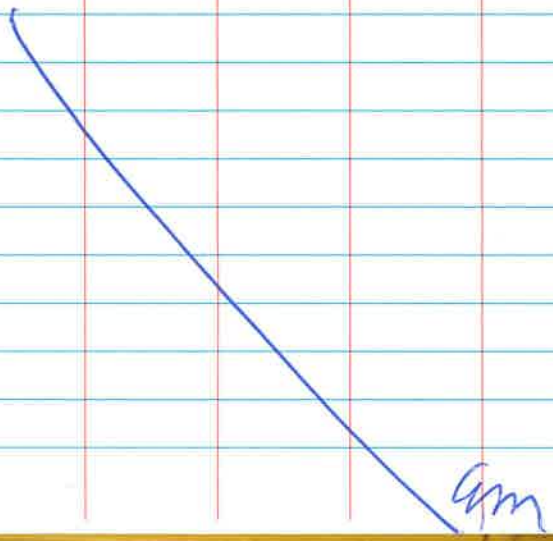
1200 IB clearing off large excavator

B&L Ditch Bank Excavation 9/21/15 98

- Erin oks washing off excavator in back lot and cleaning off prior to moving offsite.

1300 Erin and Brian discuss schedule and plan for week.

1400 Erin and Brian on call.
1445 Kelly ~~cont~~ continuing to grade S. Ditch and create slope.
1515 IC/Kelly clean up site and Brian and Erin discuss week work.
1530 Erin offsite



B&L Ditch Bank Excavation 9/21/15 98

- Erin oks washing off excavator in back lot and cleaning off prior to moving offsite.

1000 Erin and Brian discuss schedule and plan for week.

1400 Erin and Brian on site.
1445 Kelly continuing to grade S. Ditch and create slope.
1515 IO/Kelly clean up site and Brian and Erin discuss week work.
1530 Erin offsite

Erin

B&L Ditch Bank Excavation 9/23/15

0910 Erin and Megan onsite
SS Landscaping onsite
Overnight ditch bank and back of portion of the S. Ditch settled and cracks and holes formed.

IO & FS discussed watering down bank with clean water from hydrant to accelerate settling.
Tomorrow IO will re-construct the bank
- Base course delivered and placed.
1010 Erin and Megan offsite.

1500 Erin back to site for CEXL and discussion on rest of week.

- Discussed saw cutting asphalt tomorrow and fixing bank & grading.
W Ditch banks have been seeded.
- Misc. equipment mobbing offsite.

1530 Erin offsite

Erin

9/29 Sunny 70° L. Meeds

1000 795-7037
Onsite + meet w/ Bill @ culvert @ 70th.

1030 Drainage District 23 Pierce County + took photos.

Ran into City of Fife Recreation @ parking lot area. He advised calling the Drainage District 23 through the County.

> Left message w/ Dennis in Public Works Dept. of Pierce County.

City of Fife Public Works
253-922-9315
Kurtt Hospenthal

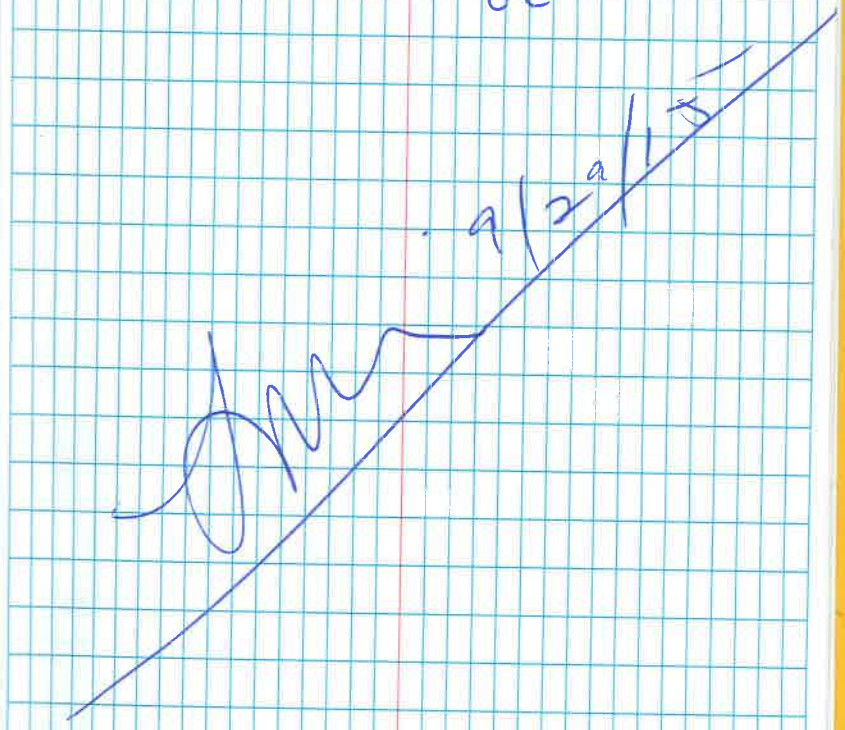
(Beavers Dam + trappers working on it. On the other side of I-5.
→ Developed rash from Nettle stems washed w/ soap + water
↳ DSVENDGARD@CITYOFFIFE.org
(send Beaver Dam photos)

L. Meeds 9/29

1145 pavers onsite observe paving + meet Brian @ 1230. Photos taken.

1240 offsite. to drive back to office

1342 Back to office



102 B&L Ditch Bank Excavation 10/5/15

0800 Erin onsite

Pacific Concrete onsite prepping concrete sidewalk forms.

- Foreman Fred says plans are NOT matching existing.

- Plans show decorative "shine" 4" wide smooth-troweled perimeter but existing sidewalk on either end of driveway is broom finished all the way to the curb.

- Plans show 4' sidewalk curb to curb but existing is 5'

- Plans show 12' expansion joint sections and 4' contraction joints but because sidewalk is 5 feet wide, Pacific Concrete recommends doing 5' contraction joints and 15' expansion sections.

- Megan on flight so Erin calls Kate to ok these changes

103 B&L Ditch Bank Excavation 10/5/15

- Kate says these changes are good.

Brian mentions the Plans show #3 bars (typ.) but Jo did not do this - they did sealant instead which matches existing. Kate says OK.

Pacific Concrete says grade is too high on north edge - Erin directs Jo to fix. Brian calls Kelly to bring laborers - grade is ~2" too high so they are going to shovel out.

0930 Pacific Concrete finished setting forms - Kelly continuing to shovel.

0935 Brian & Erin discuss ponding in back lot area adjacent to S. Ditch. Ponded currently even though no recent rain.
- grate may be plugged - going to call Charles Mann.

1000 Erin discussed sidewalk install

1020 Erin start CESCL at S. Ditch

104 B&L Ditch Bank Excavation 10/5/15

with Kelly and Pacific Concrete

1040 Erin to West Ditch to check out flooding.
corner of W. Ditch & ITD
- still flooded
- call him to see if she knows if Beaver dam has been removed.

1045 Erin onto CESCL at W. Ditch

1115 Erin back to S. Ditch. Waiting for concrete truck to arrive.

- Brian connected with Charles Mann and Charles showed IO/ Kelly the metal grate. Kelly shoveled away dirt so ponded water can go through.

1200 Concrete truck onsite.

B&L Ditch Bank Excavation (105)

10/9/15

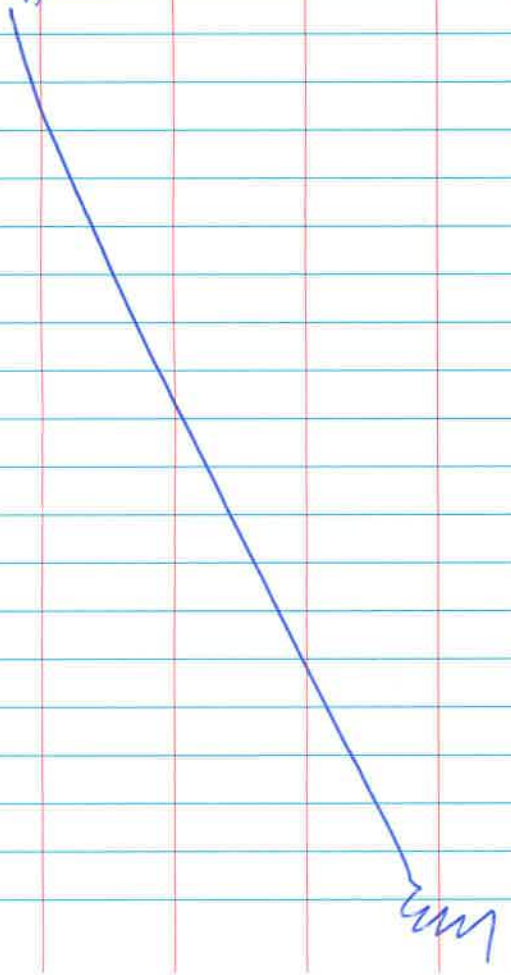
0900 Erin M onsite.
SS Landscaping onsite planting of South Ditch.
Monsen and Dan Silver onsite
Tim present
Charles Mann present
Discuss the back lot area that is not draining - Charles says this happened after IO pushed dirt against grate.
- Jim Decker says they are going to get it jet vacc'd out. Likely today
- Jim Decker says they are going to get a high velocity street sweeper in next week after all activity is done.
- Charles points out that IO took down and removed from site the fencing adjacent to the S. Ditch next to back lot area. All city fencing onsite and Jim explained what they needed to do.
- West Ditch still flooded - when flooding subsides Jake Sterino will plow field and temp roads and SS will come back to plant.

B&L Ditch Bank Excavation (102)

10/9/15

- Erin and Jim discuss silt fence and Erin tells him to leave up until monday when planting area will be mulched.

Hour All offsite



CESCL Inspection Forms

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 8/14/15 Time 3pm

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): NA - first inspection

Approximate rainfall amount in the last 24 hours (in inches): 0.1"

Current Weather Clear ☐ Cloudy ☐ Mist ☐ Rain ☑ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐	Clearing/Demo/Grading	☑	Infrastructure/storm/roads	☐
Concrete pours	☐	Excavation—West Ditch	☐	Utilities	☐
Offsite improvements	☐	Excavation—South Ditch	☑	Final stabilization	☐

→ top 3" of soil - mit in ditch line

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes X	No ___
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes X	No ___
3. Was there active discharge?	Yes X	No ___
4. If yes to #3, was a photograph taken?	Yes X	No ___
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes X	No ___
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ___	No X
7. If yes to #6 was it reported to Ecology?	Yes ___	No ___
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ___	No X

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

Turbid water was observed flowing into Autumn Village Apts. catch basin. This was clean soil from excavator tracks - not arsenic contaminated soil. Contractor supposed to plug catch basin but no plug available. Filled catch basin with straw wattles and around tops of drain and secured with sand bags. A turbidity sample

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater. was taken at the outfall directly to east of Apts. Ditch/South Ditch.

Sampling Results: Date: 8/14/15

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory	67			
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?			✓			
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓					
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?			✓			
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓					
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.		~~✓~~	✓			
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.		~~✓~~	✓			
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓			
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?			✓			
7 Drain Inlets	Storm drain inlets made operable during construction are protected.		✓		Need permanent storm drain plug	✓	✓
	Are existing storm drains within the influence of the project protected?		✓		" "	✓	✓
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?						
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?			✓			
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?			✓			
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?	✓					
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.			✓			
	Were there any clean non turbid dewatering discharges?			✓			
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✓

All in place BMPs [✓] All disturbed soils [✓] All concrete wash out area [ ] All material storage areas [ ]
All discharge locations [✓] All equipment storage areas [✓] All construction entrances/exits [✓]

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
7	Autumn Village Catch Basin	Straw wattles placed in catch basin - water running into catch basin is clear when Erin leaves site.	8/14/15	EM

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 8/14/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 8·17·15 Time 2:00 PM

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: William Beaulieu

Approximate rainfall amount since the last inspection (in inches): .15

Approximate rainfall amount in the last 24 hours (in inches): None

Current Weather Clear ☑ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☑ Clearing/Demo/Grading	☐ Infrastructure/storm/roads	☐
Concrete pours	☐ Excavation—West Ditch	☐ Utilities	☐
Offsite improvements	☐ Excavation—South Ditch	☑ Final stabilization	☐

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ✓	No ___
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ___	No X
3. Was there active discharge?	Yes ___	No X
4. If yes to #3, was a photograph taken?	Yes ___	No X
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ___	No X
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ___	No X
7. If yes to #6 was it reported to Ecology?	Yes ___	No X
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ___	No X

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

N/A

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date:

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?			✓			
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓					
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?			✓			
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓					
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.			✓			
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.			✓			
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓			
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?			✓			
7 Drain Inlets	Storm drain inlets made operable during construction are protected.		✓		needs permit	✓	✓
	Are existing storm drains within the influence of the project protected?		✓		"	✓	✓
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?						
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?			✓			
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?			✓			
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?	✓					
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.			✓			
	Were there any clean non turbid dewatering discharges?			✓			
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected.

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☐
All discharge locations ☑ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
7	Auburn Village Catch Basin	Straw wattles placed in catch basin	8/7/15	WB

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) William Beardsley (Signature) William Beardsley Date: 8/17/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 8/20/15 Time 0705

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): trace

Approximate rainfall amount in the last 24 hours (in inches): trace

Current Weather Clear ☐ Cloudy ☑ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls ☐	Clearing/Demo/Grading ☐	Infrastructure/storm/roads ☐
Concrete pours ☐	Excavation—West Ditch ☑	Utilities ☐
Offsite improvements ☐	Excavation—South Ditch ☐	Final stabilization ☐

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ☑	No ☐
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ☐	No ☑
3. Was there active discharge? Water diversion	Yes ☑	No ☐
4. If yes to #3, was a photograph taken?	Yes ☑	No ☐
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ☑	No ☐
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ☐	No ☑
7. If yes to #6 was it reported to Ecology?	Yes ☐	No ☐
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ☐	No ☑

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

We are actively diverting water from upgradient a check dam in the West Ditch to downgradient a check dam ~~in the~~ by contaminated water within ex area is getting VAC trucked out.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date: 8/20/15

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory	3.61			
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads? Rumble pad	✓					
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓					
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?	✓					
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?	NA					
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓					
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	NA					
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.	NA					
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition? In	NA		Agricultural field			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?	NA NO stockpiles					
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?	✓					
	Is off-site storm water managed separately from stormwater generated on the site?	NA					
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?	Direct loading NA					
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?	✓ check dams in ditches					
7 Drain Inlets	Storm drain inlets made operable during construction are protected.						
	Are existing storm drains within the influence of the project protected?	✓	sm ✓		~~Discuss with Megan~~ Brian installs plug in afternoon		
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓ consistent pumping from upgradient check dam in West Ditch					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	NA WILL INSTALL JUTE ~~MAT~~ PRIOR TO REMOVAL OF CHECK DAMS					
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?		✓		IO to scrap up fallen ex. material and dispose of today)		
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓	In covered		Mules		
	Has secondary containment been provided capable of containing 110% of the volume?	NA					
	Were contaminated surfaces cleaned immediately after a spill incident?		✓		See		
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?	NA					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.	NA					
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.	NA					
	Dewatering has been done to an approved source and in compliance with the SWPPP.	✓					
	Were there any clean non turbid dewatering discharges?	✓	Diversion water				
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✓

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☑

All discharge locations ☑ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
	NA			

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 8/19/15

Title/Qualification of Inspector: CESCL certified

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 8/26/15 Time 1603

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): Ø

Approximate rainfall amount in the last 24 hours (in inches): Ø

Current Weather Clear [✓] Cloudy [ ] Mist [ ] Rain [ ] Wind [ ] Fog [ ]

A. Type of inspection: Weekly [✓] Post Storm Event [ ] Other [ ]

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	[ ]	Clearing/Demo/Grading	[ ]	Infrastructure/storm/roads	[ ]
Concrete pours	[ ]	Excavation—West Ditch	[ ]	Utilities	[ ]
Offsite improvements	[ ]	Excavation—South Ditch	[✓]	Final stabilization	[ ]

C. Questions:

1.	Were all areas of construction and discharge points inspected?	Yes [✓]	No [ ]	
2.	Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes [ ]	No [✓]	
3.	Was there active discharge? Active diversion of water around S. Ditch	Yes [✓]	No [ ]	
4.	If yes to #3, was a photograph taken? west (downgradient) check dam	Yes [ ]	No [ ]	
5.	Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes [✓]	No [ ]	
6.	Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes [ ]	No [✓]	
7.	If yes to #6 was it reported to Ecology?	Yes [ ]	No [ ]	
8.	Is pH sampling required? pH range required is 6.5 to 8.5.	Yes [ ]	No [✓]	

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

We are doing active diversion of ditch surface water around a check dam in order to lower water and prepare for excavation of this area

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date: 8/26/15

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory	46.9*			
pH	Paper, kit, meter				

* water is slightly turbid with organic flocculant and mill fail — went upstream to collect background sample. This sample was 232 NTU.

Water is turbid with organics and millfail — not sediment.

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?	✓					
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.			✓ No soil in road			
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?			NA			
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			NA			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).		✓		Silt fence is around Wetland A. not buried.		
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓					
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.	✓					
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓	No stockpiles		
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓			Soil directed back into excavation		
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			NA			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?	✓					
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?	✓			Check dams are placed in ditch per plans and SWPPP.		
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓			Drain plugs in in during all construction.		
	Are existing storm drains within the influence of the project protected?	✓					
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓		NA	Contractor placed gunny sacks to prevent erosion of W. bank		
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			X			
	Were contaminated surfaces cleaned immediately after a spill incident?	✓					
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.	✓					
	Were there any clean non turbid dewatering discharges?	✓		Diversion water			
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓	✓				
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓	✓				
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓	✓				
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✓

All in place BMPs [✓] All disturbed soils [✓] All concrete wash out area [ ] All material storage areas [ ]
All discharge locations [✓] All equipment storage areas [ ] All construction entrances/exits [✓]

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 8/26/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 9/1/15 Time 1310

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): 1.31"

Approximate rainfall amount in the last 24 hours (in inches): _____

Current Weather Clear ☑ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☑ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐ Clearing/Demo/Grading	☐ Infrastructure/storm/roads	☐
Concrete pours	☐ Excavation—West Ditch	☑ Utilities	☐
Offsite improvements	☐ Excavation—South Ditch	☑ Final stabilization	☐

cm

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ✓ No ___	but not after last wattle
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen*	Yes ✓ No ___	
3. Was there active discharge?	Yes ✓ No ___	
4. If yes to #3, was a photograph taken?	Yes ✓ No ___	
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ✓ No ___	
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ___ No ✓	
7. If yes to #6 was it reported to Ecology?	Yes ___ No NA	
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ___ No ✓	

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.
We are currently discharging (diverting) water from west ditch around downgradient check ~~dam~~ to relieve relieve pressure and height of water at upgradient dam. Straw wattles

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date: _____

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory	45.2*			
pH	Paper, kit, meter				

Sample had visible organic matter suspended in water including ~~mud~~ duck weed. Tried multiple times to get sample without suspended matter and turbidity measurements came back higher. Went to upgradient check dam to collect background — 36.3 NTU. less duck weed

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?	✓					
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓					
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?	✓ check dams					
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			NA			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓					
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓		Catch basin is in during construction			
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.	✓					
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?	✓			Stockpile is within excavation footprint		
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?	✓					
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?	✓					
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓			Catch basin plug is in.		
	Are existing storm drains within the influence of the project protected?	✓					
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓			Runny spot in west Ditch.		
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?	✓			At end of day after trucks are done.		
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.	✓					
	Were there any clean non turbid dewatering discharges?	✓		Diversion water			
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✔

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☐

All discharge locations ☑ All equipment storage areas ☐ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
	N/A			

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 9/1/15

Title/Qualification of Inspector:

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 9/8/15 Time 1545

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Emily Murray

Approximate rainfall amount since the last inspection (in inches): Ø

Approximate rainfall amount in the last 24 hours (in inches): Ø

Current Weather Clear ☑ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐ Clearing/Demo/Grading	☐ Infrastructure/storm/roads ☐
Concrete pours	☐ Excavation—West Ditch	☐ Utilities ☐
Offsite improvements	☐ Excavation—South Ditch	☑ Final stabilization ☐

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ☑	No ☐
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ☐	No ☑
3. Was there active discharge?	Yes ☐	No ☑
4. If yes to #3, was a photograph taken?	Yes ☐	No ☐
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ☐	No ☑
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ☐	No ☑
7. If yes to #6 was it reported to Ecology?	Yes ☐	No ☐
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ☐	No ☑

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date:

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?	✓		✓			
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓					
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?	✓		✓			
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓	✓		Silt fence around Wetland A was moved and needs to be buried		
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓	Catch Basin		plugin		
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.	✓					
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?	✓	pushed back into excavation footprint				
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?	✓		~~N/A~~			
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓					
	Are existing storm drains within the influence of the project protected?	✓					
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓					
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?	✓					
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.	✓					
	Were there any clean non turbid dewatering discharges?		✓				
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✔

All in place BMPs ☑ All disturbed soils ☐ All concrete wash out area ☐ All material storage areas ☐
All discharge locations ☐ All equipment storage areas ☐ All construction entrances/exits ☐

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
4	Silt fence around wetland A needs to be buried	" "	9/9/15	EM

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 9/8/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 9/15/15 Time 1445

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): trace

Approximate rainfall amount in the last 24 hours (in inches): 0

Current Weather Clear ☑ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls ☐
Concrete pours
Offsite improvements
Clearing/Demo/Grading ☐
Excavation—West Ditch ☐
Excavation—South Ditch ☐
Infrastructure/storm/roads ☐
Utilities ☐
Final stabilization ☑
and delivery of backfill at S. Ditch

C. Questions:

1.	Were all areas of construction and discharge points inspected?	Yes ✓ No ___
2.	Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ___ No ✓
3.	Was there active discharge?	Yes ___ No ✓
4.	If yes to #3, was a photograph taken?	Yes ___ No ___
5.	Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ___ No ✓
6.	Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ___ No ✓
7.	If yes to #6 was it reported to Ecology?	Yes ___ No ___
8.	Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ___ No ✓

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date:

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?	✓					
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓					
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?	✓					
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).		✓		Silt fence is not currently keyed in all the way around wetland A		
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓					
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.	✓					
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?	✓			Stockpiles are pushed back into excavation footprint		
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓	No more excavation		
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?	✓					
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓					
	Are existing storm drains within the influence of the project protected?	✓					
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓					
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?			✓	No more contaminated excavation.		
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.			✓	No more dewatering		
	Were there any clean non turbid dewatering discharges?		✓				
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✔

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☑
All discharge locations ☐ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
4	Silt fence around Wetland A	needs to be keyed in ↓ Make [illegible] trench at bottom of slope where silt fence is not present.	9/17/15	EM

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 9/15/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 9/18/15 Time 0845

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): 0.2 inches

Approximate rainfall amount in the last 24 hours (in inches): 0.2 inches

Current Weather Clear ☐ Cloudy ☑ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☐ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐ Clearing/Demo/Grading	☑ Infrastructure/storm/roads
Concrete pours	☐ Excavation—West Ditch	☐ Utilities
Offsite improvements	☐ Excavation—South Ditch	☐ Final stabilization

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ✓	No
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes	No ✓
3. Was there active discharge?	Yes	No ✓
4. If yes to #3, was a photograph taken?	Yes	No ✓
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes	No ✓
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes	No ✓
7. If yes to #6 was it reported to Ecology?	Yes	No
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes	No ✓

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date:

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?			✓	Took out rumble strip in West Ditch Construction Access		
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓					
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?	✓					
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓	~~✓~~ Berm fence		Silt fences not where silt is not present		
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓					
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.	✓					
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓	No stockpiles		
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?	✓					
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?	✓					
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓	Catch basin plug is removed and filter sock is in				
	Are existing storm drains within the influence of the project protected?	✓					
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓					
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?			✓			
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.			✓			
	Were there any clean non turbid dewatering discharges?		✓				
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✔

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☑

All discharge locations ☐ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 9/18/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 9/23/15 Time 1500

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): 0

Approximate rainfall amount in the last 24 hours (in inches): 0

Current Weather Clear ☑ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐	Clearing/Demo/Grading	☑	Infrastructure/storm/roads	☐
Concrete pours	☐	Excavation—West Ditch	☐	Utilities	☐
Offsite improvements	☐	Excavation—South Ditch	☐	Final stabilization	☑

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ✓	No ___
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ___	No ✓
3. Was there active discharge?	Yes ___	No ✓
4. If yes to #3, was a photograph taken?	Yes ___	No ✓
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ___	No ✓
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ___	No ✓
7. If yes to #6 was it reported to Ecology?	Yes ___	No ___
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ___	No ✓

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date:

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?			✓	Trucks no longer tracking off soil.		
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.			✓			
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?			✓	All check dams are out of ditches		
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓		✓	All silt straw wattles are removed from ditches.		
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓					
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.			✓			
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?	✓					

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓			
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?			✓			
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓					
	Are existing storm drains within the influence of the project protected?	✓			protected with	filter sock & geotextile	
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓					
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?			✓			
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.		✓	✓			
	Were there any clean non turbid dewatering discharges?		✓	✓			
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✓

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☑
All discharge locations ☐ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 9/23/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 9/30/15 Time 0730

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erik Murz

Approximate rainfall amount since the last inspection (in inches): 0

Approximate rainfall amount in the last 24 hours (in inches): 0

Current Weather Clear ☑ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls ☐	Clearing/Demo/Grading ☐	Infrastructure/storm/roads ☑
Concrete pours ☐	Excavation—West Ditch ☐	Utilities ☐
Offsite improvements ☐	Excavation—South Ditch ☐	Final stabilization ☑

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ✓	No
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes	No ✓
3. Was there active discharge?	Yes	No ✓
4. If yes to #3, was a photograph taken?	Yes	No ✓
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes	No ✓
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes	No ✓
7. If yes to #6 was it reported to Ecology?	Yes	No ✓
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes	No ✓

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date:

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?			✓			
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.			✓			
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?			✓			
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓					
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓					
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.			✓			
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?		✓		S. Ditch needs jute mat installed		

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓			
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?			✓			
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?			✓			
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓					
	Are existing storm drains within the influence of the project protected?	✓					
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓					
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?			✓			
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.			✓			
	Were there any clean non turbid dewatering discharges?		✓				
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected.

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☑
All discharge locations ☐ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
5	Exposed slope in S. Diff.	Jute mat needs to be installed		EM

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 9/30/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 10/6/15 Time 1040

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): 0.6

Approximate rainfall amount in the last 24 hours (in inches): _____

Current Weather Clear ☑ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls ☐	Clearing/Demo/Grading ☐	Infrastructure/storm/roads ☑
Concrete pours ☐	Excavation—West Ditch ☐	Utilities ☐
Offsite improvements ☐	Excavation—South Ditch ☐	Final stabilization ☑

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ☑	No ☐
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ☐	No ☑
3. Was there active discharge?	Yes ☐	No ☑
4. If yes to #3, was a photograph taken?	Yes ☐	No ☑
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ☐	No ☑
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ☐	No ☑
7. If yes to #6 was it reported to Ecology?	Yes ☐	No ☑
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ☐	No ☑

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

_____

_____

_____

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date: _____

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)	✓					
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?			✓			
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.			✓			
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?			✓			
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓					
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.	✓					
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.			✓			
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?		✓		Jute mat needs to be installed		

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓			
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?			✓			
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?	✓					
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓					
	Are existing storm drains within the influence of the project protected?	✓					
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?	✓					
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?	✓					
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?	✓					
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?	✓					
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?			✓			
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.			✓			
	Were there any clean non turbid dewatering discharges?		✓				
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected.

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☑
All discharge locations ☐ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials
5	Exposed slope in S. Ditch	Jute mat to be installed on 10/7/15		

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 10/6/15

Title/Qualification of Inspector: CESCL

Construction Stormwater Site Inspection Form

Project Name B&L-O&M T. 1525 Permit # WAR303284 Inspection Date 10/9/15 Time 0945

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: Erin Murray

Approximate rainfall amount since the last inspection (in inches): 0

Approximate rainfall amount in the last 24 hours (in inches): trace

Current Weather Clear ☐ Cloudy ☑ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☑ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls ☐	Clearing/Demo/Grading ☐	Infrastructure/storm/roads ☐
Concrete pours ☐	Excavation—West Ditch ☐	Utilities ☐
Offsite improvements ☐	Excavation—South Ditch ☐	Final stabilization ☑

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ☑	No ☐
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ☐	No ☑
3. Was there active discharge?	Yes ☐	No ☑
4. If yes to #3, was a photograph taken?	Yes ☐	No ☐
5. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ☐	No ☑
6. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ☐	No ☑
7. If yes to #6 was it reported to Ecology?	Yes ☐	No ☐
8. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ☐	No ☑

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date:

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)			✓			
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?			✓			
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.	✓			Landscapers on site and sweeping		
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?			✓			
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?			✓			
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).	✓			Silt fence going to be removed today		
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.			✓			
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.			✓			
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?		~~✓~~	✓	Mulch going in on Monday		

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?			✓			
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?	✓					
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?			✓			
	Is off-site storm water managed separately from stormwater generated on the site?			✓			
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?			✓			
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?			✓			
7 Drain Inlets	Storm drain inlets made operable during construction are protected.	✓			Filter fabric installed		
	Are existing storm drains within the influence of the project protected?						
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?			✓			
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?			✓			
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?			✓			
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?			✓			
	Has secondary containment been provided capable of containing 110% of the volume?			✓			
	Were contaminated surfaces cleaned immediately after a spill incident?			✓			
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?			✓			

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.			✓			
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.			✓			
	Dewatering has been done to an approved source and in compliance with the SWPPP.			✓			
	Were there any clean non turbid dewatering discharges?		✓				
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?	✓					
12 Manage the Project	Has the project been phased to the maximum degree practicable?	✓					
	Has regular inspection, monitoring and maintenance been performed as required by the permit?	✓					
	Has the SWPPP been updated, implemented and records maintained?	✓					

E. Check all areas that have been inspected. ✓

All in place BMPs ☑ All disturbed soils ☑ All concrete wash out area ☐ All material storage areas ☑

All discharge locations ☑ All equipment storage areas ☑ All construction entrances/exits ☑

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) Erin Murray (Signature) [signature] Date: 10/9/15

Title/Qualification of Inspector: CESCL

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix C
Weekly Progress Reports

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 1 **Dates:** 8/10/2015 **To:** 8/16/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** August 24, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

Monday, August 10, 2015

Mobilize to site, begin receiving equipment, 20K gallon tank, and supplies. Sky High Tree began clearing and tree removal in the South ditch.

Tuesday, August 11, 2015

Continued equipment receipt of excavators, water truck, etc. Continued tree removal and chipping/off-site disposal, traffic control, and site set up.

Wednesday, August 12 , 2015

Finished tree removal. Started fence removal and trailer relocation and demolition. Started road construction and compaction in agricultural field

Thursday, August 13, 2015

Continued road construction in agricultural field. Continued set up of piping to the GWTP. Surveyor's on-site setting up control points in West and South Ditch.

Friday, August 14, 2015

Began surface excavation and direct loading of top 3 feet of soil and tree roots in the eastern end of the South Ditch in the shoring area. Demolition and removal of trailer.

Saturday, August

No work conducted.

Sunday, August

No work conducted.

Next Week's Activities

Depending on permit, start excavation of West and South ditches.

Prepared by: Erin Murray

Reviewed by: Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 2 **Dates:** 8/17/2015 **To:** 8/23/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** August 24, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

Monday, August 17, 2015

Shoring installation in South Ditch. IO continuing to prepare site for excavation.

Tuesday, August 18, 2015

Constructed surface water diversion dams and straw wattle dams in West Ditch and started diversion of water past downgradient dam. Determined trucking road is within Wetland F footprint. Installed silt fencing around wetland to prevent further disturbance. Surface water diversion system modifications to address turbid water flowing out of downgradient dam.

Wednesday, August 19 , 2015

Determined control points were off in West Ditch. Re-measured and shifted control points west into agricultural field. Started excavation and direct loading of West Ditch sediment. Completed West Ditch excavation to within 2 feet of south excavation extent. F|S collected verification samples on base and banks of excavation. Ecology Site Manager Mohsen on-site for a site walk. Approximately 3,000 gallons of ditch excavation water send to Baker tank at GWTP.

Thursday, August 20, 2015

Completed excavation of West Ditch and collection of last verification sample. Delivery of quarry spalls to West Ditch. Mobilize to South Ditch to continue excavation. IO installed cribbing and lagging. Geotech on-site to discuss need for lagging on south wall where cobbles present. Excavation and direct load out of South Ditch. Collection of verification samples to delineate exceedance of north bank sample in West Ditch.

Friday, August 21, 2015

Continued excavation and direct load out of eastern end of South Ditch. Completed to excavation extents approximately 10 feet east of CP-27 and CP-28. Collection of verification samples. Set up silt fencing around Wetland A.

Saturday, August 22, 2015

No work conducted.

Sunday, August 23, 2015

No work conducted.

Next Week's Activities

Continue excavation in South Ditch. Conduct over excavation in West Ditch.

Prepared by:	Erin Murray
Reviewed by:	Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 3 **Dates:** 8/24/2015 **To:** 8/30/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** August 31, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

Monday, August 24, 2015

Set up downgradient check dam in South Ditch. Continued excavation and direct loading of South Ditch and installation of lagging between truck loads. Set up excavation extents for over-excavation area in West Ditch. Began dewatering of West Ditch with vac truck to prepare for over-excavation and eventual filling. Filled 21,000 gallon Baker tank at GWTP with dewatering water from West Ditch. IO excavated between CP-27 and CP-16 on the south wall and CP028 and CP-15 on the north wall of the South Ditch.

Tuesday, August 25, 2015

Completed over-excavation in West Ditch. Started dewatering of West Ditch into 2nd 21,000 gallon Baker tank stationed at West Ditch. Continued excavation and direct loading of South Ditch and installation of lagging between truck loads. Surveyors completed final survey of West Ditch. Continued to divert water around West Ditch excavation area to prepare for backfilling. IO excavated between CP-27 and CP-16 on the south wall and CP028 and CP-15 on the north wall of the South Ditch.

Wednesday, August 26 , 2015

Filled 2nd Baker tank at West Ditch with dewatering water. Began backfilling of West Ditch with quarry spalls in areas with standing water was present, and with select borrow in southern end of excavation where no standing water was present. Continued excavation and direct loading of South Ditch and installation of lagging between truck loads. Collected TSS sample of water in Baker Tank at GWTP—96 mg/L. Discovered metal shaving and oily sheen in filter housing. F|S collected water samples for TPH and metals, and instructed Contractor to replace filters and clean filter housing prior to use. IO excavated between CP-27 and CP-16 on the south wall and CP028 and CP-15 on the north wall of the South Ditch.

Thursday, August 27, 2015

Continued excavation and direct loading of South Ditch and installation of lagging between truck loads. Stumps hauled off-site by DM Disposal. IO replaced 50 µm filters with 25 µm filters and collected 2nd TSS sample from the circulating water in the Baker Tank—51 mg/L. Collected samples stepping out from the excavation to the north approximately 30’ west of CP-30 to collect samples for delineation of north bank exceedances. Excessive turbidity observed downgradient of north check dam in West Ditch. IO installed additional straw wattle dams and

turbidity began to drop. IO excavated between CP-27 and CP-16 on the south wall and CP028 and CP-15 on the north wall of the South Ditch.

Friday, August 28, 2015

Turbidity still present downgradient of north check dam in West Ditch so IO added additional straw wattles to heighten dams. Observed quarry spalls on bank of ditch and extending into base of ditch. IO and F|S had weekly call to discuss timing and removal of quarry spall. IO removed north check dam to lower level of water in West Ditch. Continued excavation and direct loading of South Ditch and installation of lagging between truck loads. Cleaned out Apartments catch basin and removed plug and prepared site for upcoming precipitation over weekend. IO excavated between CP-27 and CP-16 on the south wall and CP028 and CP-15 on the north wall of the South Ditch.

Saturday, August 29, 2015

No work conducted.

Sunday, August 30, 2015

No work conducted.

Next Week's Activities

Continue excavation in South Ditch. Restoration of West Ditch by placing backfill to final grade, installation of jute mat and seeding.

Prepared by:	Erin Murray
Reviewed by:	Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 4 **Dates:** 8/31/2015 **To:** 9/6/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** September 14, 2015
Project Location: Pierce County, Washington	**Field Rep:** Corey Wilson

Work completed this period includes:

Monday, August 31, 2015

IO reinstalled the catch basin plug that was removed over the weekend. The site received approximately 1.3" of precipitation between Friday evening and Monday morning. The West Ditch upstream check dam and downstream straw waddles remained in place. IO Continued excavation and direct loading of South Ditch. Two test pit trenches were completed along the north wall at 11 feet and 30 feet west of CP-30 to characterize additional soil for over excavation. IO excavated between CP-16 and 5 feet east of CP-13 on the south wall and CP-15 and 20 feet east of CP-9 on the north wall of the South Ditch. IO installed additional filters to reduce TSS in the ditch water being sent to the GWTP. The pumped ditch water TSS was 17 mg/L.

Tuesday, September 1, 2015

IO Continued excavation and direct loading of South Ditch. F|S completed a CESCL inspection of the West Ditch. IO excavated between 5 feet east of CP-13 and CP-11 on the south wall and 20 feet east of CP-9 and CP-9 on the north wall of the South Ditch. The GWTP began accepting ditch water that had settled in the 21,000 gallon Baker Tank.

Wednesday, September 2, 2015

IO Continued excavation and direct loading of South Ditch. IO commingled drummed geotech soils with excavated material and removed from site. IO excavated between CP-11 and 7.5 feet east of CP-6 on the south wall and CP-9 and 7.5 feet east of CP-5 on the north wall of the South Ditch. The GWTP continued processing ditch water that had settled in the 21,000 gallon Baker Tank.

Thursday, September 3, 2015

IO Continued excavation and direct loading of South Ditch. IO scraped the paved area along the western portion of the South Ditch to prepare for container trucks used for stump removal. IO removed ditch bank tree stumps and hauled offsite. IO conducting over excavation in the northeast corner of the South Ditch. During a short but heavy rain event, ponding occurred around the plugged catch basin. IO began pumping the ponded water into the ditch excavation. F|S instructed IO to cease pumping and collect water for transport offsite. During the discussion, the catch basin plug released and the ponded water discharged to the Apartments drainage system. The catch basin was inspected and a leak appeared to occur in the area where the drainage pipe seals to the catch basin walls. IO excavated between 7.5 feet east of CP-6 and

CP-4 on the south wall and 7.5 feet east of CP-5 and CP-3 on the north wall of the South Ditch. The GWTP continued processing ditch water that had settled in the 21,000 gallon Baker Tank.

Friday, September 4, 2015

IO Continued excavation and direct loading of South Ditch. Ecology conducted a site visit to discuss over excavation and sample location data at both the South and West Ditch. IO excavated between CP-4 and the western extent of the excavation on the south wall CP-3 and the western extent of the excavation on the north wall of the South Ditch. The GWTP continued processing ditch water that had settled in the 21,000 gallon Baker Tank.

Saturday, September 5, 2015

No work conducted.

Sunday, September 6, 2015

No work conducted.

Next Week's Activities

Continue over excavation in South Ditch. Restoration of West Ditch by placing backfill to final grade, installation of jute mat and seeding.

Prepared by:	Corey Wilson
Reviewed by:	Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 5 **Dates:** 9/7/2015 **To:** 9/13/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** September 15, 2015
Project Location: Pierce County, Washington	**Field Rep:** Corey Wilson

Work completed this period includes:

Monday, September 7, 2015

Labor Day Holiday. No work conducted at site.

Tuesday, September 8, 2015

IO continued to load out over excavated soil from the northeast section of the South Ditch. IO began importing quarry spalls to the South Ditch. Surveyors surveyed the South Ditch from CP-2 to CP-25. Asphalt in the Apartments driveway began cracking under pressure from the excavator. F|S and IO identified the areas where the asphalt needs to be repaired. IO reinstalled silt fencing along the wetland to the north of the South Ditch. IO began pumping water from the 21,000 gallon Baker Tank through filters to a 10,000 gallon Baker Tank. The GWTP processed ditch water that had settled in the 10,000 gallon Baker Tank.

Wednesday, September 9, 2015

IO continued to load out over excavated soil from the northeast and central section of the South Ditch. IO readjusted the silt fence on the north side of the South Ditch to accommodate the area for over excavation. IO over excavated approximately 5 feet of the north side wall between CP-9 and CP-23 of the South Ditch; the depth of the over excavation was consistent with the base of the initial excavation. Ecology conducted a site visit to inspect compliance with the CSWGP and implementation of BMPs. Ecology made recommendations on BMP improvements to reduce potential track out from the site. The GWTP continued processing ditch water that had settled in the 10,000 gallon Baker Tank.

Thursday, September 10, 2015

IO continued to load out over excavated soil from the northeast and central section of the South Ditch. IO completed over excavation of the north wall in the South Ditch. IO continued to import quarry spalls. In the West Ditch, IO began diverting water around the work area to draw down the water level upstream of the check dam in preparation for restoration activities on 9/11. IO began dewatering the South Ditch to prepare for placement of quarry spalls. TSS of the ditch water being sent to the GWTP was 85 mg/L. F|S instructed IO to shutdown ditch water pumping until TSS was below 25 mg/L.

Friday, September 11, 2015

IO completed load out of over excavated soil from the north wall of the South Ditch. IO over excavated soil above the CUL at the south wall of the South Ditch between CP-10 and CP-12. IO live loaded over excavated soil in the South Ditch in to solo trucks. IO began restoration of the West Ditch by removing quarry spalls that had spilled from the sidewall into the ditch. During

restoration activities, water in the West Ditch work area became turbid. F|S instructed IO to stop work and focus on preventing turbid water from flowing out of the work area. F|S tested turbidity 50 feet downstream of the straw waddles during restoration activities; TSS = 14.2, 19.7, and 7.41 NTU. IO installed geotextile fencing for filtering and resealed the check dam upstream of the work area to help reduce turbidity downstream. The GWTP did not process ditch water due to the TSS exceedance.

Saturday, September 12, 2015

No work conducted.

Sunday, September 13, 2015

No work conducted.

Next Week's Activities

Continue placing quarry spalls and backfill in the South Ditch. Restoration of West Ditch by placing backfill to final grade, installation of jute mat and seeding.

Prepared by:	Corey Wilson
Reviewed by:	Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 6 **Dates:** 9/14/2015 **To:** 9/20/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** September 28, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

Monday, September 14, 2015

IO continued importing quarry spalls to the South Ditch. Geotextile dams installed in the West Ditch on 9/11/15 were removed due to built-up pressure upgradient the dams. Trucks start importing topsoil to the West Ditch and IO spread out to be approximately 6 inches thick. IO removed upgradient check dam and installs jute matting in West Ditch and removes two of the 7 remaining straw wattle dams.

Tuesday, September 15, 2015

Trucks starting to deliver select borrow to South Ditch. Certified Cleaning Services on-site to start vacuum removal of dewatering water in 21,000 gallon Baker Tank in West Ditch agricultural field. Streich Brothers on-site to cut eye beams approximately 4 feet bgs. Bill Beaulieu notices sheen in top of 10,000 gallon Baker Tank and in original 21,000 gallon Baker Tank at GWTP that has received water from West Ditch Baker Tank. Floyd|Snider directs IO to immediately stop transferring water to Baker Tanks and to add absorbent pads to soak up any TPH. At South Ditch, IO continuing to receive backfill and compact 8 inch lifts. Second, Certified Cleaning Services vac trunk on-site to continue transfer of West Ditch dewatering water to Baker tanks at GWTP. IO removed last two remaining straw wattle dams in the West Ditch.

Wednesday, September 16, 2015

IO continued to backfill and compact lifts in the South Ditch. AES onsite to conduct compaction testing—testing results passed. Streich Brothers on-site to continue cutting of eye beams. SS Landscaping on-site to do site walk with F|S at West Ditch. Best Cleaning on-site at the South Ditch to clean asphalt driveway and parking area in preparation for catch basin plug removal. Sample collected from the closed-off 21,000 gallon Baker Tank (BT-02). Gasoline detected in sample. Solids in West Ditch Baker Tank transferred to BT-02 for settling. Catch Basin plug installed in catch basin at South Ditch. Filter sock and additional geotextile added for increased filtering.

Thursday, September 17, 2015

IO continued to backfill and compact lifts in the South Ditch. AES onsite to conduct compaction testing—testing results passed. Streich Brothers on-site to continue cutting of eye beams. Samples collected from the 10,000 gallon Baker Tank (BT-03), and the 20,000 open top Baker Tank (BT-04) and submitted for TPH-G. Rain event causes ponding in back lot area adjacent to South Ditch. F|S coordinates with Charles Mann of Apartments and F|S and IO agree to replace

2 foot berm adjacent to the area to separate ponded water from South Ditch during rain events per Charles' request.

Friday, September 18, 2015

IO continued to backfill and compact lifts in the South Ditch and create 2:1 slope. All miscellaneous debris, straw wattles, etc. was removed from the West Ditch area. Straw wattles were stockpiled at GWTP and covered with visqueen for offsite disposal next week.

Saturday, September 19, 2015

No work conducted.

Sunday, September 20, 2015

IO on-site to install carbon filtration drum on BT-03. Water circulated through system twice before Monday morning.

Next Week's Activities

Continue backfill, compaction, and restoration of the South Ditch. In the West Ditch, the plan is to remove all remaining debris and place seeding.

Prepared by:	Erin Murray
Reviewed by:	Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 7 **Dates:** 9/21/2015 **To:** 9/27/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** September 28, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

Monday, September 21, 2015

IO continued grading, compaction, and slope creation in the South Ditch. Floyd|Snider collected water samples from the 10,000 gallon Baker Tank after recirculation. Cleaned out catch basin filters as water was ponding.

Tuesday, September 22, 2015

Floyd|Snider not on-site. IO continuing to compact and grade the South Ditch and start cleanup and demobilization of excavation equipment. SS Landscaping on-site to plan for planting.

Wednesday, September 23, 2015

IO continuing to construct bank in the South Ditch. After completion, a part of the bank started to collapse. Floyd|Snider instructed IO to water down the bank with clean water from the hydrant to accelerate settling. SS Landscaping seeded West Ditch.

Thursday, September 24, 2015

Floyd|Snider not on-site. IO reconstructs the portion of the South Ditch that collapsed. Base coarse for the South Ditch was delivered and placed according got specs. Sawcutting asphalt begins.

Friday, September 25, 2015

Floyd|Snider not on-site.

Saturday, September 26, 2015

No work conducted.

Sunday, September 27, 2015

No work conducted.

Next Week's Activities

Start landscaping and asphalt driveway at South Ditch.

Prepared by: Erin Murray

Reviewed by: Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 8 **Dates:** 9/28/2015 **To:** 10/4/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** October 6, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

September 28, 2015 through October 4, 2015

On Monday September 28, asphalting of the South Ditch driveway and parking area begins. The West Ditch flooded from a beaver dam upgradient of Surprise Lake Drain. Floyd|Snider on-site to document conditions. IO finished all fine grading in the paving areas and the asphalt and curbing was completed. All remaining machinery has been staged and is ready for demobilization next week.

Next Week's Activities

The paving subcontractor will be on-site to install the concrete sidewalk. SS Landscaping will begin jute matting of the South Ditch and will bring in soil and begin planting.

Prepared by: Erin Murray

Reviewed by: Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 9 **Dates:** 10/5/2015 **To:** 10/11/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** October 13, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

October 5, 2015 through October 11, 2015

Pacific Concrete on-site to put in sidewalk. Back lot area adjacent to the South Ditch flooded. Per Floyd|Snider instruction, IO potholed around the area looking for a drainage pipe but was unable to find anything. Ditch water treatment continues. Planting completed at the South Ditch.

Next Week's Activities

Dewatering water treatment/processing, cleanout and demobilization of baker tanks.

Prepared by: Erin Murray

Reviewed by: Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 10 **Dates:** 10/12/2015 **To:** 10/18/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** October 20, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

October 12, 2015 through October 18, 2015

The South Ditch was mulched according to plans and specs. IO continued to troubleshoot flooding in back lot area adjacent to the South Ditch. APS on-site to trace the line and look for obstructions. Continued treatment of ditch water at GWTP.

Next Week's Activities

IO will jet vacuum out the catch drain to see if that alleviates the flooding.

Prepared by: Erin Murray

Reviewed by: Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 11 **Dates:** 10/19/2015 **To:** 10/25/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** October 27, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

October 19, 2015 through October 25, 2015

Mar Vac jet vacuumed out the catch drain and the ponded water was pumped out into the South Ditch in order to restore the back lot area adjacent to the South Ditch. The GWTP finished all water treatment.

Next Week's Activities

All the Baker tanks will be removed next week and the catch basin filter will be removed.

Prepared by: Erin Murray

Reviewed by: Megan McCullough, PE

Weekly Field Activities Summary
Ditch Bank Excavation

Week No.: 12 **Dates:** 10/26/2015 **To:** 11/1/2015	**Project No.:** B&L O&M T.1525.1
Project Name: B&L– Ditch Bank Cleanup	**Date:** November 3, 2015
Project Location: Pierce County, Washington	**Field Rep:** Erin Murray

Work completed this period includes:

October 26, 2015 through November 1, 2015

All the Baker Tanks and remaining equipment was mobilized off-site. Floyd|Snider completed a final site walk to document completion of project activities.

Prepared by: Erin Murray

Reviewed by: Megan McCullough, PE

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix D
Permits and Approvals

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

May 6, 2015

CERTIFIED MAIL 7010 1670 0002 4158 9230

Dan Silver
B&L Woodwaste Site Custodial Trust
606 Columbia Street Northwest Suite 212
Olympia, WA 98501

RE: Modification of National Pollutant Discharge Elimination System (NPDES) Permit No. WA0040321, B&L Woodwaste Site Custodial Trust

Dear Mr. Silver:

The NPDES permit that was issued for your facility on November 23, 2011, is hereby modified for the following particulars:

- Modified to allow the treated groundwater from the pump and treat system, treated groundwater and construction stormwater generated from south ditch and west ditch during remediation to be discharged via Outfall 001

The enclosed permit is your official copy of the permit modification.

You have the right to appeal this permit within 30 days upon receipt of this document. Pursuant to Chapter 43.21B RCW, your appeal must be filed with the Pollution Control Hearings Board, and served on the Department of Ecology, within 30 days of the date of your receipt of this document.

If you choose to appeal this decision, your notice of appeal must contain: (1) a copy of the permit you are appealing, and (2) a copy of the application for the permit/modification.

Any appeal must contain the following in accordance with the rules of the Hearings Board:

a. The appellant's name and address;
b. The coverage date and number of the permit appealed;
c. A description of the substance within the permit that is the subject of the appeal;
d. A clear, separate, and concise statement of every error alleged to have been committed;
e. A clear and concise statement of the facts which the requester relies to sustain his or her statements of error; and
f. A statement setting forth the relief sought.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive Southeast Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel Road Southwest, Suite 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk P.O. Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** P.O. Box 40903 Olympia, WA 98504-0903

For additional information: Environmental Hearings Office Website: http://www.eho.wa.gov

If you have any questions on this action, please contact Mohsen Kourehdar at 360-407-6256, or by e-mail at mohsen.kourehdar@ecy.wa.gov.

Sincerely,

Rebecca S. Lawson

Rebecca S. Lawson, P.E., L.Hg.
Southwest Region Manager
Toxics Cleanup Program

RSL:MW(0040321)
Enclosures

STATEMENT OF BASIS
B&L WOODWASTE SITE CUSTODIAL TRUST
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT NO. WA0040321

I. GENERAL INFORMATION

Permittee:	B&L Woodwaste Site Custodial Trust 606 Columbia Street Northwest, Suite 212 Olympia, WA 98501
Facility Location:	2201 6th Avenue/522 Fife Way Milton, WA 98354
Discharge Location:	Latitude: 47.244722 Longitude: -122.329167

The purpose of this Statement of Basis is to modify the existing permit to allow the treated groundwater from the pump and treat system, treated groundwater and construction stormwater generated from south ditch and west ditch during remediation to be discharged via outfall 001 subject to all effluent limits and permit terms and conditions.

This Statement of Basis will serve as an amendment to the Fact Sheet and Permit.

DEPARTMENT OF
ECOLOGY
State of Washington

Issuance Date: November 23, 2011
Effective Date: January 1, 2012
Expiration Date: December 31, 2016
Modification Date: May 15, 2012
Modification Date: May 31, 2013
Modification Date: May 6, 2015

National Pollutant Discharge Elimination System
Waste Discharge Permit No. WA0040321

State of Washington
DEPARTMENT OF ECOLOGY
Southwest Regional Office
P.O. Box 47775
Olympia, Washington 98504-7775

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1342 et seq.

B&L Woodwaste Site Custodial Trust
606 Columbia Street Northwest, Suite 212
Olympia, WA 98501

is authorized to discharge in accordance with the Special and General Conditions that follow

Facility Location: 2201 6th Avenue/522 Fife Way, Milton WA 98354	Receiving Water: An unnamed Agricultural ditch which is tributary to Hylebos Creek
Model Toxics Control Act (MTCA) Cleanup Site	Treatment Type: Oxidation, pH adjustment and co-precipitation, clarification, pH adjustment, filtration, and adsorption

Rebecca S. Lawson, P.E., L.Hg.
Southwest Region Manager
Toxics Cleanup Program
Washington State Department of Ecology

TABLE OF CONTENTS

SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report	Monthly	February 15, 2012
S3.E	Reporting Permit Violations	As necessary	
S3.F	Other Reporting	As necessary	
S4.A	Operations and Maintenance Manual	1/permit cycle	November 1, 2012
S4.A	Operations and Maintenance Manual Update or Review Confirmation Letter	Annually	November 1, 2013
S4.B	Reporting Bypasses	As necessary	
S5.C	Solid Waste Control Plan	1/permit cycle	November 1, 2012
S5.C	Modification to Solid Waste Plan	1/permit cycle	December 30, 2015
S6.	Application for Permit Renewal	1/permit cycle	December 30, 2015
S7.	Engineering Documents	1/permit cycle	January 2, 2013
S8.	Compliance Schedule: Influent/Effluent Testing for Total Arsenic, Total Zinc, Total Lead, and Total Copper Testing of Effluent for Volatile Organic Carbon, Semi-Volatile Organic Carbon and Pesticides/PCBs		September 1, 2012 December 30, 2015
S9.	Non-Routine and Unanticipated Discharges	As necessary	
S10.	Spill Control Plan	1/permit cycle, Updates submitted as necessary	Submitted April 11, 2011
S11.	Stormwater Pollution Prevention Plan/Best Management Practices	1/permit cycle, Updates submitted as necessary	Submitted April 11, 2011

Modification Date: May 15, 2012

Permit Section	Submittal	Frequency	First Submittal Date
S12.	Receiving Stream Study	1/permit cycle	December 30, 2015
S13.	Outfall Evaluation	2/permit cycle	November 1, 2013 November 1, 2015
S14.A	Acute Toxicity Characterization Data and Summary Report	Twice/year	January 2, 2013 August 1, 2013
S14.D	Acute Toxicity Compliance Monitoring Reports		November 15, 2013 June 15, 2014
S14.D	Acute Toxicity: "Causes and Preventative Measures for Transient Events."	As necessary	
S14.D	Acute Toxicity TI/TRE Plan	As necessary	
S14.F	Acute Toxicity Effluent Test Results with Permit Renewal Application	June 30, 2015 December 30, 2015 [S14.F(1)]	December 30, 2015
S15.A	Chronic Toxicity Characterization Data and Summary Reports	Twice/year	January 2, 2013 August 1, 2013
S15.D	Chronic Toxicity Compliance Monitoring Reports		November 15, 2013 June 15, 2014
S15.D	Chronic Toxicity: "Causes and Preventative Measures for Transient Events."	As necessary	
S15.D	Chronic Toxicity TI/TRE Plan	As necessary	
S15.F	Chronic Toxicity Effluent Test Results with Permit Renewal Application	June 30, 2015 December 30, 2015 [S15.F(1)]	December 30, 2015
G1.	Notice of Change in Authorization	As necessary	
G4.	Permit Application for Substantive Changes to the Discharge	As necessary	
G5.	Engineering Report for Construction or Modification Activities	As necessary	
G7.	NOTICE of Permit Transfer	As necessary	
G10.	Duty to Provide Information	As necessary	
G13.	Payment of Fees	As assessed	
G21.	Compliance Schedules	As necessary	

SPECIAL CONDITIONS

S1. DISCHARGE LIMITS

A. Process Wastewater Discharges

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

For the first two weeks of operation (the shakedown period), the Permittee will batch discharge the effluent from Outfall # 001. Each batch must meet the effluent limits before discharge for Outfall # 001.

Beginning on the effective date of this permit and lasting through the expiration date, the Permittee is authorized to discharge treated groundwater from the pump and treat system, treated groundwater and construction stormwater generated from south ditch and west ditch during remediation to northern stormwater pond subject to complying with the following limits:

Effluent Limits: Outfall # 001 Latitude 47.244722 Longitude 122.329167		
Parameter	**Average Monthly**	**Maximum Daily [a]**
Flow gallons per day (gpd)	-	Report
Arsenic (Total as µg/L)	-	5.0
Lead (Total as µg/L)	-	Report
Zinc (Total as µg/L)	-	Report
Copper (Total as µg/L)	-	Report
Total Suspended Solids (TSS) (mg/L)	-	Report
Turbidity, nephelometric turbidity units (NTUs)	-	Report
Parameter	**Daily minimum**	**Daily Maximum**
pH, standard units (s.u.)	6.0	9.0
[a] Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. This does not apply to pH or temperature.		

Modification Date: May 31, 2013
Modification Date: May 6, 2015

S2. MONITORING REQUIREMENTS

A. Monitoring Schedule

The Permittee must monitor in accordance with the following schedule and the requirements specified in **Appendix A**.

(1) Wastewater Effluent			
Parameter	**Units & Speciation**	**Minimum Sampling Frequency**	**Sample Type**
Flow	gallons/day (gpd)	Daily	Metered & Recorded
pH [a]	standard units	Weekly	Grab
Arsenic (Total)	micrograms/liter (µg/L)	Monthly [b]	24-Hour Time Composite [c]
Zinc (Total)	micrograms/liter (µg/L)	Monthly [b]	24-Hour Time Composite [c]
Lead (Total)	micrograms/liter (µg/L)	Monthly [b]	24-Hour Time Composite [c]
Copper (Total)	micrograms/liter (µg/L)	Monthly [b]	24-Hour Time Composite [c]
TSS	milligrams/liter (mg/L)	Monthly [b]	24-Hour Time Composite [c]
Turbidity	NTU	Monthly [b]	24-Hour Time Composite [c]
(2) Effluent Characterization – Final Wastewater Effluent [e]			
PP – Volatile Organic Carbon	µg/L	1/ Permit Cycle See Special Condition S8	Grab [d]
Semi-Volatile Organic Carbon	µg/L	1/ Permit Cycle See Special Condition S8	24-Hour Time Composite [c]
PP – Pesticides/PCBs	µg/L	1/ Permit Cycle See Special Condition S8	24-Hour Time Composite [c]
(3) Whole Effluent Toxicity Testing – Final Wastewater Effluent [e]			
Acute Toxicity Testing Section S14	Final Effluent [e]	Twice/year	24-Hour Time Composite [c]
Chronic Toxicity Testing Section S15	Final Effluent [e]	Twice/year	24-Hour Time Composite [c]

a. The Permittee must report the instantaneous maximum and minimum pH monthly. Do not average pH values.
b. Monthly means once every calendar month.
c. 24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.
d. Grab means an individual sample collected over a fifteen minute, or less, period.
e. Final Effluent means wastewater exiting, or that has exited, the last treatment process or operation.

[f] See Appendix A for the required detection (DL) or quantitation (QL) levels.

Report single analytical values below detection as "less than (detection level)" where (detection level) is the numeric value specified in attachment A.

Report single analytical values between the agency-required detection and quantitation levels with qualifier code of j following the value.

To calculate the average value (monthly average):

- Use the reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
- For values reported below detection, use one-half the detection value if the lab detected the parameter in another sample for the reporting period.
- For values reported below detection, use zero if the lab did not detect the parameter in another sample for the reporting period.

If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.

B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 Code of Federal Regulations (CFR) Part 136.

C. Flow Measurement, Field Measurement and Continuous Monitoring Devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer's recommendation for that type of device.
3. Calibration as specified in this document is not required if the Permittee uses recording devices certified by the manufacturer.
4. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.

5. Calibrate these devices at the frequency recommended by the manufacturer.

6. Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year.

7. Maintain calibration records for at least three years.

D. Laboratory Accreditation

The Permittee must ensure that all monitoring data required by the Department of Ecology (Ecology) is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 Washington Administrative Code (WAC), Accreditation of Environmental Laboratories. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters.

E. Request for Reduction in Monitoring

The Permittee may request a reduction of the sampling frequency after 12 months of monitoring. Ecology will review each request and at its discretion grant the request when it reissues the permit or by a permit modification.

The Permittee must:

1. Provide a written request.

2. Clearly state the parameters for which it is requesting reduced monitoring.

3. Clearly state the justification for the reduction.

S3. REPORTING AND RECORDKEEPING REQUIREMENTS

The Permittee must monitor and report in accordance with the following conditions. The falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

A. Reporting

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by Ecology. Include a summary listing daily results for the parameters tabulated in Special Condition S2, including MDLs and QLs (when applicable). If submitting DMRs electronically, report a value for each day sampling occurred and for the summary values (when applicable) included on the form.

2. Submit the form as required with the words "no discharge" entered in place of the monitoring results, if the facility did not discharge during a given monitoring

period. If submitting DMRs electronically, you must enter "no discharge" for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate.

3. Report the test method, the DL, and the QL on the discharge monitoring report or in the required report, if the Permittee used an alternative method not specified in the permit and as allowed in Appendix A.

4. Include the following information (for priority pollutant organic and metal parameters lab reports): sampling date, sample location, date of analysis, parameter name, CAS number, analytical method/number, method detection limit (MDL), laboratory practical quantitation limit (PQL), reporting units, and concentration detected. The Permittee must submit a copy of the contract laboratory report to provide this information. Analytical results from samples sent to a contract laboratory must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter. If the Permittee submits electronic DMRs, then it must attach an electronic file of the lab report to the electronic DMR.

5. Ensure that DMR forms are postmarked or received by Ecology no later than the dates specified below, unless otherwise specified in this permit. If submitting DMRS electronically, submit the DMR no later than the dates specified below, unless otherwise specified in this permit.

6. Submit DMRs for parameters with the monitoring frequencies specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:

   a. Submit **monthly** DMRs by the 15th day of the following month.

   b. Submit 1/Permit Cycle, the data for Volatile Organic Carbon, Semi-Volatile Organic Carbon, and Pesticides/PCBs by **December 30, 2015**.

7. Submit reports to Ecology online using Ecology's electronic DMR submittal forms or send reports to Ecology at:

   Water Quality Permit Coordinator
   Department of Ecology
   Southwest Regional Office
   P.O. Box 47775
   Olympia, WA 98504-7775

B. Records Retention

The Permittee must retain records of all monitoring information for a minimum of three years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

C. Recording of Results

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement;

2. The individual who performed the sampling or measurement;

3. The dates the analyses were performed;

4. The individual who performed the analyses;

5. The analytical techniques or methods used;

6. The results of all analyses:

D. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR.

E. Reporting Permit Violations

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.

2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within 30 days of sampling.

a. Immediate Reporting

The Permittee must immediately report to the Department of Ecology and the Department of Health, Drinking Water Program (at the numbers listed below), all:

- Failures of the disinfection system.
- Collection system overflows discharging to a water body used as a source of drinking water.
- Plant bypasses discharging to a waterbody used as a source of drinking water.

Southwest Regional Office	360-407-6300
Department of Health, Drinking Water Program	800-521-0323 (business hours) 877-481-4901 (after business hours)
Pierce County Health Department	800-992-2456

b. Twenty-four hour Reporting

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at the telephone numbers listed above, within 24-hours from the time the Permittee becomes aware of any of the following circumstances:

1. Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.

2. Any unanticipated bypass that causes an exceedance of any effluent limit in the permit (See Part S4.B., "Bypass Procedures").

3. Any upset that causes an exceedance of an effluent limit in the permit (See G.15, "Upset").

4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1.A of this permit.

5. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit.

c. Report within Five Days

The Permittee must also provide a written submission within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The written submission must contain:

1. A description of the noncompliance and its cause.

2. The period of noncompliance, including exact dates and times.

3. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.

4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

5. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

d. Waiver of Written Reports

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

e. All Other Permit Violation Reporting

The Permittee must report all permit violations, which do not require immediate or within 24-hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

f. Report Submittal

The Permittee must submit reports to the address listed in S3.

F. Other Reporting

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of Revised Code of Washington (RCW) 90.56.280 and chapter 173-303-145. You can obtain further instructions at the following website: http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm .

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly.

G. Maintaining a Copy of this Permit

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

S4. OPERATION AND MAINTENANCE

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out in a manner approved by Ecology.

A. Operations and Maintenance (O&M) Manual

1. O&M manual submittal and requirements

The Permittee must:

a. Prepare the O&M Manual that meets the requirements of 173-240-150 WAC and submit it to Ecology for approval by **November 1, 2012**. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format [PDF]).

b. Review the O&M Manual at least annually and confirm this review by letter to Ecology by **November 1st of each year.**

c. Submit to Ecology for review and approval substantial changes or updates to the O&M Manual whenever it incorporates them into the manual. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

d. Keep the approved O&M Manual at the permitted facility.

e. Follow the instructions and procedures of this manual.

2. O&M Manual Components

In addition to the requirements of WAC 173-240-080 (1) through (5), the O&M Manual must include:

a. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure.

b. Wastewater system maintenance procedures that contribute to the generation of process wastewater.

c. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine.)

d. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.

e. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit

f. Treatment plant process control monitoring schedule.

g. Specify other items on case-by-case basis such as O&M for any pump stations, lagoon liners, etc.

B. Bypass Procedures

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility. Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

2. This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least 10 days before the date of the bypass.

3. Bypass is unavoidable, unanticipated, and results in noncompliance of this permit.

   This permit authorizes such a bypass only if:

   a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

   b. No feasible alternatives to the bypass exist, such as:

      - The use of auxiliary treatment facilities.
      - Retention of untreated wastes.
      - Stopping production.
      - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
      - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.

   c. The Permittee has properly notified Ecology of the bypass as required in Condition S3.E of this permit.

4. If bypass is anticipated and has the potential to result in noncompliance of this permit.

   a. The Permittee must notify Ecology at least 30 days before the planned date of bypass. The notice must contain:

      - A description of the bypass and its cause.

- An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
- A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
- The minimum and maximum duration of bypass under each alternative.
- A recommendation as to the preferred alternative for conducting the bypass.
- The projected date of bypass initiation.
- A statement of compliance with SEPA.
- A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
- Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.

c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:

- If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

S5. SOLID WASTES

A. Solid Waste Handling

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

B. Leachate

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

C. Solid Waste Control Plan

1. Submittal Requirements

The Permittee must:

a. Submit a solid waste control plan to Ecology by **November 1, 2012**.

b. Submit to Ecology any proposed revision or modification of the solid waste control plan for review and approval at least 30 days prior to implementation. The Permittee must submit a paper copy and an electronic copy.

c. Comply with the plan and any modifications.

d. Submit an update of the solid waste control plan by **December 30, 2015**. The Permittee must submit a paper copy and an electronic copy.

2. Solid Waste Control Plan Content

The solid waste control plan must:

a. Follow Ecology's guidance for preparing a solid waste control plan (www.ecy.wa.gov/biblio/0710024.html) and address all solid wastes generated by the Permittee.

b. Include at a minimum a description, source, generation rate, and disposal methods of these solid wastes.

c. Not conflict with local or state solid waste regulations.

S6. APPLICATION FOR PERMIT RENEWAL OR MODIFICATION FOR FACILITY CHANGES

The Permittee must submit an application for renewal of this permit by **December 30, 2015**. The Permittee must submit a paper copy and an electronic copy.

The Permittee must also submit a new application or supplement at least 180 days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

S7. ENGINEERING DOCUMENTS

a. The Permittee must prepare and submit two copies of as-built **plans and specifications** to Ecology for review and approval in accordance with chapter 173-240 WAC by **January 2, 2013**. The Permittee must submit a paper copy and an electronic copy.

S8. COMPLIANCE SCHEDULE

By the dates tabulated below, the Permittee must complete the following tasks and submit a report describing, at a minimum:

- Whether it completed the task and, if not, the date on which it expects to complete the task.
- The reasons for delay and the steps it is taking to return the project to the established schedule.

Tasks	Date Due
1. Influent/Effluent testing for Total Arsenic, Total Zinc, Total Lead, Total Copper, TSS and Turbidity for thirty consecutive days following the two weeks of shake down period	**September 1, 2012**. Submit all the influent/effluent data
2. One time testing of effluent for Volatile Organic Carbon, Semi-Volatile Organic Carbon and Pesticides/PCBs	**December 30, 2015**. Submit with the permit application for renewal

S9. NON-ROUTINE AND UNANTICIPATED DISCHARGES

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater on a case-by-case basis if approved by Ecology. Prior to any such discharge, the Permittee must contact Ecology and at a minimum provide the following information:

   a. The proposed discharge location

   b. The nature of the activity that will generate the discharge

c. Any alternatives to the discharge, such as reuse, storage, or recycling of the water

d. The total volume of water it expects to discharge

e. The results of the chemical analysis of the water

f. The date of proposed discharge

g. The expected rate of discharge discharged, in gallons per minute

2. The Permittee must analyze the water for all constituents limited for the discharge and report them as required by subpart 1.e above. The analysis must also include any parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Condition S1 of this permit, water quality standards, and any other limits imposed by Ecology.

3. The Permittee must limit the discharge rate, as referenced in subpart 1.g above, so it will not cause erosion of ditches or structural damage to culverts and their entrances or exits.

4. The discharge cannot proceed until Ecology has reviewed the information provided and has authorized the discharge by letter to the Permittee or by an Administrative Order. Once approved and if the proposed discharge is to a municipal storm drain, the Permittee must obtain prior approval from the municipality and notify it when it plans to discharge.

S10. SPILL CONTROL PLAN

A. Spill Control Plan Submittals and Requirements

The Permittee has submitted a spill control plan in April 11, 2011. Ecology has reviewed and approved the plan in July 2011.

The Permittee must:

1. Review the plan at least annually and update the spill plan as needed.

2. Send changes to the plan to Ecology.

3. Follow the plan and any supplements throughout the term of the permit.

B. Spill Control Plan Components

The spill control plan must include the following:

1. A list of all oil and petroleum products and other materials used and/or stored on-site, which when spilled, or otherwise released into the environment, designate as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070. Include other materials used and/or stored on-site which may become pollutants or cause pollution upon reaching state's waters.

2. A description of preventive measures and facilities (including an overall facility plot showing drainage patterns) which prevent, contain, or treat spills of these materials.

3. A description of the reporting system the Permittee will use to alert responsible managers and legal authorities in the event of a spill.

4. A description of operator training to implement the plan.

The Permittee may submit plans and manuals required by 40 CFR Part 112, contingency plans required by Chapter 173-303 WAC, or other plans required by other agencies, which meet the intent of this section.

S11. STORMWATER POLLUTION PREVENTION PLAN/ BEST MANAGEMENT PRACTICES

The Permittee submitted a Stormwater pollution prevention plan (SWPPP) in April 11, 2011. The Permittee must review and update the SWPPP at least annually.

S12. RECEIVING STREAM STUDY

The Permittee must submit the review and evaluation of the surface water data required under MTCA with the permit application for renewal by **December 30 2015**. The report must evaluate the effectiveness of the groundwater containment and treatment system on the arsenic concentration in the agricultural ditch surface water by comparing the concentrations before and after groundwater cleanup and containment implementation. This report will also assess impacts (positive or negative) of the permitted effluent on the receiving water, as well as the impacts of the forthcoming ditch sediment cleanout implemented under MTCA (Consent Decree No. 082106107) on the receiving water. The receiving stream will also be tested for pH.

S13. OUTFALL EVALUATION

The Permittee must inspect the outfall line to document its integrity and continued function every two year. If conditions allow for a photographic verification, the Permittee must include such verification in the report. By **November 1, 2013,** and **every two years (November 1, 2015) thereafter**, the Permittee must submit the inspection report to Ecology.

S14. ACUTE TOXICITY

A. Effluent Characterization

The Permittee must:

1. Conduct acute toxicity testing on the final effluent twice/year for one year. Testing must be conducted by **January 2, 2013,** and by **August 1, 2013**.

2. Submit a written report to Ecology twice for one year within 45 days of sampling and no later than **March 30, 2013**, and **September 30, 2013**. Further instructions on testing conditions and test report content are in Subsection G below.

3. Use a dilution series consisting of a minimum of five concentrations and a control. The five concentrations should include the ACEC of 100 percent effluent.

4. Conduct the following two, acute toxicity tests on each sample:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	*Pimephales promelas*	EPA-821-R-02-012
Daphnid 48-hour static test	*Ceriodaphnia dubia, Daphnia pulex,* or *Daphnia magna*	EPA-821-R-02-012

5. The effluent limit for acute toxicity listed in Section B below applies if after one year of effluent characterization:

   - The median survival of any species in 100 percent effluent is below 80 percent.
   - Any one test of any species exhibits less than 65 percent survival in 100 percent effluent.

   If the limit applies, then the Permittee must immediately follow the instructions in Subsections B, C, D, E, and G. If the limit does not apply, then the Permittee must follow the instructions in Subsections F and G.

B. Effluent Limit for Acute Toxicity

The effluent limit for acute toxicity is:

No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC).

The ACEC equals 100 percent effluent.

C. Compliance with the Effluent Limit for Acute Toxicity

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Subsection D show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, the test does not comply with the effluent limit for acute toxicity. The Permittee must then immediately conduct the additional testing described in Subsection E. The Permittee will comply with the requirements of this section by meeting the requirements of Subsection E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10 percent, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

D. Compliance Testing for Acute Toxicity

The Permittee must:

1. Perform the acute toxicity tests with 100 percent effluent, the ACEC, and a control, or with a full dilution series.

2. Conduct twice/year acute toxicity testing on the final effluent if characterization determines that the effluent limit for acute toxicity is applicable. Testing must begin by **October 1, 2013**.

3. Submit a written report of all the test results to Ecology twice for one year within 45 days of sampling and no later than **November 15, 2013,** and **June 15, 2014**. Further instructions on testing conditions and test report content are in Subsection G below.

4. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	*Pimephales promelas*	EPA-821-R-02-012
Daphnid 48-hour static test	*Ceriodaphnia dubia, Daphnia pulex,* or *Daphnia magna*	EPA-821-R-02-012

E. Response to Noncompliance with the Effluent Limit for Acute Toxicity

If a toxicity test conducted under Subsection D determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Subsection C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct one additional test each week for four consecutive weeks, using the same test and species as the failed compliance test.

2. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Subsection C.

3. Return to the original monitoring frequency in Subsection D after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Subsection D indicates noncompliance with the acute toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee

must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this subsection. Or,

If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this subsection.

Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing in this subsection complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Production records
- Raw material purchases
- Pretreatment records, etc.

If the additional testing in this subsection shows another violation of the acute toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date [WAC 173-205-100(2)].

F. Testing when there is No Permit Limit for Acute Toxicity

The Permittee must:

1. Conduct acute toxicity testing on final effluent during June 2015, and December, 2015 (once in the last summer and once in the last winter prior to submission of the application for permit renewal).

2. Submit the results to Ecology with the permit renewal application.

3. Conduct acute toxicity testing on a series of at least five concentrations of effluent, including 100 percent effluent and a control.

4. Use each of the following species and protocols for each acute toxicity test:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	*Pimephales promelas*	EPA-821-R-02-012
Daphnid 48-hour static test	*Ceriodaphnia dubia, Daphnia pulex,* or *Daphnia magna*	EPA-821-R-02-012

G. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee must collect 24-hour composite effluent samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.

3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.*

4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Subsection C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.

5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection A or pristine natural water of sufficient quality for good control performance.

6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.

   a. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the acute critical effluent concentration (ACEC). The ACEC equals 100 percent effluent.

   b. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing must comply with the

c. acute statistical power standard of 29 percent as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

S15. CHRONIC TOXICITY

A. Effluent Characterization

The Permittee must:

1. Conduct chronic toxicity testing on the final effluent twice/year for one year. Testing must begin by **January 2, 2013,** and by **August 1, 2013**.

2. Submit a written report to Ecology twice for one year within 45 days of sampling and no later than **March 30, 2013**, and **September 30, 2013**. Further instructions on testing conditions and test report content are in Subsection G below.

3. Conduct chronic toxicity testing during effluent characterization on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 100 percent effluent.

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	*Pimephales promelas*	EPA-821-R-02-013
Water flea survival and reproduction	*Ceriodaphnia dubia*	EPA-821-R-02-013

4. The effluent limit for chronic toxicity listed in Section B below applies if after one year of effluent characterization any test shows a significant difference between the control and the ACEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001).

   - If the limit applies, then the Permittee must immediately follow the instructions in Subsections B, C, D, E, and G. If the limit does not apply, then the Permittee must follow the instructions in Subsections F and G.

B. Effluent Limit for Chronic Toxicity

The effluent limit for chronic toxicity is:

No toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC).

The CCEC equals 100 percent effluent.

C. Compliance with the Effluent Limit for Chronic Toxicity

Compliance with the effluent limit for chronic toxicity means the results of the testing specified in Subsection D. show no statistically significant difference in response between the control and the CCEC.

If the test results show a statistically significant difference in response between the control and the CCEC, the test does not comply with the effluent limit for chronic toxicity. The Permittee must then immediately conduct the additional testing described in Subsection E. The Permittee will comply with the requirements of this section by meeting the requirements of Subsection E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20 percent, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

Ecology will reevaluate the need for the chronic toxicity limit in future permits. Therefore, the Permittee must also conduct this same hypothesis test (Appendix H, EPA/600/4-89/001) to determine whether a statistically significant difference in response exists between the acute critical effluent concentration (ACEC) and the control.

D. Compliance Testing for Chronic Toxicity

The Permittee must:

1. Perform the chronic toxicity tests using the CCEC, the ACEC, and a control, or with a full dilution series.

2. Conduct twice/year chronic toxicity testing on the final effluent if characterization determines that the effluent limit for chronic toxicity is applicable. Testing must begin by **October 1, 2013**.

3. Submit a written report of all the test results to Ecology twice for one year within 45 days of sampling and no later than **November 15, 2013,** and **June 15, 2014**. This written report must include the results of hypothesis testing conducted as described in Subsection C. using both the ACEC and CCEC versus the control. Further instructions on testing conditions and test report content are in Subsection G below.

4. Perform compliance tests using the following species on a rotating basis and the most recent version of the following protocols:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	*Pimephales promelas*	EPA-821-R-02-013
Water flea survival and reproduction	*Ceriodaphnia dubia*	EPA-821-R-02-013

E. Response to Noncompliance with the Effluent Limit for Chronic Toxicity

If a toxicity test conducted under Subsection D determines a statistically significant difference in response between the CCEC and the control using the statistical test

described in Subsection C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct additional testing each month for three consecutive months using the same test and species as the failed compliance test.

2. Use a series of at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the CCEC. The results of the test at the CCEC will determine compliance with the effluent limit for chronic toxicity as described in Subsection B.

3. Return to the original monitoring frequency in Subsection C after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Subsection D indicates noncompliance with the chronic toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this subsection. Or,

If the one additional sample fails to comply with the effluent limit for chronic toxicity, then the Permittee must complete all of the additional monitoring required in this subsection. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing required by this subsection complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Production records
- Raw material purchases
- Pretreatment records, etc.

If the additional testing required by this subsection shows another violation of the chronic toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date (WAC 173-205-100(2)).

F. Testing when there is No Permit Limit for Chronic Toxicity

The Permittee must:

1. Conduct chronic toxicity testing on final effluent during June 2015 and December 2015 (once in the last summer and once in the last winter prior to submission of the application for permit renewal).

2. Submit the results to Ecology with the permit renewal application.

3. Conduct chronic toxicity testing on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 100 percent effluent. The series of dilutions should also contain the CCEC of 100 percent effluent.

4. Compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.

5. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	*Pimephales promelas*	EPA-821-R-02-013
Water flea survival and reproduction	*Ceriodaphnia dubia*	EPA-821-R-02-013

G. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee must collect 24-hour composite effluent samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.

3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.*

4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Section C. and the Ecology Publication no. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.

5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection C. or pristine natural water of sufficient quality for good control performance.

6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.

7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the CCEC and the ACEC. The CCEC and the ACEC may either substitute for the effluent concentrations that are closest to them in the dilution series or be extra effluent concentrations. The CCEC equals 100 percent effluent. The ACEC equals 100 percent effluent.

8. All whole effluent toxicity tests that involve hypothesis testing must comply with the chronic statistical power standard of 39 percent as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

GENERAL CONDITIONS

G1. SIGNATORY REQUIREMENTS

1. All applications, reports, or information submitted to Ecology must be signed and certified.

   a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

      - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or

      - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

      - In the case of a partnership, by a general partner.

      - In the case of sole proprietorship, by the proprietor.

      - In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

      Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

2. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to Ecology.

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under paragraph B.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section must make the following certification:

> "I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

G2. RIGHT OF INSPECTION AND ENTRY

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.

2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.

3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.

4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon Ecology's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:

   a. Violation of any permit term or condition.

   b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.

c. A material change in quantity or type of waste disposal.

d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.

e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.

f. Nonpayment of fees assessed pursuant to RCW 90.48.465.

g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:

a. A material change in the condition of the waters of the state.

b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.

c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.

d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.

e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.

f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.

g. Incorporation of an approved local pretreatment program into a municipality's permit.

3. The following are causes for modification or alternatively revocation and reissuance:

a. When cause exists for termination for reasons listed in A1 through A7 of this section, and Ecology determines that modification or revocation and reissuance is appropriate.

b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. REPORTING PLANNED CHANGES

The Permittee must, as soon as possible, but no later than sixty (60) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b)

2. A significant change in the nature or an increase in quantity of pollutants discharged.

3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G5. PLAN REVIEW REQUIRED

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least 180 days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

G6. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. TRANSFER OF THIS PERMIT

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

1. Transfers by Modification:

   Except as provided in paragraph (B) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

2. Automatic Transfers:

   This permit may be automatically transferred to a new Permittee if:

   a. The Permittee notifies Ecology at least 30 days in advance of the proposed transfer date.

b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.

c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. REDUCED PRODUCTION FOR COMPLIANCE

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G9. REMOVED SUBSTANCES

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. DUTY TO PROVIDE INFORMATION

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

G11. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. ADDITIONAL MONITORING

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. PAYMENT OF FEES

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof must be punished by a fine of up to ten thousand dollars ($10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars ($10,000) for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

G15. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.

2. The permitted facility was being properly operated at the time of the upset.

3. The Permittee submitted notice of the upset as required in Condition S3.E.

4. The Permittee complied with any remedial measures required under S4.C of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. TOXIC POLLUTANTS

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit must, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment must be a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G20. REPORTING REQUIREMENTS APPLICABLE TO EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL DISCHARGERS

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify Ecology as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"

    a. One hundred micrograms per liter (100 µg/L).

    b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.

    c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).

    d. The level established by the Director in accordance with 40 CFR 122.44(f).

2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"

    a. Five hundred micrograms per liter (500µg/L).

    b. One milligram per liter (1 mg/L) for antimony.

    c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).

    d. The level established by the Director in accordance with 40 CFR 122.44(f).

G21. COMPLIANCE SCHEDULES

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

APPENDIX A

LIST OF POLLUTANTS WITH ANALYTICAL METHODS, DETECTION LIMITS AND QUANTITATION LEVELS

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136.

If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology's Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical "non-detects" in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

CONVENTIONAL PARAMETERS

Pollutant & CAS No. *(if available)*	**Recommended Analytical Protocol**	**Detection (DL)[1]** *µg/L unless specified*	**Quantitation Level (QL)[2]** *µg/L unless specified*
Biochemical Oxygen Demand	SM5210-B		2 mg/L
Chemical Oxygen Demand	SM5220-D		10 mg/L
Total Organic Carbon	SM5310-B/C/D		1 mg/L
Total Suspended Solids	SM2540-D		5 mg/L
Total Ammonia (as N)	SM4500-NH3- GH		0.3 mg/L
Flow	Calibrated device		
Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C
pH	SM4500-H+ B	N/A	N/A

NONCONVENTIONAL PARAMETERS

Pollutant & CAS No. *(if available)*	**Recommended Analytical Protocol**	**Detection (DL)[1]** *µg/L unless specified*	**Quantitation Level (QL)[2]** *µg/L unless specified*
Total Alkalinity	SM2320-B		5 mg/L as CaCO3
Chlorine, Total Residual	SM4500 Cl G		50.0
Color	SM2120 B/C/E		10 color units
Fecal Coliform	SM 9221D/E,9222	N/A	N/A
Fluoride (16984-48-8)	SM4500-F E	25	100
Nitrate-Nitrite (as N)	SM4500-NO3-E/F/H		100
Nitrogen, Total Kjeldahl (as N)	SM4500-NH3-C/E/FG		300
Ortho-Phosphate (PO4 as P)	SM4500- PE/PF	3	10
Phosphorus, Total (as P)	SM4500-PE/PF	3	10
Oil and Grease (HEM)	1664A	1,400	5,000
Salinity	SM2520-B		3 PSS
Settleable Solids	SM2540 -F		100
Sulfate (as mg/L SO4)	SM4110-B		200
Sulfide (as mg/L S)	SM4500-S2F/D/E/G		200
Sulfite (as mg/L SO3)	SM4500-SO3B		2000
Total Coliform	SM 9221B, 9222B, 9223B	N/A	N/A
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	SM2340B		200 as CaCO3
Aluminum, Total (7429-90-5)	200.8	2.0	10
Barium Total (7440-39-3)	200.8	0.5	2.0
BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)	EPA SW 846 8021/8260	1	2
Boron Total (7440-42-8)	200.8	2.0	10.0
Cobalt, Total (7440-48-4)	200.8	0.05	0.25
Iron, Total (7439-89-6)	200.7	12.5	50
Magnesium, Total (7439-95-4)	200.7	10	50
Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
Manganese, Total (7439-96-5)	200.8	0.1	0.5
NWTPH Dx	Ecology NWTPH Dx	250	250
NWTPH Gx	Ecology NWTPH Gx	250	250
Tin, Total (7440-31-5)	200.8	0.3	1.5
Titanium, Total (7440-32-6)	200.8	0.5	2.5

PRIORITY POLLUTANTS

Pollutant & CAS No. *(if available)*	**Recommended Analytical Protocol**	**Detection (DL)[1]** *µg/L unless specified*	**Quantitation Level (QL)[2]** *µg/L unless specified*
METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total (7440-36-0)	200.8	0.3	1.0
Arsenic, Total (7440-38-2)	200.8	0.1	0.5
Beryllium, Total (7440-41-7)	200.8	0.1	0.5
Cadmium, Total (7440-43-9)	200.8	0.05	0.25
Chromium (hex) dissolved (18540-29-9)	SM3500-Cr EC	0.3	1.2
Chromium, Total (7440-47-3)	200.8	0.2	1.0
Copper, Total (7440-50-8)	200.8	0.4	2.0
Lead, Total (7439-92-1)	200.8	0.1	0.5
Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
Nickel, Total (7440-02-0)	200.8	0.1	0.5
Selenium, Total (7782-49-2)	200.8	1.0	1.0
Silver, Total (7440-22-4)	200.8	0.04	0.2
Thallium, Total (7440-28-0)	200.8	0.09	0.36
Zinc, Total (7440-66-6)	200.8	0.5	2.5
Cyanide, Total (57-12-5)	335.4	5	10
Cyanide, Weak Acid Dissociable	SM4500-CN I	5	10
Phenols, Total	EPA 420.1		50
ACID COMPOUNDS			
2-Chlorophenol (95-57-8)	625	1.0	2.0
2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6,-dinitrophenol)	625/1625B	1.0	2.0
2,4 dinitrophenol (51-28-5)	625	1.0	2.0
2-Nitrophenol (88-75-5)	625	0.5	1.0
4-nitrophenol (100-02-7)	625	0.5	1.0
Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
Pentachlorophenol (87-86-5)	625	0.5	1.0
Phenol (108-95-2)	625	2.0	4.0
2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0
VOLATILE COMPOUNDS			
Acrolein (107-02-8)	624	5	10
Acrylonitrile (107-13-1)	624	1.0	2.0
Benzene (71-43-2)	624	1.0	2.0
Bromoform (75-25-2)	624	1.0	2.0
Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
Chlorobenzene (108-90-7)	624	1.0	2.0
Chloroethane (75-00-3)	624/601	1.0	2.0

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
METALS, CYANIDE & TOTAL PHENOLS			
2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0
Chloroform (67-66-3)	624 or SM6210B	1.0	2.0
Dibromochloromethane (124-48-1)	624	1.0	2.0
1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
Dichlorobromomethane (75-27-4)	624	1.0	2.0
1,1-Dichloroethane (75-34-3)	624	1.0	2.0
1,2-Dichloroethane (107-06-2)	624	1.0	2.0
1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
1,2-Dichloropropane (78-87-5)	624	1.0	2.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) 3	624	1.0	2.0
Ethylbenzene (100-41-4)	624	1.0	2.0
Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0
Methyl chloride (74-87-3) (Chloromethane)	624	1.0	2.0
Methylene chloride (75-09-2)	624	5.0	10.0
1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
Tetrachloroethylene (127-18-4)	624	1.0	2.0
Toluene (108-88-3)	624	1.0	2.0
1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0
1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
Trichloroethylene (79-01-6)	624	1.0	2.0
Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene (83-32-9)	625	0.2	0.4
Acenaphthylene (208-96-8)	625	0.3	0.6
Anthracene (120-12-7)	625	0.3	0.6
Benzidine (92-87-5)	625	12	24
Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
Benzo(*a*)anthracene (56-55-3)	625	0.3	0.6
Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2) [4]	610/625	0.8	1.6

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)1 µg/L unless specified	Quantitation Level (QL) 2 µg/L unless specified
Benzo(j)fluoranthene (205-82-3) [4]	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9) [4]	610/625	0.8	1.6
Benzo(r,s,t)pentaphene (189-55-9)	625	0.5	1.0
Benzo(*a*)pyrene (50-32-8)	610/625	0.5	1.0
Benzo(*ghi*)Perylene (191-24-2)	610/625	0.5	1.0
Bis(*2-chloroethoxy)*methane (111-91-1)	625	5.3	21.2
Bis(*2-chloroethyl*)ether (111-44-4)	611/625	0.3	1.0
Bis(*2-chloroisopropyl*)ether (39638-32-9)	625	0.3	0.6
Bis(*2-ethylhexyl*)phthalate (117-81-7)	625	0.1	0.5
4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
2-Chloronaphthalene (91-58-7)	625	0.3	0.6
4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
Chrysene (218-01-9)	610/625	0.3	0.6
Dibenzo (a,j)acridine (224-42-0)	610M/625M	2.5	10.0
Dibenzo (a,h)acridine (226-36-8)	610M/625M	2.5	10.0
Dibenzo(a-*h*)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
Dibenzo(a,e)pyrene (192-65-4)	610M/625M	2.5	10.0
Dibenzo(a,h)pyrene (189-64-0)	625M	2.5	10.0
3,3-Dichlorobenzidine (91-94-1)	605/625	0.5	1.0
Diethyl phthalate (84-66-2)	625	1.9	7.6
Dimethyl phthalate (131-11-3)	625	1.6	6.4
Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
1,2-Diphenylhydrazine (*as Azobenzene*) (122-66-7)	1625B	5.0	20
Fluoranthene (206-44-0)	625	0.3	0.6
Fluorene (86-73-7)	625	0.3	0.6
Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
Hexachlorobutadiene (87-68-3)	625	0.5	1.0
Hexachlorocyclopentadiene (77-47-4)	1625B/625	0.5	1.0
Hexachloroethane (67-72-1)	625	0.5	1.0
Indeno(*1,2,3-cd*)Pyrene (193-39-5)	610/625	0.5	1.0

Isophorone (78-59-1)	625	0.5	1.0
3-Methyl cholanthrene (56-49-5)	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6
Nitrobenzene (98-95-3)	625	0.5	1.0
N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0
N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0
Perylene (198-55-0)	625	1.9	7.6
Phenanthrene (85-01-8)	625	0.3	0.6
Pyrene (129-00-0)	625	0.3	0.6
1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6
DIOXIN			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16)	1613B	1.3 pg/L	5 pg/L
PESTICIDES/PCBs			
Aldrin (309-00-2)	608	0.025	0.05
alpha-BHC (319-84-6)	608	0.025	0.05
beta-BHC (319-85-7)	608	0.025	0.05
gamma-BHC (58-89-9)	608	0.025	0.05
delta-BHC (319-86-8)	608	0.025	0.05
Chlordane (57-74-9) [5]	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05
4,4'-DDE (72-55-9)	608	0.025	0.05[10]
4,4' DDD (72-54-8)	608	0.025	0.05
Dieldrin (60-57-1)	608	0.025	0.05
alpha-Endosulfan (959-98-8)	608	0.025	0.05
beta-Endosulfan (33213-65-9)	608	0.025	0.05
Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
Endrin (72-20-8)	608	0.025	0.05
Endrin Aldehyde (7421-93-4)	608	0.025	0.05
Heptachlor (76-44-8)	608	0.025	0.05
Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
PCB-1242 (53469-21-9) [6]	608	0.25	0.5
PCB-1254 (11097-69-1)	608	0.25	0.5
PCB-1221 (11104-28-2)	608	0.25	0.5
PCB-1232 (11141-16-5)	608	0.25	0.5
PCB-1248 (12672-29-6)	608	0.25	0.5
PCB-1260 (11096-82-5)	608	0.13	0.5
PCB-1016 (12674-11-2) [6]	608	0.13	0.5
Toxaphene (8001-35-2)	608	0.24	0.5

1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99 percent confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.

2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to (1, 2, or 5) x 10^n, where n is an integer. (64 FR 30417). ALSO GIVEN AS: The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

3. 1, 3-dichloroproylene (mixed isomers) – You may report this parameter as two separate parameters: cis-1, 3-dichlorpropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).

4. Total Benzofluoranthenes – Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzofluoranthenes.

5. Chlordane – You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 0.025/0.050.

6. PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

REPLY TO
ATTENTION OF

AUG 18 2015

Regulatory Branch

Mr. Dan Silver
B&L Woodwaste Custodial Trust
606 Columbia Street Northwest, Suite 212
Olympic, Washington 98501

Reference: NWS-2011-316
B&L Woodwaste Custodial Trust

Dear Mr. Silver:

We have reviewed your application to remove contaminated material on the banks of an unnamed ditch and temporarily impact 1197 square feet of wetlands to provide continued remediation of contamination at Milton, Pierce County, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 38, *Cleanup of Hazardous and Toxic Waste* (Federal Register February 21, 2012, Vol. 77, No. 34), authorizes your proposal as depicted on the enclosed drawings dated March 13, 2015.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP 38, Terms and Conditions* and the following special conditions:

a. If contaminated sediments are moved offsite, the location of final disposal should be reported to Mr. Kevin Rochlin at rochlin.kevin@epa.gov.

b. By accepting this permit, you agree to accept such potential liability for response costs, response activity and natural resource damages as you would have under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA) or the Model Toxics Control Act, R.C.W. 70.105 (MTCA) absent the issuance of this permit. Further, you agree that this permit does not provide you with any defense from liability under the CERCLA or the MTCA. Additionally, you shall be financially responsible for any incremental response costs attributable under CERCLA or MTCA to your activities under this permit.

We have reviewed your project pursuant to the requirements of the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act. We have determined this project complies with the requirements of these laws provided you comply with all of the permit general and special conditions.

The authorized work complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification and the Coastal Zone Management Act requirements for this NWP. No further coordination with Ecology is required.

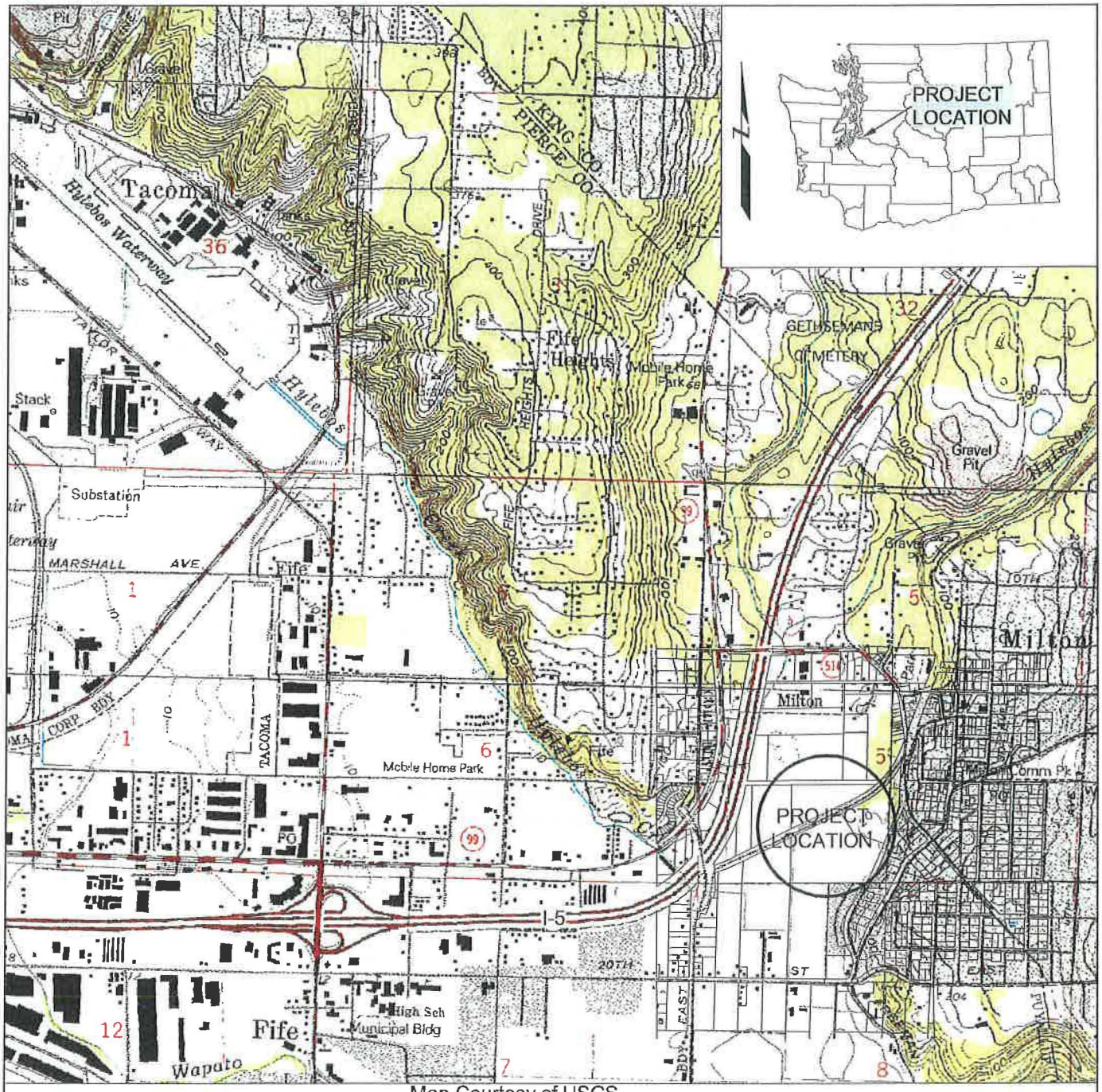
We have prepared and enclosed a *Preliminary Jurisdictional Determination* (JD) dated June 13, 2011, which is a written indication that wetlands and waterways within your project area may be waters of the U.S. Such waters will be treated as jurisdictional waters of the U.S. for purposes of computation of impact area and compensatory mitigation requirements associated with your permit application. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of waters of the U.S. If one is requested, please be aware that we may require the submittal of additional information to complete an approved JD and work authorized in this letter may not occur until the approved JD has been finalized.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form. Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Contact Us." A copy of this letter with enclosures will be furnished to Mr. Brett Beaulieu, Floyd Snider, Two Union Square, 601 Union Street, Suite 600 Seattle, Washington 98504. If you have any questions, please contact me at lori.c.lull@usace.army.mil or (206) 316-3153.

Sincerely,

Lori C. Lull, Project Manager
Regulatory Branch

Enclosures



Map Courtesy of USGS

Driving Directions:

1. From Seattle, go South on I-5 22.3 mi
2. Take exit 142B for S 348th St/WA-18 W 0.3 mi
3. Turn right at S 348th St/WA-18 W 0.2 mi
4. Turn left at Enchanted Pkwy S 0.9 mi
5. Turn right at Milton Rd S 1.2 mi
6. Continue on 5th Ave 1.0 mi
7. Continue straight onto Porter Way 0.3 mi
8. Slight left at Fife Way 0.3 mi

The site is on the right.

APPROXIMATE SCALE IN FEET

0 1000 2000 4000

T20N, R4E, S5
Pierce County

47° 14' 38.0" N
122° 19' 45.0" W

PURPOSE: NWP Permit Application
NWS-2011-816
DATUM: NAVD 88
ADJACENT PROPERTY OWNERS:
See Sheets 3 and 4

NAME: B & L Woodwaste Site Remediation

SITE LOCATION ADDRESS:
522 Fife Way
Milton, Washington
98354

PROPOSED: Ditch Bank Excavation and Restoration
IN:
NEAR/AT:
COUNTY: Pierce STATE: WA
SHEET 1 of 7 Site Vicinity
DATE: 5/14/2012 Rev. 3/13/2015

APPROXIMATE SCALE IN FEET

0 250 500 1000

Delineated Wetlands

Estimated Wetland

Ditch

T20N, R4E, S5
Pierce County

47° 14' 38.0" N
122° 19' 45.0" W

PURPOSE: NWP 38 Permit Application
NWS-2011-316
DATUM: NAVD 88
ADJACENT PROPERTY OWNERS:
See Sheets 3 and 4

NAME: B & L Woodwaste
Site Remediation

SITE LOCATION ADDRESS:
522 Fife Way
Milton, Washington
98354

PROPOSED: Ditch Bank Excavation and Restoration
IN:
NEAR/AT:
COUNTY: Pierce STATE: WA
SHEET 2 of 7 Wetlands and Waterbodies
DATE: 5/14/2012 Rev. 3/13/2015

Ditch

Work Area 2015

APPROXIMATE SCALE IN FEET

0 250 500 1000

T20N, R4E, S5
Pierce County

47° 14' 38.0" N
122° 19' 45.0" W

PURPOSE: NWP 38 Permit Application
NWS-2011-316

DATUM: NAVD 88

ADJACENT PROPERTY OWNERS:
See Sheets 3 and 4

NAME: B & L Woodwaste Site Remediation

SITE LOCATION ADDRESS:
522 Fife Way
Milton, Washington
98354

PROPOSED: Ditch Excavation and Restoration

IN:
NEAR/AT:
COUNTY: Pierce STATE: WA

SHEET 3 of 7 Project Area and Tax Parcels

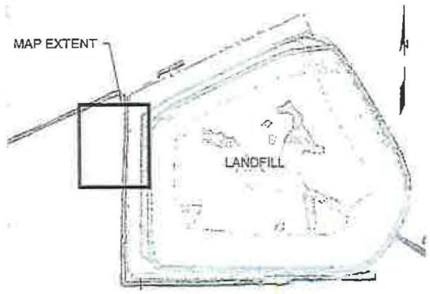
DATE: 5/14/2012 Rev. 3/13/2015

Name	Mailing Address	Tax Parcel #
Benaroya Capital Company, LLC	1100 Olive Way, Suite 1700 Seattle, WA 98101	0420053004
WSDOT, Tacoma Real Estate Services	2112 Center Street, Tacoma, WA 98409-7635	0420053006; 0420082001 (for access); 0420082002 (for access)
City of Milton	1000 Laurel Street Milton, WA 98354-8850	0420053023
Vladimir Labaz	10433 SE 212th Street Kent, WA 98031	0420053065
GRE Greenwood, LLC	3131 S. Vaughn Way Aurora, CO 80014	0420082000

T20N, R4E, S5
Pierce County

47° 14' 38.0" N
122° 19' 45.0" W

PURPOSE: NWP 38 Permit Application NWS-2011-316 DATUM: NAVD 88 ADJACENT PROPERTY OWNERS: See Sheets 3 and 4	NAME: B & L Woodwaste Site Remediation SITE LOCATION ADDRESS: 522 Fife Way Milton, Washington 98354	PROPOSED: Ditch Bank Excavation and Restoration IN: NEAR/AT: COUNTY: Pierce STATE: WA SHEET 4 of 7 Adjacent Property Owners DATE: 5/14/2012 Rev. 3/13/2015



CONTROL POINT ID	EASTING	NORTHING
CP-50	1,185,662	702,037
CP-51	1,185,664	702,042
CP-52	1,185,686	702,042
CP-53	1,185,672	702,019
CP-54	1,185,684	702,019
CP-55	1,185,672	702,006
CP-56	1,185,683	702,006
CP-57	1,185,671	701,991
CP-58	1,185,682	701,991
CP-59	1,185,671	701,976
CP-60	1,185,682	701,976
CP-61	1,185,661	701,935
CP-62	1,185,671	701,935
CP-63	1,185,671	701,920
CP-64	1,185,680	701,920
CP-65	1,185,661	701,897
CP-66	1,185,679	701,897

LEGEND

CP-53 CP-54 10 EXCAVATION BOTTOM ELEVATION
CP-55 CP-56 EXCAVATION GRID
CONTROL POINT LOCATION AND NUMBER (SEE BELOW TABLE FOR LOCATION COORDINATES)
SILT FENCE
WETLAND

Excavation or disturbance in regulated water body below top of bank or ordinary high water, or in wetland

Upland excavation area

Conceptual cross section transect

NOTES

1. INSTALL SURFACE WATER DIVERSION DAMS AS NEEDED TO PROTECT EXCAVATION FROM INFLUENT SURFACE WATER.
2. SOIL STOCKPILING IN UNPAVED AREAS IS NOT PERMITTED.
3. DISTURBANCE OF WETLAND F IS NOT PERMITTED.
4. RESTORE DITCH BANK TO MATCH UPSTREAM AND DOWNSTREAM BANKS.
5. SEED DISTURBED AREA AS SPECIFIED.

PURPOSE: **NWP 38 Application** NWS-2011-316 DATUM: **NAVD 88** ADJACENT PROPERTY OWNERS: **See Sheets 3 and 4**	NAME: **B & L Woodwaste Site Remediation** SITE LOCATION ADDRESS: **522 Fife Way** **Milton, Washington** **98354**	PROPOSED: **Ditch Bank Excavation and Restoration** IN: **Hylebos Creek & Surprise Lake Drain** NEAR/AT: **Hylebos Creek & Surprise Lake Drain** COUNTY: **Pierce** SHEET: **5 of 7 West Ditch Work Area** DATE: **3/13/2015**

LEGEND

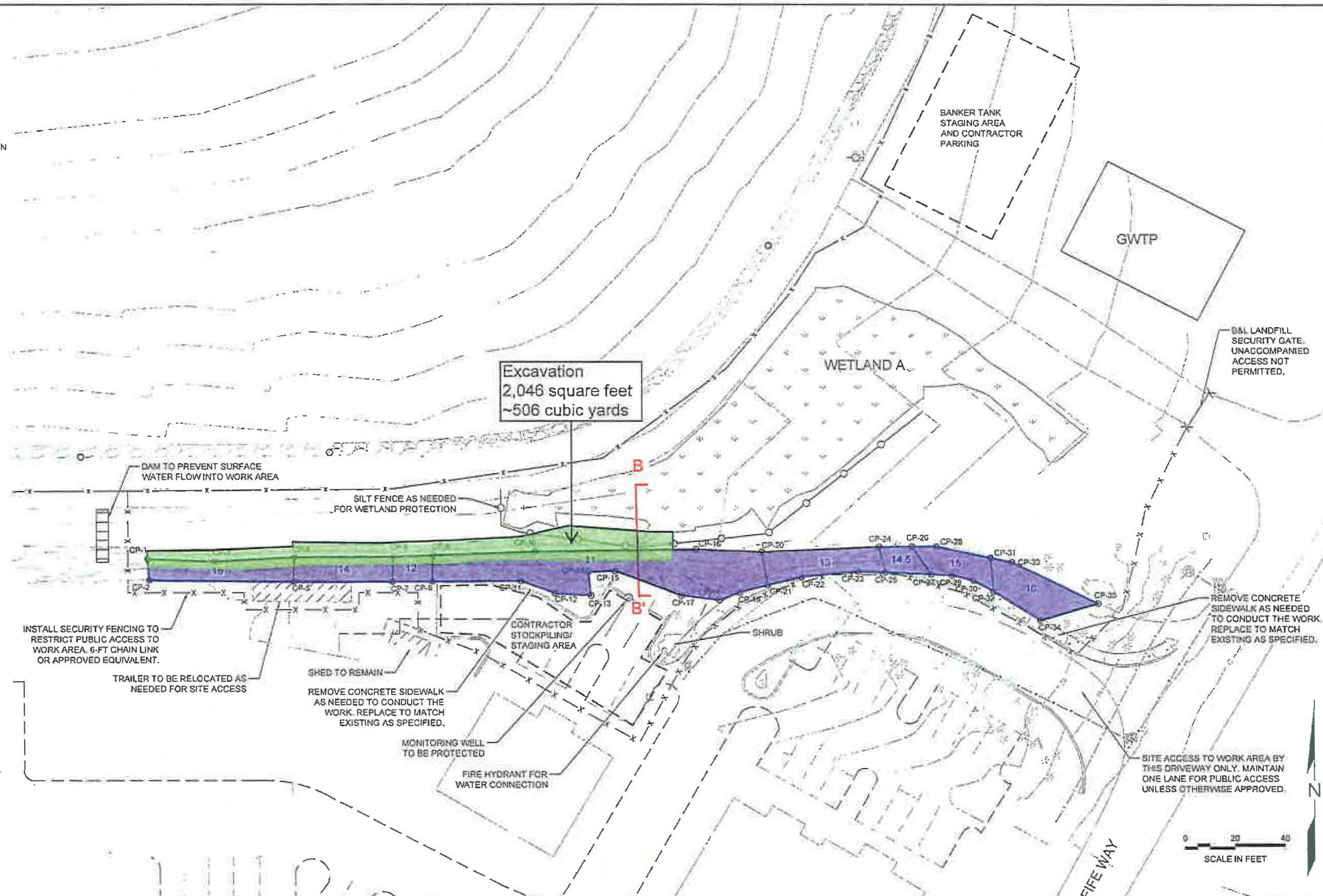
CP-1, CP-3, CP-4, CP-2, CP-5 — 15
- EXCAVATION BOTTOM ELEVATION
- EXCAVATION GRID
- CONTROL POINT LOCATION AND NUMBER (SEE BELOW TABLE FOR LOCATION COORDINATES)

CONTROL POINT ID	EASTING	NORTHING
CP-1	1,186,282	701,578
CP-2	1,186,282	701,570
CP-3	1,186,309	701,577
CP-4	1,186,341	701,579
CP-5	1,186,341	701,569
CP-6	1,186,381	701,579
CP-7	1,186,381	701,569
CP-8	1,186,397	701,580
CP-9	1,186,397	701,569
CP-10	1,186,438	701,581
CP-11	1,186,432	701,569
CP-12	1,186,446	701,564
CP-13	1,186,460	701,563
CP-14	1,186,459	701,573
CP-15	1,186,470	701,573
CP-16	1,186,502	701,582
CP-17	1,186,496	701,563
CP-18	1,186,512	701,562
CP-19	1,186,520	701,565
CP-20	1,186,529	701,581
CP-21	1,186,531	701,568
CP-22	1,186,545	701,571
CP-23	1,186,568	701,573
CP-24	1,186,576	701,583
CP-25	1,186,579	701,573
CP-26	1,186,589	701,583
CP-27	1,186,597	701,572
CP-28	1,186,599	701,583
CP-29	1,186,606	701,571
CP-30	1,186,614	701,569
CP-31	1,186,621	701,579
CP-32	1,186,622	701,565
CP-33	1,186,630	701,577
CP-34	1,186,641	701,553
CP-35	1,186,665	701,560

Excavation or disturbance in regulated water body below top of bank or ordinary high water, or in wetland

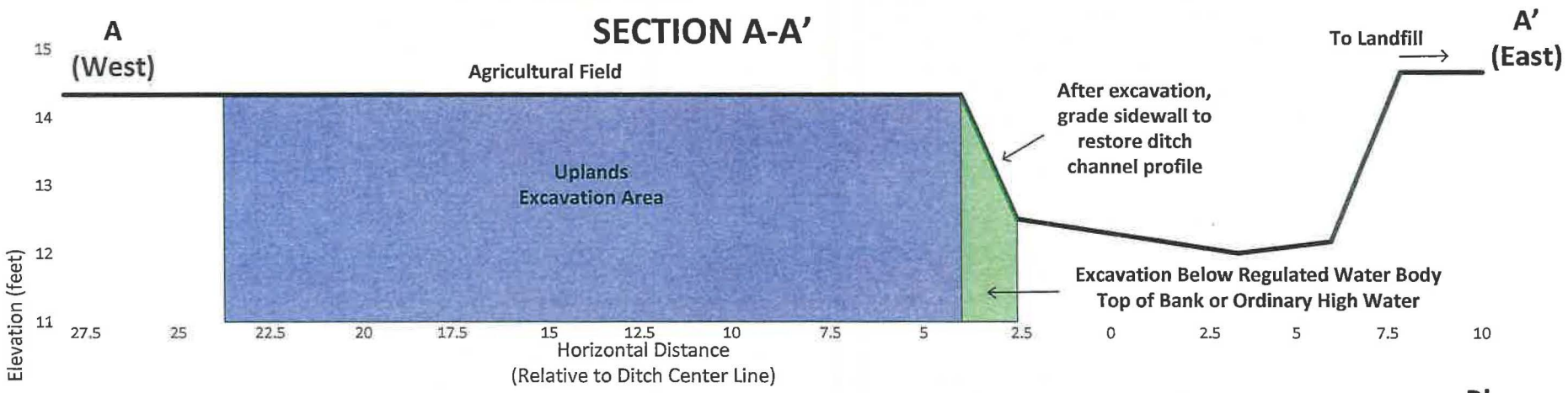
Upland excavation area

Conceptual cross section transect

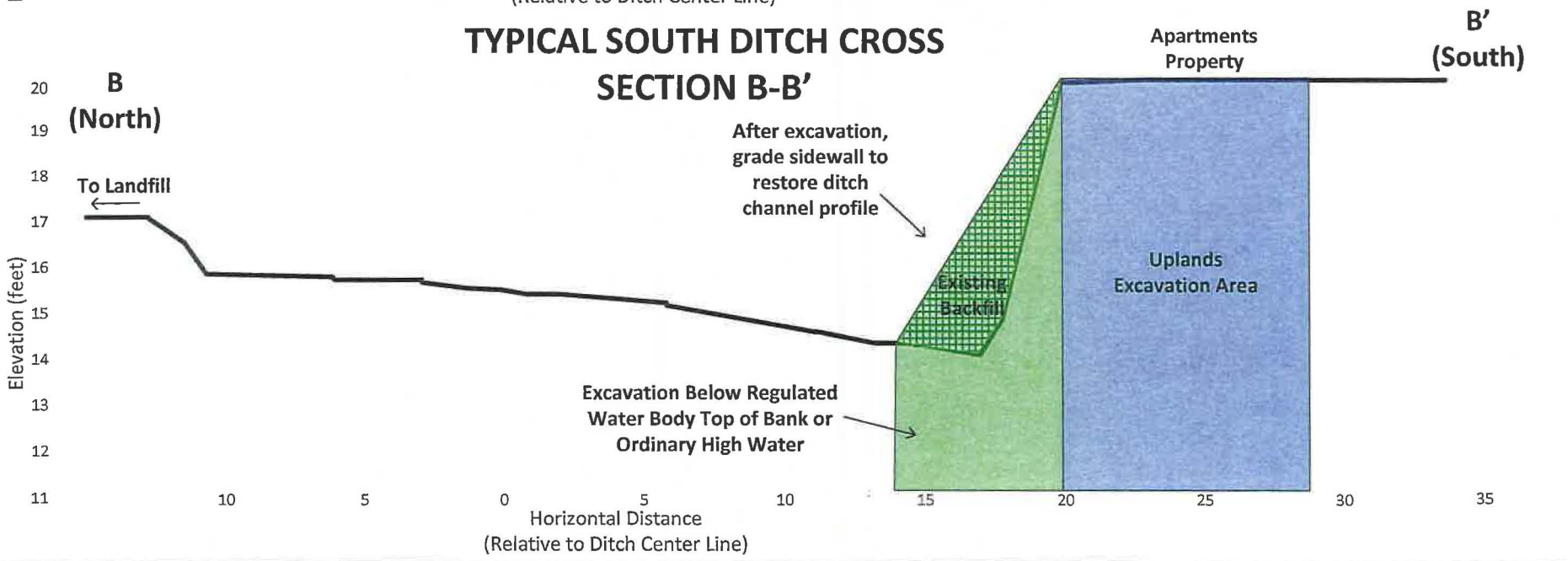


PURPOSE: **NWP 38 Application** NWS-2011-314 DATUM: **NAVD 88** ADJACENT PROPERTY OWNERS: **See Sheets 3 and 4**	NAME: **B & L Woodwaste Site Remediation** SITE LOCATION ADDRESS: **522 Fife Way** **Milton, Washington** **98354**	PROPOSED: **Ditch Bank Excavation and Restoration** IN: **Hylebos Creek & Surprise Lake Drain** NEAR/AT: **Hylebos Creek & Surprise Lake Drain** COUNTY: **Pierce** SHEET: **6 of 7 South Ditch Work Area** DATE: **3/13/2015**

TYPICAL WEST DITCH CROSS SECTION A-A'



TYPICAL SOUTH DITCH CROSS SECTION B-B'



PURPOSE: **NWP 38 Application** NWS-2011-316 DATUM: **NAVD 88** ADJACENT PROPERTY OWNERS: **See Sheets 3 and 4**	NAME: **B & L Woodwaste Site Remediation** SITE LOCATION ADDRESS: **522 Fife Way** **Milton, Washington** **98354**	PROPOSED: **Ditch Bank Excavation and Restoration** IN: **Hylebos Creek & Surprise Lake Drain** NEAR/AT: **Hylebos Creek & Surprise Lake Drain** COUNTY: **Pierce** SHEET: **7 of 7 Representative Cross Sections** DATE: **3/13/2015**

US Army Corps of Engineers ®
Seattle District

NATIONWIDE PERMIT 38
Terms and Conditions

Effective Date: June 15, 2012

In addition to any special condition that may be required on a case-by-case basis by the District Engineer, the following terms and conditions must be met, as applicable, for a Nationwide Permit authorization to be valid in Washington State.

A. DESCRIPTION OF AUTHORIZED ACTIVITIES

38. Cleanup of Hazardous and Toxic Waste. Specific activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Court ordered remedial action plans or related settlements are also authorized by this NWP. This NWP does not authorize the establishment of new disposal sites or the expansion of existing sites used for the disposal of hazardous or toxic waste.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 31.) (Sections 10 and 404)

Note: Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.

B. CORPS NATIONAL GENERAL CONDITIONS FOR ALL NWPs

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR § 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will

notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed

activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332. (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is

best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include: (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either: (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans); (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than

minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan

before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

C. CORPS SEATTLE DISTRICT REGIONAL GENERAL CONDITIONS

1. Aquatic Resources Requiring Special Protection. Activities resulting in a loss of waters of the United States in a mature forested wetland, bog, bog-like wetland, aspen-dominated wetland, alkali wetland, wetlands in a dunal system along the Washington coast, vernal pools, camas prairie wetlands, estuarine wetlands, and wetlands in coastal lagoons cannot be authorized by a NWP, except by the following NWPs:

NWP 3 – Maintenance
NWP 20 – Oil Spill Cleanup
NWP 32 – Completed Enforcement Actions
NWP 38 – Cleanup of Hazardous and Toxic Waste

In order to use one of the above-referenced NWPs in any of the aquatic resources requiring special protection, you must submit a pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 (Pre-Construction Notification) and obtain written approval before commencing work.

2. Commencement Bay. The following NWPs may not be used to authorize activities located in the Commencement Bay Study Area (see Figure 1 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) requiring Department of the Army authorization:

NWP 12 – Utility Line Activities (substations)
NWP 13 – Bank Stabilization
NWP 14 – Linear Transportation Projects
NWP 23 – Approved Categorical Exclusions
NWP 29 – Residential Developments
NWP 39 – Commercial and Institutional Developments
NWP 40 – Agricultural Activities
NWP 41 – Reshaping Existing Drainage Ditches
NWP 42 – Recreational Facilities
NWP 43 – Stormwater Management Facilities

3. New Bank Stabilization Prohibition Areas in Tidal Waters of Puget Sound. Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas (WRIAs) 8, 9, 10, 11, and 12 (within the specific area identified on Figure 2 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) cannot be authorized by a NWP.

4. Bank Stabilization. Any project including new or maintenance bank stabilization activities requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

a. Need for the work, including the cause of the erosion and the threat posed to structures, infrastructure, and/or public safety. The notification must also include a justification for the need to place fill or structures waterward of the line of the Corps' jurisdiction (typically, the ordinary high water mark or mean higher high water mark).

b. Current and expected post-project sediment movement and deposition patterns in and near the project area. In tidal waters, describe the location and size of the nearest bluff sediment sources (feeder bluffs) to the project area and current and expected post-project nearshore drift patterns in the project area.

c. Current and expected post-project habitat conditions, including the presence of fish, wildlife and plant species, submerged aquatic vegetation, spawning habitat, and special aquatic sites (e.g., vegetated shallows, riffle and pool complexes, or mudflats) in the project area.

d. In rivers and streams, an assessment of the likely impact of the proposed work on upstream, downstream and cross-stream properties (at a minimum the area assessed should extend from the nearest upstream bend to the nearest downstream bend of the watercourse). Discuss the methodology used for determining effects. The Corps reserves the right to request an increase in the reach assessment area to fully address the relevant ecological reach and associated habitat.

e. For new bank stabilization activities in rivers and streams, describe the type and length of existing bank stabilization within 300 feet up and downstream of the project area. In tidal areas, describe the type and length of existing bank stabilization within 300 feet along the shoreline on both sides of the project area.

f. Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances. If rock must be used due to site erosion conditions, explain how the bank stabilization structure incorporates elements beneficial to fish. If the Corps determines you have not incorporated the least environmentally damaging practicable bank protection methods and/or have not fully compensated for impacts to aquatic resources, you must submit a compensatory mitigation plan to compensate for impacts to aquatic resources.

g. A planting plan using native riparian plant species unless the applicant demonstrates a planting plan is not appropriate or not practicable.

5. Crossings of Waters of the United States. Any project including installing, replacing, or modifying crossings of waters of the United States, such as culverts, requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

a. Need for the crossing.

b. Crossing design criteria and design methodology.

c. Rationale behind using the specific design method for the crossing.

6. Cultural Resources and Human Burials. Permittees must immediately stop work and notify the District Engineer within 24 hours if, during the course of conducting authorized work, human burials, cultural resources, or historic properties, as identified by the National Historic Preservation Act, are discovered. Failure to stop work in the area of discovery until the Corps can comply with the provisions of 33 CFR 325 Appendix C, the National Historic Preservation Act, and other pertinent laws and regulations could result in a violation of state and federal laws. Violators are subject to civil and criminal penalties.

7. Essential Fish Habitat. An activity which may adversely affect essential fish habitat, as identified under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), may not be authorized by NWP until essential fish habitat requirements have been met by the applicant and the Corps. Non-federal permittees shall notify the District Engineer if essential fish habitat may be affected by, or is in the vicinity of, a proposed activity and shall not begin work until notified by the District Engineer that the requirements of the essential fish habitat provisions of the MSA have been satisfied and the activity is authorized. The notification must identify the type(s) of essential fish habitat (e.g., Pacific salmon, groundfish, and/or coastal-pelagic species) managed by a Fishery Management Plan that may be affected. Information about essential fish habitat is available at www.nwr.noaa.gov/.

8. Vegetation Protection and Restoration. Permittees must clearly mark all construction area boundaries before beginning work. The removal of native vegetation in riparian areas and wetlands, and the removal of submerged aquatic vegetation in estuarine and tidal areas must be avoided and minimized to the maximum extent practicable. Areas subject to temporary vegetation removal shall be replanted with

appropriate native species by the end of the first planting season following the disturbance except as waived by the District Engineer. If an aquaculture area is permitted to impact submerged aquatic vegetation under NWP 48, the aquaculture area does not need to be replanted with submerged aquatic vegetation.

9. Access. You must allow representatives of this office to inspect the authorized activity at any time deemed necessary to ensure the work is being, or has been, accomplished in accordance with the terms and conditions of your permit.

10. Contractor Notification of Permit Requirements. The permittee must provide a copy of the nationwide permit verification letter, conditions, and permit drawings to all contractors involved with the authorized work, prior to the commencement of any work in waters of the U.S.

D. CORPS REGIONAL SPECIFIC CONDITIONS FOR THIS NWP: NONE

E. STATE 401 CERTIFICATION GENERAL CONDITIONS:

1. **For in-water construction activities**. Individual 401 review is required for projects or activities authorized under NWPs that will cause, or be likely to cause or contribute to an exceedence of a State water quality standard (WAC 173-201A) or sediment management standard (WAC 173-204).

   ***Note**: State water quality standards are posted on Ecology's website: http://www.ecy.wa.gov/programs/wq/swqs/. Click "Surface Water Criteria" for freshwater and marine water standards. Sediment management standards are posted on Ecology's website: http://www.ecy.wa.gov/biblio/wac173204.html. Information is also available by contacting Ecology's Federal Permit staff.*

2. **Projects or Activities Discharging to Impaired Waters**. Individual 401 review is required for projects or activities authorized under NWPs if the project or activity will occur in a 303(d) listed segment of a waterbody or upstream of a listed segment and may result in further exceedences of the specific listed parameter.

   ***Note**: To determine if your project or activity is in a 303(d) listed segment of a waterbody, visit Ecology's Water Quality Assessment webpage for maps and search tools, http://www.ecy.wa.gov/programs/wq/303d/2008/. Information is also available by contacting Ecology's Federal Permit staff.*

3. **Notification**. For projects or activities that will require Individual 401 review, applicants must provide Ecology with the same documentation provided to the Corps (as described in Corps Nationwide Permit General Condition 31, Pre-Construction Notification), including, when applicable:

   (a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, and any other Department of the Army permits used or intended to be used to authorize any part of the proposed project or any related activity.

   (b) Delineation of special aquatic sites and other waters of the United States. Wetland delineations must be prepared in accordance with the current method required by the Corps and shall include Ecology's Wetland Rating form. Wetland rating forms are subject to review and verification by Ecology staff.

   ***Note**: Wetland rating forms are available on Ecology's Wetlands website:*

http://www.ecy.wa.gov/programs/sea/wetlands/ratingsystems or by contacting Ecology's Federal Permit staff.

(c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.

Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b).

(d) Coastal Zone Management Program "Certification of Consistency" Form if the project is located within a coastal county (Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom counties).

***Note**: CZM Certification of Consistency forms are available on Ecology's Federal Permit website: http://www.ecy.wa.gov/programs/sea/fed-permit/index.html or by contacting Ecology's Federal Permit staff.*

(e) Other applicable requirements of Corps Nationwide Permit General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

***Note**: Ecology has 180 days from receipt of applicable documents noted above **and** a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program to issue a WQC and CZM consistency determination response. If more than 180 days pass after Ecology's receipt of these documents, your requirement to obtain an individual WQC and CZM consistency determination response becomes waived.*

4. **Aquatic resources requiring special protection**. Certain aquatic resources are unique, difficult-to-replace components of the aquatic environment in Washington State. Activities that would affect these resources must be avoided to the greatest extent possible. Compensating for adverse impacts to high value aquatic resources is typically difficult, prohibitively expensive, and may not be possible in some landscape settings.

Individual 401 review is required for activities in or affecting the following aquatic resources (and not prohibited by Regional Condition 1):

(a) Wetlands with special characteristics (as defined in the Washington State Wetland Rating Systems for western and eastern Washington, Ecology Publications #04-06-025 and #04-06-015):

- Estuarine wetlands
- Natural Heritage wetlands
- Bogs
- Old-growth and mature forested wetlands
- Wetlands in coastal lagoons
- Interdunal wetlands
- Vernal pools
- Alkali wetlands

(b) Fens, aspen-dominated wetlands, camas prairie wetlands, and marine water with eelgrass (*Zostera marina*) beds (except for NWP 48).

(c) Category 1 wetlands

(d) Category II wetlands with a habitat score ≥ 29 points. This State General Condition does not apply to the following Nationwide Permits:

NWP 20 – Response Operations for Oil and Hazardous Substances
NWP 32 – Completed Enforcement Actions

5. **Mitigation.** For projects requiring Individual 401 review, adequate compensatory mitigation must be provided for wetland and other water quality-related impacts of projects or activities authorized under the NWP Program.

(a) Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b) and shall, at a minimum, include the following:

i. A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.

ii. The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded)

iii. The rationale for the mitigation site that was selected

iv. The goals and objectives of the compensatory mitigation project

v. How the mitigation project will be accomplished, including construction sequencing, best management practices to protect water quality, proposed performance standards for measuring success and the proposed buffer widths

vi. How it will be maintained and monitored to assess progress towards goals and objectives. Monitoring will generally be required for a minimum of five years. For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.

vii. How the compensatory mitigation site will be legally protected for the long term.

Refer to Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Ecology Publication #06-06-011b) for guidance on developing mitigation plans.

Ecology encourages the use of alternative mitigation approaches, including advance mitigation and other programmatic approaches such as mitigation banks and programmatic mitigation areas at the local level. If you are interested in proposing use of an alternative mitigation approach, consult with the appropriate Ecology regional staff person. (see http://www.ecy.wa.gov/programs/sea/wetlands/contacts.htm)

Information on the state wetland mitigation banking program is available on Ecology's website: http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/index.html

6. **Temporary Fills.** Individual 401 review is required for any project or activity with temporary fill in wetlands or other waters of the State for more than 90 days, unless the applicant has received written approval from Ecology.

Note: This State General Condition does not apply to projects or activities authorized under NWP 33, Temporary Construction, Access, and Dewatering

7. **Stormwater discharge pollution prevention**: All projects that involve land disturbance or impervious surfaces must implement prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the state. For land disturbances during construction, the permittee must obtain and implement permits where required and follow Ecology's current stormwater manual.

   Note: Stormwater permit information is available at Ecology's Water Quality website: http://www.ecy.wa.gov/programs/wq/stormwater/index.html. Ecology's Stormwater Management and Design Manuals are available at: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/StrmwtrMan.html. Information is also available by contacting Ecology's Federal Permit staff.

8. **State Certification for PCNs not receiving 45-day response.** In the event the U.S. Army Corps of Engineers does not respond to a complete pre-construction notification within 45 days, the applicant must contact Ecology for Individual 401 review.

F. STATE 401 CERTIFICATION SPECIFIC **CONDITIONS FOR THIS NWP:** Certified subject to conditions. Permittee must meet Ecology 401 General Conditions. Individual 401 review is required for projects or activities authorized under this NWP if:

1. The project or activity involves fill in tidal waters.
2. The project or activity affects ½ acre or more of wetlands.

G. EPA 401 CERTIFICATION GENERAL CONDITIONS:

A. Any activities in the following types of wetlands and waters of the United States will need to apply for an individual 401 certification: Mature forested wetlands, bogs, bog-like wetlands, wetlands in dunal systems along the Washington coast, coastal lagoons, vernal pools, aspen-dominated wetlands, alkali wetlands, camas prairie wetlands, estuarine wetlands, including salt marshes, and marine waters with eelgrass or kelp beds.

B. A 401 certification determination is based on the project or activity meeting established turbidity levels. The EPA will be using as guidance the state of Washington's water quality standards [WAC 173-201a] and sediment quality standards [WAC 173-204]. Projects or activities that are expected to exceed these levels or that do exceed these levels will require an individual 401 certification.

The water quality standards allow for short-term turbidity exceedances after all necessary Best Management Practices have been implemented (e.g., properly placed and maintained filter fences, hay bales and/or other erosion control devices, adequate detention of runoff to prevent turbid water from flowing off-site, providing a vegetated buffer between the activity and open water, etc.), and only up to the following limits:

Wetted Stream Width at Discharge Point	Approximate Downstream Point for Determining Compliance
Up to 30 feet	50 feet
>30 to 100 feet	100 feet
>100 feet to 200 feet	200 feet

>200 feet	300 feet
LAKE, POND, RESERVOIR	Lesser of 100 feet or maximum surface dimension

C. 401 certification of projects and activities under NWPs will use Washington State Department of Ecology's most recent stormwater manual or an EPA approved equivalent manual as guidance in meeting water quality standards.

D. For projects and activities requiring coverage under an NPDES permit, certification is based on compliance with the requirements of that permit. Projects and activities not in compliance with NPDES requirements will require individual 401certification.

E. Individual 401certification is required for projects or activities authorized under NWPs if the project will discharge to a waterbody on the list of impaired waterbodies (the 303(d) List) and the discharge may result in further exceedance of a specific parameter the waterbody is listed for. The EPA shall make this determination on a case-by-case basis.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved Total Maximum Daily Load (TMDL) or an approved water quality management plan, the applicant must provide documentation for EPA approval showing that the discharge will not result in further exceedance of the listed contaminant or impairment.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved TMDL, the applicant must provide documentation for EPA approval showing that the discharge is within the limits established in the TMDL. The current list of 303(d)-listed waterbodies in Washington State will be consulted in making this determination and is available on Ecology's web site at: www.ecy.wa.gov/programs/wq/303d/2012/index.html

The EPA may issue 401 certification for projects or activities that would result in further exceedance or impairment if mitigation is provided that would result in a net decrease in listed contaminants or less impairment in the waterbody. This determination would be made during individual 401 certification review.

F. For projects requiring individual 401 certification, applicants must provide the EPA with the same documentation provided to the Corps, (as described in Corps' National General Condition 31, Pre-Construction Notification), including, when applicable:

(a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, any other U.S. Department of the Army permits used or intended to use to authorize any part of the proposed project or any related activity.

(b) Delineation of special aquatic sites and other waters of the United States. Wetland delineations must be prepared in accordance with the current method required by the Corps.

(c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.

(d) Other applicable requirements of Corps National General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

A request for individual 401 certification- review is not complete until the EPA receives the applicable documents noted above and the EPA has received a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program.

G. No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

H. An individual 401 certification is based on adequate compensatory mitigation being provided for aquatic resource and other water quality-related impacts of projects or activities authorized under the NWP Program.

A 401 certification is contingent upon written approval from the EPA of the compensatory mitigation plan for projects and activities resulting in any of the following:

- impacts to any aquatic resources requiring special protection (as defined in EPA General Condition A or Corps General Regional Condition 1)
- any impacts to tidal waters or non-tidal waters adjacent to tidal waters (applies to NWP 14)
- Or, any impacts to aquatic resources greater than ¼ acre.

Compensatory mitigation plans submitted to the EPA shall be based on the Joint Agency guidance provided in *Wetland Mitigation in Washington State, Parts 1 and 2* (Ecology Publication #06-06-011a and #06-06-011b) and shall, at a minimum, include the following:

(1) A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
(2) The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded)
(3) The rationale for the mitigation site that was selected
(4) The goals and objectives of the compensatory mitigation project
(5) How the mitigation project will be accomplished, including proposed performance standards for measuring success (including meeting planting success standard of 80 percent survival after five years), evidence for hydrology at the mitigation site, and the proposed buffer widths;
(6) How it will be maintained and monitored to assess progress towards goals and objectives.
(7) Completion and submittal of an "as-built conditions report" upon completion of grading, planting and hydrology establishment at the mitigation site;
(8) Completion and submittal of monitoring reports at years 3 and 5 showing the results of monitoring for hydrology, vegetation types, and aerial cover of vegetation.
(9) For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.
(10) Documentation of legal site protection mechanism (covenant or deed restriction) to show how the compensatory mitigation site will be legally protected for the long-term.

I. An individual 401 certification is required for any activity where temporary fill will remain in wetlands or other waterbodies for more than 90 days. The 90 day period begins when filling activity starts in the wetland or other waterbody.

J. An individual 401 is required for any proposed project or activity in waterbodies on the most current list of the following Designated Critical Resource Waters (per Corps General Condition 22).

K. An individual 401 certification is required for any proposed project that would increase permanent, above-grade fill within the 100-year floodplain (including the floodway and the flood fringe).

> [***Note:*** The 100-year floodplain is defined as those areas identified as Zones A, A1-30, AE, AH, AO, A99, V, V1-30, and VE on the most current Federal Emergency Management Agency Flood Rate Insurance Maps, or areas identified as within the 100-year floodplain on applicable local Flood Management Program maps. The 100-year flood is also known as the flood with a 100-year recurrence interval, or as the flood with an exceedance probability of 0.01.]

H. EPA 401 CERTIFICATION SPECIFIC CONDITIONS FOR THIS NWP: Partially denied without prejudice. Permittee must meet EPA 401 General Conditions. Individual 401 review is required for projects authorized under this NWP if the project or activities are not part of an EPA ordered cleanup.

I. COASTAL ZONE MANAGEMENT CONSISTENCY RESPONSE FOR THIS NWP: Concur subject to the following condition: When individual 401 review by Ecology is triggered, a CZM Certification of Consistency form must be submitted for projects located within the 15 coastal counties (see State General 401 Condition 3 (Notification)).

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 13 JUN 2011

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Dan Silver, Trustee
B & L Woodwaste Custodial Trust
606 Columbia Street Northwest, Suite 212
Olympia, Washington 98501

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Seattle District, NWS-2011-316, B & L Woodwaste Custodial Trust (site remediation)

. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
State: WA County: Pierce City: Milton
Center coordinates of site (lat/long in degree decimal format): Lat. 47.2459 °N, Long. -122.32497_____ °W
Name of nearest waterbody: Hylebos Creek
Name of any water bodies on the site, in the review area, that have been identified as Section 10 waters:
Tidal: _____.
Non-Tidal: _____.

Identify (estimate) amount of waters in the review area (if there are multiple sites, use the table instead):
Stream Flow : RPW Flow path: The wetlands are adjacent to Hylebos Creek which is a RPW which flows into Commencement Bay, Puget Sound, which is a TNW.

Wetlands: see attached map "Project Review Area" acres (total for site).
Cowardin Class(es): _____

Name/Type of Water	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Wetland A	47.2429	-122.3274	PEM	0.20 acre	Non-section 10; wetland
Wetland B	47.2441	-122.3267	PEM	0.71 acre	Non-section 10; wetland
Wetland C	47.2457	-122.3299	PSS/PEM	7 acres (out of 59 acres total)	Non-section 10; wetland
Wetland F	47.2439	-122.3314	PEM	1.0 acre	Non-section 10; wetland
Unnamed ditch	47.2427	-122.3308	R2	1850 ft	Non-section 10; RPW
Interurban trail ditch	47.2444	-122.3308	R2	1850 ft	Non-section 10; RPW
Surprise Lake drain	47.2422	-122.3336	R2	1000 ft	Non-section 10; RPW
I-5 ditch	47.2457	-122.3337	R2	1850 ft	Non-section 10; RPW

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: 13 JUN 2011
☐ Field Determination. Date(s): _____

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: dated 21 APR 2011.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☒ Office does not concur with data sheets/delineation report. Explain: Delineations must be conducted in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* and the U.S. Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (May 2010)*.
☐ Data sheets prepared by the Corps: _____.

- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas: _____.
  - ☐ USGS NHD data. ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name: _____.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: _____.
- ☐ National wetlands inventory map(s). Cite name: _____.
- ☐ State/Local wetland inventory map(s): _____.
- ☐ FEMA/FIRM maps: _____.
- ☐ 100-year Floodplain Elevation is: _____(National Geodetic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date): _____.
- ☐ Photographs: ☐ Other (Name & Date): _____.
- ☐ Previous determination(s). File no., date (and findings) of response letter (determination and coordination): _____.
- ☐ Other information (please specify): _____.

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the information in this document.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature:

Regulatory Project Manager	Date: 13 Jun 2011
Person[1] Requesting Preliminary JD	Date: June 13 2011

[1] Permit applicant, landowner, a lease, easement or option holder, or individual with identifiable and substantial legal interest in the property; this signature is not required for preliminary JDs associated with enforcement actions.

US Army Corps of Engineers ®
Seattle District

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: NWS-2011-316

Name of Permittee: B&L Woodwaste Custodial Trust

Date of Issuance: AUG 18 2015

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following address:

Department of the Army
U.S. Army Corps of Engineers
Seattle District, Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-3755

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

☐ The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit.

Date work complete: _____

☐ Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).

☐ If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring).

Date work complete: _____ ☐ N/A

☐ Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).

☐ Provide phone number/email for scheduling site visits (must have legal authority to grant property access).

Printed Name: _____

Phone Number: _____ Email: _____

Printed Name: _____

Signature: _____

Date: _____

US Army Corps of Engineers
Seattle District

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: NWS-2011-316

Name of Permittee: B&L Woodwaste Custodial Trust

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Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following address:

Department of the Army
U.S. Army Corps of Engineers
Seattle District, Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-3755

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

☒ The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit.

Date work complete: December 2, 2015

☐ Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).

☒ If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring).

Date work complete: December 2, 2015 ☐ N/A

☐ Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).

☒ Provide phone number/email for scheduling site visits (must have legal authority to grant property access).

Printed Name: DANIEL SILVER

Phone Number: 360-754-9343 Email: daniel j silver @ msn.com

Printed Name: DANIEL J SILVER, Trustee

Signature:

Date: 12/29/15

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

July 23, 2015

Dan Silver
B&L Woodwaste Site Custodial Trust
606 Columbia St NW
Olympia WA 98501

RE: Coverage under the Construction Stormwater General Permit

Permit number:	**WAR303284**	
Site Name:	**B&L Landfill**	
Location:	**522 Fife Way E**	
	Milton, WA	**County: Pierce**
Disturbed Acres:	**0.18**	

Dear Mr. Silver:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (permit). This is your permit coverage letter. Your permit coverage is effective on July 23, 2015. **Please retain this permit coverage letter with your permit (enclosed), stormwater pollution prevention plan (SWPPP), and site log book. These materials are the official record of permit coverage for your site.**

Please take time to read the entire permit and contact Ecology if you have any questions.

Appeal Process
You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this letter. This appeal is limited to the general permit's applicability or non-applicability to a specific discharger. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do the following within 30 days of the date of receipt of this letter:

- File your appeal and a copy of the permit cover page with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and the permit cover page on Ecology in paper form – by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

Address and Location Information:

Street Addresses:	**Mailing Addresses:**
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board (PCHB) 1111 Israel Road SW, Suite 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Electronic Discharge Monitoring Reports (WQWebDMR)
This permit requires that Permittees submit monthly discharge monitoring reports (DMRs) electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to: www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html. If you have questions, contact the portal staff at (360) 407-7097 (Olympia area), or (800) 633-6193/option 3, or email WQWebPortal@ecy.wa.gov.

Ecology Field Inspector Assistance
If you have questions regarding stormwater management at your construction site, please contact Carol Serdar of Ecology's Southwest Regional Office in Lacey at carol.serdar@ecy.wa.gov or (360) 407-6269.

Questions or Additional Information
Ecology is committed to providing assistance. Please review our web page at: www.ecy.wa.gov/programs/wq/stormwater/construction. If you have questions about the construction stormwater general permit, please contact Josh Klimek at josh.klimek@ecy.wa.gov or (360) 407-7451.

Sincerely,

Kathleen Emmett for Bill Moore

Bill Moore, P.E., Manager
Program Development Services Section
Water Quality Program

Enclosure

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

December 24, 2015

Dan Silver
B&L Woodwaste Site Custodial Trust
606 Columbia St. NW Suite 212
Olympia, WA 98501

RE: **Notice of Termination of Coverage under the Stormwater General Permit for Construction Activity**

Permit Number:	**WAR303284**
Site Name:	B & L Landfill
Location:	1522 Fife Way East Milton, WA (Pierce County)
Disturbed Acres:	1.5

Dear Mr. Silver:

The Washington State Department of Ecology (Ecology) has reviewed your Notice of Termination (NOT) of coverage under the Construction Stormwater General Permit for the construction site shown above. Based upon the NOT, Ecology is terminating your coverage under the permit as of November 09, 2015, the date Ecology received the NOT, for the following reason:

> *The site has undergone final stabilization, all temporary BPMs have been removed, and all stormwater discharges associated with construction activity has been eliminated. (Section S10-A1).*

Please ensure that you retain the Stormwater Pollution Prevention Plan (SWPPP) and copies of all of the application, inspection reports, and all other reports required by this permit for at least three years after the date of final stabilization of the construction site. These documents need to be available to Ecology and to the local government agencies with jurisdiction, upon request.

Appeal of this Action
You have a right to appeal this action. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do the following within 30 days of the date of receipt of this letter:

- File your appeal and a copy of the permit cover page with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and the permit cover page on Ecology in paper form - by mail or in person (see addresses below). Email is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Address and Location Information:

Street Addresses:	**Mailing Addresses:**
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board (PCHB) 1111 Israel Road SW, Suite 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

As required by State law (RCW 90.48.465), Ecology charges a fee for its discharge permits. Although your permit is terminated, you will receive an invoice for entire fiscal year if payment has not been received. Ecology ***does not prorate fees*** for permits terminated during the fiscal year.

If you would like more information on the fee process, please contact Charles Gilman at (360) 407-6425 or send email to charles.gilman@ecy.wa.gov.

If you have any questions regarding the termination process, please contact Josh Klimek at (360) 407-7451 or send email to josh.klimek@ecy.wa.gov.

Sincerely,

Bill Moore, P.E.
Program Development Services Section Manager
Water Quality Program

cc: Charles Gilman, Ecology/Water Quality Program/Fees
Josh Klimek, Ecology/Water Quality Program

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix E
Stormwater Pollution Prevention Plan

Construction Stormwater General Permit

Stormwater Pollution Prevention Plan (SWPPP)

for

B&L Landfill South and West Ditch Bank Excavation Project

Prepared for:

The Washington State Department of Ecology

Southwest Regional Office

Permittee / Owner	Developer	Operator / Contractor
B & L Woodwaste Custodial Trust	WA Dept of Ecology/ Floyd/Snider	IO Environmental and Infrastructure, Inc.

Project Location:

B & L Landfill off Fife Way near 6th Avenue in Milton, Pierce County, WA

Certified Erosion and Sediment Control Lead (CESCL)

Name	Organization	Contact Phone Number
William Beaulieu	Floyd Snider	206-292-2078
Erin Murray	Floyd Snider	206-292-2078

SWPPP Prepared By

Name	Organization	Contact Phone Number
Katharine Lee & Mike Bagley	PBS Engineering & Environmental	206-233-9639

SWPPP Preparation Date

7/22/15

Project Construction Dates

Start Date	End Date
Aug 3, 2015	October 15, 2015

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List of Acronyms and Abbreviations

Acronym / Abbreviation	Explanation
303(d)	Section of the Clean Water Act pertaining to Impaired Waterbodies
BFO	Bellingham Field Office of the Department of Ecology
BMP(s)	Best Management Practice(s)
CESCL	Certified Erosion and Sediment Control Lead
CO_2	Carbon Dioxide
CRO	Central Regional Office of the Department of Ecology
CSWGP	Construction Stormwater General Permit
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ERO	Eastern Regional Office of the Department of Ecology
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
GULD	General Use Level Designation
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
NWRO	Northwest Regional Office of the Department of Ecology
pH	Power of Hydrogen
RCW	Revised Code of Washington
SPCC	Spill Prevention, Control, and Countermeasure
su	Standard Units
SWMMEW	Stormwater Management Manual for Eastern Washington
SWMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
SWRO	Southwest Regional Office of the Department of Ecology
TMDL	Total Maximum Daily Load
VFO	Vancouver Field Office of the Department of Ecology
WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation
WWHM	Western Washington Hydrology Model

1 Project Information

Project/Site Name:	B & L Woodwaste Site Ditch Bank Soil Excavation Project			
Street/Location:	Fife Way and 6th Ave			
City: Milton	State:	WA	Zip code:	98354
Subdivision:	N/A			
Receiving waterbody:	Ditch tributary to Hylebos Creek			

1.1 Introduction

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the B & L Woodwaste Site Ditch Bank Soil Excavation Project (project) with IO Environmental and Infrastructure, Inc. (IO). The project is being managed by Floyd/Snider. This project is a continuation of a Washington Department of Ecology (Ecology) cleanup effort at the landfill, which began in 1993 after the discovery of arsenic leaching out of the landfill into the surface and groundwater. A consent decree was issued by Ecology in 2008 for the removal of contaminated sediments from the agricultural ditches adjacent to the landfill. This project is one of several phases of the contaminated ditch sediment removal. The project has two discreet project areas identified by Floyd/Snider as the South Ditch and the West Ditch. The project will obtain one National Pollution Discharge Elimination System (NPDES) General Construction Stormwater permit for construction stormwater discharges at both the South and West Ditch sites due to the close proximity of these two locations. The SWPPP and Temporary Erosion and Sediment Control (TESC) Plan describe the measures to be used during construction to meet the requirements of the permit and protect waters of the state from degradation due to sediment transport or water pollution. The plan was prepared in accordance with guidance provided in the Stormwater Management Manual for Western Washington, Volume II – Construction Stormwater Pollution Prevention (2012, as amended 2014).

The objectives of this SWPPP are as follows:

- Implement BMPs to minimize erosion and sedimentation from rainfall at construction sites, and to identify, reduce, eliminate, or prevent the pollution of stormwater from excavation of arsenic contaminated soils.
- Prevent violations of surface water quality, ground water quality, or sediment management standards.
- Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water.

The Project Plan Sheets (Appendix A) that are included with this narrative show where various best management practices (BMPs) will be used to meet the objectives listed above. However, field conditions during construction may require additional temporary BMPs or a change in placement of the temporary BMPs. The Certified Erosion and Sediment Control Lead (CESCL),

Environmental Compliance Manager (ECM) and Environmental Compliance Inspectors shall modify this plan if necessary to meet field conditions.

1.2 Existing Conditions

Summary Table

Project Site Total acreage:	1.5 acres
Disturbed acreage:	1.5 acres
Existing structures:	Landfill, sidewalks, trailer, groundwater treatment building
Landscape topography:	Generally flat, landfill rises approximately 35 feet from base elevation, slight slope up to Fife Way, constructed ditches and berms
Drainage patterns:	Area is ditched, water that does not infiltrate will flow to ditches. Ditches flow west, then north, then west and south to join Hylebos Creek near I-5.
Existing Vegetation:	South Ditch – Douglas fir, Himalayan blackberry, scotch broom, grasses, willows in adjacent wetland. West Ditch – grasses, weeds, agricultural crops, willows in adjacent wetland
Critical Areas (wetlands, streams, high erosion risk, steep or difficult to stabilize slopes):	Much of the project vicinity is historic wetland. Soils are mapped as Semiahmoo muck, Shalcar muck, and Sultan silt loam. Wetlands have been mapped adjacent to both excavation areas.
303d impaired waters	Hylebos Creek west of I-5 is listed for dissolved oxygen and a low bioassessment score
TMDLs	None
Known Contamination	Yes - arsenic

Project Setting

The B&L Landfill is located in unincorporated Pierce County, east of Tacoma near Milton, Washington in Water Resource Inventory Area (WRIA) 10 – Puyallup–White (Figure 1). The landfill site is located in the lower Hylebos Creek watershed where Hylebos Creek enters the lower Puyallup River floodplain and the Commencement Bay estuary. The project area and vicinity was mostly historic wetland, portions of which were ditched and drained for agriculture. The landfill property is approximately 15 acres in size and includes the landfill and a groundwater treatment plant. The base elevation around the perimeter of the landfill is 12 to 18 feet above sea level. The capped landfill rises approximately 35 feet. At the east edge of the property the land slopes up toward Fife Way approximately 10 feet.

The soil that will be excavated from the South Ditch bank extends into the adjacent Autumn Village Apartments property and the soil that will be excavated from the West Ditch extends into the adjacent agricultural field.

Drainage Patterns

Agricultural ditches border the west and south sides of the landfill. These ditches (South Ditch, West Ditch) are excavated to a depth of approximately 2 to 4 feet with 2 foot high berms. An excavated linear pond on the north side of the landfill (north ditch) is used as the discharge point for the treatment plant. The South Ditch flows west to join the West Ditch, which flows north to the edge of the property, then west and south to join Hylebos Creek just east of Interstate 5. The Hylebos waterway, part of Commencement Bay is 1.5 miles downstream (Figure 2). Hylebos Creek just down gradient from the project site is listed for dissolved oxygen and a low bioassessment score. There is currently no TMDL for Hylebos Creek.

Existing Vegetation

The Ditch banks are primarily vegetated with grasses and weedy species. Agricultural fields are present just west of the West Ditch. At the South Ditch there is a narrow strip of Douglas fir trees along the apartment driveway. Himalayan blackberry and a few native shrubs are present under the Douglas-firs. Wetlands adjacent to the project areas are dominated by willows and a variety of grasses and wetland plants.

Precipitation

The nearest weather station to the project is in Tacoma, WA. The table shows precipitation records from 1982 to 2012 for the months during which construction will occur.

TACOMA #1, WASHINGTON

Period of Record General Climate Summary - Precipitation

Station:(458278) TACOMA 1

From Year=1982 To Year=2012

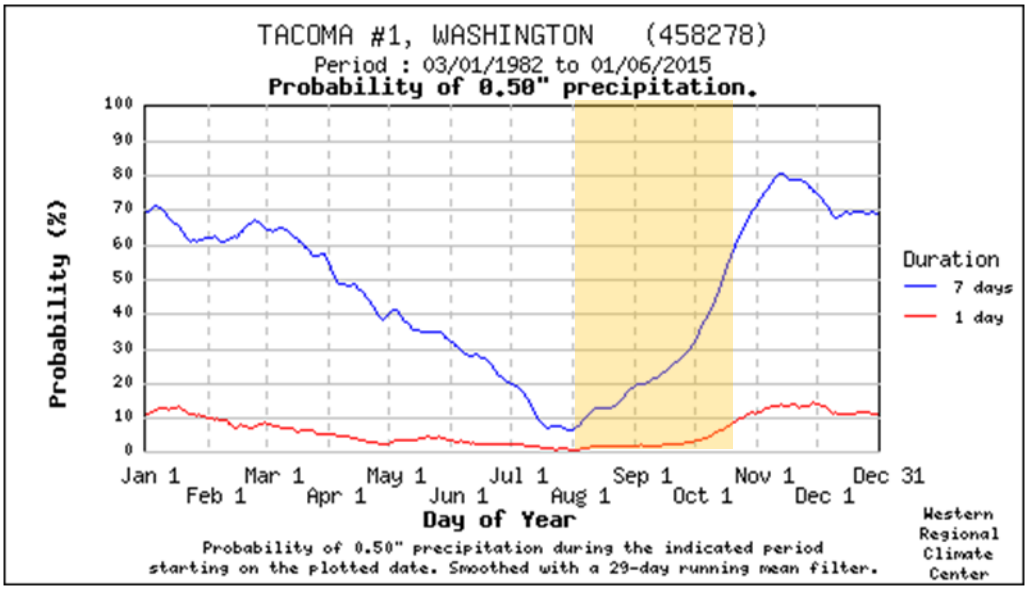
	Precipitation											Total Snowfall		
	Mean	High	Year	Low	Year	1 Day Max.		>= 0.01 in.	>= 0.10 in.	>= 0.50 in.	>= 1.00 in.	Mean	High	Year
	in.	in.	-	in.	-	in.	dd/yyyy yyyymmdd	# Days	# Days	# Days	# Days	in.	in.	-
August	0.83	2.87	1991	0.00	1998	1.48	30/1983	4	2	0	0	0.0	0.0	1982
September	1.27	3.90	2010	0.00	1990	0.96	18/2010	7	4	1	0	0.0	0.0	1982
October	3.56	8.88	2003	0.40	1987	3.38	21/2003	13	8	2	1	0.0	0.0	1982
Annual	39.76	48.07	2006	24.94	1985	4.73	20111122	152	96	23	5	0.5	6.5	2007
Summer	3.21	6.68	1983	0.78	2003	1.49	20010611	17	9	2	0	0.0	0.0	1982
Fall	11.65	17.21	2006	3.55	1993	4.73	20111122	39	25	7	2	0.1	2.0	2010

Table updated on Oct 31, 2012. For monthly and annual means, thresholds, and sums: Months with 5 or more missing days are not considered. Years with 1 or more missing months are not considered. Seasons are climatological not calendar seasons. Summer = Jun., Jul., Aug. and Fall = Sep., Oct., Nov.

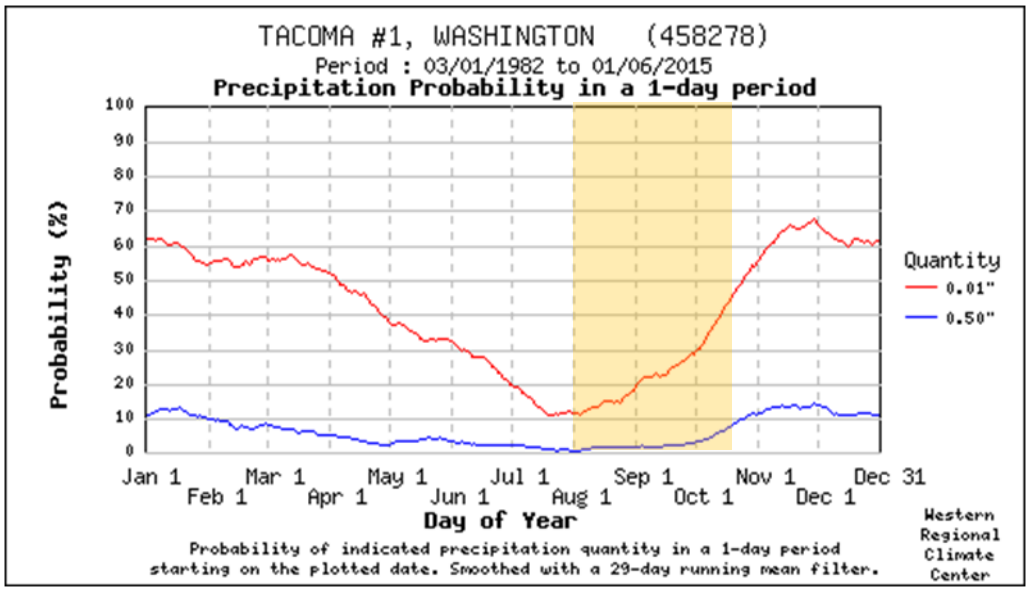
The months of August through October are typically dry with average rainfall low in August, but increasing into October. The average number of days where rainfall exceeds 0.5 inches is 0 in August, 1 in September and 2 in October. Measurable precipitation occurs on average 4 days in

August, 7 days in September and 13 days in October. Graphs of precipitation duration and quantity for the Tacoma station are shown below with the project duration highlighted.

Precipitation Probability by Quantity



Precipitation Probability by Duration



Critical Areas

Wetlands are present in the area and have been mapped in close proximity to both the West and South Ditch sites (Appendix A – Site Plans). There is an extensive wetland north of the site. Hydric soils (Semiahmoo Much and Shalcar Muck) are present in the South Ditch Area. Portions of the site are mapped as priority habitat on WDFWs Priority Habitats and Species website because of the presence of wetlands. Hylebos Creek has documented presence of listed fish species (fall Chinook and winter steelhead) west of I-5 with possible occurrence in the ditches east of I-5.

Contaminants

The landfill started operation in the 1970s for disposal of deck debris from log sort yards operating in the Tacoma tideflats. The log sort yards used Asarco slag as roadway and yard ballast. The slag became mixed with the bark and dirt that was transported to the landfill for disposal. The landfill was discontinued and capped in 1993/1994 following discovery of arsenic contamination. The B&L landfill property includes the capped landfill and an active groundwater treatment plant that is used for remediation. The project areas extend off the B&L property into agricultural land to the west and the Autumn Village Apartments to the south. Details of the arsenic contamination can be found in Appendix G.

Table 1 includes a list of suspected and/or known contaminants associated with the construction activity.

Table 1 – Summary of Site Pollutant Constituents

Constituent (Pollutant)	Location	Depth	Concentration
Arsenic	West Ditch soil	0- 4’	2.5 – 77 mg/kg
Arsenic	South Ditch soil	0- 12’	1.1 – 559 mg/kg
Arsenic	Groundwater	Variable	0.5 – 4,150 ug/L
Arsenic	Surface water	N/A	4.8 – 54 ug/L

1.3 Proposed Construction Activities

The project will remove contaminated soils in the vicinity of the B & L Woodwaste Landfill. Arsenic-impacted soils will be excavated from the ditch banks at the two identified locations. The excavation will extend outward from the ditches to a point where the remaining arsenic concentrations in the soils extending into the agricultural field and the apartment complex are below the site cleanup level of 20mg/kg. Excavated soil will be dewatered and/or stabilized as needed and properly disposed in a permitted, off-site landfill. The depth of excavation ranges from 5 to 12 feet at the South Ditch and 2 to 4 feet at the West Ditch. Following excavation, all areas will be backfilled with clean fill, compacted, and planted according to the approved planting plan.

All subsurface work will be performed during the dry season when ditch water levels are at a seasonal low, there is minimal to no standing water present at the ground surface in the agricultural field, and rainfall is at a minimum.

Specific activities include:

- Installation of silt fence along boundaries of wetlands at both the West and South Ditches.
- Installation of construction fencing and traffic control at the South Ditch
- Establishment of stockpile areas at the South Ditch with barriers to prevent contact with underlying soils.
- Diversion of surface water in the both ditches around the project areas to maintain area-wide drainage. A diversion system will be set up even if no water is present in the ditches at the start of construction
- Removal of trees, vegetation and structures from the South Ditch excavation area. Trees to be cut at ground level with roots left in ground until excavation.
- Installation of shoring at South Ditch to protect adjacent property
- Excavation and removal of contaminated soil and root wads.
- Dewatering within the excavation areas as needed.
- Management and transport of dewatering water to owner's on-site groundwater treatment plant (GWTP) following pretreatment for solids removal to comply with GWTP influent requirements
- Management, transport, and disposal of contaminated soil, vegetation and demolition debris
- Backfilling and compaction of the excavation areas with borrow material
- Restoration and seeding of the West Ditch excavation area
- Restoration of paving, curbing, and landscaping at the South Ditch excavation
- Removal of all temporary surface water diversion structures, and erosion and sediment controls

Surface Water Diversion / Dewatering

The project site is located in the flat floodplain of lower Hylebos Creek where it flows into the lower Puyallup River valley. Groundwater is close to the surface and will likely be encountered during excavation. Ditches intercept high groundwater and collect surface water and ultimately flow towards Hylebos Creek. Despite the work occurring in the dry season, dewatering is anticipated. If water is present in either of the ditches during construction, it will be diverted around the work area during construction. Diversion structures will be installed upgradient of the work areas and silt dams located downgradient. The water will be dammed and diverted using diversion pumps and piping or similar means as necessary to control surface water flow into the work areas. Diverted water must meet water quality standards for turbidity. Water that collects in the ditches within the work area will require treatment and will not be discharged back to the ditch.

Site Restoration

Following excavation of the contaminated soils, the areas will be backfilled to pre-existing contours. Quarry spalls will be placed at the bottom of the excavation where the bottom is greater than 1 foot below the groundwater table and will extend up to 1 foot above the groundwater table. Select borrow material will be placed in the remainder of the excavation in 8 inch lifts and compacted after each lift. Imported Bioretention Topsoil will be used for the top 12 inches at the West Ditch and landscaped portions of the South Ditch. The West Ditch site will be seeded with a grass seed mix. At the South Ditch, the pavement, sidewalk and curbs will be replaced over a crushed surface base course and the balance of the disturbed area landscaped according to the landscape plan. Erosion control fabric shall be used to stabilize the ditch banks for all slopes greater than 2.5:1. Three inches of mulch will be applied to the South Ditch landscaped area.

Contaminated Site Information:

All excavated soils and dewatering water are assumed to be contaminated with arsenic. All soils will be transported off-site to an approved facility. Rootwads will also be transported off site. Soils may be stockpiled temporarily at the South Ditch site, but must be loaded directly onto trucks at the West Ditch. The following facilities have been pre-approved for disposal. Other disposal locations will require advance approval from the project engineer.

- Columbia Ridge Landfill
- Greater Wenatchee Landfill
- Roosevelt Regional Landfill

Trucks used for transport must be liquid certified so that water leaching out of the soil does not leak out of the truck.

Dewatering water will be transported and discharged to the GWTP but may require pre-treatment to remove suspended solids to meet the influent requirements of the GWTP. Temporary storage tanks will be used if needed to store and treat the dewatering water and to meter the flow into the GWTP.

Construction Sequence

- Establish construction access, staging, install construction fencing and silt fence
- Remove trees at South Ditch
- Install diversion dams and pumps on both ditches
- Establish transport of dewatering to GWTP
- Install shoring at South Ditch area
- Install remainder of BMPs
- Excavation and backfill at South Ditch
- Excavation and backfill at West Ditch
- Remove ditch diversions
- Final site stabilization, planting, remove remaining BMPs

2 Construction Stormwater Best Management Practices (BMPs)

The SWPPP is a living document reflecting current conditions and changes throughout the life of the project. These changes may be informal (i.e., hand-written notes and deletions). Update the SWPPP when the CESCL has noted a deficiency in BMPs or deviation from original design.

2.1 The 12 Elements

2.1.1 Element 1: Preserve Vegetation / Mark Clearing Limits

Prior to beginning land disturbing activities, including clearing and grading, IO will clearly mark with high visibility construction fencing all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area as shown in the TESC plans sheets. The clearing limits will be delineated before any clearing or grubbing can begin. All existing native vegetation (trees, bushes, shrubs, grasses) and the duff layer shall be preserved when removal is not necessary for excavation. High visibility construction fence will be used at the South Ditch to delineate the south work area boundary. Silt fence will be used at the edge of the work areas bordering wetlands at both the South Ditch and the West Ditch. The fencing adjacent to wetlands will be posted with signs indicating that no activities are allowed beyond the marked boundaries. Properties adjacent to the project site shall be fully protected from erosion and sediment deposition.

Vegetation (including trees) to be cleared from the excavation areas without disturbing surrounding soil. Trees will be cut as close as possible to ground surface, without removing roots. Root masses entrained with contaminated soil must be disposed of with excavated soil.

The BMPs that will be used to satisfy this element include:

C101	Preserving natural vegetation
C102	Buffer zones
C103	High visibility construction fence
C233	Silt fence

Installation Schedules:	All fencing shall be installed prior to earth disturbance or excavation
Inspection and Maintenance plan:	Daily inspection during construction
Responsible Staff:	CESCL, IO TESC Lead

2.1.2 Element 2: Establish Construction Access

Most of the work near the South Ditch can be accomplished from the existing pavement, limiting the potential for track out. Provisions will be made to minimize the transport of sediment and mud onto the paved roads. Only essential equipment will be allowed on disturbed areas. A stabilized construction entrance will be provided for vehicles accessing the West Ditch work area. Any sediment transported onto a road surface will be cleaned thoroughly as necessary during the day and at the end of each day using street sweepers. Prior to start of earth disturbing activities, the contractor shall coordinate adjacent apartments' driveway and parking area closures with the project engineer, and secure the work area with temporary fencing restricting public access.

Site access routes will be improved as necessary to control unintended transport of soil from the construction area to adjacent agricultural fields and public roadways. Crushed rock shall not be placed on the agricultural field roadways unless approved by the Engineer. Rumble plates will be used instead of spall at disturbed entrances.

Construction access BMPS that will be used at the site will be clearly shown on the TESC plan sheets, and include the following:

C105	Stabilized construction entrance
C107	Construction road/parking area stabilization
Other	Compaction of existing dirt roads
	Use existing pavement at South Ditch
	Rumble strips
	Crushed rock

A wheel wash is not specified on the plans. If the CESCL determines that the project is not adequately controlling track out using other methods, he/she may require that one be installed. No wash wastewater generated from TESC activities shall be discharged to stormwater or ditches or to the GWTP.

Installation Schedules:	Establish construction entrances prior to clearing or excavation
Inspection and Maintenance plan:	Daily inspection during use
Responsible Staff:	CESCL, IO TESC Lead

2.1.3 Element 3: Control Flow Rates

Will you construct stormwater retention and/or detention facilities?
☐ Yes ☒ No

Will you use permanent infiltration ponds or other low impact development (example: rain gardens, bio-retention, porous pavement) to control flow during construction?
☐ Yes ☒ No

Because the project sites are essentially flat, flow rates outside of the ditches are not likely to be a problem. Increases in storm water volumes are not anticipated. Prior to the start of excavation activities surface water influent to the South Ditch Work area from Wetland "A" and the South ditch west of the Work area will be dammed and diverted as necessary to control surface water flow into the Work area. Surface water in the West Ditch will also be dammed and diverted as necessary to control surface water flow into the Work area.

To avoid erosion at the discharge locations, energy dissipaters and/or dispersion controls will be installed as necessary at the effluent point to protect from scour and erosion. Influent surface water diversion pumps and piping will be sized appropriately to provide for redirection of reasonably anticipated stormwater flows that may enter the system during storm events.

Existing roadway runoff and stormwater passing to the site from off site will be isolated from the construction site runoff to prevent an increase in quantity of the stormwater delivered to the GWTP. Existing roadway stormwater will be routed around or tight lined through the project site to prevent soil erosion at existing discharge points.

The BMPs selected for this project to control stormwater flow rates include the following:

C203	Water bars
C209	Outlet protection (for ditch diversion)
C235	Wattles
C240	Sediment trap (ditch within work zone)
Other	Temporary conveyance to GWTP

Installation Schedules:	Install temporary dams and diversion prior to excavation
Inspection and Maintenance plan:	Daily inspection during diversion
Responsible Staff:	CESCL, IO TESC Lead

2.1.4 Element 4: Install Sediment Controls

Clearing and excavation is likely to result in temporary increases in sediment laden runoff. Most runoff will be directed to the ditches, which will be temporarily blocked to prevent the downstream discharge of turbid water. Turbid water that collects in the isolated portions of the ditches will be pumped to baker tanks for settling and then discharged to the on-site treatment system. Silt fence will be installed at the edges of the wetlands and along the agricultural field at the West Ditch. At the South Ditch, it may be necessary to install sediment controls in the paved area.

Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment on site will be installed and functional prior to any land disturbing activities. Source control for exposed slopes will be accomplished primarily through the use of slope covering and protection (e.g., vegetation, mulch, or mats).

Existing roadway runoff and stormwater passing to the site from off site will be isolated from the construction site runoff to prevent a decrease in quality of the stormwater delivered to the GWTP. Existing roadway stormwater will be routed around or tight lined through the project site to prevent soil erosion and an increase in sediment at existing discharge points. The construction site runoff will flow through temporary sediment control. These temporary BMPs will be implemented at the designated areas to provide stormwater treatment early in the grading and construction process. ESC facilities will be inspected daily and maintained as necessary to ensure their continued functioning.

Dust suppression in Work areas and along access roadways will be required to control dispersion of dust into the surrounding agricultural fields, public roadways, and the nearby Apartments property during the construction period. The Contractor shall use potable water to control dust.

The BMPs that may be used to satisfy this element include:

C233	Silt fence
C235	Wattles
C240	Sediment trap (ditch within work zone)
Others	Baker tanks for settling Plastic wrapped earthen berms Vacuum truck for paved areas

Installation Schedules:	BMPs intended to trap sediment on site shall be installed and functional prior to any land disturbing activities.
Inspection and Maintenance plan:	Daily inspection
Responsible Staff:	CESCL, IO TESC Lead

2.1.5 Element 5: Stabilize Soils

West of the Cascade Mountains Crest

Season	Dates	# of Days Soils Can be Left Exposed
During the Dry Season	May 1 – September 30	7 days
During the Wet Season	October 1 – April 30	2 days

Soils must be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

Anticipated project dates: Start date: August 15, 2015 End date: October 15, 2015

Will you construct during the wet season? ☐ Yes ☒ No

The project schedule was constrained to limit major earthwork activities to the dry season. All work will be complete by October 15, 2015. No exposed and un-worked soils shall remain un-stabilized or exposed for more than 2 days after October 1 and 7 days between August 1 and September 30. Areas where soil will be un-worked and which have been temporarily stabilized shall be covered if the soil remains un-worked for more than 30 days. In addition, soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast. The TESC team will assess the risk for increased erosion and sediment transport due to predicted weather conditions. Stockpiled materials will be stabilized and covered when not in use.

Soils removed from the South Ditch excavation area shall be stockpiled such that they do not contact native soils and so that no runoff from the stockpiles enters the soil. Piles will be covered to prevent this from occurring if any rain is forecast. Soils from the West Ditch may not be stockpiled and must be loaded directly on trucks. Ditch slopes will be stabilized with geotextile as needed and then seeded following excavation.

The BMPs selected for this project to address soil stabilization requirements are shown on the site plans and include the following:

C120	Permanent seeding and planting
C121	Mulching
C122	Nets and blankets
C123	Plastic Covering
C125	Topsoil and Compost
C140	Dust control
C162	Scheduling

Installation Schedules:	Construction interval
Inspection and Maintenance plan:	Daily inspection during active work
Responsible Staff:	CESCL, IO TESC Lead

2.1.6 Element 6: Protect Slopes

Will steep slopes be present at the site during construction?

☐ Yes ☒ No

The site is basically flat except for the ditch banks. Excavation may result in some temporary steep cut slopes.

Exposed ditch slopes will be stabilized if needed with plastic sheeting or geotextile prior to seeding.

The following BMPs will be implemented to minimize erosion on ditch slopes:

C120	Permanent seeding and planting
C121	Mulching
C122	Nets and blankets
C123	Plastic covering

Installation Schedules:	Construction interval
Inspection and Maintenance plan:	Daily inspection
Responsible Staff:	CESCL, IO TESC Lead

2.1.7 Element 7: Protect Drain Inlets

There is an inlet in the driveway to the Apartment complex that will require protection. No other drain inlets have been identified.This inlet will be plugged during active work. Any accumulated stormwater will be collected and managed.

The following are included as potential BMPs for storm drain inlets:

C220 Storm drain inlet protection (plugging)

Installation Schedules:	Prior to clearing, demolition, grading or excavation
Inspection and Maintenance plan:	At least weekly
Responsible Staff:	CESCL, IO TESC Lead

2.1.8 Element 8: Stabilize Channels and Outlets

The existing ditches are designed, constructed, and stabilized to prevent erosion from the peak flow of a 10-year, 24-hour frequency storm. However, these will not be used during construction to convey runoff to downstream portions of the ditch. Water in the ditches will be diverted around the work areas. The outlet of the diversion will be stabilized to prevent erosion using energy dissipaters and/or dispersion controls as necessary to protect from scour and erosion.

Dewatering of the excavation and water collected in the isolated ditch sections will be transported to the GWTP via temporary piping or baker tanks. Lining of the ditches with geotextile may be used following excavation to stabilize the ditch banks.

C122	Nets and blankets
C202	Channel Lining
C209	Outlet protection

Installation Schedules:	Prior to excavations as part of diversion setup, final ditch channel stabilization
Inspection and Maintenance plan:	During diversion and upon completion
Responsible Staff:	CESCL, IO TESC Lead

2.1.9 Element 9: Control Pollutants

The following pollutants are anticipated to be present on-site:

Table 2 – Pollutants

Pollutant (List pollutants and source, if applicable)
Arsenic – soils and groundwater
Concrete saw cutting – removal of sidewalks
High pH from concrete curing

Will maintenance, fueling, and/or repair of heavy equipment and vehicles occur on-site?
☒ Yes ☐ No

Fueling will be conducted in a controlled area of the apartment complex parking lot. Maintenance will be performed on-site to avoid transporting contaminated soils off-site.

Will wheel wash or tire bath system BMPs be used during construction?
☐ Yes ☐ No ☒Possibly

A wheel wash will be used if other methods are not effective in controlling washout. Any wheel wash water will be collected and disposed of off-site.

Will pH-modifying sources be present on-site?
☒ Yes ☐ No

Table 3 – pH-Modifying Sources

☐	None
☐	Bulk cement
☐	Cement kiln dust
☐	Fly ash
☒	Other cementitious materials – may use dry concrete for soil stabilization
☒	New concrete washing or curing waters
☒	Waste streams generated from concrete grinding and sawing
☐	Exposed aggregate processes
☐	Dewatering concrete vaults
☐	Concrete pumping and mixer washout waters
☐	Recycled concrete
☐	Other (i.e., calcium lignosulfate) [please describe:]

All pollutants, including construction materials, waste materials, and demolition debris will be handled and disposed of properly. If these materials are not to be removed from the site immediately they will be stockpiled and covered to prevent the contamination of stormwater.

Excavated soils will be transported to an approved facility for disposal. Dewatering of the excavations will be sent to the GWTP. Water that collects in the isolated ditch sections that

may be impacted by arsenic will also be sent to the GWTP. Fueling and maintenance will be conducted in a controlled area of the apartment parking lot. Pollutants that are considered hazardous materials will be controlled as described in the Spill Prevention Control and Countermeasures (SPCC) plan. Spill prevention supplies will be kept on site at all times. Storage of any potentially hazardous materials or pollutants shall not occur within 100 feet of any wetland or drainage way.

Equipment decontamination procedures will be implemented to control incidental transport of contaminated material from the construction area. Rumble strips and sweeping/cleaning will be used to ensure that contaminated soil is not transported to surfaces outside the construction areas. Earthmoving equipment that has come in contact with contaminated soil will not exit the work area until decontaminated. Solid waste generated by decontamination procedures shall be disposed of with excavated soil. Liquid waste generated during decontamination shall be hauled from the site for off-site disposal at a facility approved by the project engineer.

Before vehicles or equipment leave the active work areas, soil shall b e removed from the tires and bodies so that it is not deposited or tracked onto private or public roads outside the work area. If soil or debris is tracked from the work areas, it will be cleaned up immediately; any observed soil/dust tracked onto public roadways must be removed daily.

Any potentially high pH runoff from concrete curing or washout will be collected and discharged to an approved off-site disposal location. Concrete washout will be done either in Ecopans or at an approved washout area on or offsite. Concrete trucks will not be washed out onto the ground, or into storm drains, open ditches, or streets. Excess concrete will not be dumped on-site, except in designated concrete washout areas with appropriate BMPs installed.

The BMPs that will be used to control pollutants include the following:

C140	Dust control
C153	Material delivery, storage, and containment
C106	Wheel wash
C151	Concrete Handling
C152	Sawcutting and surfacing pollution prevention
C154	Concrete washout area, Ecopans

Installation Schedules:	Construction interval
Inspection and Maintenance plan:	Daily inspection during active work
Responsible Staff:	CESCL, IO TESC Lead

2.1.10 Element 10: Control Dewatering

Dewatering is anticipated within both the South and West Ditch work areas, due to the relatively high local water table. Groundwater that may seep into work areas is likely to be contaminated with arsenic. Direct discharge of dewatering water from the active work areas to the ditches is not allowed. It is anticipated that dewatering will be discharged to the GWTP. Following treatment, it may be discharged if all effluent complies with federal, state, and local regulations and permits.

Excavated soils may also be dewatered prior to loading in trucks for disposal at the South Ditch. Any soil dewatering areas shall be protected from erosion using berms, bales, or equivalent.

Table 4 – Dewatering BMPs

☒	Infiltration – into excavation or isolated ditch section
☒	Transport off-site in a vehicle (vacuum truck for legal disposal)
☒	Ecology-approved on-site chemical treatment or other suitable treatment technologies
☐	Sanitary or combined sewer discharge with local sewer district approval (last resort)
☐	Use of sedimentation bag with discharge to ditch or swale (small volumes of localized dewatering)
☒	Baker tanks for settling solids Sealed and bermed areas for soil dewatering

Water from de-watering will be conveyed or pumped to temporary holding tanks or directly to the GWTP. Individual work plans will be developed as necessary to address specific de-watering methods associated with different construction processes. All water collected from the active Work areas must be treated for arsenic removal prior to discharge on-site. The contractor may use the on-site GWTP for treatment.

Discharge to the GWTP must meet all requirements as specified for use of this facility, which include a TSS concentration of less than 25 mg/L.

BMPs shown that will be implemented to treat dewatering water include:

Other On-site GWTP
Baker tanks for settling
Pump system to GWTP

Installation Schedules:	Construction active excavations
Inspection and Maintenance plan:	All dewatering and pre-treatment systems will be inspected daily for leaks and condition.
Responsible Staff:	CESCL, IO TESC Lead,

2.1.11 Element 11: Maintain BMPs

All temporary and permanent Erosion and Sediment Control (ESC) BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function.

Maintenance and repair shall be conducted in accordance with each particular BMP specification (*Volume II of the SWMMWW)*

Visual monitoring of all BMPs installed at the site will be conducted at least once every calendar week and within 24 hours of any stormwater or non-stormwater discharge from the site.

The following materials will be on-site for use if needed:

- Plastic sheeting
- Silt fencing
- Straw bales
- Drain pipe
- Sand bags

All temporary ESC BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

Trapped sediment shall be removed unless arsenic levels are below clean-up. Disturbed soil resulting from removal of either BMPs or vegetation shall be permanently stabilized. Soil and/or accumulated sediment removed during BMP maintenance shall be managed as excavated soil.

The following BMPs will be used

C150 Materials on Hand

C160 Certified Erosion and Sediment Control Lead

Installation Schedules:	Entire project
Inspection and Maintenance plan:	Daily or as needed
Responsible Staff:	CESCL, IO TESC Lead

2.1.12 Element 12: Manage the Project

The project will be managed based on the following principles:

- Project has been designed to occur during the dry summer/early fall months. Excavations will be phased to limit the volume of soil and/or dewatering requiring handling at any given time.
- Inspection and monitoring:
    - Inspection, maintenance and repair of all BMPs will occur as needed to ensure performance of their intended function.
    - Site inspections and monitoring will be conducted in accordance with Special Condition S4 of the CSWGP. Sampling locations are indicated on the Site Map. Sampling station(s) are located in accordance with applicable requirements of the CSWGP.
- Maintain an updated SWPPP.
    - The SWPPP will be updated, maintained, and implemented in accordance with Special Conditions S3, S4, and S9 of the CSWGP.

As site work progresses the SWPPP will be modified routinely to reflect changing site conditions. The SWPPP will be reviewed monthly to ensure the content is current.

Table 5 – Management

☒	Design the project to fit the existing topography, soils, and drainage patterns
☒	Emphasize erosion control rather than sediment control
☒	Minimize the extent and duration of the area exposed
☒	Keep runoff velocities low
☒	Retain sediment on-site
☒	Thoroughly monitor site and maintain all ESC measures
☒	Schedule major earthwork during the dry season
☒	Other (Utilize on-site GWTP)

Installation Schedules:	Entire project
Inspection and Maintenance plan:	Daily
Responsible Staff:	Project manager, CESCL, IO TESC Lead

3 Pollution Prevention Team

Table 6 – Team Information

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	William Beaulieu Erin Murray	206-292-2078 206-292-2078
Resident Engineer	Megan McCullough	206-292-2078
Emergency Ecology Contact	Carol Serdar carol.serdar@ecy.wa.gov	360-407-6269
Emergency Permittee/ Owner Contact	Lisa Meoli, Floyd/Snider	206-292-2078
Non-Emergency Owner Contact	Dan Silver, B&L Woodwaste Site Custodial Trust	
Monitoring Personnel	Floyd/Snider	206-292-2078
Ecology Regional Office	Southwestern WA Regional Office	360-407-6300

4 Monitoring and Sampling Requirements

Monitoring includes visual inspection, sampling for water quality parameters of concern, and documentation of the inspection and sampling findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Stormwater sampling data

The site inspection form is under Appendix D.

The site log book must be maintained on-site within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

Numeric effluent limits may be required for certain discharges to 303(d) listed waterbodies. See CSWGP Special Condition S8 and Section 5 of this template.

4.1 Site Inspection

Site inspections will be conducted at least once every calendar week and within 24 hours following any discharge from the site. For sites that are temporarily stabilized and inactive, the required frequency is reduced to once per calendar month.

The discharge point(s) are indicated on the Site Map (see Appendix A) and in accordance with the applicable requirements of the CSWGP.

4.2 Stormwater Quality Sampling

4.2.1 Turbidity Sampling

Requirements include calibrated turbidity meter or transparency tube to sample site discharges for compliance with the CSWGP. Sampling will be conducted at all discharge points at least once per calendar week or anytime stormwater discharges from the site.

Method for sampling turbidity:

Table 7 – Turbidity Sampling Method

☒	Turbidity Meter/Turbidimeter (required for disturbances 5 acres or greater in size)
☒	Transparency Tube (option for disturbances less than 1 acre and up to 5 acres in size)

The benchmark for turbidity value is 25 nephelometric turbidity units (NTU) and a transparency less than 33 centimeters.

If the discharge's turbidity is 26 to 249 NTU **or** the transparency is less than 33 cm but equal to or greater than 6 cm, the following steps will be conducted:

1. Review the SWPPP for compliance with Special Condition S9. Make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
3. Document BMP implementation and maintenance in the site log book.

If the turbidity exceeds 250 NTU **or** the transparency is 6 cm or less at any time, the following steps will be conducted:

1. Telephone the applicable Ecology Region's Environmental Report Tracking System (ERTS) number within 24 hours.

    - **Southwest Region** (Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum,): (360) 407-6300
    -

2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period
3. Document BMP implementation and maintenance in the site log book.
4. Continue to sample discharges daily until one of the following is true:
    - Turbidity is 25 NTU (or lower).
    - Transparency is 33 cm (or greater).
    - Compliance with the water quality limit for turbidity is achieved.
        - 1 - 5 NTU over background turbidity, if background is less than 50 NTU
        - 1% - 10% over background turbidity, if background is 50 NTU or greater
    - The discharge stops or is eliminated.

4.2.2 pH Sampling

pH monitoring is required for “Significant concrete work” (i.e., greater than 1000 cubic yards poured or recycled concrete over the life of the project). The use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD] or fly ash) also requires pH monitoring.

This project does not include more than 1000 cubic yards of concrete. No pH sampling should be required.

5 Discharges to 303(d) or Total Maximum Daily Load (TMDL) Waterbodies

5.1 303(d) Listed Waterbodies

Is the receiving water 303(d) (Category 5) listed for turbidity, fine sediment, phosphorus, or pH?

☐ Yes ☒ No

List the impairment(s):

Hylebos Creek is listed for dissolved oxygen and low bioassessment score

5.2 TMDL Waterbodies

Waste Load Allocation for CWSGP discharges:

NO TMDL

List and describe BMPs:

N/A

Discharges to TMDL receiving waterbodies will meet in-stream water quality criteria at the point of discharge.

The Construction Stormwater General Permit Proposed New Discharge to an Impaired Water Body form is included in Appendix F.

6 Reporting and Record Keeping

6.1 Record Keeping

6.1.1 Site Log Book

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Sample logs

6.1.2 Records Retention

Records will be retained during the life of the project and for a minimum of three (3) years following the termination of permit coverage in accordance with Special Condition S5.C of the CSWGP.

Permit documentation to be retained on-site:

- CSWGP
- Permit Coverage Letter
- SWPPP
- Site Log Book

Permit documentation will be provided within 14 days of receipt of a written request from Ecology. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with Special Condition S5.G.2.b of the CSWGP.

6.1.3 Updating the SWPPP

The SWPPP will be modified if:

- Found ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site.
- There is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

The SWPPP will be modified within seven (7) days if inspection(s) or investigation(s) determine additional or modified BMPs are necessary for compliance. An updated timeline for BMP implementation will be prepared.

6.2 Reporting

6.2.1 Discharge Monitoring Reports

Cumulative soil disturbance is one (1) acre or larger; therefore, Discharge Monitoring Reports (DMRs) will be submitted to Ecology monthly. If there was no discharge during a given monitoring period the DMR will be submitted as required, reporting "No Discharge". The DMR due date is fifteen (15) days following the end of each calendar month.

DMRs will be reported online through Ecology's WQWebDMR System.

6.2.2 Notification of Noncompliance

If any of the terms and conditions of the permit is not met, and the resulting noncompliance may cause a threat to human health or the environment, the following actions will be taken:

1. Ecology will be immediately notified of the failure to comply by calling the applicable Regional office ERTS phone number (Regional office numbers listed below).
2. Immediate action will be taken to prevent the discharge/pollution or otherwise stop or correct the noncompliance. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

Anytime turbidity sampling indicates turbidity is 250 NTUs or greater, or water transparency is 6 cm or less, the Ecology Regional office will be notified by phone within 24 hours of analysis as required by Special Condition S5.A of the CSWGP.

- **Southwest Region** at (360) 407-6300 for Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, or Wahkiakum

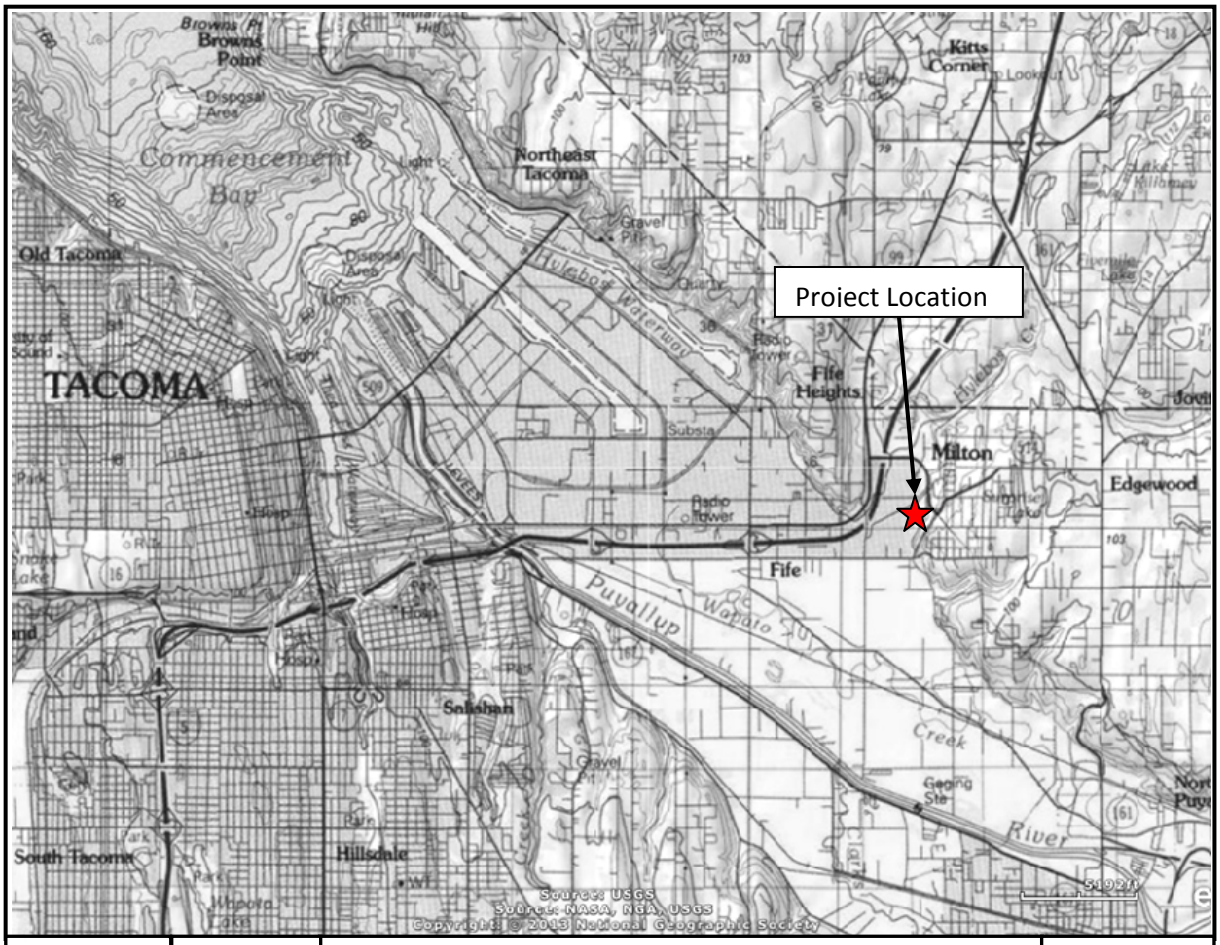
Include the following information:

1. Your name and / Phone number
2. Permit number
3. City / County of project
4. Sample results
5. Date / Time of call
6. Date / Time of sample
7. Project name

In accordance with Special Condition S4.D.5.b of the CSWGP, the Ecology Regional office will be notified if chemical treatment other than CO_2 sparging is planned for adjustment of high pH water.

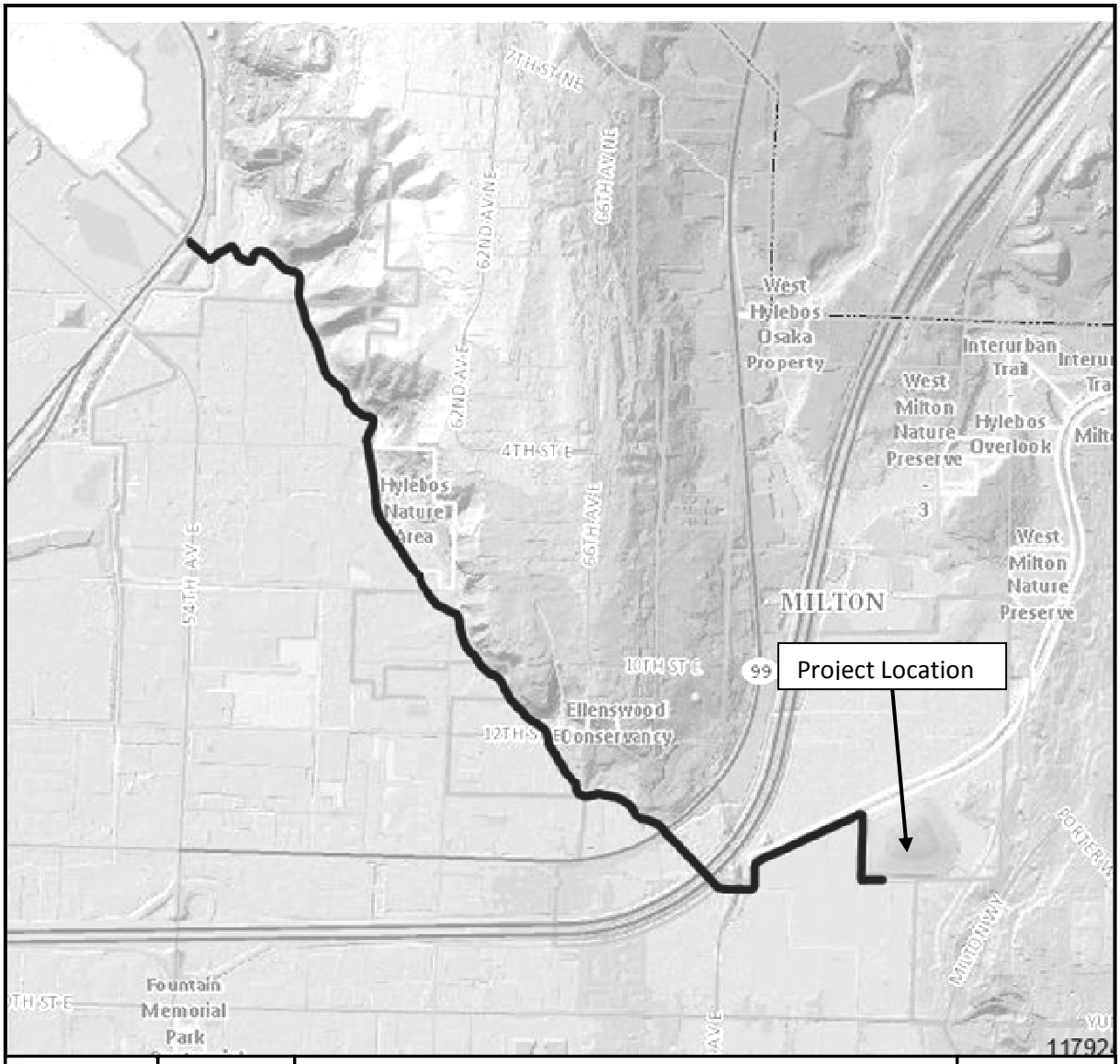
Figures

Figure 1. Project Vicinity Map



ENVIRONMENTAL & INFRASTRUCTURE INC.	Date: July 2015	Project Vicinity Map B&L Woodwaste Landfill Milton, Washington	**FIGURE 1**

Figure 2 – Site Drainage Map



ENVIRONMENTAL & INFRASTRUCTURE INC.	Date: July 2015	Site Drainage Map B&L Woodwaste Landfill Milton, Washington	**FIGURE 2**

Appendices

A. Site Plans
B. Project Specific BMP Details
C. Correspondence
D. Site Inspection Form
E. Construction Stormwater General Permit (CSWGP)
F. 303(d) List Waterbodies / TMDL Waterbodies Information
G. Contaminated Site Information
   Soil and Groundwater Contamination Report
   Maps and Figures Depicting Contamination
   Soil Management Plan

Appendix A – Site Plans

Appendix B – Site Specific BMPs

C101	Preserving natural vegetation
C102	Buffer zones
C103	High visibility construction fence
C105	Stabilized construction entrance
C106	Wheel wash
C107	Construction road/parking area stabilization
C120	Permanent seeding and planting
C120	Permanent seeding and planting
C121	Mulching
C122	Nets and blankets
C123	Plastic covering
C125	Topsoil and compost
C140	Dust control
C150	Materials on hand
C151	Concrete handling
C152	Sawcutting and surfacing pollution prevention
C153	Material delivery, storage, and containment
C154	Concrete washout area
C160	Certified Erosion and Sediment Control Lead
C162	Scheduling
C202	Channel lining
C203	Water bars
C209	Outlet protection (for ditch diversion)
C220	Storm drain inlet protection
C233	Silt fence
C235	Wattles
C240	Sediment trap (ditch within work zone)

Appendix C – Correspondence

Appendix D – Site Inspection Form

Construction Stormwater Site Inspection Form

Project Name: **B&L Landfill South & West Ditch Bank Excavation**
Permit # _____ Inspection Date: _____ Time _____

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: _____

Approximate rainfall amount since the last inspection (in inches): _____

Approximate rainfall amount in the last 24 hours (in inches): _____

Current Weather Clear ☐ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☐ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐	Clearing/Demo/Grading	☐	Infrastructure/storm/roads	☐
Concrete pours	☐	Vertical Construction/buildings	☐	Utilities	☐
Offsite improvements	☐	Site temporary stabilized	☐	Final stabilization	☐

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ___	No ___
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ___	No ___
3. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ___	No ___
4. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ___	No ___
5. If yes to #4 was it reported to Ecology?	Yes ___	No ___
6. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ___	No ___

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

_____

_____

_____

_____

_____

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date: _____

Sampling Location	Parameter	Method	Result			Notes / Comments
			NTU	cm	pH	

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)						
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?						
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.						
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?						
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?						
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).						
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.						
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.						
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?						
	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?						
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?						
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?						
	Is off-site storm water managed separately from stormwater generated on the site?						
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?						
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?						

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
7 Drain Inlets	Storm drain inlets made operable during construction are protected.						
	Are existing storm drains within the influence of the project protected?						
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?						
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?						
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?						
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?						
	Has secondary containment been provided capable of containing 110% of the volume?						
	Were contaminated surfaces cleaned immediately after a spill incident?						
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?						
	Wheel wash wastewater is handled and disposed of properly.						
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.						
	Dewatering has been done to an approved source and in compliance with the SWPPP.						
	Were there any clean non turbid dewatering discharges?						
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?						
12 Manage the Project	Has the project been phased to the maximum degree practicable?						
	Has regular inspection, monitoring and maintenance been performed as required by the permit?						
	Has the SWPPP been updated, implemented and records maintained?						

E. Check all areas that have been inspected. ✔

All in place BMPs ☐ All disturbed soils ☐ All concrete wash out area ☐ All material storage areas ☐

All discharge locations ☐ All equipment storage areas ☐ All construction entrances/exits ☐

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Photographs taken? Yes_____ No_____

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) _____ (Signature) _____ Date: _____
Title/Qualification of Inspector: _____

Appendix E – Construction Stormwater General Permit

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

July 23, 2015

Dan Silver
B&L Woodwaste Site Custodial Trust
606 Columbia St NW
Olympia WA 98501

RE: Coverage under the Construction Stormwater General Permit

Permit number:	**WAR303284**	
Site Name:	**B&L Landfill**	
Location:	**522 Fife Way E**	
	Milton, WA	**County: Pierce**
Disturbed Acres:	**0.18**	

Dear Mr. Silver:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (permit). This is your permit coverage letter. Your permit coverage is effective on July 23, 2015. **Please retain this permit coverage letter with your permit (enclosed), stormwater pollution prevention plan (SWPPP), and site log book. These materials are the official record of permit coverage for your site.**

Please take time to read the entire permit and contact Ecology if you have any questions.

Appeal Process
You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this letter. This appeal is limited to the general permit's applicability or non-applicability to a specific discharger. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do the following within 30 days of the date of receipt of this letter:

- File your appeal and a copy of the permit cover page with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and the permit cover page on Ecology in paper form – by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

Address and Location Information:

Street Addresses:	**Mailing Addresses:**
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board (PCHB) 1111 Israel Road SW, Suite 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Electronic Discharge Monitoring Reports (WQWebDMR)
This permit requires that Permittees submit monthly discharge monitoring reports (DMRs) electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to: www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html. If you have questions, contact the portal staff at (360) 407-7097 (Olympia area), or (800) 633-6193/option 3, or email WQWebPortal@ecy.wa.gov.

Ecology Field Inspector Assistance
If you have questions regarding stormwater management at your construction site, please contact Carol Serdar of Ecology's Southwest Regional Office in Lacey at carol.serdar@ecy.wa.gov or (360) 407-6269.

Questions or Additional Information
Ecology is committed to providing assistance. Please review our web page at: www.ecy.wa.gov/programs/wq/stormwater/construction. If you have questions about the construction stormwater general permit, please contact Josh Klimek at josh.klimek@ecy.wa.gov or (360) 407-7451.

Sincerely,

Kathleen Emmett for Bill Moore

Bill Moore, P.E., Manager
Program Development Services Section
Water Quality Program

Enclosure

Issuance Date: December 1, 2010
Effective Date: January 1, 2011
Expiration Date: December 31, 2015

CONSTRUCTION STORMWATER GENERAL PERMIT

National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity

State of Washington
Department of Ecology
Olympia, Washington 98504

In compliance with the provisions of
Chapter 90.48 Revised Code of Washington
(State of Washington Water Pollution Control Act)
and
Title 33 United States Code, Section 1251 et seq.
The Federal Water Pollution Control Act (The Clean Water Act)

Until this permit expires, is modified or revoked, Permittees that have properly obtained coverage under this general permit are authorized to discharge in accordance with the special and general conditions that follow.

Kelly Susewind, P.E., P.G.
Water Quality Program Manager
Washington State Department of Ecology

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LIST OF TABLES

SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions within this permit for additional submittal requirements. Appendix A provides a list of definitions. Appendix B provides a list of acronyms.

Table 1. Summary of Permit Report Submittals

Permit Section	Submittal	Frequency	First Submittal Date
S5.A and S8	High Turbidity/Transparency Phone Reporting	As Necessary	Within 24 hours
S5.B	Discharge Monitoring Report	Monthly*	Within 15 days of applicable monitoring period
S5.F and S8	Noncompliance Notification	As necessary	Immediately
S5.F	Noncompliance Notification – Written Report	As necessary	Within 5 Days of non-compliance
G2.	Notice of Change in Authorization	As necessary	
G6.	Permit Application for Substantive Changes to the Discharge	As necessary	
G8.	Application for Permit Renewal	1/permit cycle	No later than 180 days before expiration
G9.	Notice of Permit Transfer	As necessary	
G20.	Notice of Planned Changes	As necessary	
G22.	Reporting Anticipated Non-compliance	As necessary	

SPECIAL NOTE: *Permittees must submit Discharge Monitoring Reports (DMRs) to the Washington State Department of Ecology monthly, regardless of site discharge, for the full duration of permit coverage. Refer to Section S5.B of this General Permit for more specific information regarding DMRs.

Table 2. Summary of Required On-site Documentation

Document Title	Permit Conditions
Permit Coverage Letter	See Conditions S2, S5
Construction Stormwater General Permit	See Conditions S2, S5
Site Log Book	See Conditions S4, S5
Stormwater Pollution Prevention Plan (SWPPP)	See Conditions S9, S5

SPECIAL CONDITIONS

S1. PERMIT COVERAGE

A. Permit Area

This Construction Stormwater General Permit (CSWGP) covers all areas of Washington State, except for federal and Tribal lands as specified in Special Condition S1.E.3.

B. Operators Required to Seek Coverage Under this General Permit:

1. Operators of the following construction activities are required to seek coverage under this CSWGP:

   a. Clearing, grading and/or excavation that results in the disturbance of one or more acres and discharges stormwater to surface waters of the State; and clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.

      i. This includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, and discharge to surface waters of the State (that is, forest practices that prepare a site for construction activities); and

   b. Any size construction activity discharging stormwater to waters of the State that the Department of Ecology ("Ecology"):

      i. Determines to be a significant contributor of pollutants to waters of the State of Washington.

      ii. Reasonably expects to cause a violation of any water quality standard.

2. Operators of the following activities are not required to seek coverage under this CSWGP (unless specifically required under Special Condition S1.B.1.b. above):

   a. Construction activities that discharge all stormwater and non-stormwater to ground water, sanitary sewer, or combined sewer, and have no point source discharge to either surface water or a storm sewer system that drains to surface waters of the State.

   b. Construction activities covered under an Erosivity Waiver (Special Condition S2.C).

   c. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

C. Authorized Discharges:

1. Stormwater Associated with Construction Activity. Subject to compliance with the terms and conditions of this permit, Permittees are authorized to discharge stormwater associated with construction activity to surface waters of the State or to a storm sewer system that drains to surface waters of the State. (Note that "surface waters of the State" may exist on a construction site as well as off site; for example, a creek running through a site.)

2. Stormwater Associated with Construction Support Activity. This permit also authorizes stormwater discharge from support activities related to the permitted construction site (for example, an on-site portable rock crusher, off-site equipment staging yards, material storage areas, borrow areas, etc.) provided:

   a. The support activity relates directly to the permitted construction site that is required to have a NPDES permit; and

   b. The support activity is not a commercial operation serving multiple unrelated construction projects, and does not operate beyond the completion of the construction activity; and

   c. Appropriate controls and measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) for the discharges from the support activity areas.

3. Non-Stormwater Discharges. The categories and sources of non-stormwater discharges identified below are authorized conditionally, provided the discharge is consistent with the terms and conditions of this permit:

   a. Discharges from fire-fighting activities.

   b. Fire hydrant system flushing.

   c. Potable water, including uncontaminated water line flushing.

   d. Pipeline hydrostatic test water.

   e. Uncontaminated air conditioning or compressor condensate.

   f. Uncontaminated ground water or spring water.

   g. Uncontaminated excavation dewatering water (in accordance with S9.D.10).

   h. Uncontaminated discharges from foundation or footing drains.

   i. Water used to control dust. Permittees must minimize the amount of dust control water used.

   j. Routine external building wash down that does not use detergents.

   k. Landscape irrigation water.

   The SWPPP must adequately address all authorized non-stormwater discharges, except for discharges from fire-fighting activities, and must comply with Special

Condition S3. At a minimum, discharges from potable water (including water line flushing), fire hydrant system flushing, and pipeline hydrostatic test water must undergo the following: dechlorination to a concentration of 0.1 parts per million (ppm) or less, and pH adjustment to within 6.5 – 8.5 standard units (su), if necessary.

D. Prohibited Discharges:

The following discharges to waters of the State, including ground water, are prohibited.

1. Concrete wastewater.
2. Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
3. Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.1 (see Appendix A of this permit).
4. Slurry materials and waste from shaft drilling.
5. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
6. Soaps or solvents used in vehicle and equipment washing.
7. Wheel wash wastewater, unless discharged according to Special Condition S9.D.9.d.
8. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to Special Condition S9.D.10.

E. Limits on Coverage

Ecology may require any discharger to apply for and obtain coverage under an individual permit or another more specific general permit. Such alternative coverage will be required when Ecology determines that this CSWGP does not provide adequate assurance that water quality will be protected, or there is a reasonable potential for the project to cause or contribute to a violation of water quality standards.

The following stormwater discharges are not covered by this permit:

1. Post-construction stormwater discharges that originate from the site after completion of construction activities and the site has undergone final stabilization.
2. Non-point source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance, from which there is natural runoff as excluded in 40 CFR Subpart 122.
3. Stormwater from any federal project or project on federal land or land within an Indian Reservation except for the Puyallup Reservation. Within the Puyallup

Reservation, any project that discharges to surface water on land held in trust by the federal government may be covered by this permit.

4. Stormwater from any site covered under an existing NPDES individual permit in which stormwater management and/or treatment requirements are included for all stormwater discharges associated with construction activity.

5. Stormwater from a site where an applicable Total Maximum Daily Load (TMDL) requirement specifically precludes or prohibits discharges from construction activity.

S2. APPLICATION REQUIREMENTS

A. Permit Application Forms

1. Notice of Intent Form/Timeline

a. Operators of new or previously unpermitted construction activities must submit a complete and accurate permit application (Notice of Intent, or NOI) to Ecology.

b. The operator must submit the NOI at least 60 days before discharging stormwater from construction activities and must submit it on or before the date of the first public notice (see Special Condition S2.B below for details). The 30-day public comment period required by WAC 173-226-130(5) begins on the publication date of the second public notice. Unless Ecology responds to the complete application in writing, based on public comments, or any other relevant factors, coverage under the general permit will automatically commence on the thirty-first day following receipt by Ecology of a completed NOI, or the issuance date of this permit, whichever is later, unless Ecology specifies a later date in writing.

c. Applicants who propose to discharge to a storm or sewer system operated by Seattle, King County, Snohomish County, Tacoma, Pierce County, or Clark County must also submit a copy of the NOI to the appropriate jurisdiction.

d. If an applicant intends to use a Best Management Practice (BMP) selected on the basis of Special Condition S9.C.4 (“demonstrably equivalent” BMPs), the applicant must notify Ecology of its selection as part of the NOI. In the event the applicant selects BMPs after submission of the NOI, it must provide notice of the selection of an equivalent BMP to Ecology at least 60 days before intended use of the equivalent BMP.

e. Permittees must notify Ecology regarding any changes to the information provided on the NOI by submitting an updated NOI. Examples of such changes include, but are not limited to,

i. changes to the Permittee’s mailing address,

ii. changes to the on-site contact person information, and

iii. changes to the area/acreage affected by construction activity.

2. Transfer of Coverage Form

The Permittee can transfer current coverage under this permit to one or more new operators, including operators of sites within a Common Plan of Development, provided the Permittee submits a Transfer of Coverage Form in accordance with General Condition G9. Transfers do not require public notice.

B. Public Notice

For new or previously unpermitted construction activities, the applicant must publish a public notice at least one time each week for two consecutive weeks, at least 7 days apart, in a newspaper with general circulation in the county where the construction is to take place. The notice must contain:

1. A statement that "The applicant is seeking coverage under the Washington State Department of Ecology's Construction Stormwater NPDES and State Waste Discharge General Permit."

2. The name, address and location of the construction site.

3. The name and address of the applicant.

4. The type of construction activity that will result in a discharge (for example, residential construction, commercial construction, etc.), and the number of acres to be disturbed.

5. The name of the receiving water(s) (that is, the surface water(s) to which the site will discharge), or, if the discharge is through a storm sewer system, the name of the operator of the system.

6. The statement: "Any persons desiring to present their views to the Washington State Department of Ecology regarding this application, or interested in Ecology's action on this application, may notify Ecology in writing no later than 30 days of the last date of publication of this notice. Ecology reviews public comments and considers whether discharges from this project would cause a measurable change in receiving water quality, and, if so, whether the project is necessary and in the overriding public interest according to Tier II antidegradation requirements under WAC 173-201A-320. Comments can be submitted to: Department of Ecology, P.O. Box 47696, Olympia, WA 98504-7696 Attn: Water Quality Program, Construction Stormwater."

C. Erosivity Waiver

Construction site operators may qualify for an erosivity waiver from the CSWGP if the following conditions are met:

1. The site will result in the disturbance of fewer than 5 acres and the site is not a portion of a common plan of development or sale that will disturb 5 acres or greater.

2. Calculation of Erosivity "R" Factor and Regional Timeframe:

   a. The project's rainfall erosivity factor ("R" Factor) must be less than 5 during the period of construction activity, as calculated using either the Texas A&M University online rainfall erosivity calculator at: http://ei.tamu.edu/ or EPA's calculator at http://cfpub.epa.gov/npdes/stormwater/lew/lewcalculator.cfm. The period of construction activity starts when the land is first disturbed and ends with final stabilization. In addition:

   b. The entire period of construction activity must fall within the following timeframes:

      i. For sites west of the Cascades Crest: June 15 – September 15.

      ii. For sites east of the Cascades Crest, excluding the Central Basin: June 15 – October 15.

      iii. For sites east of the Cascades Crest, within the Central Basin: no additional timeframe restrictions apply. The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches. For a map of the Central Basin (Region 2), refer to http://www.ecy.wa.gov/pubs/ecy070202.pdf.

3. Construction site operators must submit a complete Erosivity Waiver certification form at least one week before disturbing the land. Certification must include statements that the operator will:

   a. Comply with applicable local stormwater requirements; and

   b. Implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.

4. This waiver is not available for facilities declared significant contributors of pollutants as defined in Special Condition S1.B.1.b.

5. This waiver does not apply to construction activities which include non-stormwater discharges listed in Special Condition S1.C.3.

6. If construction activity extends beyond the certified waiver period for any reason, the operator must either:

   a. Recalculate the rainfall erosivity "R" factor using the original start date and a new projected ending date and, if the "R" factor is still under 5 and the entire

project falls within the applicable regional timeframe in Special Condition S2.C.2.b, complete and submit an amended waiver certification form before the original waiver expires; or

b. Submit a complete permit application to Ecology in accordance with Special Condition S2.A and B before the end of the certified waiver period.

S3. COMPLIANCE WITH STANDARDS

A. Discharges must not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges not in compliance with these standards are not authorized.

B. Prior to the discharge of stormwater and non-stormwater to waters of the State, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

C. Ecology presumes that a Permittee complies with water quality standards unless discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:

1. Comply with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions.

2. Implement stormwater BMPs contained in stormwater management manuals published or approved by Ecology, or BMPs that are demonstrably equivalent to BMPs contained in stormwater technical manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the Phase I Municipal Stormwater Permit are approved by Ecology.)

D. Where construction sites also discharge to ground water, the ground water discharges must also meet the terms and conditions of this CSWGP. Permittees who discharge to ground water through an injection well must also comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.

S4. MONITORING REQUIREMENTS, BENCHMARKS AND REPORTING TRIGGERS

Table 3. Summary of Primary Monitoring Requirements

Size of Soil Disturbance[1]	Weekly Site Inspections	Weekly Sampling w/ Turbidity Meter	Weekly Sampling w/ Transparency Tube	Weekly pH Sampling[2]	Requires CESCL Certification?
Sites that disturb less than 1 acre, but are part of a larger Common Plan of Development	Required	Not Required	Not Required	Not Required	No
Sites that disturb 1 acre or more, but fewer than 5 acres	Required	Sampling Required – either method[3]		Required	Yes
Sites that disturb 5 acres or more	Required	Required	Not Required[4]	Required	Yes

A. Site Log Book

The Permittee must maintain a site log book that contains a record of the implementation of the SWPPP and other permit requirements, including the installation and maintenance of BMPs, site inspections, and stormwater monitoring.

B. Site Inspections

The Permittee's (operator's) site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points. (See Special Conditions S4.B.3 and B.4 below for detailed requirements of the Permittee's Certified Erosion and Sediment Control Lead [CESCL]).

[1] Soil disturbance is calculated by adding together all areas affected by construction activity. Construction activity means clearing, grading, excavation, and any other activity that disturbs the surface of the land, including ingress/egress from the site.

[2] If construction activity results in the disturbance of 1 acre or more, and involves significant concrete work (1,000 cubic yards of poured or recycled concrete over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer stormwater collection system that drains to other surface waters of the State, the Permittee must conduct pH monitoring sampling in accordance with Special Condition S4.D.

[3] Sites with one or more acres, but fewer than 5 acres of soil disturbance, must conduct turbidity or transparency sampling in accordance with Special Condition S4.C.

[4] Sites equal to or greater than 5 acres of soil disturbance must conduct turbidity sampling using a turbidity meter in accordance with Special Condition S4.C.

Construction sites one acre or larger that discharge stormwater to surface waters of the State must have site inspections conducted by a certified CESCL. Sites less than one acre may have a person without CESCL certification conduct inspections; sampling is not required on sites that disturb less than an acre.

1. The Permittee must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. The Permittee must evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

   Based on the results of the inspection, the Permittee must correct the problems identified by:

   a. Reviewing the SWPPP for compliance with Special Condition S9 and making appropriate revisions within 7 days of the inspection.

   b. Immediately beginning the process of fully implementing and maintaining appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than within 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.

   c. Documenting BMP implementation and maintenance in the site log book.

2. The Permittee must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one day do not require daily inspections. For example, if a stormwater pond discharges continuously over the course of a week, only one inspection is required that week.) The Permittee may reduce the inspection frequency for temporarily stabilized, inactive sites to once every calendar month.

3. The Permittee must have staff knowledgeable in the principles and practices of erosion and sediment control. The CESCL (sites one acre or more) or inspector (sites less than one acre) must have the skills to assess the:

   a. Site conditions and construction activities that could impact the quality of stormwater, and

   b. Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

4. The SWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times. The CESCL must obtain this certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the manual referred to in Special Condition S9.C.1 and 2).

5. The Permittee must summarize the results of each inspection in an inspection report or checklist and enter the report/checklist into, or attach it to, the site log book. At a minimum, each inspection report or checklist must include:

    a. Inspection date and time.

    b. Weather information, the general conditions during inspection and the approximate amount of precipitation since the last inspection, and precipitation within the last 24 hours.

    c. A summary or list of all implemented BMPs, including observations of all erosion/sediment control structures or practices.

    d. A description of the locations:

        i. Of BMPs inspected.

        ii. Of BMPs that need maintenance and why.

        iii. Of BMPs that failed to operate as designed or intended, and

        iv. Where additional or different BMPs are needed, and why.

    e. A description of stormwater discharged from the site. The Permittee must note the presence of suspended sediment, turbidity, discoloration, and oil sheen, as applicable.

    f. Any water quality monitoring performed during inspection.

    g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made following the inspection.

    h. A summary report and a schedule of implementation of the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.

    i. The name, title, and signature of the person conducting the site inspection, a phone number or other reliable method to reach this person, and the following statement: "I certify that this report is true, accurate, and complete to the best of my knowledge and belief."

C. Turbidity/Transparency Sampling Requirements

1. Sampling Methods

    a. If construction activity involves the disturbance of 5 acres or more, the Permittee must conduct turbidity sampling per Special Condition S4.C.

    b. If construction activity involves 1 acre or more but fewer than 5 acres of soil disturbance, the Permittee must conduct either transparency sampling **or** turbidity sampling per Special Condition S4.C.

2. Sampling Frequency

    a. The Permittee must sample all discharge locations at least once every calendar week when stormwater (or authorized non-stormwater) discharges from the site or enters any on-site surface waters of the state (for example, a creek running through a site).

    b. Samples must be representative of the flow and characteristics of the discharge.

    c. Sampling is not required when there is no discharge during a calendar week.

    d. Sampling is not required outside of normal working hours or during unsafe conditions.

    e. If the Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly Discharge Monitoring Report (DMR).

    f. Sampling is not required before construction activity begins.

3. Sampling Locations

    a. Sampling is required at all points where stormwater associated with construction activity (or authorized non-stormwater) is discharged off site, including where it enters any on-site surface waters of the state (for example, a creek running through a site).

    b. The Permittee may discontinue sampling at discharge points that drain areas of the project that are fully stabilized to prevent erosion.

    c. The Permittee must identify all sampling point(s) on the SWPPP site map and clearly mark these points in the field with a flag, tape, stake or other visible marker.

    d. Sampling is not required for discharge that is sent directly to sanitary or combined sewer systems.

4. Sampling and Analysis Methods

    a. The Permittee performs turbidity analysis with a calibrated turbidity meter (turbidimeter) either on site or at an accredited lab. The Permittee must record the results in the site log book in nephelometric turbidity units (NTU).

    b. The Permittee performs transparency analysis on site with a 1¾-inch-diameter, 60-centimeter (cm)-long transparency tube. The Permittee will record the results in the site log book in centimeters (cm). Transparency tubes are available from: http://watermonitoringequip.com/pages/stream.html.

Table 4. Monitoring and Reporting Requirements

Parameter	Unit	Analytical Method	Sampling Frequency	Benchmark Value	Phone Reporting Trigger Value
Turbidity	NTU	SM2130 or EPA 180.1	Weekly, if discharging	25 NTU	250 NTU
Transparency	cm	Manufacturer instructions, or Ecology guidance	Weekly, if discharging	33 cm	6 cm

5. Turbidity/Transparency Benchmark Values and Reporting Triggers

The benchmark value for turbidity is 25 NTU or less. The benchmark value for transparency is 33 centimeters (cm). Note: Benchmark values do not apply to discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus; these discharges are subject to a numeric effluent limit for turbidity. Refer to Special Condition S8 for more information.

a. Turbidity 26 – 249 NTU, or Transparency 32 – 7 cm:

If the discharge turbidity is 26 to 249 NTU; or if discharge transparency is less than 33 cm, but equal to or greater than 6 cm, the Permittee must:

i. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

ii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

iii. Document BMP implementation and maintenance in the site log book.

b. Turbidity 250 NTU or greater, or Transparency 6 cm or less:

If a discharge point's turbidity is 250 NTU or greater, or if discharge transparency is less than or equal to 6 cm, the Permittee must complete the reporting and adaptive management process described below.

i. Telephone the applicable Ecology Region's Environmental Report Tracking System (ERTS) number within 24 hours, in accordance with Special Condition S5.F.

- Central Region (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton): (509) 575-2490

- Eastern Region (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400

- Northwest Region (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom): (425) 649-7000

- Southwest Region (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): (360) 407-6300

These numbers are also listed at the following web site: http://www.ecy.wa.gov/programs/wq/stormwater/construction/permit.html

ii. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

iii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

iv. Document BMP implementation and maintenance in the site log book.

v. Continue to sample discharges daily until:

a) Turbidity is 25 NTU (or lower); or

b) Transparency is 33 cm (or greater); or

c) The Permittee has demonstrated compliance with the water quality limit for turbidity:

1) No more than 5 NTU over background turbidity, if background is less than 50 NTU, or

2) No more than 10% over background turbidity, if background is 50 NTU or greater; or

d) The discharge stops or is eliminated.

D. pH Sampling Requirements -- Significant Concrete Work or Engineered Soils

If construction activity results in the disturbance of 1 acre or more, **and** involves significant concrete work (significant concrete work means greater than 1000 cubic yards poured concrete or recycled concrete used over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area

drains to surface waters of the State or to a storm sewer system that drains to surface waters of the state, the Permittee must conduct pH monitoring as set forth below. Note: In addition, discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for high pH are subject to a numeric effluent limit for pH; refer to Special Condition S8.

1. For sites with significant concrete work, the Permittee must begin the pH monitoring period when the concrete is first poured and exposed to precipitation, and continue weekly throughout and after the concrete pour and curing period, until stormwater pH is in the range of 6.5 to 8.5 (su).

2. For sites with engineered soils, the Permittee must begin the pH monitoring period when the soil amendments are first exposed to precipitation and must continue until the area of engineered soils is fully stabilized.

3. During the applicable pH monitoring period defined above, the Permittee must obtain a representative sample of stormwater and conduct pH analysis at least once per week.

4. The Permittee must monitor pH in the sediment trap/pond(s) or other locations that receive stormwater runoff from the area of significant concrete work or engineered soils before the stormwater discharges to surface waters.

5. The benchmark value for pH is 8.5 standard units. Anytime sampling indicates that pH is 8.5 or greater, the Permittee must either:

    a. Prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters; or

    b. If necessary, adjust or neutralize the high pH water until it is in the range of pH 6.5 to 8.5 (su) using an appropriate treatment BMP such as carbon dioxide (CO_2) sparging or dry ice. The Permittee must obtain written approval from Ecology before using any form of chemical treatment other than CO_2 sparging or dry ice.

6. The Permittee must perform pH analysis on site with a calibrated pH meter, pH test kit, or wide range pH indicator paper. The Permittee must record pH monitoring results in the site log book.

S5. REPORTING AND RECORDKEEPING REQUIREMENTS

A. High Turbidity Phone Reporting

Anytime sampling performed in accordance with Special Condition S4.C indicates turbidity has reached the 250 NTU phone reporting level, the Permittee must call Ecology's Regional office by phone within 24 hours of analysis. The web site is http://www.ecy.wa.gov/programs/wq/stormwater/construction/permit.html. Also see phone numbers in Special Condition S4.C.5.b.i.

B. Discharge Monitoring Reports

Permittees required to conduct water quality sampling in accordance with Special Conditions S4.C (Turbidity/Transparency), S4.D (pH), S8 (303[d]/TMDL sampling), and/or G13 (Additional Sampling) must submit the results to Ecology.

Permittees must submit monitoring data using Ecology's WebDMR program. To find out more information and to sign up for WebDMR go to: http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html.

Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR at:

Mailing Address:
Department of Ecology
Water Quality Program
Attn: Stormwater Compliance Specialist
PO Box 47696
Olympia, WA 98504-7696

Permittees who obtain a waiver not to use WebDMR must use the forms provided to them by Ecology; submittals must be mailed to the address above. Permittees shall submit DMR forms to be received by Ecology within 15 days following the end of each month.

If there was no discharge during a given monitoring period, all Permittees must submit a DMR as required with "no discharge" entered in place of the monitoring results. For more information, contact Ecology staff using information provided at the following web site: http://www.ecy.wa.gov/programs/spills/response/assistancesoil%20map.pdf

C. Records Retention

The Permittee must retain records of all monitoring information (site log book, sampling results, inspection reports/checklists, etc.), Stormwater Pollution Prevention Plan, and any other documentation of compliance with permit requirements for the entire life of the construction project and for a minimum of three years following the termination of permit coverage. Such information must include all calibration and maintenance records, and records of all data used to complete the application for this

permit. This period of retention must be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

D. Recording Results

For each measurement or sample taken, the Permittee must record the following information:

1. Date, place, method, and time of sampling or measurement.
2. The first and last name of the individual who performed the sampling or measurement.
3. The date(s) the analyses were performed.
4. The first and last name of the individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

E. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this permit using test procedures specified by Special Condition S4 of this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Permittee's DMR.

F. Noncompliance Notification

In the event the Permittee is unable to comply with any part of the terms and conditions of this permit, and the resulting noncompliance may cause a threat to human health or the environment, the Permittee must:

1. Immediately notify Ecology of the failure to comply by calling the applicable Regional office ERTS phone number (find at http://www.ecy.wa.gov/programs/spills/response/assistancesoil%20map.pdf) or refer to Special Condition S4.C.5.b.i.
2. Immediately take action to prevent the discharge/pollution, or otherwise stop or correct the noncompliance, and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to Ecology within five (5) days of becoming aware of the violation.
3. Submit a detailed written report to Ecology within five (5) days, unless requested earlier by Ecology. The report must contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Permittee must report any unanticipated bypass and/or upset that exceeds any effluent limit in the permit in accordance with the 24-hour reporting requirement contained in 40 C.F.R. 122.41(l)(6)).

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply. Refer to Section G14 of this permit for specific information regarding non-compliance.

G. Access to Plans and Records

1. The Permittee must retain the following permit documentation (plans and records) on site, or within reasonable access to the site, for use by the operator or for on-site review by Ecology or the local jurisdiction:

   a. General Permit.

   b. Permit Coverage Letter.

   c. Stormwater Pollution Prevention Plan (SWPPP).

   d. Site Log Book.

2. The Permittee must address written requests for plans and records listed above (Special Condition S5.G.1) as follows:

   a. The Permittee must provide a copy of plans and records to Ecology within 14 days of receipt of a written request from Ecology.

   b. The Permittee must provide a copy of plans and records to the public when requested in writing. Upon receiving a written request from the public for the Permittee's plans and records, the Permittee must either:

      i. Provide a copy of the plans and records to the requester within 14 days of a receipt of the written request; or

      ii. Notify the requester within 10 days of receipt of the written request of the location and times within normal business hours when the plans and records may be viewed; and provide access to the plans and records within 14 days of receipt of the written request; or

      Within 14 days of receipt of the written request, the Permittee may submit a copy of the plans and records to Ecology for viewing and/or copying by the requester at an Ecology office, or a mutually agreed location. If plans and records are viewed and/or copied at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which a reasonable fee may be charged. The Permittee must notify the requester within 10 days of receipt of the request where the plans and records may be viewed and/or copied.

S6. PERMIT FEES

The Permittee must pay permit fees assessed by Ecology. Fees for stormwater discharges covered under this permit are established by Chapter 173-224 WAC. Ecology continues to assess permit fees until the permit is terminated in accordance with Special Condition S10 or revoked in accordance with General Condition G5.

S7. SOLID AND LIQUID WASTE DISPOSAL

The Permittee must handle and dispose of solid and liquid wastes generated by construction activity, such as demolition debris, construction materials, contaminated materials, and waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, in accordance with:

A. Special Condition S3, Compliance with Standards.

B. WAC 173-216-110.

C. Other applicable regulations.

S8. DISCHARGES TO 303(D) OR TMDL WATER BODIES

A. Sampling and Numeric Effluent Limits For Certain Discharges to 303(d)-listed Water Bodies

1. Permittees who discharge to segments of water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, or phosphorus, must conduct water quality sampling according to the requirements of this section, and Special Conditions S4.C.2.b-f and S4.C.3.b-d, and must comply with the applicable numeric effluent limitations in S8.C and S8.D.

2. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters (Category 5) that exists on January 1, 2011, or the date when the operator's complete permit application is received by Ecology, whichever is later.

B. Limits on Coverage for New Discharges to TMDL or 303(d)-listed Waters

Operators of construction sites that discharge to a 303(d)-listed water body are not eligible for coverage under this permit *unless* the operator:

1. Prevents exposing stormwater to pollutants for which the water body is impaired, and retains documentation in the SWPPP that details procedures taken to prevent exposure on site; or

2. Documents that the pollutants for which the water body is impaired are not present at the site, and retains documentation of this finding within the SWPPP; or

3. Provides Ecology with data indicating the discharge is not expected to cause or contribute to an exceedance of a water quality standard, and retains such data on site with the SWPPP. The operator must provide data and other technical information to Ecology that sufficiently demonstrate:

    a. For discharges to waters without an EPA-approved or -established TMDL, that the discharge of the pollutant for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the water body; or

    b. For discharges to waters with an EPA-approved or -established TMDL, that there is sufficient remaining wasteload allocation in the TMDL to allow construction stormwater discharge and that existing dischargers to the water body are subject to compliance schedules designed to bring the water body into attainment with water quality standards.

    Operators of construction sites are eligible for coverage under this permit if Ecology issues permit coverage based upon an affirmative determination that the discharge will not cause or contribute to the existing impairment.

C. Sampling and Numeric Effluent Limits for Discharges to Water Bodies on the 303(d) List for Turbidity, Fine Sediment, or Phosphorus

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus must conduct turbidity sampling in accordance with Special Condition S4.C.2 and comply with either of the numeric effluent limits noted in Table 5 below.

2. As an alternative to the 25 NTU effluent limit noted in Table 5 below (applied at the point where stormwater [or authorized non-stormwater] is discharged off-site), permittees may choose to comply with the surface water quality standard for turbidity. The standard is: no more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or no more than a 10% increase in turbidity when the background turbidity is more than 50 NTU. In order to use the water quality standard requirement, the sampling must take place at the following locations:

    a. Background turbidity in the 303(d)-listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.

    b. Turbidity at the point of discharge into the 303(d)-listed receiving water, inside the area of influence of the discharge**.**

3. Discharges that exceed the numeric effluent limit for turbidity constitute a violation of this permit.

4. Permittees whose discharges exceed the numeric effluent limit shall sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

Table 5. Turbidity, Fine Sediment & Phosphorus Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Sampling Frequency	Numeric Effluent Limit[1]
• Turbidity • Fine Sediment • Phosphorus	Turbidity	NTU	SM2130 or EPA180.1	Weekly, if discharging	25 NTU, at the point where stormwater is discharged from the site; OR In compliance with the surface water quality standard for turbidity (S8.C.1.a)

[1]Permittees subject to a numeric effluent limit for turbidity may, at their discretion, choose either numeric effluent limitation based on site-specific considerations including, but not limited to, safety, access and convenience.

D. Discharges to Water Bodies on the 303(d) List for High pH

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for high pH must conduct pH sampling in accordance with the table below, and comply with the numeric effluent limit of pH 6.5 to 8.5 su (Table 6).

Table 6. pH Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled/Units	Analytical Method	Sampling Frequency	Numeric Effluent Limit
High pH	pH /Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

2. At the Permittee's discretion, compliance with the limit shall be assessed at one of the following locations:

   a. Directly in the 303(d)-listed water body segment, inside the immediate area of influence of the discharge; or

   b. Alternatively, the permittee may measure pH at the point where the discharge leaves the construction site, rather than in the receiving water.

3. Discharges that exceed the numeric effluent limit for pH (outside the range of 6.5 – 8.5 su) constitute a violation of this permit.

4. Permittees whose discharges exceed the numeric effluent limit shall sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

E. Sampling and Limits for Sites Discharging to Waters Covered by a TMDL or Another Pollution Control Plan

1. Discharges to a water body that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL. Refer to http://www.ecy.wa.gov/programs/wq/tmdl/index.html for more information on TMDLs.

    a. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges must be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

        i. The Permittee must sample discharges weekly or as otherwise specified by the TMDL to evaluate compliance with the specific waste load allocations or requirements.

        ii. Analytical methods used to meet the monitoring requirements must conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136. Turbidity and pH methods need not be accredited or registered unless conducted at a laboratory which must otherwise be accredited or registered.

    b. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but has not identified specific requirements, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.

    c. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.

    d. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

2. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus that is completed and approved by EPA before January 1, 2011, or before the date the operator's complete permit application is received by Ecology, whichever is later. TMDLs completed after the operator's complete permit application is received by Ecology become applicable to the Permittee only if they are imposed through an administrative order by Ecology, or through a modification of permit coverage.

S9. STORMWATER POLLUTION PREVENTION PLAN

The Permittee must prepare and properly implement an adequate Stormwater Pollution Prevention Plan (SWPPP) for construction activity in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization.

A. The Permittee's SWPPP must meet the following objectives:

1. To implement best management practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.

2. To prevent violations of surface water quality, ground water quality, or sediment management standards.

3. To control peak volumetric flow rates and velocities of stormwater discharges.

B. General Requirements

1. The SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:

   a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).

   b. Potential erosion problem areas.

   c. The 12 elements of a SWPPP in Special Condition S9.D.1-12, including BMPs used to address each element.

   d. Construction phasing/sequence and general BMP implementation schedule.

   e. The actions to be taken if BMP performance goals are not achieved—for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.

   f. Engineering calculations for ponds and any other designed structures.

2. The Permittee must modify the SWPPP if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must then:

   a. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the inspection or investigation.

   b. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than 10 days from the inspection or investigation. If

installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period,

c. Document BMP implementation and maintenance in the site log book.

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

C. Stormwater Best Management Practices (BMPs)

BMPs must be consistent with:

1. Stormwater Management Manual for Western Washington (most recent edition), for sites west of the crest of the Cascade Mountains; or

2. Stormwater Management Manual for Eastern Washington (most recent edition), for sites east of the crest of the Cascade Mountains; or

3. Revisions to the manuals listed in Special Condition S9.C.1. & 2., or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230; or

4. Documentation in the SWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable Stormwater Management Manuals, including:

   a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.

   b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

D. SWPPP – Narrative Contents and Requirements

The Permittee must include each of the 12 elements below in Special Condition S9.D.1-12 in the narrative of the SWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits

   a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.

b. Retain the duff layer, native top soil, and natural vegetation in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access

   a. Limit construction vehicle access and exit to one route, if possible.

   b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.

   c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.

   d. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.

   e. Conduct street washing only after sediment removal in accordance with Special Condition S9.D.2.d. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.

3. Control Flow Rates

   a. Protect properties and waterways downstream of development sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.

   b. Where necessary to comply with Special Condition S9.D.3.a, construct stormwater retention or detention facilities as one of the first steps in grading. Assure that detention facilities function properly before constructing site improvements (for example, impervious surfaces).

   c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from siltation during the construction phase.

4. Install Sediment Controls

   The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must design, install and maintain such controls to:

   a. Construct sediment control BMPs (sediment ponds, traps, filters, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.

   b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of

resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.

c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Special Condition S9.D.3.a.

d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.

e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.

f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

5. Stabilize Soils

a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.

b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.

c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.

d. Depending on the geographic location of the project, the Permittee must not allow soils to remain exposed and unworked for more than the time periods set forth below to prevent erosion:

West of the Cascade Mountains Crest
During the dry season (May 1 - Sept. 30): 7 days
During the wet season (October 1 - April 30): 2 days

East of the Cascade Mountains Crest, except for Central Basin*
During the dry season (July 1 - September 30): 10 days
During the wet season (October 1 - June 30): 5 days

The Central Basin*, East of the Cascade Mountains Crest

During the dry Season (July 1 - September 30): 30 days
During the wet season (October 1 - June 30): 15 days

*Note: The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches.

e. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.

f. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

g. The Permittee must minimize the amount of soil exposed during construction activity.

h. The Permittee must minimize the disturbance of steep slopes.

i. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

6. Protect Slopes

a. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).

b. The Permittee must divert off-site stormwater (run-on) or ground water away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.

c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.

i. West of the Cascade Mountains Crest: Temporary pipe slope drains must handle the peak 10-minute velocity of flow from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area."

ii. East of the Cascade Mountains Crest: Temporary pipe slope drains must handle the expected peak flow velocity from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.

d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.

e. Place check dams at regular intervals within constructed channels that are cut down a slope.

7. Protect Drain Inlets

a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.

b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

8. Stabilize Channels and Outlets

a. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:

i. West of the Cascade Mountains Crest: Channels must handle the peak 10-minute velocity of flow from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."

ii. East of the Cascade Mountains Crest: Channels must handle the expected peak flow velocity from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.

b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.

9. Control Pollutants

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.

b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.

c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.

d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.

e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.

f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. (Also refer to the definition for "concrete wastewater" in Appendix A--Definitions.)

g. Adjust the pH of stormwater if necessary to prevent violations of water quality standards.

h. Assure that washout of concrete trucks is performed offsite or in designated concrete washout areas only. Do not wash out concrete trucks onto the ground, or into storm drains, open ditches, streets, or streams. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge to surface waters of the State is prohibited.

i. Obtain written approval from Ecology before using chemical treatment other than CO_2 or dry ice to adjust pH.

10. Control Dewatering

a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, into a

controlled conveyance system before discharge to a sediment trap or sediment pond.

b. Permittees may discharge clean, non-turbid dewatering water, such as well-point ground water, to systems tributary to, or directly into surface waters of the State, as specified in Special Condition S9.D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that "surface waters of the State" may exist on a construction site as well as off site; for example, a creek running through a site.

c. Other treatment or disposal options may include:

   i. Infiltration.

   ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.

   iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies.

   iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.

   v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.

d. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.

11. Maintain BMPs

    a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.

    b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

12. Manage the Project

    a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.

    b. Inspection and monitoring -- Inspect, maintain and repair all BMPs as needed to assure continued performance of their intended function. Conduct site inspections and monitoring in accordance with Special Condition S4.

    c. Maintaining an updated construction SWPPP -- Maintain, update, and implement the SWPPP in accordance with Special Conditions S3, S4 and S9.

E. SWPPP – Map Contents and Requirements

The Permittee's SWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The SWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions:

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.
3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.
4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface water body, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

S10. NOTICE OF TERMINATION

A. The site is eligible for termination of coverage when it has met any of the following conditions:

1. The site has undergone final stabilization, the Permittee has removed all temporary BMPs (except biodegradable BMPs clearly manufactured with the intention for the material to be left in place and not interfere with maintenance or land use), and all stormwater discharges associated with construction activity have been eliminated; or
2. All portions of the site that have not undergone final stabilization per Special Condition S10.A.1 have been sold and/or transferred (per General Condition G9), and the Permittee no longer has operational control of the construction activity; or

3. For residential construction only, the Permittee has completed temporary stabilization and the homeowners have taken possession of the residences.

B. When the site is eligible for termination, the Permittee must submit a complete and accurate Notice of Termination (NOT) form, signed in accordance with General Condition G2, to:

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, Washington 98504-7696

The termination is effective on the date Ecology receives the NOT form, unless Ecology notifies the Permittee within 30 days that termination request is denied because the Permittee has not met the eligibility requirements in Special Condition S10.A.

Permittees transferring the property to a new property owner or operator/permittee are required to complete and submit the Notice of Transfer form to Ecology, but are not required to submit a Notice of Termination form for this type of transaction.

GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this general permit must be consistent with the terms and conditions of this general permit. Any discharge of any pollutant more frequent than or at a level in excess of that identified and authorized by the general permit must constitute a violation of the terms and conditions of this permit.

G2. SIGNATORY REQUIREMENTS

A. All permit applications must bear a certification of correctness to be signed:

1. In the case of corporations, by a responsible corporate officer of at least the level of vice president of a corporation;

2. In the case of a partnership, by a general partner of a partnership;

3. In the case of sole proprietorship, by the proprietor; or

4. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

B. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Ecology.

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G2.B.2 above must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Certification. Any person signing a document under this section must make the following certification:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering

information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

G3. RIGHT OF INSPECTION AND ENTRY

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

A. To enter upon the premises where a discharge is located or where any records are kept under the terms and conditions of this permit.

B. To have access to and copy – at reasonable times and at reasonable cost -- any records required to be kept under the terms and conditions of this permit.

C. To inspect -- at reasonable times – any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.

D. To sample or monitor – at reasonable times – any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G4. GENERAL PERMIT MODIFICATION AND REVOCATION

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

A. When a change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this permit.

B. When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of dischargers covered under this permit.

C. When a water quality management plan containing requirements applicable to the category of dischargers covered under this permit is approved, or

D. When information is obtained that indicates cumulative effects on the environment from dischargers covered under this permit are unacceptable.

G5. REVOCATION OF COVERAGE UNDER THE PERMIT

Pursuant to Chapter 43.21B RCW and Chapter 173-226 WAC, the Director may terminate coverage for any discharger under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:

A. Violation of any term or condition of this permit.

B. Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.

C. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

D. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

E. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.

F. Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.

G. Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.

The Director may require any discharger under this permit to apply for and obtain coverage under an individual permit or another more specific general permit. Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within ninety (90) days from the time of revocation and is submitted along with a complete individual permit application form.

G6. REPORTING A CAUSE FOR MODIFICATION

The Permittee must submit a new application, or a supplement to the previous application, whenever a material change to the construction activity or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least sixty (60) days prior to any proposed changes. Filing a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G7. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit will be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G8. DUTY TO REAPPLY

The Permittee must apply for permit renewal at least 180 days prior to the specified expiration date of this permit.

G9. TRANSFER OF GENERAL PERMIT COVERAGE

Coverage under this general permit is automatically transferred to a new discharger, including operators of lots/parcels within a common plan of development or sale, **if**:

A. A written agreement (Transfer of Coverage Form) between the current discharger (Permittee) and new discharger, signed by both parties and containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to the Director; and

B. The Director does not notify the current discharger and new discharger of the Director's intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the written agreement.

When a current discharger (Permittee) transfers a portion of a permitted site, the current discharger must also submit an updated application form (NOI) to the Director indicating the remaining permitted acreage after the transfer.

G10. REMOVED SUBSTANCES

The Permittee must not re-suspend or reintroduce collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to the final effluent stream for discharge to state waters.

G11. DUTY TO PROVIDE INFORMATION

The Permittee must submit to Ecology, within a reasonable time, all information that Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

G12. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G13. ADDITIONAL MONITORING

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars ($10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars ($10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G15. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in Special Condition S5.F, and; 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. TOXIC POLLUTANTS

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than $20,000 per day of violation, or imprisonment of not more than four (4) years, or both.

G20. REPORTING PLANNED CHANGES

The Permittee must, as soon as possible, give notice to Ecology of planned physical alterations, modifications or additions to the permitted construction activity. The Permittee should be aware that, depending on the nature and size of the changes to the original permit, a new public notice and other permit process requirements may be required. Changes in activities that require reporting to Ecology include those that will result in:

A. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).

B. A significant change in the nature or an increase in quantity of pollutants discharged, including but not limited to: for sites 5 acres or larger, a 20% or greater increase in acreage disturbed by construction activity.

C. A change in or addition of surface water(s) receiving stormwater or non-stormwater from the construction activity.

D. A change in the construction plans and/or activity that affects the Permittee's monitoring requirements in Special Condition S4.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G21. REPORTING OTHER INFORMATION

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to Ecology, it must promptly submit such facts or information.

G22. REPORTING ANTICIPATED NON-COMPLIANCE

The Permittee must give advance notice to Ecology by submission of a new application or supplement thereto at least forty-five (45) days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, must be scheduled during non-critical water quality periods and carried out in a manner approved by Ecology.

G23. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT

Any discharger authorized by this permit may request to be excluded from coverage under the general permit by applying for an individual permit. The discharger must submit to the Director an application as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons will fully document how an individual permit will apply to the applicant in a way that the general permit cannot. Ecology may make specific requests for information to support the request. The Director will either issue an individual permit or deny the request with a statement explaining the reason for the denial. When an individual permit is issued to a discharger otherwise subject to the construction stormwater general permit, the applicability of the construction stormwater general permit to that Permittee is automatically terminated on the effective date of the individual permit.

G24. APPEALS

A. The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal by any person within 30 days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.

B. The terms and conditions of this general permit, as they apply to an individual discharger, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.

C. The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter

shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

G25. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

G26. BYPASS PROHIBITED

A. Bypass Procedures

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited for stormwater events below the design criteria for stormwater management. Ecology may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, 3 or 4) is applicable.

1. Bypass of stormwater is consistent with the design criteria and part of an approved management practice in the applicable stormwater management manual.

2. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

   Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health.

3. Bypass of stormwater is unavoidable, unanticipated, and results in noncompliance of this permit.

   This bypass is permitted only if:

   a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

   b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.

c. Ecology is properly notified of the bypass as required in Special Condition S5.F of this permit.

4. A planned action that would cause bypass of stormwater and has the potential to result in noncompliance of this permit during a storm event.

   The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:

   a. a description of the bypass and its cause

   b. an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.

   c. a cost-effectiveness analysis of alternatives including comparative resource damage assessment.

   d. the minimum and maximum duration of bypass under each alternative.

   e. a recommendation as to the preferred alternative for conducting the bypass.

   f. the projected date of bypass initiation.

   g. a statement of compliance with SEPA.

   h. a request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated.

   i. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

5. For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above must be considered during preparation of the Stormwater Pollution Prevention Plan (SWPPP) and must be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

   Ecology will consider the following before issuing an administrative order for this type bypass:

   a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.

   b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.

   c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve, conditionally approve, or deny the request. The public must be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by Ecology under RCW 90.48.120.

B. Duty to Mitigate

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

APPENDIX A – DEFINITIONS

AKART is an acronym for "all known, available, and reasonable methods of prevention, control, and treatment." AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants and controlling pollution associated with a discharge.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which was completed and approved by EPA before January 1, 2011, or before the date the operator's complete permit application is received by Ecology, whichever is later.

Applicant means an operator seeking coverage under this permit.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: stormwater associated with construction activity, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Buffer means an area designated by a local jurisdiction that is contiguous to and intended to protect a sensitive area.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Calendar Day A period of 24 consecutive hours starting at 12:00 midnight and ending the following 12:00 midnight.

Calendar Week (same as Week) means a period of seven consecutive days starting at 12:01 a.m. (0:01 hours) on Sunday.

Certified Erosion and Sediment Control Lead (CESCL) means a person who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the SWMM).

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Common Plan of Development or Sale means a site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1) phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g., a development where lots are sold to separate builders); 2) a development plan that may be phased over multiple years, but is still under a

consistent plan for long-term development; 3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4) linear projects such as roads, pipelines, or utilities. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements.

Composite Sample means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increases while maintaining a constant time interval between the aliquots.

Concrete wastewater means any water used in the production, pouring and/or clean-up of concrete or concrete products, and any water used to cut, grind, wash, or otherwise modify concrete or concrete products. Examples include water used for or resulting from concrete truck/mixer/pumper/tool/chute rinsing or washing, concrete saw cutting and surfacing (sawing, coring, grinding, roughening, hydro-demolition, bridge and road surfacing). When stormwater comingles with concrete wastewater, the resulting water is considered concrete wastewater and must be managed to prevent discharge to waters of the state, including ground water.

Construction Activity means land disturbing operations including clearing, grading or excavation which disturbs the surface of the land. Such activities may include road construction, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Contaminant means any hazardous substance that does not occur naturally or occurs at greater than natural background levels. See definition of “hazardous substance” and WAC 173-340-200.

Demonstrably Equivalent means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:

1. The method and reasons for choosing the stormwater BMPs selected.
2. The pollutant removal performance expected from the BMPs selected.
3. The technical basis supporting the performance claims for the BMPs selected, including any available data concerning field performance of the BMPs selected.
4. An assessment of how the selected BMPs will comply with state water quality standards.
5. An assessment of how the selected BMPs will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment (AKART).

Department means the Washington State Department of Ecology.

Detention means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.

Dewatering means the act of pumping ground water or stormwater away from an active construction site.

Director means the Director of the Washington Department of Ecology or his/her authorized representative.

Discharger means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such ground water infiltration or surface waters as may be present.

Ecology means the Washington State Department of Ecology.

Engineered Soils means the use of soil amendments including, but not limited, to Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to ground water than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, sediment traps, and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Final Stabilization (same as fully stabilized or full stabilization) means the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) which prevents erosion.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface water body.

Hazardous Substance means any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous sub-stance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42 U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director

by rule to present a threat to human health or the environment if released into the environment. The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

Injection Well means a well that is used for the subsurface emplacement of fluids. (See Well.)

Jurisdiction means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the State from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Notice of Intent (NOI) means the application for, or a request for coverage under this general permit pursuant to WAC 173-226-200.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

Operator means any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Permittee means individual or entity that receives notice of coverage under this general permit.

pH means a liquid's measure of acidity or alkalinity. A pH of 7 is defined as neutral. Large variations above or below this value are considered harmful to most aquatic life.

pH monitoring period means the time period in which the pH of stormwater runoff from a site must be tested a minimum of once every seven days to determine if stormwater pH is between 6.5 and 8.5.

Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, and container from which pollutants are or may be discharged to surface waters of the State. This term does not include return flows from irrigated agriculture. (See Fact Sheet for further explanation.)

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the CWA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the CWA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the State; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the State as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product (40 CFR 122.1).

Receiving water means the water body at the point of discharge. If the discharge is to a storm sewer system, either surface or subsurface, the receiving water is the water body to which the storm system discharges. Systems designed primarily for other purposes such as for ground water drainage, redirecting stream natural flows, or for conveyance of irrigation water/return flows that coincidentally convey stormwater are considered the receiving water.

Representative means a stormwater or wastewater sample which represents the flow and characteristics of the discharge. Representative samples may be a grab sample, a time-proportionate composite sample, or a flow proportionate sample. Ecology's Construction Stormwater Monitoring Manual provides guidance on representative sampling.

Sanitary sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

Sensitive area means a water body, wetland, stream, aquifer recharge area, or channel migration zone.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Significant Amount means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a

reasonable potential to cause a violation of surface or ground water quality or sediment management standards.

Significant concrete work means greater than 1000 cubic yards poured concrete or recycled concrete over the life of a project.

Significant Contributor of Pollutants means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the State of Washington.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source control BMPs means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

Storm drain means any drain which drains directly into a storm sewer system, usually found along roadways or in parking lots.

Storm sewer system means a means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains designed or used for collecting or conveying stormwater. This does not include systems which are part of a combined sewer or Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Stormwater means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body, or a constructed infiltration facility.

Stormwater Management Manual (SWMM) or Manual means the technical Manual published by Ecology for use by local governments that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Temporary Stabilization means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent "final stabilization."

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a pollutant that a water body can receive and still meet state water quality standards. Percentages of the total maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The TMDL calculations must include a "margin of safety" to ensure that the water body can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

Treatment BMPs means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

Transparency means a measurement of water clarity in centimeters (cm), using a 60 cm transparency tube. The transparency tube is used to estimate the relative clarity or transparency of water by noting the depth at which a black and white Secchi disc becomes visible when water is released from a value in the bottom of the tube. A transparency tube is sometimes referred to as a "turbidity tube."

Turbidity means the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.

Uncontaminated means free from any contaminant, as defined in MTCA cleanup regulations. See definition of "contaminant" and WAC 173-340-200.

Waste Load Allocation (WLA) means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation (40 CFR 130.2[h]).

Water quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the State" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Well means a bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. (See Injection well.)

Wheel wash wastewater means any water used in, or resulting from the operation of, a tire bath or wheel wash (BMP C106: Wheel Wash), or other structure or practice that uses water to physically remove mud and debris from vehicles leaving a construction site and prevent track-out onto roads. When stormwater comingles with wheel wash wastewater, the resulting water is considered wheel wash wastewater and must be managed according to Special Condition S9.D.9.

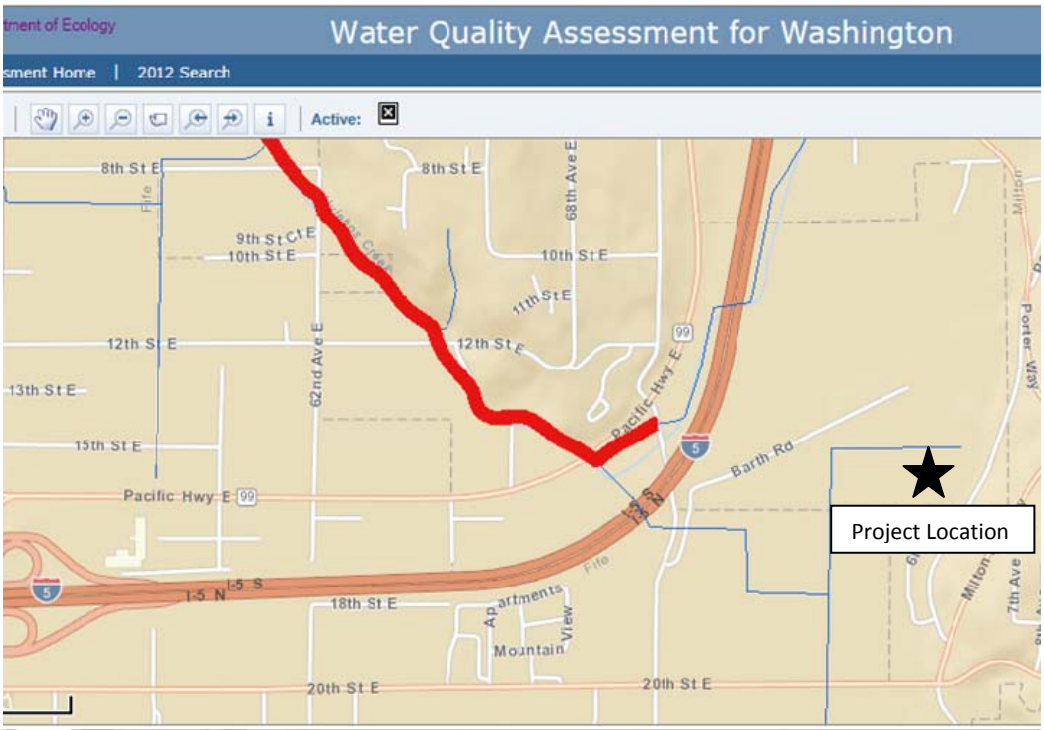
APPENDIX B – ACRONYMS

AKART	All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment
BMP	Best Management Practice
CESCL	Certified Erosion and Sediment Control Lead
CFR	Code of Federal Regulations
CKD	Cement Kiln Dust
cm	Centimeters
CTB	Cement-Treated Base
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FR	Federal Register
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UIC	Underground Injection Control
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality
WWHM	Western Washington Hydrology Model

Appendix F - 303(d) List Waterbodies / TMDL Waterbodies Information

WA DOE Water Quality Assessment – 303d List

https://fortress.wa.gov/ecy/wqamapviewer/default.aspx?res=1366x768



Identify Results

Assessment | Hydro | Boundaries

Latitude: 47.24573 **Longitude:** -122.34261 **Datum:** NAD83 HARN

2 listings found

Listing ID	Name	Parameter	Medium	Category	Waterbody ID	Lower Address	Upper Address
18885	HYLEBOS CREEK	Bioassessment	Other	5	1223590472610	0.769	2.969
35409	HYLEBOS CREEK	Dissolved Oxygen	Water	2	1223590472610	0.769	2.969

Appendix G – Contamination Site Information

amec
600 University Street, Suite 600 Seattle, WA 98101

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strategy ▪ science ▪ engineering
601 Union Street, Suite 600 Seattle, WA 98101

Memorandum

To: Mohsen Kourehdar, Washington State Department of Ecology

Copies: Dan Silver, B&L Woodwaste Site Custodial Trust; Larry McGaughey, AMEC; and Teri Floyd, Floyd|Snider

From: Brett Beaulieu, Megan McCullough, and Jenny Graves, Floyd|Snider

Date: November 21, 2014

Project No: B&L-O&M Task 1525

Re: **Ditch Bank Soil Extent Investigation Results and Remedial Design Basis**

INTRODUCTION

In this memorandum, data are presented supporting the delineation of arsenic soil contamination along the South Ditch, adjacent to the B&L Woodwaste Landfill (Landfill) at the B&L Woodwaste Site (Site). The South Ditch area is shown on Figure 1. These data were collected as part of a direct-push investigation described in a June 20, 2014 memorandum to the Washington State Department of Ecology (Ecology) entitled, "Ditch Bank Soil Extent Investigation" (Floyd|Snider/AMEC 2014a). A previous phase of investigation in this area of impacted soil was conducted in 2013 (Floyd|Snider/AMEC 2013) and the results are described in the "Ditch Bank Remedial Action" memorandum (Floyd|Snider/AMEC 2014b).

The purpose of this investigation was to further delineate the extent of elevated concentrations of arsenic in soil at the eastern and western edges of the impacted area of the South Ditch to support the excavation of contaminated soil by the B&L Woodwaste Site Custodial Trust (Trust).

In addition, this memorandum presents the design basis assumptions for the excavation of two ditch bank areas, the South Ditch and the West Ditch, planned for completion in 2015. The West Ditch area is shown on Figure 2.

FIELD METHODS

The investigation consisted of two rounds of direct-push borings with soil sampling. Boring locations from both rounds of 2014 investigation, as well as the 2013 investigation phase are shown on Figure 1.

For both the July and September sampling events, property access, utility clearance, boring advancement, and sample collection and analysis were conducted in accordance with the

procedures described in the *Sampling and Analysis Plan/Quality Assurance Project Plan* (Appendix B to the *Groundwater Remediation Work Plan*; Floyd|Snider/AMEC Geomatrix 2009) and the "*Ditch Bank Soil Investigation*" memorandum (Floyd|Snider/AMEC 2013). Soil samples were collected from 3 feet down to 8 feet below ground surface (bgs) at 1-foot intervals. Selected samples taken at depths ranging from 3 to 8 feet bgs were analyzed for total arsenic by U.S. Environmental Protection Agency (USEPA) Method 200.8. The remaining intervals were archived for potential future analysis.

July Sampling Event

On July 16, 2014, eight direct-push borings were advanced along the eastern and western edges of the South Ditch (AV-33 through AV-39). Six of these borings (AV-33, AV-34, AV-36, AV-38, and AV-39) were advanced along the south side of the bank, within approximately 5 feet of the edge, and spaced along the ditch at approximately 15-foot intervals, as shown on Figure 1. Two borings, AV-35 and AV-37, were advanced at distances approximately 10 to 15 feet south of the ditch bank.

September Sampling Event

Based on the July results, it was determined that additional samples were necessary for delineation purposes. On September 22, 2014, nine additional direct-push borings were advanced along the eastern and western edges of the South Ditch (AV-40 through AV-48) to further delineate the contaminated soil. These borings were advanced along the south side of the bank, within approximately 5 feet of the edge, and were spaced along the ditch at approximately 20- to 40-foot intervals, as shown on Figure 1.

DATA VALIDATION

A Compliance Screening, Tier 1 data quality review was performed on the results of laboratory analysis for total arsenic. The analytical data were validated in accordance with the USEPA *National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2013).

A total of 49 soil samples were submitted, in one sample delivery group (FB409392), to Friedman & Bruya, Inc. of Seattle, Washington. Of the submitted samples, 12 were archived and the remaining 37 underwent chemical analysis. For the samples that were analyzed, the analytical holding times were met and the method blanks had no detections. The internal standard, laboratory control sample, matrix spike (MS) and matrix spike duplicate (MSD) recoveries, and MS/MSD relative percent differences all met USEPA requirements.

No qualifiers were added to the analytical results based on the data quality review. Data are determined to be of acceptable quality for use as reported by the laboratory.

EXTENT OF SOIL ARSENIC CONTAMINATION

Results for both the July and September sampling events are presented in Table 1 and illustrated on Figure 1. Detected arsenic concentrations ranged from 1.1 milligrams per kilogram (mg/kg) to 204 mg/kg. The highest detected concentration (204 mg/kg) was from the 3- to 4-foot interval of AV-48. This result, though of acceptable data quality, is not considered representative of the soil in the area because the arsenic concentration in the field duplicate (AV-48-DUP) was 38.4 mg/kg.

Along the length of the ditch bank, soil arsenic contamination is present for approximately 375 lineal feet, with an apparent isolated exceedance located in shallow soil west of this section. The ditch effectively ends east of AV-47, where the ground surface elevation rises to meet the Fife Way East roadway. This roadway existed prior to the dumping of the woodwaste and slag in the 1970s and 1980s, so the extent of elevated arsenic in soil on the eastern edge of the ditch bank is estimated to extend a short distance east of AV-47.

In a central "hotspot" area located approximately between AV-4/AV-3 and AV-27/AV-26, elevated soil arsenic concentrations extend into the Autumn Village Apartments (Apartments) property up to approximately 15 feet. Contamination from the hotspot area is thought to be the main source of elevated arsenic in groundwater in this area, as measured at PD-31 and AV-31. Outside the hotspot area, it appears that the elevated soil arsenic contamination extends approximately 10 feet or less from the ditch bank, based on the lower concentrations measured in these areas and several borings that establish an approximate southern boundary.

Elevated soil arsenic concentrations extend to depths of at least 8 feet in portions of the hotspot area, and in several boring locations east of the hotspot area (AV-38, AV-46, AV-44, and AV-47). West of the hotspot, elevated soil arsenic contamination is shallower in depth (approximately 4 to 5 feet deep).

DESIGN BASIS FOR DITCH BANK CLEANUP ACTION

Excavation is the selected remedial action for the soils with elevated arsenic concentrations in the banks adjacent to the agricultural ditch (Floyd|Snider 2014b), referred to as the South Ditch and the West Ditch. This remedial action will proceed as a continuation of the 2008 Cleanup Action Plan (CAP) implementation, which included excavation and off-site disposal of contaminated ditch sediments and contaminated soil.

The purpose of this section is to document the key assumptions and basis for design of the ditch bank excavation to be completed in 2015. The assumptions and basis presented in this section will be used to complete the design, engineering, plans, and specifications for 2015 remedial action. The design basis for the 2015 remedial action is largely consistent with the approach used in the contaminated sediment excavation in 2012.

This section identifies the engineering considerations, design constraints, property issues, and other conditions to be considered during development of the design and preparation of the plans

and specifications for the remedial activities. These considerations form the basis for design of the remedial action and are described below.

1. Ditch bank soil in the West Ditch and South Ditch exceeding the arsenic cleanup level (CUL) of 20 mg/kg will be removed from the Site for disposal as confirmed by the following method:
    a. Verification sampling will be conducted in the excavation areas to confirm that remediation objectives have been attained. Compliance will be demonstrated in accordance with the Model Toxics Control Act (Washington Administrative Code [WAC] 173-340-740(7)(c)(iv)) by calculating a 95 percent upper percentile concentration of the data set that complies with the CUL of 20 mg/kg.
        i. Existing data for soil left in place following excavation will be included in the compliance data set.
        ii. Not more than 10 percent of the total samples of soil left in place will exceed the CUL.
        iii. No samples of soil left in place will exceed 2 times the CUL.
    b. In areas where existing data locations are excavated, new verification samples will be collected every 50 feet along the excavation sidewalls. The ditch bank is situated several feet above the ditch center, and sidewalls may not be present in locations where the excavation opens into the ditch. Samples will be collected from the depth of the most elevated arsenic concentrations observed in existing borings. Excavation base samples will also be collected every 50 feet along the length of the excavation, from the center of the excavation area.
2. Soil known to exceed the arsenic CUL in the bank of the West Ditch as shown on Figure 2 will be excavated.
3. Soil known to exceed the arsenic CUL in the South Ditch adjacent to the Apartments as shown on Figure 1 will be excavated.
    a. Based on existing data and the conceptual site model, it is assumed that soil exceeding the CUL generally extends below ground 10 feet or less from the top of the ditch bank. It is also assumed that soil exceeding the CUL consistently extends approximately 10 feet or less from the edge of the ditch, except in the hotspot area, where soil exceeding the CUL extends up to approximately 15 feet from the edge of the ditch.
    b. For soil on the landfill property (delineated on Figure 1) that contains arsenic concentrations less than 2 times the CUL, the remedial action may be re-evaluated in consultation with Ecology. The soil may be identified by further characterization of the area, or by verification samples. If the exceedances of the CUL in this area prevents the 95 percent upper percentile concentration from being in compliance, these samples may be considered in a separate compliance evaluation.

4. Contaminated soil will be estimated to extend half-way between the distance from a location in which soil exceeds the CUL and a location in which soil does not exceed the CUL.
5. Methods for soil removal from the ditch bank areas should be conducted in a manner that minimizes excavated volumes and limits the removal of soil/sediment with arsenic concentrations less than 20 mg/kg.
6. Contaminated groundwater or stormwater removed from work areas can be treated in the groundwater treatment plant (GWTP) if standards set by the treatment plant engineer for total suspended solids (TSS) and/or turbidity in the influent water stream are met by settling, filtration, or other methods.
7. Surface water that flows into the work area from upgradient areas must be managed without resulting in erosion, discharge of turbid water to water bodies, mobilization of contaminants from the work area, flooding, or other adverse effects. Upgradient water that does enter the work area can be redirected to downgradient drainage ditches.
8. Dewatering should be implemented to minimize the potential for sediment transport during excavation, reduce the moisture content of excavated sediments, and limit the amount of handling required to decrease water content prior to transportation for disposal.
9. Decontamination procedures and other considerations shall be implemented to control incidental transport of contaminated material from the work area.
10. The work should be performed in a manner that minimizes generation of dust and aerosols.
11. Construction will be completed in a manner that limits impact to property owners, residents, and the public. The health and safety of the public, workers, and residents of the Apartments will be the highest priority in project planning and execution. Precautions will be implemented to prevent access to the excavation area, contact with contaminated media, and disruption of fire and emergency services.
12. Impacted areas will be restored to existing conditions, or equivalent, following excavation. Pre-existing grades will be restored with imported, compacted fill and topsoil where appropriate. Existing structures, including sidewalks and driveways, will be restored with construction materials and workmanship equivalent to the existing level of quality. Affected landscaping, including trees, will be replaced with similar species and density. Replaced trees will be less mature than existing trees. Restored landscaping will be maintained for 1 year following planting.
13. Construction activities will not permanently damage existing wetlands or environmentally sensitive areas. Any damage to these areas will be repaired to existing conditions.

14. All excavated material will be disposed of at a Subtitle D, non-hazardous waste landfill. Dewatering or stabilization of some excavated material for moisture control may be required prior to disposal to ensure the material can be placed within a landfill with no further treatment.

15. Existing soil data will be used to profile excavated material for landfill disposal as non-hazardous waste. If additional data are required for waste profiling and disposal purposes, representative sampling and analyses will be conducted to achieve disposal requirements.

16. If material containing identifiable slag is encountered during excavation activities, this material will be segregated, sampled, and submitted for total arsenic analysis. Results from these analyses will be used to determine the appropriate method for waste management and disposal.

17. The construction activities will be scheduled during the dry season and will begin no earlier than June 1, 2015, and concluded no later than October 15, 2015.

18. The remedial action construction area will be managed with stormwater Best Management Practices (BMPs), and all stormwater runoff from the construction area will be contained and treated (as needed) to comply with the substantive requirements of the Washington State Stormwater Industrial Discharge Permit turbidity limit of 25 Nephelometric Turbidity Units (NTUs). A Construction Stormwater General Permit will not be required because the construction activities are limited to less than an acre of disturbed area. A stormwater pollution prevention plan (SWPPP) will be prepared to describe the BMPs and other measures to prevent violations of surface water quality.

REFERENCES

Floyd|Snider/AMEC Geomatrix. 2008. Unpublished Technical Memorandum from Teri Floyd and Brett Beaulieu, Floyd|Snider, and Larry McGaughey, AMEC Geomatrix, to Dom Reale of the Washington State Department of Ecology Re: Arsenic Characterization Study Report. 10 December.

———. 2009. *B&L Woodwaste Site Groundwater Remediation Work Plan.* Prepared for B&L Custodial Trust, Olympia, Washington. January.

Floyd|Snider/AMEC. 2013. Unpublished Memorandum from Brett Beaulieu and Erin Murray, Floyd|Snider to Dom Reale of the Washington State Department of Ecology Re: Ditch Bank Soil Investigation. 17 April.

———. 2014a. Unpublished Memorandum from Brett Beaulieu, Floyd|Snider, to Mohsen Kourehdar of the Washington State Department of Ecology re: Ditch Bank Soil Investigation. 20 June.

———. 2014b. Unpublished Memorandum from Brett Beaulieu, Megan McCullough, and Erin Murray, Floyd|Snider, to Mohsen Kourehdar of the Washington State Department of Ecology re: Ditch Bank Remedial Action. 21 May.

U.S. Environmental Protection Agency (USEPA). 2013a. *National Functional Guidelines for Inorganic Superfund Data Review*. EPA-540-R-013-001. October.

ATTACHMENTS

Table 1 South Ditch Soil Arsenic Results

Figure 1 South Ditch Arsenic Results and Estimated Excavation Extent

Figure 2 West Ditch Arsenic Results and Estimated Excavation Extent

Table

Table 1
South Ditch Soil Arsenic Results

Location	Sample ID	Sample Date	Top Depth (feet)	Bottom Depth (feet)	Arsenic Concentration (mg/kg)
AV-33	AV-33-3-4'	7/16/2014	3	4	**96.4**
	AV-33-4-5'	7/16/2014	4	5	**40.5**
	AV-33-5-6'	7/16/2014	5	6	8.09
	AV-33-6-7'	7/16/2014	6	7	5.87
AV-34	AV-34-3-4'	7/16/2014	3	4	**103**
	AV-34-4-5'	7/16/2014	4	5	18.7
	AV-34-5-6'	7/16/2014	5	6	9.83
	AV-34-6-7'	7/16/2014	6	7	6.54
AV-35	AV-35-3-4'	7/16/2014	3	4	7.73
	AV-35-6-7'	7/16/2014	6	7	4.29
AV-36	AV-36-3-4'	7/16/2014	3	4	**157**
	AV-36-3-4' DUP	7/16/2014	3	4	**98.2**
	AV-36-4-5'	7/16/2014	4	5	**126**
	AV-36-5-6'	7/16/2014	5	6	**57.2**
	AV-36-6-7'	7/16/2014	6	7	8.9
AV-37	AV-37-3-4'	7/16/2014	3	4	2.41
	AV-37-6-7'	7/16/2014	6	7	1.99
	AV-37-6-7' DUP	7/16/2014	6	7	2.06
AV-38	AV-38-3-4'	7/16/2014	3	4	**37.2**
	AV-38-6-7'	7/16/2014	6	7	**44.8**
	AV-38-7-8'	7/16/2014	7	8	**51.5**
AV-39	AV-39-3-4'	7/16/2014	3	4	**68.8**
	AV-39-3-4' DUP	7/16/2014	3	4	**88.6**
	AV-39-6-7'	7/16/2014	6	7	**45.2**
	AV-39-7-8'	7/16/2014	7	8	17.4
AV-40	AV-40-3-4’	9/22/2014	3	4	9.95
	AV-40-3-4’ DUP	9/22/2014	3	4	8.02
	AV-40-6-7’	9/22/2014	6	7	9.37
AV-41	AV-41-3-4’	9/22/2014	3	4	**38.5**
	AV-41-4-5’	9/22/2014	4	5	7.16
	AV-41-5-6’	9/22/2014	5	6	4.07
	AV-41-6-7’	9/22/2014	6	7	4.19
	AV-41-6-7’ DUP	9/22/2014	6	7	4.38
AV-42	AV-42-3-4’	9/22/2014	3	4	2.25
	AV-42-6-7’	9/22/2014	6	7	1.12
AV-43	AV-43-3-4’	9/22/2014	3	4	63
	AV-43-4-5’	9/22/2014	4	5	4.93
	AV-43-5-6’	9/22/2014	5	6	3.49
	AV-43-6-7’	9/22/2014	6	7	4.06
AV-44	AV-44-3-4’	9/22/2014	3	4	**34**
	AV-44-4-5’	9/22/2014	4	5	**48.5**
	AV-44-5-6’	9/22/2014	5	6	**105**
	AV-44-6-7’	9/22/2014	6	7	**31.2**
	AV-44-7-8’	9/22/2014	7	8	**39.5**
AV-45	AV-45-3-4’	9/22/2014	3	4	2.79
	AV-45-6-7’	9/22/2014	6	7	3.04
	AV-45-6-7’ DUP	9/22/2014	6	7	2.39
AV-46	AV-46-3-4’	9/22/2014	3	4	19.6
	AV-46-4-5’	9/22/2014	4	5	**84.4**
	AV-46-5-6’	9/22/2014	5	6	**48.3**
	AV-46-6-7’	9/22/2014	6	7	**26.1**
	AV-46-7-8’	9/22/2014	7	8	**105**
AV-47	AV-47-3-4’	9/22/2014	3	4	**25.1**
	AV-47-4-5’	9/22/2014	4	5	**89.1**
	AV-47-5-6’	9/22/2014	5	6	**41.2**
	AV-47-6-7’	9/22/2014	6	7	**45.4**
	AV-47-7-8’	9/22/2014	7	8	**28.2**
AV-48	AV-48-3-4’	9/22/2014	3	4	**204**
	AV-48-3-4’ DUP	9/22/2014	3	4	**38.4**
	AV-48-4-5’	9/22/2014	4	5	6.34
	AV-48-5-6’	9/22/2014	5	6	3.54
	AV-48-6-7’	9/22/2014	6	7	2.09

Note:

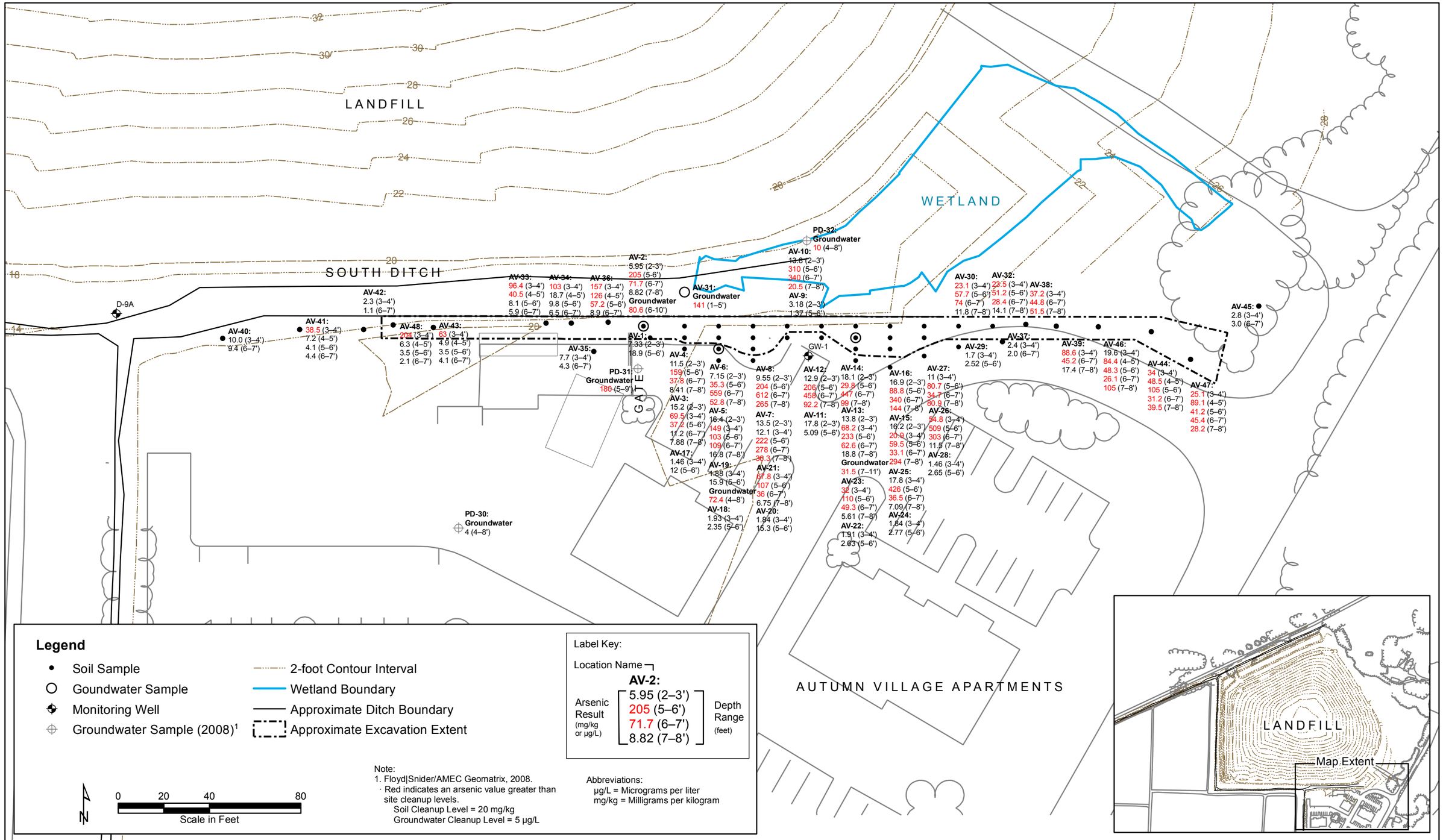
Bold Indicates concentration is greater than the cleanup level of 20 mg/kg for soil and 5 µg/L for groundwater.

Abbreviations:

µg/L Micrograms per liter

mg/kg Milligrams per kilogram

Figures



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Ditch Bank Soil Extent Investigation and Remedial Design Basis
B&L Woodwaste Site
Pierce County, Washington

Figure 1
South Ditch Arsenic Results and Estimated Excavation Extent

I:\GIS\Projects\B&L-O&M\MXD\Ditch Bank Soil Extent Investigation\Figure 1 South Ditch Arsenic Results and Estimated Excavation Extent 2013-2014.mxd
10/31/2014

Legend

- Soil Sample
- Monitoring Well
- Soil Sample (2008)[1]
- 2-foot Contour Interval
- Approximate Excavation Extent

Note:
1. Floyd|Snider/AMEC Geomatrix, 2008.
· Red indicates an arsenic value greater than site cleanup level.
Soil Cleanup Level = 20 mg/kg

Abbreviation:
mg/kg = Milligrams per kilogram

Qualifier:
U Analyte is undetected at given reporting limit.

Label Key:

Location Name

WD-2:
29.5 (1–2')
42.1 (2–3')
5.18 (3–4')

Arsenic Result (mg/kg)

Depth Range (feet)

0 10 20 40
Scale in Feet

N

PD-14:
1 U (5')
1 U (8')

WD-1:
23.8 (1–2')
18.3 (2–3')
5.62 (3–4')

WD-2:
29.5 (1–2')
42.1 (2–3')
5.18 (3–4')

WD-3:
28.1 (1–2')
46.5 (2–3')
45.1 (3–4')
4.84 (4–5')

WD-4:
26.4 (1–2')
31.6 (2–3')
6 (3–4')

WD-5:
47.8 (1–2')
103 (2–3')
14.7 (3–4')

WD-6:
27.4 (1–2')
43 (2–3')
12.4 (3–4')

WD-7:
45.4 (1–2')
76.6 (2–3')
44.9 (3–4')
5 (4–5')

WD-8:
31.8 (1–2')
27.9 (2–3')
12.3 (3–4')

WD-9:
67.7 (1–2')
23.3J (2–3')
8.47 (3–4')

WD-10:
29.1 (1–2')
10.3 (2–3')
5.59 (3–4')

WD-11:
30.8 (1–2')
54 (2–3')
8.21 (3–4')

WD-12:
20.6 (1–2')
24.1 (2–3')
9.91 (3–4')

WD-13:
41.1 (1–2')
46 (2–3')
13.7 (3–4')

WD-14:
26.6 (1–2')
23.6 (2–3')
21.7 (3–4')
7.34 (4–5')

WD-15:
30.2 (1–2')
29.4 (2–3')
5.42 (3–4')

WD-16:
52.7 (1–2')
7.61 (2–3')
2.63 (3–4')

WD-17:
56.1 (1–2')
7.49 (2–3')
4.81 (3–4')

WD-18:
23 (1–2')
5.6 (2–3')
2.45 (3–4')

D-8A
D-8B

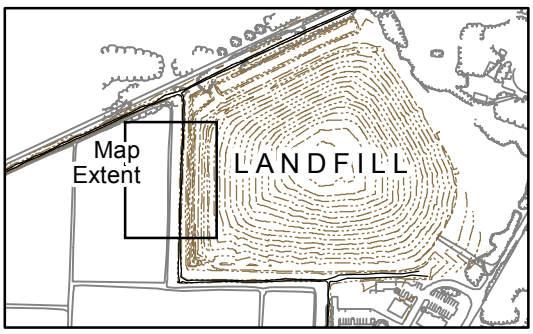
P-4:
2.4 (2')

PD-17:
1 U (2')

AGRICULTURAL FIELD

LANDFILL

WEST DITCH



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Ditch Bank Soil Extent Investigation and Remedial Design Basis
B&L Woodwaste Site
Pierce County, Washington

Figure 2
West Ditch Arsenic Results and Estimated Excavation Extent

I:\GIS\Projects\B&L-O&M\MXD\Ditch Bank Soil Extent Investigation\Figure 2 West Ditch Estimated Excavation Extent.mxd
10/31/2014

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix F
Geotechnical Analysis

associated earth sciences incorporated

July 10, 2015
Project No. TE150299A

IO Environmental & Infrastructure, Inc.
14734 NE 95th Street
Redmond, Washington 98052

Attention: Mr. Jeff Keller

Subject: Limited Subsurface Exploration and Geotechnical Wall Analysis
B&L Woodwaste Excavation
Fife Way & Interurban Trail Vicinity
Pierce County, Washington

Dear Mr. Keller:

Associated Earth Sciences, Inc. (AESI) is pleased to submit this report describing our limited subsurface exploration and geotechnical analysis for a temporary shoring wall in Pierce County, Washington. Our services were completed in general accordance with our proposal dated June 8, 2015, and were authorized by your signature on June 15, 2015.

1.0 PROJECT AND SITE DESCRIPTION

The project site is a woodwaste landfill facility located in the Fife/Milton area of Pierce County, as shown on the attached "Vicinity Map" (Figure 1). Our specific study area is an access driveway situated closely south of the landfill, north of a residential complex (Autumn Village Apartments), and west of Fife Way. Overall, this study area measures approximately 400 feet long by 50 feet wide. The attached "Site and Exploration Plan" (Figure 2) illustrates the access driveway and adjacent features.

Environmental remediation plans call for excavating an elongated prism of arsenic-impacted soils from the project site and then replacing these excavated soils with structural fill. According to a plan sheet prepared by Floyd-Snider environmental consultants, the excavation will be on the order of 15 to 20 feet wide and 8 to 12 feet deep. One segment of the excavation (between control points CP-16 and CP-29) extends alongside the access driveway and a buried water line for a distance of about 120 feet; this segment will require shoring to

protect the adjacent features. We understand that driven, steel, wide-flange soldier piles with wooden lagging will be used for shoring purposes, if feasible. Elsewhere, the excavation will be laid back to a stable angle and will not require shoring.

2.0 PURPOSE AND SCOPE

AESI performed this study to characterize subsurface conditions at the site, such that we can derive geotechnical conclusions and recommendations concerning design and construction of a temporary shoring wall. Our scope of work included the following tasks.

- Reviewed available topographic maps, geologic maps, and subsurface information regarding the project site and vicinity.
- Performed a visual surface reconnaissance of the site and immediate surroundings.
- Advanced three exploration borings (designated EB-1 through EB-3) to depths ranging from about 30 to 31½ feet below ground surface, at strategic locations along the proposed wall alignment as shown on Figure 2.
- Visually classified all soil samples obtained from our explorations.
- Analyzed research and field data in context with the proposed shoring wall.
- Prepared this limited geotechnical report summarizing our findings, conclusions, and recommendations.

3.0 FIELD EXPLORATION PROCEDURES

We explored subsurface conditions at the site on June 30, 2015. The number, locations, and depths of our explorations were completed within site access and budgetary constraints. Our exploration procedures are described below. The various types of sediments, as well as the depths where characteristics of the sediments changed, are indicated on the exploration logs presented in Appendix A. Soil contact depths shown on the logs should be regarded as only an approximation; the actual changes between sediment types are often gradational and/or undulating.

The conclusions and recommendations presented in this report are based, in part, on conditions encountered by our explorations completed for this study. Due to the nature of subsurface exploratory work, it is necessary to interpolate and extrapolate soil conditions between and beyond the field explorations. Differing subsurface conditions could be present outside the area of the explorations due to the random nature of deposition and the alteration of topography by past grading and/or filling. The nature and extent of any variations between the field explorations might not become fully evident until construction. If variations are

observed at that time, it could be necessary to modify specific conclusions or recommendations in this report.

3.1 Exploration Borings

All exploration borings were performed by Holocene Drilling, Inc., working under subcontract to AESI. Each boring was completed by advancing an 8-inch outside-diameter, hollow-stem auger with a truck-mounted drill rig. During the drilling process, disturbed but representative soil samples were obtained at 2½- or 5-foot-depth intervals using the Standard Penetration Test (SPT) procedure in accordance with the *American Society for Testing and Materials* (ASTM D-1586). After drilling, each borehole was backfilled with bentonite chips, and the surface was patched with asphaltic concrete.

The SPT testing and sampling procedure consists of driving a standard, 2-inch outside-diameter, split-barrel sampler a distance of 18 inches into the soil with a 140-pound hammer free-falling a distance of 30 inches. The number of blows for each 6-inch interval is recorded, and the number of blows required to drive the sampler the final 12 inches represents the Standard Penetration Resistance (also known as the "N-value"). If a total of 50 blows is reached within one 6-inch interval, the N-value is recorded as 50 blows for the corresponding number of inches of penetration. The N-value provides a measure of the relative density of granular soils or the relative consistency of cohesive soils. N-values are plotted on the exploration boring logs presented in Appendix A.

All exploration borings were continuously observed and logged by an AESI geologist. The samples obtained from the split-barrel sampler were classified in the field, and representative portions were placed in watertight containers. The samples were then transported to our laboratory for further visual classification. Soil descriptions shown on our exploration logs are based on N-values, drilling action, field observations, and laboratory classifications.

4.0 SITE CONDITIONS

The following text sections describe current site conditions, including existing development, vegetation, regional and local topography, regional geology, local soils, and local ground water. Our sources of information include topographic and geologic maps published by the U.S. Geological Survey (USGS).

4.1 Existing Development and Vegetation

The site is currently covered with asphaltic pavement and is bordered by concrete curbs and mature landscaping trees. Our exploration borings indicated that the asphaltic pavement is about 2 inches thick.

4.2 Regional and Local Topography

The site is positioned on the eastern margin of a large alluvial valley, adjacent to the western flank of an upland plateau. As such, regional topography is fairly flat to the west of the site but slopes upward to the east at a moderately steep angle. Local surface grades across the site slope gently downward to the west, resulting in approximately 5 feet of grade difference between the eastern and western ends of the proposed wall alignment.

4.3 Regional Geology

The 2006 draft USGS *Geologic Map of the Puyallup 7.5-Minute Quadrangle* (1:24,000 scale) indicates that the project site lies near the corner of a broad zone of Quaternary-age alluvial sediments. Typically, these alluvial sediments consist of loose to medium dense sands and gravels and/or soft to stiff silts and clays. Thicknesses can range from several tens of feet to several hundred feet, but due to the marginal location of the site, we infer that local thicknesses are at the low end of this range. A large deposit of peat is mapped closely north of the site, and a large deposit of recessional outwash soil is mapped closely to the east.

4.4 Local Soils

Our on-site exploration borings disclosed two primary soil layers that appear to represent recent fill soils overlying native alluvial soils. This stratigraphy is generally consistent with our surface observations and with the above-referenced geologic map. Local soil conditions are summarized in the paragraphs below and are detailed on the attached exploration logs.

Surficial Fill: Beneath the driveway pavement, all three of our borings revealed about 7½ feet of medium dense to very dense, gravelly sands with some silt. We interpret this layer to be fill soil placed during previous site development activities. The moderate to high densities indicate that some degree of compaction was applied to the fill material during placement.

Alluvium: Under the surficial fill layer, our borings disclosed loose to medium dense sands and gravelly sands interbedded with medium stiff to stiff silts and sandy silts. Organic matter was observed at random locations and depths within the layer. We interpret this soil to be native alluvium deposited by nearby rivers and streams. The alluvium extended beyond our maximum exploration depth of 31½ feet.

4.5 Local Ground Water

All three of our exploration borings encountered ground water at the time of drilling. Ground water depths ranged from about 10 feet in borings EB-2 and EB-3, which were located in the central and western parts of the site, to about 15 feet in EB-1, which was located in the eastern (higher) part of the site. This difference in water level depths approximately matches the difference in surface grades, thereby indicating that the local ground water table is fairly level.

It should be noted that local ground water conditions likely change with season, precipitation patterns, on- and off-site land usage, and other factors.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our surface reconnaissance, subsurface exploration, and document research, we conclude that the proposed temporary soldier pile shoring wall is feasible from a geotechnical standpoint, contingent on proper design implementation and construction practices. The following text sections present our geotechnical conclusions and recommendations concerning soldier piles and lagging.

It should be emphasized that all environmental issues associated with this shoring and excavation work will be handled by the project environmental consultant and/or remediation contractor. This includes preparation of a suitable Health and Safety Plan for all on-site personnel. AESI's scope of services for this project does not include any environmental consulting.

5.1 Soldier Piles

Our design and construction recommendations concerning soldier piles are discussed below and are illustrated on the attached "Lateral Earth Pressure Diagram" (Figure 3).

Pile Types and Installation: A high-load soldier pile is typically installed by drilling a hole, backfilling the hole with concrete, and inserting a steel wide-flange member into the concrete. However, a low-load soldier pile can sometimes be installed by driving a steel member directly into the ground. Considering the relatively low height of the subject wall, we anticipate that driven piles could be feasible. The final decision regarding pile type and installation method should be made by the shoring contractor.

Pile Drilling and Driving Conditions: Our subsurface explorations revealed that the wall alignment is mantled by 7½ feet of medium dense to very dense, granular fill soils, which are underlain by a thicker deposit of alluvial soils comprising loose to medium dense sands and medium stiff to stiff silts. We anticipate that the alluvial soils can be readily drilled or driven through, whereas the surficial fill will require greater drilling or driving effort. Ground water will likely be encountered at depths below the excavation base level. For drilled piles, the shoring contractor should be prepared to install temporary casing whenever soil and ground water conditions lead to sidewall caving.

Pile Embedment and Spacing: All soldier piles must have sufficient embedment below the excavation base to provide adequate kick-out resistance to horizontal loads. Figure 3 indicates our recommended minimum embedment below the excavation base level. In all cases,

however, the actual embedment and pile spacing must be determined through equilibrium analyses by the project shoring engineer.

Applied Earth Pressures: All soldier piles should be designed to resist the applied lateral earth pressures. If the shoring wall is allowed to yield slightly, we infer that *active earth pressures* can be used for design purposes. However, where utility lines or other settlement-sensitive structures are located close to the excavation, we recommend designing for higher *at-rest earth pressures* as a means to limit pile deflections and reduce the risk of associated subsidence. Figure 3 indicates our recommended values for both cases.

Surcharge Pressures: In addition to the applied earth pressures discussed above, all soldier piles should be designed to resist any applicable lateral surcharge pressures. We specifically recommend that a *traffic surcharge pressure* be included in the design of any walls with backslopes that will be subjected to vehicle or construction traffic. Our recommended traffic surcharge pressure is presented graphically on Figure 3.

Resisting Earth Pressures: Lateral loads acting on the soldier pile wall can be resisted by using an appropriate *passive earth pressure.* This resisting pressure acts over two pile diameters for the embedded portion of each soldier pile, neglecting the uppermost 2 feet. Our recommended allowable passive earth pressure design value is shown on Figure 3.

Construction Monitoring: We recommend that an AESI geotechnical representative be retained to continuously monitor the installation of all soldier piles. This monitoring program would include observation and documentation of installation procedures, construction materials, drilling or driving action, tip depths, soil conditions, pile spacing, and pile plumbness.

5.2 Lagging and Backfill

We recommend that wooden timbers, or *lagging*, be installed between all adjacent soldier piles to reduce the potential for soil caving, backslope subsidence, and hazardous working conditions. Our geotechnical recommendations concerning temporary lagging are discussed below.

Lateral Pressures: Lagging will be subjected to the same types of applied earth pressures and surcharge pressures as described above for soldier piles. However, due to soil arching effects, temporary lagging that spans 8 feet or less need be designed for only 50 percent of the earth pressures and surcharge pressures shown on Figure 3.

Lagging Backfill: We recommend that any voids behind the lagging be backfilled with a material sufficiently pervious to allow ground water flow and prevent a build-up of hydrostatic pressure. For this reason, permeable materials such as granular excavation spoils, clean sand, or pea gravel are suitable as backfill material. In contrast, silty soils, cement grout, controlled-density fill, or other less-permeable materials are not suitable. All lagging backfill

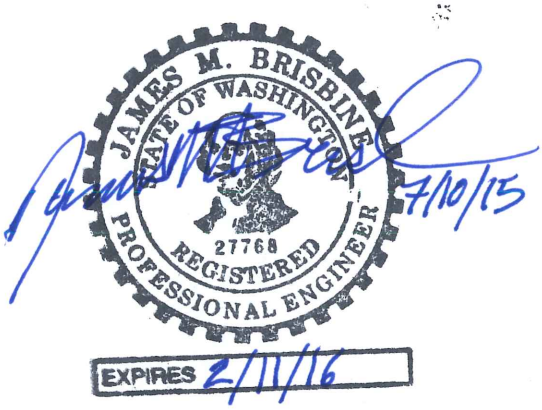
material should freely transit water to the front of the wall, either by extending gravel under the lagging or by providing gaps through the lagging.

6.0 CLOSURE

AESI has prepared this report for the exclusive use of our client and their agents, for specific application to this project. Within the limitations of scope and schedule, our services have been performed in accordance with generally accepted local geotechnical engineering practices in effect at the time our report was prepared. No other warranty, express or implied, is made.

We appreciate the opportunity to be of continued service to you on this project. Should you have any questions regarding this report or other geotechnical aspects of the project, please call us at your earliest convenience.

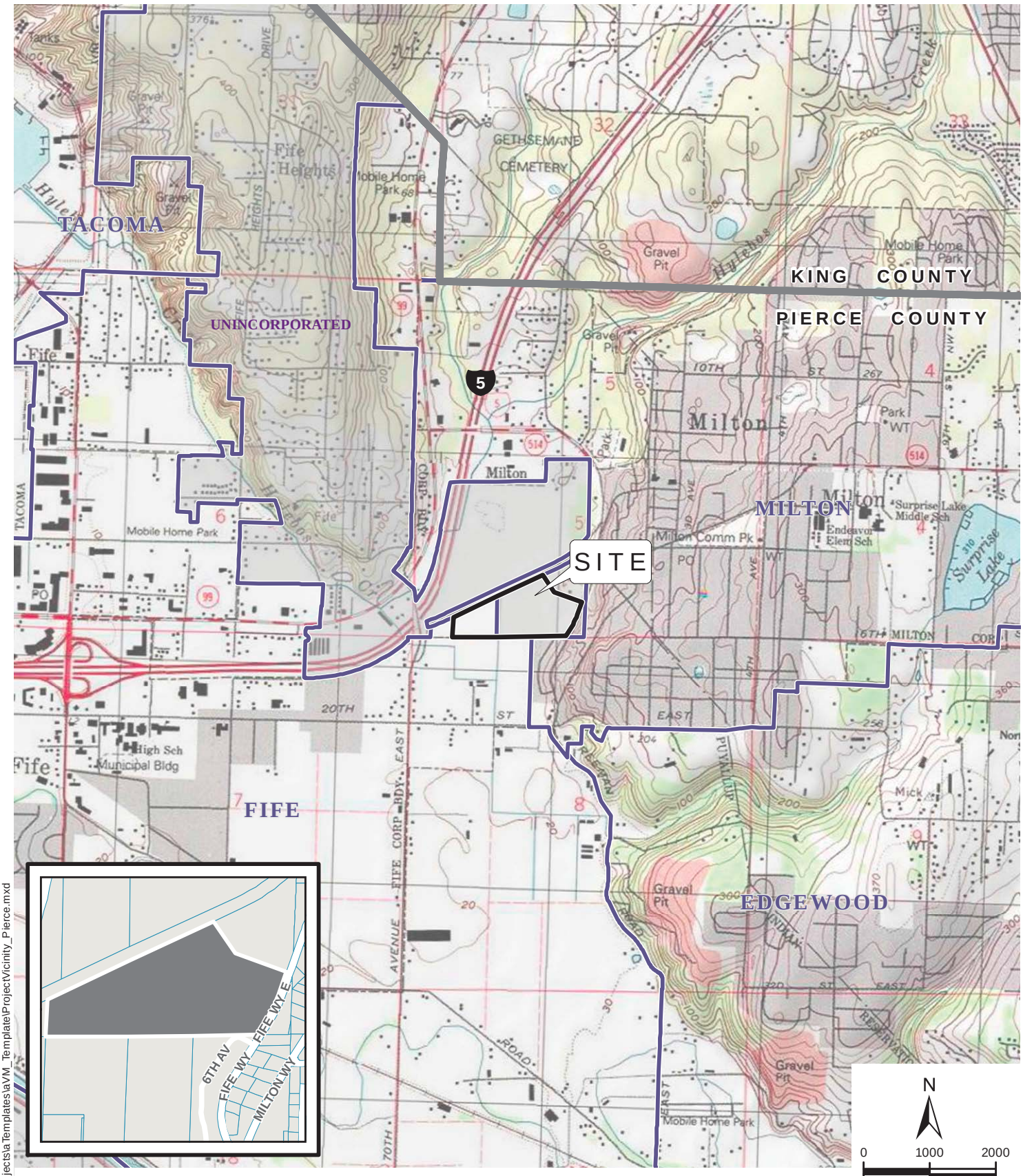
Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Tacoma, Washington



Jon N. Sondergaard, L.G., L.E.G.
Senior Principal Engineering Geologist

James M. Brisbine, P.E., L.G., L.E.G.
Senior Associate Geotechnical Engineer

Attachments:
Figure 1: Vicinity Map
Figure 2: Site and Exploration Plan
Figure 3: Lateral Earth Pressure Diagram
Appendix A: Exploration Logs



REFERENCE: USGS, PIERCE CO

NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION.

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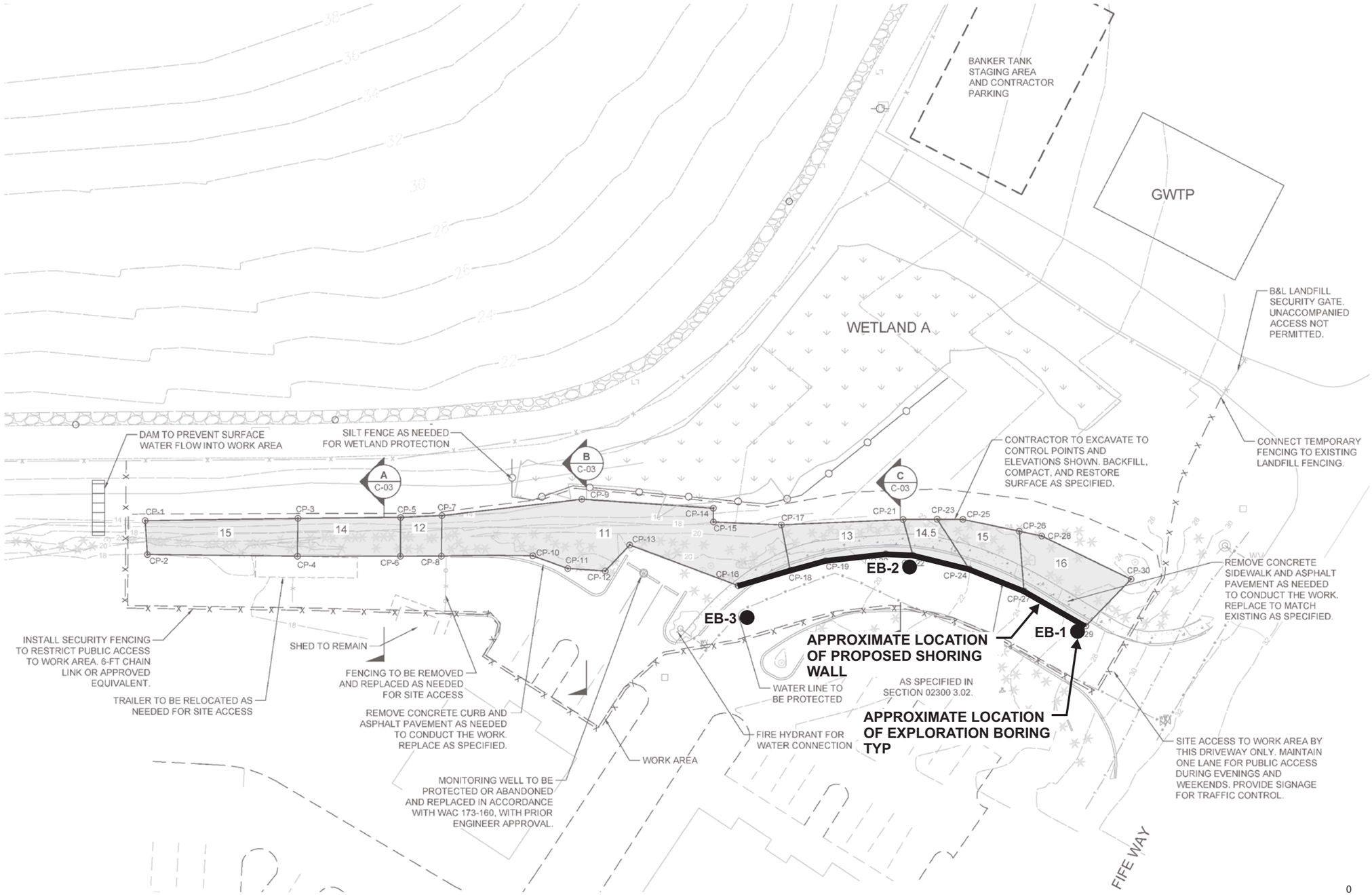
VICINITY MAP

B AND L WOODWASTE EXCAVATION
FIFE / PIERCE COUNTY, WASHINGTON

FIGURE 1

DATE 7/15

PROJ. NO. TE150299A



REFERENCE: FLOYD / SNIDER

150299 B-L Woodwaste Excavation \ 150299 F2 Site and Expl.cdr

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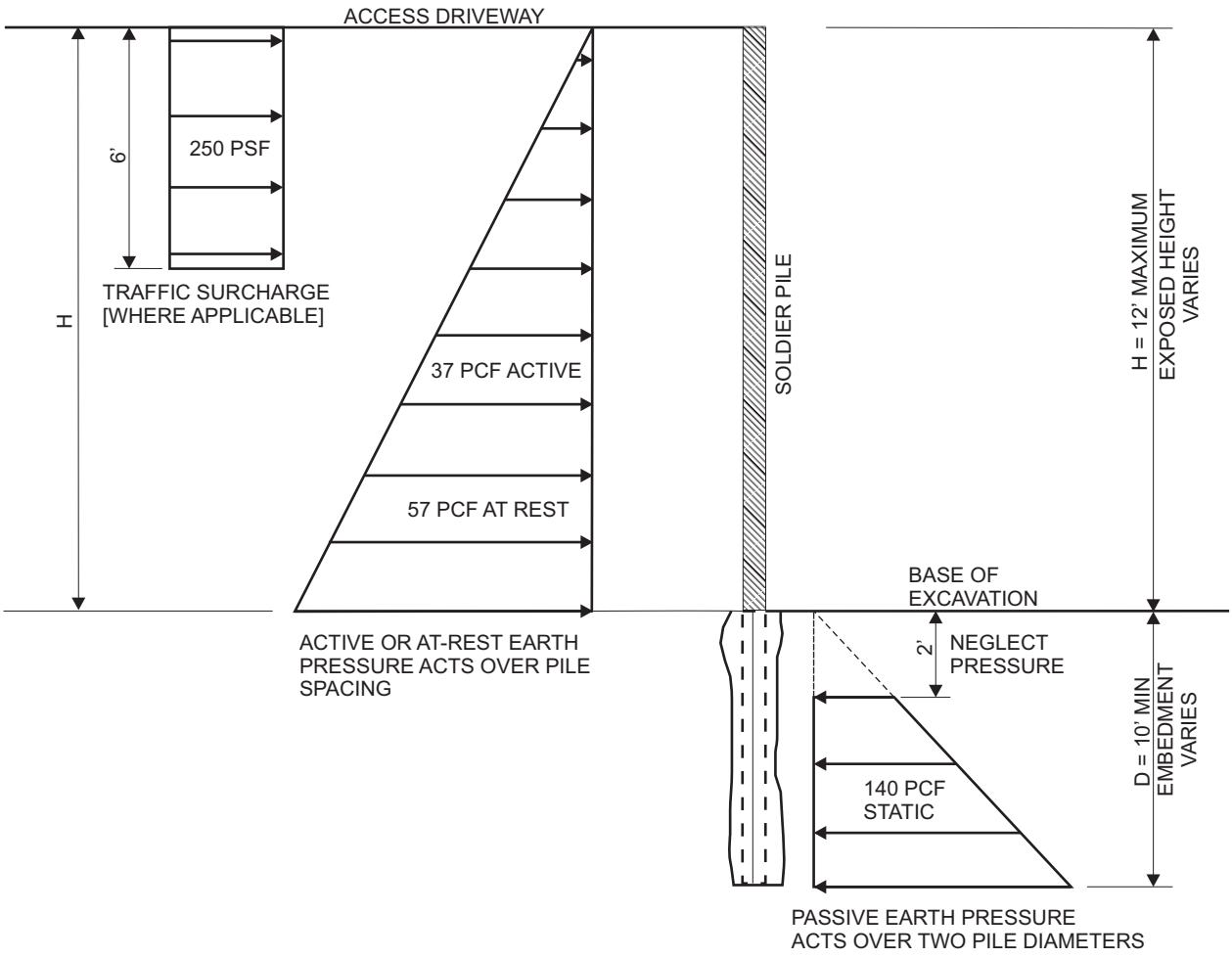
SITE AND EXPLORATION PLAN

B & L WOODWASTE EXCAVATION
PIERCE COUNTY, WASHINGTON

FIGURE 2

DATE 7/15

PROJ. NO. TE150299A



NOTES:

1. ACTIVE EARTH PRESSURE CAN BE USED FOR YIELDING WALLS. AT REST EARTH PRESSURE MUST BE USED WHERE SETTLEMENT-SENSITIVE STRUCTURES OR UTILITIES SIT CLOSELY BEHIND WALL.

2. SOLDIER PILE EMBEDMENT DEPTH "D" SHOULD PROVIDE NECESSARY VERTICAL CAPACITY, KICKOUT, AND OVERTURNING RESISTANCE.

3. PASSIVE PRESSURES INCLUDE A FACTOR OF SAFETY OF 1.5.

4. GROUND WATER LEVEL IS ASSUMED TO BE AT BASE OF EXCAVATION.

5. DIAGRAM DOES NOT INCLUDE HYDROSTATIC PRESSURE SURCHARGE ABOVE THE EXCAVATION BASE. IT IS ASSUMED THAT WALLS ARE SUITABLY DRAINED TO PREVENT BUILDUP OF HYDROSTATIC PRESSURE.

6. DIAGRAM IS ILLUSTRATIVE AND NOT REFERENCED TO A PARTICULAR LOCATION.

7. DIAGRAM DOES NOT INCLUDE PRESSURES DUE TO SURFACE SURCHARGES FROM ANY ADJACENT STRUCTURES. THESE PRESSURES MUST BE PROVIDED BY THE STRUCTURAL ENGINEER.

8. GROUND WATER LEVEL IS ASSUMED TO BE AT BASE OF EXCAVATION.

9. DUE TO TEMPORARY NATURE OF SHORING WALL, NO SEISMIC LOADS ARE INCLUDED.

APPENDIX A

Exploration Logs

Coarse-Grained Soils - More than 50% [1] Retained on No. 200 Sieve	Gravels - More than 50% [1] of Coarse Fraction Retained on No. 4 Sieve	≤5% Fines [5]	GW	Well-graded gravel and gravel with sand, little to no fines
			GP	Poorly-graded gravel and gravel with sand, little to no fines
		≥12% Fines [5]	GM	Silty gravel and silty gravel with sand
			GC	Clayey gravel and clayey gravel with sand
	Sands - 50% [1] or More of Coarse Fraction Passes No. 4 Sieve	≤5% Fines [5]	SW	Well-graded sand and sand with gravel, little to no fines
			SP	Poorly-graded sand and sand with gravel, little to no fines
		≥12% Fines [5]	SM	Silty sand and silty sand with gravel
			SC	Clayey sand and clayey sand with gravel
Fine-Grained Soils - 50% [1] or More Passes No. 200 Sieve	Silts and Clays Liquid Limit Less than 50		ML	Silt, sandy silt, gravelly silt, silt with sand or gravel
			CL	Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay
			OL	Organic clay or silt of low plasticity
	Silts and Clays Liquid Limit 50 or More		MH	Elastic silt, clayey silt, silt with micaceous or diatomaceous fine sand or silt
			CH	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel
			OH	Organic clay or silt of medium to high plasticity
Highly Organic Soils			PT	Peat, muck and other highly organic soils

Terms Describing Relative Density and Consistency

	Density	SPT [2] blows/foot
Coarse-Grained Soils	Very Loose	0 to 4
	Loose	4 to 10
	Medium Dense	10 to 30
	Dense	30 to 50
	Very Dense	>50
	Consistency	**SPT [2] blows/foot**
Fine-Grained Soils	Very Soft	0 to 2
	Soft	2 to 4
	Medium Stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	>30

Test Symbols

G = Grain Size
M = Moisture Content
A = Atterberg Limits
C = Chemical
DD = Dry Density
K = Permeability

Component Definitions

Descriptive Term	Size Range and Sieve Number
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

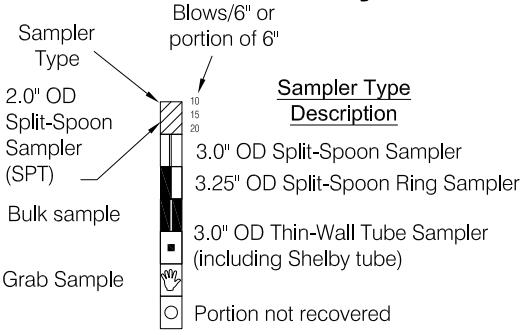
[3] Estimated Percentage

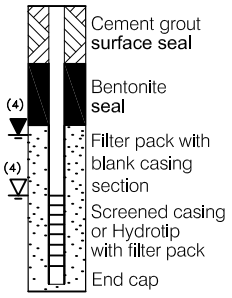
Component	Percentage by Weight
Trace	<5
Some	5 to <12
Modifier (silty, sandy, gravelly)	12 to <30
Very *modifier* (silty, sandy, gravelly)	30 to <50

Moisture Content

Dry - Absence of moisture, dusty, dry to the touch
Slightly Moist - Perceptible moisture
Moist - Damp but no visible water
Very Moist - Water visible but not free draining
Wet - Visible free water, usually from below water table

Symbols





(1) Percentage by dry weight
(2) (SPT) Standard Penetration Test (ASTM D-1586)
(3) In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)
(4) Depth of ground water
▼ ATD = At time of drilling
▽ Static water level (date)
(5) Combined USCS symbols used for fines between 5% and 12%

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.

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Exploration Log

Project Number	Exploration Number	Sheet
TE150299A	EB-1	1 of 1

Project Name	B&L Woodwaste Excavation	Ground Surface Elevation (ft)	26 amsl
Location	Milton, WA	Datum	Civil Plan
Driller/Equipment	Holocene Drilling, Inc. / Hollow Stem Auger, truck-mounted	Date Start/Finish	6/30/15,6/30/15
Hammer Weight/Drop	140# / 30"	Hole Diameter (in)	8 inches

Depth (ft)	ST	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot (10 20 30 40)	Other Tests
				Asphalt - 2 inches					
				Fill					
		S-1		Very dense, slightly moist, brown, very gravelly fine to coarse SAND, some silt; unsorted; poor recovery (SW).			22 50/6"	▲72	
5		S-2		As above.			25 50/5"	▲75/11"	
				Holocene-Age Alluvium					
10		S-3		Very loose, very moist, brown, very gravelly fine to coarse SAND, some silt; poor recovery (SW).			2 1 3	▲4	
15		S-4		Very loose, wet, brown, very gravelly fine to coarse SAND, some silt; poor recovery (SW).		▼	2 1 2	▲3	
20		S-5		Medium dense, wet, brown, very gravelly fine to coarse SAND, some silt (SW). Medium dense, wet, lavender brown, silty, very fine to fine SAND; massive; poor recovery (SP).			3 12 9	▲21	
25		S-6		Medium dense, wet, dark brown, silty fine to medium SAND, some fine to coarse gravel, some organics (SM). Medium dense, wet, gray, sandy fine to coarse GRAVEL, some silt (GW). Blow counts likely overstated due to gravel and large wood fragment content.			9 15 15	▲30	
30		S-7		Medium dense, wet, dark brown, silty fine to medium SAND, some fine to coarse gravel, some organics (SM). Medium dense, wet, brown, gravelly fine to coarse SAND, some silt; weakly stratified (SW). Blow counts likely overstated due to gravel and large wood fragment content.			12 18 16	▲35	
				Bottom of exploration boring at 31.5 feet Backfilled with bentonite chips; asphalt patch.					

Sampler Type (ST):

- 2" OD Split Spoon Sampler (SPT)
- 3" OD Split Spoon Sampler (D & M)
- Grab Sample
- No Recovery
- Ring Sample
- Shelby Tube Sample

M - Moisture

- Water Level ()
- Water Level at time of drilling (ATD)

Logged by: LBK
Approved by: JMB

AESIBOR 150299.GPJ July 10, 2015

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Exploration Log

Project Number	Exploration Number	Sheet
TE150299A	EB-2	1 of 1

Project Name	B&L Woodwaste Excavation	Ground Surface Elevation (ft)	21 amsl
Location	Milton, WA	Datum	Civil Plan
Driller/Equipment	Holocene Drilling, Inc. / Hollow Stem Auger, truck-mounted	Date Start/Finish	6/30/15,6/30/15
Hammer Weight/Drop	140# / 30"	Hole Diameter (in)	8 inches

Depth (ft)	ST	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot (10 20 30 40)	Other Tests
				Asphalt - 2 inches					
				Fill					
		S-1		Medium dense, moist, brown, fine to coarse SAND, some fine to coarse gravel, some silt (SW).			13 9 7	▲16	
5		S-2		No recovery.			7 8 9	▲17	
				Holocene-Age Alluvium					
10		S-3		Loose, wet, gray, very gravelly fine to coarse SAND, some silt; stratified (SW). Medium stiff, wet, lavender brown, SILT, some very fine sand, some organics; massive (ML).		▼	3 3 4	▲7	
15		S-4		Loose, wet, gray, very gravelly fine to coarse SAND, some to trace silt; stratified (SW). Medium stiff, wet, lavender brown, SILT, some very fine sand, trace organics (ML).			3 4 4	▲8	
20		S-5		Loose, wet, gray, fine to coarse SAND, some fine gravel, trace silt; stratified (SW). Medium stiff, wet, lavender brown, SILT, some very fine sand, some organics, with thin (1/16 to 1/4 inch thick) very fine to fine SAND seams (ML).			3 3 5	▲8	
25		S-6		Loose, wet, gray, fine to coarse SAND, some silt, trace gravel; stratified (SW). Medium stiff, wet, lavender brown, SILT, some very fine sand, some organics (ML). Driller notes blow counts overstated due to tree branch at bottom of boring.			50/2 1/2"		▲50/2 1/2"
30		S-7		Driller notes driving sampler on tree branch.			50/2"		▲50/2"
				Bottom of exploration boring at 30.2 feet Backfilled with bentonite chips; asphalt patch.					

Sampler Type (ST):

- 2" OD Split Spoon Sampler (SPT)
- 3" OD Split Spoon Sampler (D & M)
- Grab Sample
- No Recovery
- Ring Sample
- Shelby Tube Sample

M - Moisture

- Water Level ()
- Water Level at time of drilling (ATD)

Logged by: LBK
Approved by: JMB

AESIBOR 150299.GPJ July 10, 2015

associated earth sciences incorporated

Exploration Log

Project Number	Exploration Number	Sheet
TE150299A	EB-3	1 of 1

Project Name	B&L Woodwaste Excavation	Ground Surface Elevation (ft)	21 amsl
Location	Milton, WA	Datum	Civil Plan
Driller/Equipment	Holocene Drilling, Inc. / Hollow Stem Auger, truck-mounted	Date Start/Finish	6/30/15,6/30/15
Hammer Weight/Drop	140# / 30"	Hole Diameter (in)	8 inches

Depth (ft)	ST	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot (10 20 30 40)	Other Tests
				Asphalt - 2 inches					
				Fill					
		S-1		Dense to very dense, moist, gray brown, gravelly fine to coarse SAND, some silt; unsorted (SW).			15 21 29	▲50	
5		S-2		Very dense, moist, gray brown, gravelly fine to coarse SAND, some silt; unsorted (SW).			24 25 30	▲55	
				Holocene-Age Alluvium					
10		S-3		Loose to medium dense / medium stiff to stiff, very moist to wet, lavender brown, interbedded silty very fine SAND and very fine sandy SILT (ML/SP).		▼	6 5 6	▲11	
15		S-4		Medium dense / very stiff, wet, lavender brown, interbedded silty very fine SAND and very fine sandy SILT, trace organics (ML/SP).			4 9 11	▲20	
20		S-5		Medium stiff to stiff, wet, lavender brown, very fine sandy SILT, abundant organics; scattered fine gravel (ML).			3 5 5	▲10	
25		S-6		Medium dense, wet, red brown, fine to medium SAND, trace silt, grading to very fine to fine SAND, trace silt (SP).			7 7 15	▲22	
30		S-7		Medium dense, wet, red brown, fine to medium SAND, trace silt; massive (SP).			3 7 15	▲22	
				Driller notes approximate 3 foot heave.					
				Bottom of exploration boring at 31.5 feet Backfilled with bentonite chips; asphalt patch.					

Sampler Type (ST):

- 2" OD Split Spoon Sampler (SPT)
- 3" OD Split Spoon Sampler (D & M)
- Grab Sample
- No Recovery
- Ring Sample
- Shelby Tube Sample

M - Moisture

- Water Level ()
- Water Level at time of drilling (ATD)

Logged by: LBK
Approved by: JMB

AESIBOR 150299.GPJ July 10, 2015

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix G
Waste Disposal Authorization, Trip Tickets, and Waste Profile Forms

Tacoma - Pierce County
Health Department
Healthy People in Healthy Communities
www.tpchd.org

No. 1928

WASTE DISPOSAL AUTHORIZATION

Tacoma Pierce County
Health Department
7/28/2015 1:20:12 PM
Clerk 48-T2
Waste Disposal Auth Initial
$150.00
Receipt #387101
ck:1023 IO Environmental/B&L Woodw

(**XX**) Non-Asbestos (**XX**) **New**
( ) Asbestos (PSCAA Case # _____) ( ) Amendment

A. Generator Name: B&L Woodwaste Trust
B. Generator Address: B&L woodwaste Site, Fife, WA aste FifeWA
C. Transporter Name: Contract Hauler
D. Technical Contact: Jeff Keller, IO Environmental & Infrastructure Phone: (425) 698-3093
E. Waste Description: Woodwaste Landfill that contains slag from Asarco Smelter
( ) Sludge (**XX**) Solid ( ) PCS (**XX**) Other
F. Approved Quantity: **3,000 Tons**
G. **Actual Quantity (Filled in upon disposal):** _____
H. Multiple Loads: (**XX**) Yes ( ) No
I. Dates of Disposal: **July 28, 2015 through December 31, 2015**
J. Testing: Total metals for Arsenic, TCLP for Arsenic
K. Reviewed by Department of Ecology: **(XX) Yes** ( ) No
L. Disposal/Transportation Requirements: **A copy of this WDA must be transported with EACH load of waste and presented to the LRI Landfill Scalehouse Operator.** Soils demonstrating excessive odors are not suitable for use as daily cover and shall be directly buried (disposed of) in the landfill. If odors are not excessive and the soils physical characteristics are suitable for utilization as a daily cover then the soils may be used as alternative daily cover. Loads shall be covered during transport to the landfill to prevent fugitive emissions of contaminated soils. Load sizes shall comply with conditional-use and solid waste permit criteria.
M. Facility: (**XX**) **LRI Landfill (304th Street LF), 30919 Meridian Street, Eatonville, WA**

CERTIFICATION

I hereby certify that I have personally examined and am familiar with the information submitted in this document and any supporting material. Based on my inquiry of those individuals immediately responsible for obtaining the information, the information submitted is true, accurate and complete to the best of my knowledge and ability and that all known and suspected hazards have been disclosed. I agree that the generator and/or transporter will abide by all conditions specified in line (L) or any attachments thereto.

7/28/15 Senior PM
Date Title Signature

AUTHORIZED BY: Dan Watts

Dan Watts TPCHD (253) 798-3512

Cc: LRI LF Scalehouse via Fax – 253 875 7205

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JUL 28 2015
Tacoma-Pierce County
Health Dept.

APPROVED
JUL 28 2015
TACOMA-PIERCE COUNTY HEALTH DEPT.
ENVIRONMENTAL HEALTH DIV.
For Official Use Only

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Puyallup, WA 98375
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2840 ADAMS AVE SUITE 301
SAN DIEGO CA 92116

040-062-01

ACCOUNT NO.
922

DETACH AND RETURN TOP PORTION WITH REMITTANCE

DATE	TICKET	VEHICLE	REFERENCE	DESCRIPTION	QUANTITY	AMOUNT
08/13/15	03-00373721		14	Weight Only	18.99	
08/14/15	03-00373917			83 SOIL DISPOSAL-OC	23.47	
08/14/15	03-00373986			83 SOIL DISPOSAL-OC	28.68	
08/14/15	03-00374039			83 SOIL DISPOSAL-OC	31.11	
08/19/15	03-00374557		TIM	83 SOIL DISPOSAL-OC	22.74	
08/19/15	03-00374559		HARLOW 18	83 SOIL DISPOSAL-OC	23.32	
08/19/15	03-00374563		LINDA	83 SOIL DISPOSAL-OC	27.63	
08/19/15	03-00374569		BARRY	83 SOIL DISPOSAL-OC	24.90	
08/19/15	03-00374614		TIM	83 SOIL DISPOSAL-OC	30.90	
08/19/15	03-00374619		HARLOW 18	83 SOIL DISPOSAL-OC	25.50	
08/19/15	03-00374623		LINDA	83 SOIL DISPOSAL-OC	23.70	
08/19/15	03-00374625		BARRY	83 SOIL DISPOSAL-OC	24.38	
08/19/15	03-00374673		PGH 14	83 SOIL DISPOSAL-OC	23.31	
08/19/15	03-00374674		PGH 5	83 SOIL DISPOSAL-OC	27.74	
08/19/15	03-00374675		PGH 7	83 SOIL DISPOSAL-OC	25.80	
08/19/15	03-00374678		TIM	83 SOIL DISPOSAL-OC	22.64	
08/19/15	03-00374686		LINDA	83 SOIL DISPOSAL-OC	21.84	
08/19/15	03-00374692		BARRY	83 SOIL DISPOSAL-OC	24.26	
08/19/15	03-00374717		HARLOW 18	83 SOIL DISPOSAL-OC	21.47	
08/20/15	03-00374737		17	83 SOIL DISPOSAL-OC	28.63	
08/20/15	03-00374765		5	83 SOIL DISPOSAL-OC	24.36	
08/20/15	03-00374769		7	83 SOIL DISPOSAL-OC	20.53	
08/20/15	03-00374817		5	83 SOIL DISPOSAL-OC	22.10	
08/20/15	03-00374846		14	83 SOIL DISPOSAL-OC	25.05	
08/20/15	03-00374911		5	83 SOIL DISPOSAL-OC	25.26	
08/20/15	03-00374927		14	83 SOIL DISPOSAL-OC	31.80	
08/21/15	03-00375003		14	83 SOIL DISPOSAL-OC	26.08	
08/21/15	03-00375009		7	83 SOIL DISPOSAL-OC	28.86	
08/21/15	03-00375097			83 SOIL DISPOSAL-OC	27.63	
08/21/15	03-00375098			83 SOIL DISPOSAL-OC	38.06	

Form #2(

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08/13/15	03-00373721		14	Weight Only	10.99	
08/14/15	03-00373917			83 SOIL DISPOSAL-OC	23.47	
08/14/15	03-00373986			83 SOIL DISPOSAL-OC	28.68	
08/14/15	03-00374039			83 SOIL DISPOSAL-OC	31.11	
08/19/15	03-00374557		TIM	83 SOIL DISPOSAL-OC	22.74	
08/19/15	03-00374559		HARLOW 18	83 SOIL DISPOSAL-OC	23.32	
08/19/15	03-00374563		LINDA	83 SOIL DISPOSAL-OC	27.63	
08/19/15	03-00374569		BARRY	83 SOIL DISPOSAL-OC	24.90	
08/19/15	03-00374614		TIM	83 SOIL DISPOSAL-OC	30.90	
08/19/15	03-00374619		HARLOW 18	83 SOIL DISPOSAL-OC	25.50	
08/19/15	03-00374623		LINDA	83 SOIL DISPOSAL-OC	23.70	
08/19/15	03-00374625		BARRY	83 SOIL DISPOSAL-OC	24.38	
08/19/15	03-00374673		PGH 14	83 SOIL DISPOSAL-OC	23.31	
08/19/15	03-00374674		PGH 5	83 SOIL DISPOSAL-OC	27.74	
08/19/15	03-00374675		PGH 7	83 SOIL DISPOSAL-OC	25.80	
08/19/15	03-00374678		TIM	83 SOIL DISPOSAL-OC	22.64	
08/19/15	03-00374686		LINDA	83 SOIL DISPOSAL-OC	21.84	
08/19/15	03-00374692		BARRY	83 SOIL DISPOSAL-OC	24.26	
08/19/15	03-00374717		HARLOW 18	83 SOIL DISPOSAL-OC	21.47	
08/20/15	03-00374737		17	83 SOIL DISPOSAL-OC	28.63	
08/20/15	03-00374765		5	83 SOIL DISPOSAL-OC	24.36	
08/20/15	03-00374769		7	83 SOIL DISPOSAL-OC	20.53	
08/20/15	03-00374817		5	83 SOIL DISPOSAL-OC	22.10	
08/20/15	03-00374846		14	83 SOIL DISPOSAL-OC	25.05	
08/20/15	03-00374911		5	83 SOIL DISPOSAL-OC	25.26	
08/20/15	03-00374927		14	83 SOIL DISPOSAL-OC	31.80	
08/21/15	03-00375003		14	83 SOIL DISPOSAL-OC	26.08	
08/21/15	03-00375009		7	83 SOIL DISPOSAL-OC	28.86	
08/21/15	03-00375097			83 SOIL DISPOSAL-OC	27.63	
08/21/15	03-00375098			83 SOIL DISPOSAL-OC	38.06	

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DETACH AND RETURN TOP PORTION WITH REMITTANCE

08/22/15	03-00375161		TIM	83 SOIL DISPOSAL-OC	24.37	
08/24/15	03-00375255		7	83 SOIL DISPOSAL-OC	28.73	
08/24/15	03-00375258		14	83 SOIL DISPOSAL-OC	22.23	
08/24/15	03-00375306		7	83 SOIL DISPOSAL-OC	29.56	
08/24/15	03-00375311		14	83 SOIL DISPOSAL-OC	23.08	
08/24/15	03-00375355		7	83 SOIL DISPOSAL-OC	30.49	
08/24/15	03-00375363		14	83 SOIL DISPOSAL-OC	29.51	
08/25/15	03-00375400		PGH14	83 SOIL DISPOSAL-OC	26.94	
08/25/15	03-00375401		PGH 7	83 SOIL DISPOSAL-OC	30.99	
08/25/15	03-00375444		H18	83 SOIL DISPOSAL-OC	21.99	
08/25/15	03-00375483		H 24	83 SOIL DISPOSAL-OC	28.36	
08/25/15	03-00375490		PGH14	83 SOIL DISPOSAL-OC	21.96	
08/25/15	03-00375508		PGH 7	83 SOIL DISPOSAL-OC	28.19	
08/25/15	03-00375515		H18	83 SOIL DISPOSAL-OC	30.72	
08/25/15	03-00375525		H24	83 SOIL DISPOSAL-OC	34.35	
08/25/15	03-00375553		PGH14	83 SOIL DISPOSAL-OC	25.88	
08/25/15	03-00375576		H18	83 SOIL DISPOSAL-OC	27.76	
08/25/15	03-00375580		PGH7	83 SOIL DISPOSAL-OC	32.70	
08/25/15	03-00375593		H24	83 SOIL DISPOSAL-OC	31.08	
08/26/15	03-00375613		PGH14	83 SOIL DISPOSAL-OC	27.92	
08/26/15	03-00375618		H18	83 SOIL DISPOSAL-OC	27.14	
08/26/15	03-00375619		24	83 SOIL DISPOSAL-OC	31.93	
08/26/15	03-00375663		PGH7	83 SOIL DISPOSAL-OC	27.54	
08/26/15	03-00375712		H24	83 SOIL DISPOSAL-OC	26.44	
08/26/15	03-00375721		H18	83 SOIL DISPOSAL-OC	25.08	
08/26/15	03-00375726		PGH7	83 SOIL DISPOSAL-OC	24.10	
08/26/15	03-00375778		H24	83 SOIL DISPOSAL-OC	29.21	
08/26/15	03-00375786		H18	83 SOIL DISPOSAL-OC	29.35	
08/26/15	03-00375809		PGH7	83 SOIL DISPOSAL-OC	23.90	
08/26/15	03-00375830		H24	83 SOIL DISPOSAL-OC	17.50	

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08/27/15	03-00375890		[illegible]	83 SOIL DISPOSAL-OC	12.30	
08/27/15	03-00375891		7	83 SOIL DISPOSAL-OC	10.62	
08/27/15	03-00375903		3	83 SOIL DISPOSAL-OC	11.19	
08/27/15	03-00375910		24	83 SOIL DISPOSAL-OC	10.97	
08/27/15	03-00375948		7	83 SOIL DISPOSAL-OC	15.36	
08/27/15	03-00375951		3	83 SOIL DISPOSAL-OC	17.54	
08/27/15	03-00375955		24	83 SOIL DISPOSAL-OC	13.63	
08/27/15	03-00376000		24	83 SOIL DISPOSAL-OC	12.50	
08/27/15	03-00376008		7	83 SOIL DISPOSAL-OC	12.10	
08/27/15	03-00376010		3	83 SOIL DISPOSAL-OC	14.41	
08/28/15	03-00376034		CURT	83 SOIL DISPOSAL-OC	17.86	
08/28/15	03-00376062			83 SOIL DISPOSAL-OC	17.91	
08/28/15	03-00376069		16	83 SOIL DISPOSAL-OC	15.47	
08/28/15	03-00376071			83 SOIL DISPOSAL-OC	16.16	
08/28/15	03-00376074			83 SOIL DISPOSAL-OC	16.62	
08/28/15	03-00376077			83 SOIL DISPOSAL-OC	15.15	
08/28/15	03-00376096		2	83 SOIL DISPOSAL-OC	13.74	
08/28/15	03-00376114		16	83 SOIL DISPOSAL-OC	15.19	
08/28/15	03-00376123			83 SOIL DISPOSAL-OC	15.46	
08/28/15	03-00376132		3	83 SOIL DISPOSAL-OC	17.24	
08/28/15	03-00376135		CURT	83 SOIL DISPOSAL-OC	15.01	
08/28/15	03-00376142		2	83 SOIL DISPOSAL-OC	12.71	
08/28/15	03-00376180		DOW	83 SOIL DISPOSAL-OC	13.61	
08/28/15	03-00376182		24	83 SOIL DISPOSAL-OC	13.49	
08/28/15	03-00376188		3	83 SOIL DISPOSAL-OC	15.62	
08/28/15	03-00376189		7	83 SOIL DISPOSAL-OC	15.13	
08/28/15	03-00376192		2	83 SOIL DISPOSAL-OC	14.79	
08/31/15	03-00376313		2	83 SOIL DISPOSAL-OC	15.89	
08/31/15	03-00376314		7	83 SOIL DISPOSAL-OC	13.52	
08/31/15	03-00376316		16	83 SOIL DISPOSAL-OC	13.60	

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08/31/15	03-00376323		3	83 SOIL DISPOSAL-OC	14.26
08/31/15	03-00376324		24	83 SOIL DISPOSAL-OC	14.12
08/31/15	03-00376348		2	83 SOIL DISPOSAL-OC	15.43
08/31/15	03-00376353		7	83 SOIL DISPOSAL-OC	11.13
08/31/15	03-00376363		3	83 SOIL DISPOSAL-OC	17.27
08/31/15	03-00376366		16	83 SOIL DISPOSAL-OC	12.57
08/31/15	03-00376371		24	83 SOIL DISPOSAL-OC	12.92
08/31/15	03-00376394		2	83 SOIL DISPOSAL-OC	14.22
08/31/15	03-00376414		7	83 SOIL DISPOSAL-OC	14.87
08/31/15	03-00376419		3	83 SOIL DISPOSAL-OC	17.62
08/31/15	03-00376424		16	83 SOIL DISPOSAL-OC	13.96
08/31/15	03-00376427		24	83 SOIL DISPOSAL-OC	14.48
08/31/15	03-00376439		2	83 SOIL DISPOSAL-OC	14.47
	Net weight	2211.85		Invoice total	

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BY: 040-062-01
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DETACH AND RETURN TOP PORTION WITH REMITTANCE

DATE	TICKET	VEHICLE	REFERENCE	DESCRIPTION	QUANTITY	AMOUNT
~~09/01/15~~	~~03-00376480~~		~~H16~~	~~83 SOIL DISPOSAL-OC~~	15.93	
09/01/15	03-00376482		PGH 3	83 SOIL DISPOSAL-OC	15.95	
09/01/15	03-00376483		PGH 7	83 SOIL DISPOSAL-OC	13.81	
09/01/15	03-00376486		H24	83 SOIL DISPOSAL-OC	14.10	
09/01/15	03-00376516		H2	83 SOIL DISPOSAL-OC	15.22	
09/01/15	03-00376520		H15	83 SOIL DISPOSAL-OC	13.24	
09/01/15	03-00376535		PGH3	83 SOIL DISPOSAL-OC	16.19	
09/01/15	03-00376541		PGH7	83 SOIL DISPOSAL-OC	12.42	
09/01/15	03-00376542		H16	83 SOIL DISPOSAL-OC	13.17	
09/01/15	03-00376547		H24	83 SOIL DISPOSAL-OC	15.09	
09/01/15	03-00376554		H2	83 SOIL DISPOSAL-OC	14.10	
09/01/15	03-00376561		H15	83 SOIL DISPOSAL-OC	12.22	
09/01/15	03-00376578		PGH3	83 SOIL DISPOSAL-OC	14.14	
09/01/15	03-00376584		PGH7	83 SOIL DISPOSAL-OC	13.49	
09/01/15	03-00376589		H16	83 SOIL DISPOSAL-OC	16.15	
09/01/15	03-00376595		H2	83 SOIL DISPOSAL-OC	15.57	
09/01/15	03-00376597		H15	83 SOIL DISPOSAL-OC	14.60	
09/01/15	03-00376601		H24	83 SOIL DISPOSAL-OC	16.58	
09/01/15	03-00376638		H16	83 SOIL DISPOSAL-OC	13.88	
09/01/15	03-00376649		PGH3	83 SOIL DISPOSAL-OC	18.44	
09/01/15	03-00376650		H2	83 SOIL DISPOSAL-OC	16.85	
09/01/15	03-00376654		H15	83 SOIL DISPOSAL-OC	15.61	
09/01/15	03-00376656		PGH7	83 SOIL DISPOSAL-OC	14.95	
09/01/15	03-00376662		H24	83 SOIL DISPOSAL-OC	14.51	
09/02/15	03-00376711		2	83 SOIL DISPOSAL-OC	16.94	
09/02/15	03-00376713		16	83 SOIL DISPOSAL-OC	13.57	
09/02/15	03-00376716		9	83 SOIL DISPOSAL-OC	14.85	
09/02/15	03-00376717		7	83 SOIL DISPOSAL-OC	13.93	
09/02/15	03-00376720		15	83 SOIL DISPOSAL-OC	14.20	
09/02/15	03-00376722		CURT	83 SOIL DISPOSAL-OC	15.61	

9/15/15

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DETACH AND RETURN TOP PORTION WITH REMITTANCE

DATE	TICKET	VEHICLE	REFERENCE	DESCRIPTION	QUANTITY	AMOUNT
09/02/15	03-00376749		DON	83 SOIL DISPOSAL-OC	14.47	
09/02/15	03-00376756			83 SOIL DISPOSAL-OC	16.06	
09/02/15	03-00376759			83 SOIL DISPOSAL-OC	12.82	
09/02/15	03-00376761		15	83 SOIL DISPOSAL-OC	13.49	
09/02/15	03-00376765		24	83 SOIL DISPOSAL-OC	14.07	
09/02/15	03-00376785		DON	83 SOIL DISPOSAL-OC	14.35	
09/02/15	03-00376797		15	83 SOIL DISPOSAL-OC	13.39	
09/02/15	03-00376799		24	83 SOIL DISPOSAL-OC	13.01	
09/02/15	03-00376807		9	83 SOIL DISPOSAL-OC	13.54	
09/02/15	03-00376808		7	83 SOIL DISPOSAL-OC	12.63	
09/02/15	03-00376827		DON	83 SOIL DISPOSAL-OC	12.99	
09/02/15	03-00376839		TOM	83 SOIL DISPOSAL-OC	13.72	
09/02/15	03-00376845			83 SOIL DISPOSAL-OC	15.47	
09/03/15	03-00376860		7	83 SOIL DISPOSAL-OC	14.44	
09/03/15	03-00376891		3	83 SOIL DISPOSAL-OC	20.70	
09/03/15	03-00376894		9	83 SOIL DISPOSAL-OC	13.24	
09/03/15	03-00376899		16	83 SOIL DISPOSAL-OC	13.46	
09/03/15	03-00376903		15	83 SOIL DISPOSAL-OC	13.44	
09/03/15	03-00376907		24	83 SOIL DISPOSAL-OC	14.40	
09/03/15	03-00376910		7	83 SOIL DISPOSAL-OC	13.84	
09/03/15	03-00376948		3	83 SOIL DISPOSAL-OC	17.02	
09/03/15	03-00376951		9	83 SOIL DISPOSAL-OC	14.74	
09/03/15	03-00376967		16	83 SOIL DISPOSAL-OC	10.20	
09/03/15	03-00376968		15	83 SOIL DISPOSAL-OC	8.99	
09/03/15	03-00376975		24	83 SOIL DISPOSAL-OC	16.39	
09/03/15	03-00376986		7	83 SOIL DISPOSAL-OC	16.37	
09/03/15	03-00377011		3	83 SOIL DISPOSAL-OC	17.64	
09/03/15	03-00377018		9	83 SOIL DISPOSAL-OC	15.90	
09/03/15	03-00377037		24	83 SOIL DISPOSAL-OC	13.31	
09/03/15	03-00377038		15	83 SOIL DISPOSAL-OC	11.48	

PCRCD, LLC DBA LRI-304TH ST
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

INVOICE

Printed 09/14/15

DATE	PAGE
09/11/15	3
INVOICE NUMBER	
5020	

AMOUNT DUE	AMOUNT PAID
	$

IO ENVIRONMENTAL &
INFRASTUCTURE
2840 ADAMS AVE SUITE 301
SAN DIEGO CA 92116

ACCOUNT NO.
922

DETACH AND RETURN TOP PORTION WITH REMITTANCE

DATE	TICKET	VEHICLE	REFERENCE	DESCRIPTION	QUANTITY	AMOUNT
09/03/15	03-00377040		16	83 SOIL DISPOSAL-OC	12.71	
09/03/15	03-00377043		7	83 SOIL DISPOSAL-OC	10.70	
09/04/15	03-00377067		3	83 SOIL DISPOSAL-OC	15.63	
09/04/15	03-00377092		7	83 SOIL DISPOSAL-OC	14.16	
09/04/15	03-00377093		16	83 SOIL DISPOSAL-OC	13.54	
09/04/15	03-00377095			83 SOIL DISPOSAL-OC	12.42	
09/04/15	03-00377099		CURT	83 SOIL DISPOSAL-OC	13.18	
09/04/15	03-00377108		3	83 SOIL DISPOSAL-OC	14.15	
09/04/15	03-00377138		16	83 SOIL DISPOSAL-OC	13.18	
09/04/15	03-00377140		TOM	83 SOIL DISPOSAL-OC	13.36	
09/04/15	03-00377148		7	83 SOIL DISPOSAL-OC	12.52	
09/04/15	03-00377150		CURT	83 SOIL DISPOSAL-OC	11.70	
09/04/15	03-00377164		3	83 SOIL DISPOSAL-OC	15.43	
09/04/15	03-00377183		DON	83 SOIL DISPOSAL-OC	13.95	
09/04/15	03-00377188			83 SOIL DISPOSAL-OC	12.48	
09/04/15	03-00377198		24	83 SOIL DISPOSAL-OC	14.38	
09/04/15	03-00377218		7	83 SOIL DISPOSAL-OC	11.63	
09/04/15	03-00377221			83 SOIL DISPOSAL-OC	12.85	
09/08/15	03-00377434		3	83 SOIL DISPOSAL-OC	13.14	
09/08/15	03-00377437		7	83 SOIL DISPOSAL-OC	11.56	
09/08/15	03-00377440		TOM	83 SOIL DISPOSAL-OC	11.50	
09/08/15	03-00377445		24	83 SOIL DISPOSAL-OC	12.16	
09/08/15	03-00377454		124	83 SOIL DISPOSAL-OC	14.66	
09/08/15	03-00377455		104	83 SOIL DISPOSAL-OC	12.18	
09/08/15	03-00377456		112	83 SOIL DISPOSAL-OC	12.09	
09/08/15	03-00377477		3	83 SOIL DISPOSAL-OC	17.69	
09/08/15	03-00377482		7	83 SOIL DISPOSAL-OC	13.48	
09/08/15	03-00377485		15	83 SOIL DISPOSAL-OC	12.87	
09/08/15	03-00377492		CURT	83 SOIL DISPOSAL-OC	12.71	
09/08/15	03-00377534		3	83 SOIL DISPOSAL-OC	11.16	

PCRCD, LLC DBA LRI-304TH ST
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

INVOICE

Printed 09/14/15

DATE	PAGE
09/11/15	4
INVOICE NUMBER	
5020	
AMOUNT DUE	AMOUNT PAID
	$

IO ENVIRONMENTAL &
INFRASTUCTURE
2840 ADAMS AVE SUITE 301
SAN DIEGO CA 92116

ACCOUNT NO.
922

DETACH AND RETURN TOP PORTION WITH REMITTANCE

DATE	TICKET	VEHICLE	REFERENCE	DESCRIPTION	QUANTITY	AMOUNT
09/08/15	03-00377535		7	83 SOIL DISPOSAL-OC	10.94	
09/08/15	03-00377541		TOM 15	83 SOIL DISPOSAL-OC	10.95	
09/08/15	03-00377544		24 CURT	83 SOIL DISPOSAL-OC	11.98	
09/08/15	03-00377548		124	83 SOIL DISPOSAL-OC	11.24	
09/08/15	03-00377553		104	83 SOIL DISPOSAL-OC	10.37	
09/08/15	03-00377554		112	83 SOIL DISPOSAL-OC	10.93	
09/08/15	03-00377581		15	83 SOIL DISPOSAL-OC	12.27	
09/08/15	03-00377586		24	83 SOIL DISPOSAL-OC	13.94	
09/09/15	03-00377597		124	83 SOIL DISPOSAL-OC	12.83	
09/09/15	03-00377598			83 SOIL DISPOSAL-OC	12.72	
09/09/15	03-00377601		3	83 SOIL DISPOSAL-OC	15.29	
09/09/15	03-00377609		104	83 SOIL DISPOSAL-OC	10.95	
09/09/15	03-00377610		112	83 SOIL DISPOSAL-OC	12.84	
09/09/15	03-00377645		TOM	83 SOIL DISPOSAL-OC	10.28	
09/09/15	03-00377649		CURT	83 SOIL DISPOSAL-OC	13.91	
09/09/15	03-00377661		7	83 SOIL DISPOSAL-OC	7.35	
09/09/15	03-00377666		3	83 SOIL DISPOSAL-OC	12.27	
09/09/15	03-00377684			83 SOIL DISPOSAL-OC	13.59	
09/09/15	03-00377687		104	83 SOIL DISPOSAL-OC	13.62	
09/09/15	03-00377694		15	83 SOIL DISPOSAL-OC	14.58	
09/09/15	03-00377697			83 SOIL DISPOSAL-OC	12.08	
09/09/15	03-00377699		24	83 SOIL DISPOSAL-OC	12.27	
09/09/15	03-00377700		204	83 SOIL DISPOSAL-OC	32.04	
09/09/15	03-00377712		7	83 SOIL DISPOSAL-OC	13.22	
09/09/15	03-00377714		3	83 SOIL DISPOSAL-OC	14.53	
09/09/15	03-00377734		15	83 SOIL DISPOSAL-OC	12.17	
09/09/15	03-00377739		24	83 SOIL DISPOSAL-OC	14.32	
09/09/15	03-00377756		124	83 SOIL DISPOSAL-OC	13.86	
09/09/15	03-00377759		104	83 SOIL DISPOSAL-OC	11.96	
09/09/15	03-00377761		7	83 SOIL DISPOSAL-OC	13.89	

PCRCD, LLC DBA LRI-304TH ST
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

INVOICE

Printed 09/14/15

DATE	PAGE
09/11/15	5
INVOICE NUMBER	
5020	
AMOUNT DUE	AMOUNT PAID

IO ENVIRONMENTAL &
INFRASTUCTURE
2840 ADAMS AVE SUITE 301
SAN DIEGO CA 92116

ACCOUNT NO.
922

DETACH AND RETURN TOP PORTION WITH REMITTANCE

DATE	TICKET	VEHICLE	REFERENCE	DESCRIPTION	QUANTITY	AMOUNT
09/09/15	03-00377764		112	83 SOIL DISPOSAL-OC	13.21	
09/09/15	03-00377769			83 SOIL DISPOSAL-OC	15.92	
09/09/15	03-00377788		15	83 SOIL DISPOSAL-OC	13.17	
09/09/15	03-00377794		CURT	83 SOIL DISPOSAL-OC	14.36	
09/10/15	03-00377814		7	83 SOIL DISPOSAL-OC	13.63	
09/10/15	03-00377816		104	83 SOIL DISPOSAL-OC	14.50	
09/10/15	03-00377817		112	83 SOIL DISPOSAL-OC	15.59	
09/10/15	03-00377827		124	83 SOIL DISPOSAL-OC	14.86	
09/10/15	03-00377842		3	83 SOIL DISPOSAL-OC	14.58	
09/10/15	03-00377859		15	83 SOIL DISPOSAL-OC	14.93	
09/10/15	03-00377865		24	83 SOIL DISPOSAL-OC	15.74	
09/10/15	03-00377874		7	83 SOIL DISPOSAL-OC	10.94	
09/10/15	03-00377881		3	83 SOIL DISPOSAL-OC	14.51	
09/10/15	03-00377885		104	83 SOIL DISPOSAL-OC	13.14	
09/10/15	03-00377888		112	83 SOIL DISPOSAL-OC	12.00	
09/10/15	03-00377900		124	83 SOIL DISPOSAL-OC	13.89	
09/10/15	03-00377908		15	83 SOIL DISPOSAL-OC	12.78	
09/10/15	03-00377919		24	83 SOIL DISPOSAL-OC	17.26	
09/10/15	03-00377925		7	83 SOIL DISPOSAL-OC	14.76	
09/10/15	03-00377936		3	83 SOIL DISPOSAL-OC	15.31	
09/10/15	03-00377957		112	83 SOIL DISPOSAL-OC	12.57	
09/10/15	03-00377963		104	83 SOIL DISPOSAL-OC	12.91	
09/10/15	03-00377964		124	83 SOIL DISPOSAL-OC	17.72	
09/10/15	03-00377976		7	83 SOIL DISPOSAL-OC	17.85	
09/10/15	03-00377983		24	83 SOIL DISPOSAL-OC	15.79	
09/10/15	03-00377996		3	83 SOIL DISPOSAL-OC	19.17	
09/11/15	03-00378054		CURT	83 SOIL DISPOSAL-OC	17.29	
09/11/15	03-00378116		CURT	83 SOIL DISPOSAL-OC	15.67	
09/11/15	03-00378196		15	83 SOIL DISPOSAL-OC	17.84	
	Net weight	2089.13		Invoice total		

Invoice

Harlow Construction Company, Inc.
Lakewood, WA 98499

DATE	INVOICE #
8/27/2015	17298

RECEIVED
AUG 31 2015

BILL TO

I/O Environmental
2840 Adams Ave
Suite 301
San Diego, CA 92116
USA

P.O. NO.	TERMS
	Due on receipt

DATE	TICKET NO.	TRUCK NO	DESCRIPTION	QUANTITY	RATE	AMOUNT
8/26/2015	390347	18	2-4 Spalls	30.94		
8/26/2015	390345	24	2-4 Spalls	32.53		

ENTERED
SEP 01 2015
BY: 040-062-01
1637

9/2/15

	Sales Tax
	Total

1.5% Finance charge added to all past due accounts.

Phone #	Fax #	Web Site
(253) 588-4705	(253) 588-4710	www.harlowconstruction.com

Invoice

Harlow Construction Company, Inc.
Lakewood, WA 98499

DATE	INVOICE #
9/14/2015	17356

BILL TO

I/O Environmental
2840 Adams Ave
Suite 301
San Diego, CA 92116
USA

P.O. NO.	TERMS
	Due on receipt

DATE	TICKET NO.	TRUCK NO	DESCRIPTION	QUANTITY	RATE	AMOUNT
9/10/2015	51441	24	4-8 Quarry	14.75		

ENTERED
SEP 22 2015
BY: 040-062-01
1611

RECEIVED
SEP 19 2015

9/23/15

	Sales Tax
	Total

1.5% Finance charge added to all past due accounts.

Phone #	Fax #	Web Site
(253) 588-4705	(253) 588-4710	www.harlowconstruction.com

Invoice

Harlow Construction Company, Inc.
Lakewood, WA 98499

DATE	INVOICE #
9/14/2015	17364

BILL TO

I/O Environmental
2840 Adams Ave
Suite 301
San Diego, CA 92116
USA

P.O. NO.	TERMS
	Due on receipt

DATE	TICKET NO.	TRUCK NO	DESCRIPTION	QUANTITY	RATE	AMOUNT
9/11/2015	391603	15	4-8 Quarry	15.35		
9/11/2015	391642	15	4-8 Quarry	14.89		
9/11/2015	391675	15	4-8 Quarry	14.92		

RECEIVED
SEP 19 2015

ENTERED
SEP 22 2015
BY: 010-062-01
1611

9/22/15

	Sales Tax
	Total

1.5% Finance charge added to all past due accounts.

Phone #	Fax #	Web Site
(253) 588-4705	(253) 588-4710	www.harlowconstruction.com

Invoice

Harlow Construction Company, Inc.
Lakewood, WA 98499

DATE	INVOICE #
9/15/2015	17369

BILL TO

I/O Environmental
2840 Adams Ave
Suite 301
San Diego, CA 92116
USA

P.O. NO.	TERMS
	Due on receipt

DATE	TICKET NO.	TRUCK NO	DESCRIPTION	QUANTITY	RATE	AMOUNT
9/14/2015	51443	24	2-4 Spalls	31.14		
9/14/2015	51443	24	2-4 Spalls	32.02		

ENTERED
SEP 22 2015
BY: 040-062-01
1611

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SEP 21 2015

[redacted]

lv 9/23/15

	Sales Tax
	Total

1.5% Finance charge added to all past due accounts.

Phone #	Fax #	Web Site
(253) 588-4705	(253) 588-4710	www.harlowconstruction.com

LLOYD ENTERPRISES, INC. dba
FEDERAL WAY SAND & GRAVEL
P.O. BOX 3889
FEDERAL WAY, WA 98063
(253) 874-6692 (253) 927-0416

INVOICE NO. 189864

PAGE 1

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9/8/15

BILL TO:
IO ENVIRONMENTAL & INFRASTRUCT
2840 ADAMS AVE., STE 301
SAN DIEGO CA 92116

JOB NO:
403215
B&L WOOD WASTE
500 FIFE WAY
MILTON, WA

INVOICE DATE	INVOICE NO.	CUSTOMER NO.	PAYMENT TERMS	CONTRACT NO.
08/26/15	189864	I0031	10TH OF MO FDI	040-062-01

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	B&L WOOD WASTE PO # 040-062-01		
	TICKET # 434046		
208.09	TON SELECT BORROW		
	TICKET # 434047		
181.63	TON SELECT BORROW		
	TICKET # 434048		
198.81	TON SELECT BORROW		
	TOTAL THIS INVOICE		

ENTERED
SEP 08 2015
BY: 040-062-01
1611

ENTERED
9/9

GROSS	RETAINAGE	TAX	NET AMOUNT

LLOYD ENTERPRISES, INC. dba
FEDERAL WAY SAND & GRAVEL
P.O. BOX 3889
FEDERAL WAY, WA 98063
(253) 874-6692 (253) 927-0416

INVOICE NO. 190147

BILL TO
IO ENVIRONMENTAL & INFRASTRUCT
2840 ADAMS AVE., STE 301
SAN DIEGO CA 92116

JOB NO
403215
B&L WOOD WASTE
500 FIFE WAY
MILTON, WA

INVOICE DATE	INVOICE NO.	CUSTOMER NO.	PAYMENT TERMS	CONTRACT NO.
09/08/15	190147	I0031	10TH OF MO FDI	040-062-01

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	B&L WOOD WASTE PO # 040-062-01		
	TICKET # 434247		
14.15	TON 2 X 4 RIP RAP		
5.00	HR TRUCK RENTAL - SOLO *		
14.69	TON 4 X 8 RIP RAP		
	TICKET # 434248		
14.22	TON 2 X 4 RIP RAP		
5.25	HR TRUCK RENTAL - SOLO *		
14.50	TON 4 X 8 RIP RAP		
	TICKET # 434249		
14.16	TON 2 X 4 RIP RAP		
5.00	HR TRUCK RENTAL - SOLO *		
14.91	TON 4 X 8 RIP RAP		
	TOTAL THIS INVOICE		

RECEIVED
SEP 21 2015

ENTERED
SEP 22 2015
BY: 040-062-01

1611 / 1630 *

9/25/15

GROSS	RETAINAGE	TAX

LLOYD ENTERPRISES, INC. dba
FEDERAL WAY SAND & GRAVEL
P.O. BOX 3889
FEDERAL WAY, WA 98063
(253) 874-6692 (253) 927-0416

INVOICE NO. 190149

BILL TO
IO ENVIRONMENTAL & INFRASTRUCT
2840 ADAMS AVE., STE 301
SAN DIEGO CA 92116

JOB NO
403215
B&L WOOD WASTE
500 FIFE WAY
MILTON, WA

INVOICE DATE	INVOICE NO	CUSTOMER NO	PAYMENT TERMS	CONTRACT NO
09/09/16	190149	I0031	10TH OF MO FDI	040-062-01

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	B&L WOOD WASTE PO # 040-062-01		
	TICKET # 434216		
44.37	TON 4 X 8 QUARRY SPALLS		
4.75	HR TRUCK RENTAL - SOLO *		
	TICKET # 434262		
45.05	TON 4 X 8 QUARRY SPALLS		
6.00	HR TRUCK RENTAL - SOLO *		
	TICKET # 434263		
44.75	TON 4 X 8 QUARRY SPALLS		
6.00	HR TRUCK RENTAL - SOLO *		
	TOTAL THIS INVOICE		

RECEIVED
SEP 21 2015

ENTERED
SEP 22 2015
BY: 040-062-01

1611 /1630 *

N 9/23/15

GROSS	RETAINAGE	TAX	NET AMOUNT

LLOYD ENTERPRISES, INC. dba
FEDERAL WAY SAND & GRAVEL
P.O. BOX 3889
FEDERAL WAY, WA 98063
(253) 874-6692 (253) 927-0416

INVOICE NO. 190150

BILL TO
IO ENVIRONMENTAL & INFRASTRUCT
2840 ADAMS AVE., STE 301
SAN DIEGO CA 92116

JOB NO
403215
B&L WOOD WASTE
500 FIFE WAY
MILTON, WA

INVOICE DATE	INVOICE NO.	CUSTOMER NO.	PAYMENT TERMS	CONTRACT NO.
09/10/15	190150	I0031	10TH OF MO FDI	040-062-01

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	B&L WOOD WASTE PO # 040-062-01		
	TICKET # 434283		
43.29	TON 4 X 8 QUARRY SPALLS		
4.00	HR TRUCK RENTAL - SOLO *		
	TICKET # 434284		
45.02	TON 4 X 8 QUARRY SPALLS		
4.50	HR TRUCK RENTAL - SOLO *		
	TICKET # 434285		
44.79	TON 4 X 8 QUARRY SPALLS		
4.50	HR TRUCK RENTAL - SOLO *		
	TOTAL THIS INVOICE		

ENTERED
SEP 22 2015
BY 040-062-01
1611 /1630*

RECEIVED
SEP 21 2015

9/23/15

GROSS	RETAINAGE	TAX	NET AMOUNT

LLOYD ENTERPRISES, INC. dba
FEDERAL WAY SAND & GRAVEL
P.O. BOX 3889
FEDERAL WAY, WA 98063
(253) 874-6692 (253) 927-0416

INVOICE NO. 190151

BILL TO
IO ENVIRONMENTAL & INFRASTRUCT
2840 ADAMS AVE., STE 301
SAN DIEGO CA 92116

JOB NO
403215
B&L WOOD WASTE
600 FIFE WAY
MILTON, WA

INVOICE DATE	INVOICE NO.	CUSTOMER NO.	PAYMENT TERMS	CONTRACT NO.
09/11/15	190151	I0031	10TH OF MO FDI	040-062-01

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	B&L WOOD WASTE PO # 040-062-01		
	TICKET # 434301		
93.60	TON 4 X 8 QUARRY SPALLS - T&T		
	TICKET # 434302		
94.01	TON 4 X 8 QUARRY SPALLS - T&T		
	TICKET # 434300		
122.17	TON 4 X 8 QUARRY SPALLS		
	TOTAL THIS INVOICE		

ENTERED
SEP 22 2015
BY: 040-062-01
1611

RECEIVED
SEP 21 2015

9/23/15

GROSS	RETAINAGE	TAX	NET AMOUNT

LLOYD ENTERPRISES, INC. dba
FEDERAL WAY SAND & GRAVEL
P.O. BOX 3889
FEDERAL WAY, WA 98063
(253) 874-6892 (253) 927-0416

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SEP -5 2015

INVOICE NO. 189865

BILL TO
IO ENVIRONMENTAL & INFRASTRUCT
2840 ADAMS AVE., STE 301
SAN DIEGO CA 92116

NO
403215

JOB
B&L WOOD WASTE
500 FIFE WAY
MILTON, WA

9/8/15

08/27/15	189865	I0031	10TH OF NO FDI	040-062-01

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	B&L WOOD WASTE PO # 040-062-01		
143.82	TON SELECT BORROW		
	TOTAL THIS INVOICE		
	REF 434192		

ENTERED
SEP 08 2015
BY: 040-062-01
1611

ENTERED
9/8

GROSS	RETAINAGE	TAX	NET AMOUNT

PGH Excavating, Inc.
PO Box 1151
Enumclaw, WA 98022
USA

Voice: 360-825-5990
Fax: 360-825-5975

INVOICE

Invoice Number: 15-13760
Invoice Date: Aug 24, 2015
Page: 1

[redacted]
IO Environmental & Infrastructure, Inc.
2200 118th AVE. SE
Bellevue, WA 98006

[redacted]
B & L Woodwaste Site - Fife

NON-PW

[redacted] Net Due
IOENVI
[redacted] 8/24/15
N/A

[redacted]

		8/19
6.00	Hours/Side Dump	Trk # 5 - Ticket # 12223
2.00	Hours/T&T	Trk # 7 - Ticket # 7481
4.25	Hours/Side Dump	Trk # 14 - Ticket # 12189
		8/20
8.25	Hours/Side Dump	Trk # 5 - Ticket # 12564
60.06	Tons	2" - 4" Quarry Rock
6.00	Hours/T&T	Trk # 7 - Ticket # 11524
9.00	Hours/Side Dump	Trk # 14 - Ticket # 12192
57.64	Tons	2" - 4" Quarry Rock
		8/21
7.50	Hours/T&T	Trk # 7 - Ticket # 7483
31.81	Tons	2" -4" Quarry Rock
7.50	Hours/Side Dump	Trk # 14 - Ticket # 12193
28.83	Tons	2" - 4" Quarry Rock

ENTERED
AUG 28 2015
BY: 040-062-01

8/28

[redacted]
Subtotal
Sales Tax
Total Invoice Amount
Payment/Credit Applied
[redacted]

Check/Credit Memo No:

Overdue invoices are subject to late charges.

PGH Excavating, Inc.
PO Box 1151
Enumclaw, WA 98022
USA

Voice: 360-825-5990
Fax: 360-825-5975

INVOICE

Invoice Number: 15-13785
Invoice Date: Aug 31, 2015
Page: 1

Bill To:

IO Environmental & Infrastructure, Inc.
2200 118th AVE. SE
Bellevue, WA 98006

Ship to:

B & L Wooodwaste Site - Fife
Job #922

NON-PW

Customer ID	Customer PO	Payment Terms	
IOENVI		Net Due	
Sales Rep ID	**Shipping Method**	**Ship Date**	**Due Date**
	N/A		8/31/15

Quantity	Item	Description	Unit Price	Amount
		8/24		
10.00	Hours/T&T	Trk # 7 - Ticket # 11790		
9.50	Hours/Side Dump	Trk # 14 - Ticket # 12194		
		8/25		
8.50	Hours/T&T	Trk # 7 - Ticket # 7489		
9.50	Hours/Side Dump	Trk #14 - Ticket # 12195		
28.13	Tons	2"-4" Quarry Rock		
		8/26		
8.00	Hours/T&T	Trk # 7 - Ticket # 11545		
6.00	Hours/T&T	Trk # 14 - Ticket # 12196		
		8/27		
8.00	Hours/Solo	Trk # 3 - Ticket # 12626		
8.00	Hours/Solo	Trk # 7 - Ticket # 8662		
		8/28		
8.25	Hours/Solo	Trk # 3 - Ticket # 12627		
8.25	Hours/Solo	Trk # 7 - Ticket # 11532		

ENTERED
SEP 24 2015
BY: 040-062-07
1637

RECEIVED
SEP 24 2015

Subtotal	
Sales Tax	
Total Invoice Amount	
Payment/Credit Applied	
TOTAL	

Check/Credit Memo No:

Overdue invoices are subject to late charges.

PGH Excavating, Inc.
PO Box 1151
Enumclaw, WA 98022
USA

Voice: 360-825-5990
Fax: 360-825-5975

INVOICE

Invoice Number: 15-13808
Invoice Date: Sep 8, 2015
Page: 1

Bill To:

IO Environmental & Infrastructure, Inc.
2200 118th AVE. SE
Bellevue, WA 98006

Ship to:

B & L Wooodwaste Site - Fife
Job #922

NON-PW

Customer ID	Customer PO	Payment Terms
IOENVI		Net Due

Sales Rep ID	Shipping Method	Ship Date	Due Date
	N/A		9/8/15

Quantity	Item	Description	Unit Price	Amount
		8/31		
8.00	Hours/Solo	Trk # 3 - Ticket #12628		
8.25	Hours/Solo	Trk # 7 - Ticket # 7485		
		9/1		
8.50	Hours/Solo	Trk # 3 - Ticket # 12629		
8.50	Hours/Solo	Trk # 7 - Ticket # 11467		
		9/2		
8.00	Hours/Solo	Trk # 7 - Ticket # 7486		
6.50	Hours/Solo	Trk # 9 - Ticket # 12793		
		9/3		
8.00	Hours/Solo	Trk # 3 - Ticket # 12630		
9.00	Hours/Solo	Trk # 7 - Ticket # 11791		
6.75	Hours/Solo	Trk # 9 - Ticket # 12143		
		9/4		
8.75	Hours/Solo	Trk # 3 - Ticket # 12633		
7.75	Hours/Solo	Trk # 7 - Ticket # 8666		

ENTERED

15.00
9/25/15

ENTERED
SEP 24 2015
BY: 040-062-01
1637

RECEIVED
SEP 24 2015

Subtotal	
Sales Tax	
Total Invoice Amount	
Payment/Credit Applied	
TOTAL	

Check/Credit Memo No:

Overdue invoices are subject to late charges.

PGH Excavating, Inc.
PO Box 1151
Enumclaw, WA 98022
USA

Voice: 360-825-5990
Fax: 360-825-5975

INVOICE

Invoice Number: 15-13826
Invoice Date: Sep 14, 2015
Page: 1

Bill To:

IO Environmental & Infrastructure, Inc.
2200 118th AVE. SE
Bellevue, WA 98006

Ship to:

B & L Wooodwaste Site - Fife
Job #922

NON-PW

Customer ID	Customer PO	Payment Terms	
IOENVI		Net Due	
Sales Rep ID	**Shipping Method**	**Ship Date**	**Due Date**
	N/A		9/14/15

Quantity	Item	Description	Unit Price	Amount
		9/8		
8.00	Hours/Solo	Trk # 3 - Ticket # 12634		
8.00	Hours/Solo	Trk # 7 - Ticket # 11472		
		9/9		
9.00	Hours/Solo	Trk # 3 - Ticket # 12635		
9.00	Hours/Solo	Trk # 7 - Ticket # 8667		
		9/10		
8.00	Hours/Solo	Trk # 3- Ticket # 12636		
8.00	Hours/Solo	Trk # 7 - Ticket # 11523		

ENTERED
SEP 24 2015
BY: 040-062-01
1637

RECEIVED
SEP 24 2015

NW 9/25/15

Subtotal	
Sales Tax	
Total Invoice Amount	
Payment/Credit Applied	
TOTAL	

Check/Credit Memo No:

Overdue invoices are subject to late charges.

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix H
Analytical Results for Verification Samples and Water Treatment Samples

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 25, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 19, 2015 from the B&L-O&M 1525.1, F&BI 508341 project. There are 18 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu, Erin Murray
FDS0825R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 20, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L-O&M Task 1525.1, F&BI 508341 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508341 -01	WD-0'-N
508341 -02	WD-25'-W
508341 -03	WD-25'-C
508341 -04	WD-25a'-C
508341 -05	WD-25'-E
508341 -06	WD-50'-W
508341 -07	WD-50'-C
508341 -08	WD-50'-E
508341 -09	WD-75'-E
508341 -10	WD-75'-C
508341 -11	WD-75'-W
508341 -12	WD-100'-W
508341 -13	WD-100'-C
508341 -14	WD-100'-E
508341 -15	WD-125'-W
508341 -16	WD-125'-E
508341 -17	WD-125'-C

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-0'-N	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-01
Date Analyzed:	08/20/15	Data File:	508341-01.021
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	101

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25'-W	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-02
Date Analyzed:	08/20/15	Data File:	508341-02.022
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.61

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25'-C	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-03
Date Analyzed:	08/20/15	Data File:	508341-03.023
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.46

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25a'-C	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-04
Date Analyzed:	08/20/15	Data File:	508341-04.026
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.54

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25'-E	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-05
Date Analyzed:	08/20/15	Data File:	508341-05.027
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.27

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-50'-W	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-06
Date Analyzed:	08/20/15	Data File:	508341-06.029
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	91	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	13.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-50'-C	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-07
Date Analyzed:	08/20/15	Data File:	508341-07.030
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	13.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-50'-E	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-08
Date Analyzed:	08/20/15	Data File:	508341-08.031
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.95

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-75'-E	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-09
Date Analyzed:	08/20/15	Data File:	508341-09.032
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.97

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-75'-C	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-10
Date Analyzed:	08/20/15	Data File:	508341-10.033
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.53

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-75'-W	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-11
Date Analyzed:	08/20/15	Data File:	508341-11.034
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.08

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-125'-W	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-15
Date Analyzed:	08/20/15	Data File:	508341-15.035
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.98

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-125'-E	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-16
Date Analyzed:	08/20/15	Data File:	508341-16.036
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.34

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-125'-C	Client:	Floyd-Snider
Date Received:	08/19/15	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	508341-17
Date Analyzed:	08/20/15	Data File:	508341-17.037
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.20

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L-O&M 1525.1, F&BI 508341
Date Extracted:	08/20/15	Lab ID:	I5-460 mb
Date Analyzed:	08/20/15	Data File:	I5-460 mb.019
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 08/25/15
Date Received: 08/19/15
Project: B&L-O&M 1525.1, F&BI 508341

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508341-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	2.73	86	90	67-121	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	91	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

508341 Megan McCullough

SAMPLE CHAIN OF CUSTODY

MG 08/19/15 BT3

Page # 1 of 2

Send Report To info@danatanks.com Floyd|Snider

Company ~~Dana Thompson Tanks & Soil~~

Address ~~930 SE Lincoln St.~~ 601 Union St.

City, State, ZIP ~~Portland, OR 97214~~ Seattle, WA 98101

Phone # ~~(503) 244-7002~~ 292-2078 Fax #

SAMPLERS (signature)

PROJECT ID/ADDRESS: B&L -O&M 1525.1

JOB #

SITE NAME: B&L

REMARKS

TURNAROUND TIME
- ☐ Standard
- ☑ RUSH 24 hr.

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☑ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	2008 Total AS						Notes
WD-0'-N	01	8/14/15	1215	Soil	1							X						
WD-25'-W	02		1510	Soil	1							X						
WD-25-C	03		1525	SOIL	1							X						
WD-25a-C	04		1520	SOIL	1							X						
WD-25'-E	05		1545	Soil	1							X						
WD-50'-W	06		1600	Soil	1							X						~~Archive~~ Em
WD-50'-C	07		1605	Soil	1							X						~~Archive~~ Em
WD-50'-E	08		1610	Soil	1							X						~~Archive~~ Em
WD-75'-E	09		1615	Soil	1							X						
WD-75'-C	10		1625	Soil	1							X						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Erin Murray	Floyd|Snider	8/19/15	1845
Received by:		Nhan Phan	FCBI	8/19/15	✓
Relinquished by:					
Received by:			Samples received at 6 °C		

508341 Megan McCullough

SAMPLE CHAIN OF CUSTODY

ME 08/19/15 BI3

Page # 2 of 2

Send Report To info@danatanks.com Floyd|Snider

Company ~~Dana Thompson Tanks & Soil~~

Address ~~930 SE Lincoln St.~~ 601 Union St.

City, State, ZIP ~~Portland, OR 97214~~ Seattle WA 98101

Phone # ~~(503) 244-7002~~ 206-292-2078 Fax #

SAMPLERS (signature)

PROJECT ID/ADDRESS: B&L

JOB #: B&L-Dam 1525.1

SITE NAME: B&L

REMARKS

TURNAROUND TIME
- ☐ Standard
- ☒ ~~RUSH~~ 24 hr
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☒ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Tot. As 200.8						Notes
WD-75'-W	11	8/19/15	1630	soil	1							X						
WD-100'-W	12		1640	Soil	1													Archive
WD-100'-C	13		1645	Soil	1													Archive
WD-100'-E	14		1650	Soil	1													Archive
WD-125'-W	15		1700	Soil	1							X						
WD-125'-E	16		1705	Soil	1							X						
WD-125'-C	17		1715	SOIL	1							X						
	4W																	

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Erin Murray	Floyd/Snider	8/19/15	1845
Received by:		Khan Pham	FEBI	8/19/15	1645
Relinquished by:					
Received by:			Samples received at 6 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 25, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 20, 2015 from the B&L O&M Task 1525.1, F&BI 508354 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu, Erin Murray
FDS0825R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 20, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M Task 1525.1, F&BI 508354 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508354 -01	WD-145'-S

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-145'-S	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1
Date Extracted:	08/20/15	Lab ID:	508354-01
Date Analyzed:	08/20/15	Data File:	508354-01.064
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	85	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.87

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M Task 1525.1
Date Extracted:	08/20/15	Lab ID:	I5-460 mb
Date Analyzed:	08/20/15	Data File:	I5-460 mb.019
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 08/25/15
Date Received: 08/20/15
Project: B&L O&M Task 1525.1, F&BI 508354

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508341-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	2.73	86	90	67-121	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	91	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

508354 Megan McCullough

SAMPLE CHAIN OF CUSTODY

ME 08/20/15

B01

Page # 1 of 1

Send Report To ~~info@danatanks.com~~ Floyd|Snider

Company ~~Dana Thompson Tanks & Soil~~

Address ~~930 SE Lincoln St.~~ 601 Union St.

City, State, ZIP Portland, OR 97214 Seattle

Phone # ~~(503) 244-7002~~ 206-212-2078 Fax #

SAMPLERS (signature)

PROJECT ID/ADDRESS: B&L - O&M Task 152 S. 1

JOB #

SITE NAME: B&L Woodwaste Site

REMARKS

TURNAROUND TIME
- ☐ Standard
- ☑ RUSH 24 hour or 5 day
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☑ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Tot Arsenic 200.8					Notes
WD-145'-5	01	8/20/15 SM	0745	SOIL	1							✓					
													Samples received at 4 °C				

ANALYSES REQUESTED

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Erin Murray	Floyd|Snider	8/20/15	0915
Received by:	Sam Othmer	Hart Foot	8/20/15	10:20 AM
Relinquished by:				
Received by:	VINH	FBI	8/20/15	11:20 AM

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 25, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 20, 2015 from the B&L O&M Task 1525.1, F&BI 508378 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu, Erin Murray
FDS0825R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 20, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M Task 1525.1, F&BI 508378 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508378 -01	WD-13.5'-C-2
508378 -02	WD-13.5'-C-4
508378 -03	WD-13.5'-W-2
508378 -04	WD-13.5'-W-4
508378 -05	WD-25'-W-2
508378 -06	WD-25'-W-4
508378 -07	WD-25'-C-2
508378 -08	WD-25'-C-4

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-13.5'-C-2	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-01
Date Analyzed:	08/21/15	Data File:	508378-01.019
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	21.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-13.5'-C-4	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-02
Date Analyzed:	08/21/15	Data File:	508378-02.022
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.01

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-13.5'-W-2	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-03
Date Analyzed:	08/21/15	Data File:	508378-03.023
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	98	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.24

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-13.5'-W-4	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-04
Date Analyzed:	08/21/15	Data File:	508378-04.024
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25'-W-2	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-05
Date Analyzed:	08/21/15	Data File:	508378-05.025
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.62

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25'-W-4	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-06
Date Analyzed:	08/21/15	Data File:	508378-06.026
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25'-C-2	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-07
Date Analyzed:	08/21/15	Data File:	508378-07.028
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	69.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	WD-25'-C-4	Client:	Floyd-Snider
Date Received:	08/20/15	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	508378-08
Date Analyzed:	08/21/15	Data File:	508378-08.029
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M Task 1525.1, F&BI 508378
Date Extracted:	08/21/15	Lab ID:	I5-463 mb
Date Analyzed:	08/21/15	Data File:	I5-463 mb.017
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 08/25/15
Date Received: 08/20/15
Project: B&L O&M Task 1525.1, F&BI 508378

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508378-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	16.1	78 b	34 b	67-121	79 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	88	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

508378

SAMPLE CHAIN OF CUSTODY

~~ABS~~ ME 8/20/15 BIZ

Megan McCullough

Send Report To ~~info@danatanks.com~~

Company ~~Dana Thompson Tanks & Soil~~ Floyd|Snider

Address ~~930 SE Lincoln St.~~ 601 Union St.

City, State, ZIP ~~Portland, OR 97214~~ Seattle, WA

Phone # ~~(503) 244-7002~~ 206-292-2078 Fax #

SAMPLERS (signature)

PROJECT ID/ADDRESS: B+L - O+M Task 1525.1

JOB #

SITE NAME: B+L Woodwaste Site

REMARKS

Page # 1 of 1

TURNAROUND TIME
- ☐ Standard
- ☑ RUSH 24 hr or faster
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☑ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Total Arsenic 200.8						Notes
WD-13.5'-C-2	01	8/20/15	1445	Soil	1							X						
WD-13.5'-C-4	02		1455	Soil	1							X						
WD-13.5'-W-2	03		1515	Soil	1							X						
WD-13.5'-W-4	04		1525	Soil	1							X						
WD-25'-W-2	05		1550	Soil	1							X						
WD-25'-W-4	06		1555	Soil	1							X						
WD-25'-C-2	07		1605	Soil	1							X						
WD-25'-C-4	08		1615	Soil	1							X						Samples received at 09 °C
													8/20/15					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Erin Murray	Floyd|Snider	8/20/15	1755
Received by:	Jon Ehlmann	FBI	8/20/15	1755
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 25, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 21, 2015 from the B&L Task 1525.1, F&BI 508403 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu, Erin Murray
FDS0825R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 21, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L Task 1525.1, F&BI 508403 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508403 -01	SD-0'-E
508403 -02	SD-10'-S
508403 -03	SD-8'-N
508403 -04	SD-8a'-N
508403 -05	SD-10'-C
508403 -06	SD-10'-C-2

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-0'-E	Client:	Floyd-Snider
Date Received:	08/21/15	Project:	B&L Task 1525.1, F&BI 508403
Date Extracted:	08/24/15	Lab ID:	508403-01
Date Analyzed:	08/24/15	Data File:	508403-01.054
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	69	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	21.3

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-10'-S	Client:	Floyd-Snider
Date Received:	08/21/15	Project:	B&L Task 1525.1, F&BI 508403
Date Extracted:	08/24/15	Lab ID:	508403-02
Date Analyzed:	08/24/15	Data File:	508403-02.055
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	68	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.97

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-8'-N	Client:	Floyd-Snider
Date Received:	08/21/15	Project:	B&L Task 1525.1, F&BI 508403
Date Extracted:	08/24/15	Lab ID:	508403-03
Date Analyzed:	08/24/15	Data File:	508403-03.056
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	69	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	35.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-8a'-N	Client:	Floyd-Snider
Date Received:	08/21/15	Project:	B&L Task 1525.1, F&BI 508403
Date Extracted:	08/24/15	Lab ID:	508403-04
Date Analyzed:	08/24/15	Data File:	508403-04.057
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	69	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	50.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-10'-C	Client:	Floyd-Snider
Date Received:	08/21/15	Project:	B&L Task 1525.1, F&BI 508403
Date Extracted:	08/24/15	Lab ID:	508403-05
Date Analyzed:	08/24/15	Data File:	508403-05.058
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	68	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	86.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-10'-C-2	Client:	Floyd-Snider
Date Received:	08/21/15	Project:	B&L Task 1525.1, F&BI 508403
Date Extracted:	08/24/15	Lab ID:	508403-06
Date Analyzed:	08/24/15	Data File:	508403-06.059
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	69	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	12.8

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L Task 1525.1, F&BI 508403
Date Extracted:	08/24/15	Lab ID:	I5-467 mb
Date Analyzed:	08/24/15	Data File:	I5-467 mb.050
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	71	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 08/25/15
Date Received: 08/21/15
Project: B&L Task 1525.1, F&BI 508403

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508391-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	3.21	86	88	67-121	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	89	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

Megan McCullough 508403 — HE08-21-15 — BE7

Page # 1 of 1

Send Report To [redacted] Floyd/Snider

Company Dana Thompson ~~Tanks & Soil~~

Address ~~930 SE Lincoln St.~~ 601 Union St.

City, State, ZIP ~~Portland, OR 97214~~ Seattle, WA

Phone # (503) 244-7002 292-2078 Fax #

SAMPLERS (signature) [redacted]

PROJECT ID/ADDRESS: B&L O&M Task 1525.1

JOB #

SITE NAME

REMARKS

TURNAROUND TIME
- ☐ Standard
- ☑ RUSH 24 hours
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☑ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Tot. Arsenic 2 ppm						Notes
SD-0'-E	01	8/21/15	1100	SOIL	1							✓						
SD-10'-S	02		1105		1							✓						
SD-8'-N	03		1120		1							✓						
SD-8a'-N	04		1130		1							✓						
SD-10'-C	05		1135		1							✓						
SD-10'-C-2	06		1140		1							✓						
		EM																Samples received @ 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [redacted]	Erin Murray	Floyd/Snider	8/21/15	1500
Received by: [redacted]	DOVO	F&B	11	16:30
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 1, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 25, 2015 from the B&L O&M Task 1525.1, F&BI 508450 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0901R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 25, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M Task 1525.1, F&BI 508450 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508450 -01	SD-30'-C
508450 -02	SD-50'-C
508450 -03	SD-33'-N
508450 -04	SD-58'-N

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-30'-C	Client:	Floyd-Snider
Date Received:	08/25/15	Project:	B&L O&M Task 1525.1, F&BI 508450
Date Extracted:	08/26/15	Lab ID:	508450-01
Date Analyzed:	08/26/15	Data File:	508450-01.019
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	52.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-50'-C	Client:	Floyd-Snider
Date Received:	08/25/15	Project:	B&L O&M Task 1525.1, F&BI 508450
Date Extracted:	08/26/15	Lab ID:	508450-02
Date Analyzed:	08/26/15	Data File:	508450-02.020
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	50.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-33'-N	Client:	Floyd-Snider
Date Received:	08/25/15	Project:	B&L O&M Task 1525.1, F&BI 508450
Date Extracted:	08/26/15	Lab ID:	508450-03
Date Analyzed:	08/26/15	Data File:	508450-03.021
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	76.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-58'-N	Client:	Floyd-Snider
Date Received:	08/25/15	Project:	B&L O&M Task 1525.1, F&BI 508450
Date Extracted:	08/26/15	Lab ID:	508450-04
Date Analyzed:	08/26/15	Data File:	508450-04.022
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	29.8

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M Task 1525.1, F&BI 508450
Date Extracted:	08/26/15	Lab ID:	I5-471 mb2
Date Analyzed:	08/26/15	Data File:	I5-471 mb2.018
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	98	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/01/15
Date Received: 08/25/15
Project: B&L O&M Task 1525.1, F&BI 508450

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508397-68 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	3.29	98	99	67-121	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	99	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

ME 08-25-15 BEI

Page # 1 of 1

Send Report To Megan McCullough

Company Floyd | Snider

Address 601 Union Street

City, State, ZIP Seattle, WA 9801

Phone # 206.292.2078 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. B+L O+M Task 1525.1

PO#

REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☑ RUSH 24 hrs
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Total Arsenic 200.8						Notes
SD-30'-C	01	8/25/15	1535	Soil	1							✓						
SD-50'-C	02	↓	1536	↓	1							✓						
SD-33'-N	03		1540		1							✓						
SD-58'-N	04		1542		1							✓						

8/25/15

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Erin Murray	Floyd/Snider	8/25/15	1750
Received by:	Jon Shimazu	FBI	8/25/15	1750
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 1, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 28, 2015 from the B&L O&M 1525.1, F&BI 508511 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0901R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 28, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M 1525.1, F&BI 508511 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508511 -01	SD-30'-N-2.5
508511 -02	SD-30'-N-5
508511 -03	SD-83'-N
508511 -04	SD-75'-C
508511 -05	SD-108'-N
508511 -06	SD-100'-C

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-30'-N-2.5	Client:	Floyd-Snider
Date Received:	08/28/15	Project:	B&L O&M 1525.1, F&BI 508511
Date Extracted:	08/28/15	Lab ID:	508511-01
Date Analyzed:	08/28/15	Data File:	508511-01.035
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	58.0

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-30'-N-5	Client:	Floyd-Snider
Date Received:	08/28/15	Project:	B&L O&M 1525.1, F&BI 508511
Date Extracted:	08/28/15	Lab ID:	508511-02
Date Analyzed:	08/28/15	Data File:	508511-02.036
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	91	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	92.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-83'-N	Client:	Floyd-Snider
Date Received:	08/28/15	Project:	B&L O&M 1525.1, F&BI 508511
Date Extracted:	08/28/15	Lab ID:	508511-03
Date Analyzed:	08/28/15	Data File:	508511-03.037
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	33.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-75'-C	Client:	Floyd-Snider
Date Received:	08/28/15	Project:	B&L O&M 1525.1, F&BI 508511
Date Extracted:	08/28/15	Lab ID:	508511-04
Date Analyzed:	08/28/15	Data File:	508511-04.038
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.32

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-108'-N	Client:	Floyd-Snider
Date Received:	08/28/15	Project:	B&L O&M 1525.1, F&BI 508511
Date Extracted:	08/28/15	Lab ID:	508511-05
Date Analyzed:	08/28/15	Data File:	508511-05.039
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	66.0

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-100'-C	Client:	Floyd-Snider
Date Received:	08/28/15	Project:	B&L O&M 1525.1, F&BI 508511
Date Extracted:	08/28/15	Lab ID:	508511-06
Date Analyzed:	08/28/15	Data File:	508511-06.040
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	11.8

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M 1525.1, F&BI 508511
Date Extracted:	08/28/15	Lab ID:	I5-477 mb2
Date Analyzed:	08/28/15	Data File:	I5-477 mb2.034
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/01/15
Date Received: 08/28/15
Project: B&L O&M 1525.1, F&BI 508511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508488-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	5.08	84	82	67-121	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	97	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

508611 ME 08-28-15 BI1

Page # 1 of 1

Send Report To Megan McCullough
Company Floyd | Snider
Address 601 Union Street, Ste 600
City, State, ZIP Seattle, WA 98101
Phone # 206.292.2078 Fax #

SAMPLERS (signature)

PROJECT NAME/NO.: B+L O+M 1525.1

PO#:

REMARKS:

TURNAROUND TIME
☐ Standard (2 Weeks)
☑ RUSH 24 hrs
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Total Ks 200.8						Notes
SD-30'-N-2.5	01	8/27/15	950	Soil	1							✓						
SD-30'-N-5	02		955		1							✓						
SD-83'-N	03		1005		1							✓						
SD-75'-C	04		1010		1							✓						
SD-108'-N	05		1015		1							✓						
SD-100'-C	06		1020		1							✓						

Samples received at 4.5 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:				
Received by:	DD UD	FBI	8-28-15	9:20
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 3, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 31, 2015 from the B&L O&M T.1525.1, F&BI 508552 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu, Erin Murray
FDS0903R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 31, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M T.1525.1, F&BI 508552 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508552 -01	SD-125'-C
508552 -02	SD-140'-A
508552 -03	SD-133'-N
508552 -04	SD-158'-N
508552 -05	SD-150'-C

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-125'-C	Client:	Floyd-Snider
Date Received:	08/31/15	Project:	B&L O&M T.1525.1, F&BI 508552
Date Extracted:	08/31/15	Lab ID:	508552-01
Date Analyzed:	08/31/15	Data File:	508552-01.048
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	85	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.53

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-140'-A	Client:	Floyd-Snider
Date Received:	08/31/15	Project:	B&L O&M T.1525.1, F&BI 508552
Date Extracted:	08/31/15	Lab ID:	508552-02
Date Analyzed:	08/31/15	Data File:	508552-02.049
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	86	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.76

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-133'-N	Client:	Floyd-Snider
Date Received:	08/31/15	Project:	B&L O&M T.1525.1, F&BI 508552
Date Extracted:	08/31/15	Lab ID:	508552-03
Date Analyzed:	08/31/15	Data File:	508552-03.050
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	49.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-158'-N	Client:	Floyd-Snider
Date Received:	08/31/15	Project:	B&L O&M T.1525.1, F&BI 508552
Date Extracted:	08/31/15	Lab ID:	508552-04
Date Analyzed:	08/31/15	Data File:	508552-04.051
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	59.6

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-150'-C	Client:	Floyd-Snider
Date Received:	08/31/15	Project:	B&L O&M T.1525.1, F&BI 508552
Date Extracted:	08/31/15	Lab ID:	508552-05
Date Analyzed:	08/31/15	Data File:	508552-05.052
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.52

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M T.1525.1, F&BI 508552
Date Extracted:	08/31/15	Lab ID:	I5-485 mb
Date Analyzed:	08/31/15	Data File:	I5-485 mb.035
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/03/15
Date Received: 08/31/15
Project: B&L O&M T.1525.1, F&BI 508552

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/PRODUCT SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508535-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.24	89	92	67-121	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

508552

SAMPLE CHAIN OF CUSTODY

ME 08-31-15 BTI

Page # 1 of 1

Send Report To Megan McCullough
Company Floyd/Snider
Address 601 Union St. Ste 6100
City, State, ZIP Seattle, WA 98101
Phone # 206-292-2078 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. B&K-04M T.1525.1
PO#
REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☑ RUSH 24-hours
Rush charges authorized by Erin Murray

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☑ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Tot. As 200.8						Notes
SD-125'-C	01	8/24/15	1445	SOIL	1							X						
SD-140'-A	02		1455	SOIL	1							X						
SD-133'-N	03		1450	SOIL	1							X						
SD-158'-N	04		1540	SOIL	1							X						
SD-150'-C	05		1545	SOIL	1							X						
																		Samples received at 22 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Erin Murray	Floyd/Snider	8/24/15	9:07 AM
Received by:	Jared Underdown	Fedex	8-31-15	9:41
Relinquished by:				
Received by:	DOW	FedEx	8-31-15	10:30

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 3, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 1, 2015 from the B&L O&M Task 1525.1, F&BI 509002 project. There are 15 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Erin Murray, Brett Beaulieu
FDS0903R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 1, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M Task 1525.1, F&BI 509002 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509002 -01	SD-165'-S
509002 -02	SD-175'-C
509002 -03	SD-183'-N
509002 -04	SD-11'-N-5
509002 -05	SD-11'-N-10
509002 -06	SD-11'-N-20
509002 -07	SD-11'N-15
509002 -08	SD-30'-N-7.5
509002 -09	SD-30'-N-10

All quality control requirements were acceptable.

Date of Report: 09/03/15
Date Received: 09/01/15
Project: B&L O&M Task 1525.1, F&BI 509002
Date Extracted: 09/01/15
Date Analyzed: 09/01/15

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
SD-165'-S 509002-01	<50	<250	111
Method Blank 05-1793 MB	<50	<250	106

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-165'-S	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-01
Date Analyzed:	09/01/15	Data File:	509002-01.012
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	14.8

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-175'-C	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-02
Date Analyzed:	09/01/15	Data File:	509002-02.015
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.95

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-183'-N	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-03
Date Analyzed:	09/01/15	Data File:	509002-03.016
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	102

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-11'-N-5	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-04
Date Analyzed:	09/01/15	Data File:	509002-04.017
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	25.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-11'-N-10	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-05
Date Analyzed:	09/01/15	Data File:	509002-05.018
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	104

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-11'-N-20	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-06
Date Analyzed:	09/01/15	Data File:	509002-06.020
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	95	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.64

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-11'N-15	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-07
Date Analyzed:	09/01/15	Data File:	509002-07.021
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	40.8

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-30'-N-7.5	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-08
Date Analyzed:	09/01/15	Data File:	509002-08.022
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.98

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-30'-N-10	Client:	Floyd-Snider
Date Received:	09/01/15	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	509002-09
Date Analyzed:	09/01/15	Data File:	509002-09.023
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	47.6

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	B&L O&M Task 1525.1, F&BI 509002
Date Extracted:	09/01/15	Lab ID:	I5-488 mb
Date Analyzed:	09/01/15	Data File:	I5-488 mb.010
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	99	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/03/15
Date Received: 09/01/15
Project: B&L O&M Task 1525.1, F&BI 509002

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 508560-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	131	125	64-133	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	132	58-147

Date of Report: 09/03/15
Date Received: 09/01/15
Project: B&L O&M Task 1525.1, F&BI 509002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 509002-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	9.74	113 b	81 b	67-121	33 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	93	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

ME

09/01/15

BI2

509003

Page # 1 of _____

Send Report To Megan McCullough

Company Floyd | Snider

Address 601 Union Street

City, State, ZIP Seattle, WA 98101

Phone #206.292.2078 Fax # _____

SAMPLERS (*signature*)

PROJECT NAME/NO. B+L O+M Task 1525.1

PO#

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☑ RUSH 24 hr
- Rush charges authorized by _____

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Total Arsenic 200.7						Notes
SD-165'-S	01	8/31/15	1110	Soil	1	X						✓						X-per MM
SD-175'-C	02	↓	1105	↓	1							✓						9/1/15
SD-183'-N	03	↓	1100	↓	1							✓						MG
SD-11'-N-5	04	↓	1515	↓	1							✓						
SD-11'-N-10	05	↓	1523	↓	1							✓						
SD-11'-N-20	06	↓	1542	↓	1							✓						
SD-11'-N-15	07	↓	1535	↓	1							✓						
SD-30'-N-7.5	08	↓	1630	↓	1							✓						
SD-30'-N-10	09	↓	1635	↓	1							✓						

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:					
Received by:		Evelyn	F&B	9/1/15	8:00
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 4, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 2, 2015 from the B&L O&M T.1525.1, F&BI 509050 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0904R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 2, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M T.1525.1, F&BI 509050 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509050 -01	SD-200'-C
509050 -02	SD-208'-N
509050 -03	SD-190'-S

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-200'-C	Client:	Floyd-Snider
Date Received:	09/02/15	Project:	B&L O&M T.1525.1, F&BI 509050
Date Extracted:	09/03/15	Lab ID:	509050-01
Date Analyzed:	09/03/15	Data File:	509050-01.010
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.21

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-208'-N	Client:	Floyd-Snider
Date Received:	09/02/15	Project:	B&L O&M T.1525.1, F&BI 509050
Date Extracted:	09/03/15	Lab ID:	509050-02
Date Analyzed:	09/03/15	Data File:	509050-02.011
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.54

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-190'-S	Client:	Floyd-Snider
Date Received:	09/02/15	Project:	B&L O&M T.1525.1, F&BI 509050
Date Extracted:	09/03/15	Lab ID:	509050-03
Date Analyzed:	09/03/15	Data File:	509050-03.012
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	38.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M T.1525.1, F&BI 509050
Date Extracted:	09/03/15	Lab ID:	I5-490 mb2
Date Analyzed:	09/03/15	Data File:	I5-490 mb2.009
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/04/15
Date Received: 09/02/15
Project: B&L O&M T.1525.1, F&BI 509050

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 509022-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	5.94	82	80	67-121	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	94	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509050

SAMPLE CHAIN OF CUSTODY ME 09/02/15

Page # 1 of 1

Send Report To Megan McCullough
Company Floyd/Snider
Address 601 Union St.
City, State, ZIP Seattle, WA 98101
Phone # 206-272-2078 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. B&L - 04M T.1525.1
PO#
REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☑ RUSH 24-hours
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Tot As 200.8						Notes
SD-200'-C	01	9/1/15	1030	SOIL	1							X						
SD-208'-N	02	9/1/15	1035	SOIL	1							X						
SD-190'-S	03	9/1/15	1230	SOIL	1							X						

Samples received at 3 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Erin Murray	Floyd/Snider	9/1/15	1700
Received by:	Mike Anderson	MIKE ANDERSON	FLEET FOOT	9/2/15	9:28
Relinquished by:	Mike Anderson	MIKE ANDERSON	FLEET FOOT	9/2/15	14:21
Received by:		Clare Griggs	PAI	9/2/15	14:21
		Matt Lamberton	FRI	9/2/15	1500

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 4, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 3, 2015 from the B+L O+M t.1525, F&BI 509075 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Erin Murray, Brett Beaulieu
FDS0904R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 3, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B+L O+M t.1525, F&BI 509075 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509075 -01	SD-233'-N
509075 -02	SD-225'-C
509075 -03	SD-215'-S
509075 -04	SD-258'-N
509075 -05	SD-250'-C
509075 -06	SD-240'-S

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-233'-N	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B+L O+M t.1525, F&BI 509075
Date Extracted:	09/03/15	Lab ID:	509075-01
Date Analyzed:	09/03/15	Data File:	509075-01.048
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	78	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.41

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-225'-C	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B+L O+M t.1525, F&BI 509075
Date Extracted:	09/03/15	Lab ID:	509075-02
Date Analyzed:	09/03/15	Data File:	509075-02.049
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	78	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.23

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-215'-S	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B+L O+M t.1525, F&BI 509075
Date Extracted:	09/03/15	Lab ID:	509075-03
Date Analyzed:	09/03/15	Data File:	509075-03.050
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	74	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	26.6

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-258'-N	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B+L O+M t.1525, F&BI 509075
Date Extracted:	09/03/15	Lab ID:	509075-04
Date Analyzed:	09/03/15	Data File:	509075-04.051
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	76	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.24

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-250'-C	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B+L O+M t.1525, F&BI 509075
Date Extracted:	09/03/15	Lab ID:	509075-05
Date Analyzed:	09/03/15	Data File:	509075-05.052
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	76	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.78

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-240'-S	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B+L O+M t.1525, F&BI 509075
Date Extracted:	09/03/15	Lab ID:	509075-06
Date Analyzed:	09/03/15	Data File:	509075-06.053
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	73	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.53

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L O+M t.1525, F&BI 509075
Date Extracted:	09/03/15	Lab ID:	I5-496 mb
Date Analyzed:	09/03/15	Data File:	I5-496 mb.015
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/04/15
Date Received: 09/03/15
Project: B+L O+M t.1525, F&BI 509075

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 509067-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	5.08	87	86	67-121	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	100	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509075

SAMPLE CHAIN OF CUSTODY ME 09-03-15 BF2

Send Report To Megan McCullough
Company Floyd Snider
Address 601 Union St, Ste 600
City, State, ZIP Seattle, WA 98101
Phone # 206-292-2078 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. B+L O+M F. 1525 | PO#

REMARKS

Page # 1 of

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	As by ICP 3						Notes
SD-233'-N	01	9/2/15	1205	Soil	1							X						
SD-225'-C	02		1210		1							X						
SD-215'-S	03		1215		1							X						
SD-258'-N	04		1455		1							X						
SD-250'-C	05		1500		1							X						
SD-240'-S	06	↓	1505	↓	1							X						
																		Samples received at 5 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kristin Anderson	Floyd|Snider	9/2/15	1525
Received by:	Corey H. Wilson	Floyd Snider	9/2/15	1525
Relinquished by:				
Received by:	DO VO	FB2	9-3-15	12:45

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 9, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 3, 2015 from the B&L O&M 1525.1, F&BI 509083 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Erin Murray, Brett Beaulieu
FDS0909R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 3, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M 1525.1, F&BI 509083 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509083 -01	SD-275'-C
509083 -02	SD-283'-N
509083 -03	SD-265'-S
509083 -04	SD-308'-N
509083 -05	SD-300'-C
509083 -06	SD-290'-S

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-275'-C	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B&L O&M 1525.1, F&BI 509083
Date Extracted:	09/04/15	Lab ID:	509083-01
Date Analyzed:	09/04/15	Data File:	509083-01.033
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.97

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-283'-N	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B&L O&M 1525.1, F&BI 509083
Date Extracted:	09/04/15	Lab ID:	509083-02
Date Analyzed:	09/04/15	Data File:	509083-02.034
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	91	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.36

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-265'-S	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B&L O&M 1525.1, F&BI 509083
Date Extracted:	09/04/15	Lab ID:	509083-03
Date Analyzed:	09/04/15	Data File:	509083-03.035
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	95	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	17.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-308'-N	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B&L O&M 1525.1, F&BI 509083
Date Extracted:	09/04/15	Lab ID:	509083-04
Date Analyzed:	09/04/15	Data File:	509083-04.036
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.95

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-300'-C	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B&L O&M 1525.1, F&BI 509083
Date Extracted:	09/04/15	Lab ID:	509083-05
Date Analyzed:	09/04/15	Data File:	509083-05.037
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.91

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-290'-S	Client:	Floyd-Snider
Date Received:	09/03/15	Project:	B&L O&M 1525.1, F&BI 509083
Date Extracted:	09/04/15	Lab ID:	509083-06
Date Analyzed:	09/04/15	Data File:	509083-06.039
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.80

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M 1525.1, F&BI 509083
Date Extracted:	09/04/15	Lab ID:	I5-500 mb
Date Analyzed:	09/04/15	Data File:	I5-500 mb.022
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	103	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/09/15
Date Received: 09/03/15
Project: B&L O&M 1525.1, F&BI 509083

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508539-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.84	89	78	67-121	13

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	98	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509083

SAMPLE CHAIN OF CUSTODY

ME 09/03/15 AI

Page # 1 of 1

Send Report To Megan McCullough
Company Floyd | Snider
Address 601 Union Street, Ste. 600
City, State, ZIP Seattle, WA 98101
Phone # 206 292 2078 Fax #

SAMPLERS (signature)

PROJECT NAME/NO.: B+L O+M 1525.1 | PO#:

REMARKS:

TURNAROUND TIME
☐ Standard (2 Weeks)
☑ RUSH 24 hr
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Total As 200.8						Notes
SD-275'-C	01	9/3/15	1010	Soil	1							✓						
SD-283'-N	02		1013		1							✓						
SD-265'-S	03		1015		1							✓						
SD-308'-N	04		1410		1							✓						
SD-300'-C	05		1415		1							✓						
SD-290'-S	06		1420		1							✓						
9/3/15														Samples received at 4 °C				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Corey H. Wilson	Floyd | Snider	9/3/15	1650
Received by:	Michael Erdahl	FG Bru	↓	↓
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 9, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 4, 2015 from the B&L O&M 1525.1, F&BI 509112 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
C: Erin Murray, Brett Beaulieu
FDS0909R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 4, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M 1525.1, F&BI 509112 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509112 -01	SD-333'-N
509112 -02	SD-325'-C
509112 -03	SD-315'-S
509112 -04	SD-358'-N
509112 -05	SD-350'-C
509112 -06	SD-340'-S
509112 -07	SD-375'-W

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-333'-N	Client:	Floyd-Snider
Date Received:	09/04/15	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	509112-01
Date Analyzed:	09/08/15	Data File:	509112-01.038
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	78	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	22.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-325'-C	Client:	Floyd-Snider
Date Received:	09/04/15	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	509112-02
Date Analyzed:	09/08/15	Data File:	509112-02.051
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	33.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-315'-S	Client:	Floyd-Snider
Date Received:	09/04/15	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	509112-03
Date Analyzed:	09/08/15	Data File:	509112-03.052
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	15.6

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-358'-N	Client:	Floyd-Snider
Date Received:	09/04/15	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	509112-04
Date Analyzed:	09/08/15	Data File:	509112-04.053
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	20.3

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-350'-C	Client:	Floyd-Snider
Date Received:	09/04/15	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	509112-05
Date Analyzed:	09/08/15	Data File:	509112-05.054
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.84

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-340'-S	Client:	Floyd-Snider
Date Received:	09/04/15	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	509112-06
Date Analyzed:	09/08/15	Data File:	509112-06.055
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.89

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-375'-W	Client:	Floyd-Snider
Date Received:	09/04/15	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	509112-07
Date Analyzed:	09/08/15	Data File:	509112-07.057
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.11

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M 1525.1, F&BI 509112
Date Extracted:	09/08/15	Lab ID:	I5-503 mb
Date Analyzed:	09/08/15	Data File:	I5-503 mb.035
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/09/15
Date Received: 09/04/15
Project: B&L O&M 1525.1, F&BI 509112

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 509112-01X (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Arsenic	mg/kg (ppm)	19.7	21.5	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	108	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509112

SAMPLE CHAIN OF CUSTODY

ME 09-04-15

Page # 1 of 1

Send Report To Megan McCullough
Company Floyd|Snider
Address 601 Union Street, Ste. 600
City, State, ZIP Seattle, WA 98101
Phone # 206-292-2078 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. B+L O+M 1525.1
PO #
REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☑ RUSH 24 hr
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Total As 200.8					Notes
SD-333'-N	01	9/4/14	0844	Soil	1							/					
SD-325'-C	02		0850		1							/					
SD-315'-S	03		0853		1							/					
SD-358'-N	04		1100		1							/					
SD-350'-C	05		1104		1							/					
SD-340'-S	06		1108		1							/					
SD-375'-W	07	↓	1245	↓	1							/					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Gabriel Cisneros	Floyd|Snider	9/4/15	1430
Received by:		DD VO	FB	1	14:30
Relinquished by:					
Received by:					

FORMS\COC\COC.DOC

Samples received at 3 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 15, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 11, 2015 from the B&L O&M 1525.1, F&BI 509189 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Erin Murray, Brett Beaulieu
FDS0915R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 11, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M 1525.1, F&BI 509189 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509189 -01	SD-30'-C-2
509189 -02	SD-50'-C-2
509189 -03	SD-83'-N-B
509189 -04	SD-83-N-5
509189 -05	SD-108'-N-B
509189 -06	SD-108'-N-5
509189 -07	SD-133'-N-B
509189 -08	SD-133'-N-5
509189 -09	SD-183'-N-B
509189 -10	SD-183'-N-5
509189 -11	SD-158'-N-B
509189 -12	SD-158'-N-5

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-30'-C-2	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-01
Date Analyzed:	09/11/15	Data File:	509189-01.072
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	114	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	35.0

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-50'-C-2	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-02
Date Analyzed:	09/11/15	Data File:	509189-02.055
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	104	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-83'-N-B	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-03
Date Analyzed:	09/11/15	Data File:	509189-03.056
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	104	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.29

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-83-N-5	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-04
Date Analyzed:	09/11/15	Data File:	509189-04.060
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	105	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	23.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-108'-N-B	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-05
Date Analyzed:	09/11/15	Data File:	509189-05.061
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	105	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	15.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-108'-N-5	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-06
Date Analyzed:	09/11/15	Data File:	509189-06.062
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	108	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.90

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-133'-N-B	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-07
Date Analyzed:	09/11/15	Data File:	509189-07.063
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	104	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.06

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-133'-N-5	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-08
Date Analyzed:	09/11/15	Data File:	509189-08.064
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	108	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.45

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-183'-N-B	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-09
Date Analyzed:	09/11/15	Data File:	509189-09.065
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	108	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.07

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-183'-N-5	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-10
Date Analyzed:	09/11/15	Data File:	509189-10.066
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	109	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.71

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-158'-N-B	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-11
Date Analyzed:	09/11/15	Data File:	509189-11.067
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	111	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.75

Analysis For Total Metals By EPA Method 200.8

Client ID:	SD-158'-N-5	Client:	Floyd-Snider
Date Received:	09/11/15	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	509189-12
Date Analyzed:	09/11/15	Data File:	509189-12.069
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	108	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.24

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M 1525.1, F&BI 509189
Date Extracted:	09/11/15	Lab ID:	I5-518 mb
Date Analyzed:	09/11/15	Data File:	I5-518 mb.050
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	100	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

Date of Report: 09/15/15
Date Received: 09/11/15
Project: B&L O&M 1525.1, F&BI 509189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 509189-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	22.4	124 b	87 b	67-121	35 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	99	83-113

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509189

SAMPLE CHAIN OF CUSTODY

ME 09-11-15 BI2

Send Report To Megan McCullough
Company Floyd|Snider
Address 601 Union Street, Suite 600
City, State, ZIP Seattle, WA 98101
Phone # 206.292.2078 Fax #

SAMPLERS (signature)

PROJECT NAME/NO.: B+L O+M 1525.1

PO#

REMARKS: Analyze SD-30'-C-2 and SD-50'-C-2 First

Page # 1 of 2

TURNAROUND TIME
☐ Standard (2 Weeks)
☑ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Total As 200.8						Notes
SD-30'-C-2	01	9/10/15	1024 ~~1026~~	Soil	1							✓						
SD-50'-C-2	02		1026		1							✓						
SD-83'-N-B	03		1135		1							✓						
SD-83'-N-5	04		1140		1							✓						
SD-108'-N-B	05		1145		1							✓						
SD-108'-N-5	06		1150		1							✓						
SD-133'-N-B	07		1155		1							✓						
SD-133'-N-5	08		1205		1							✓						
SD-183'-N-B	09		1535		1							✓						
SD-183'-N-5	10		1542		1							✓						Samples received at 3 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Terry Duncan	Floyd Snider	9-11-15	10:22
Received by:		Jared Underdown	Fedex	9-11	10:22
Relinquished by:					
Received by:		Nhan Pham	FCSI	9/11/15	1:00

509189

SAMPLE CHAIN OF CUSTODY

ME 09-11-15 SD2

Page # 2 of 2

Send Report To Megan McCullough
Company Floyd|Snider
Address 601 Union Street, Ste 600
City, State, ZIP Seattle, WA 98109
Phone # 206.292.2078 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. B+L O+M 1525.1
PO#
REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Total As 200.8						Notes
SD-158'-N-D	11	9/10/15	1547	Soil	1							✓						
SD-158'-N-5	12	↓	1549	↓	1							✓						
																		Samples received at 3 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Terry Duncan	Floyd Snider	9-11-15	10:22 am
Received by:		Daniel Underdown	Fedex	9-11	10:22 am
Relinquished by:					
Received by:		Nhan Phan	FEDEX	9/11/15	1100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 2, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on August 26, 2015 from the B&L O&M 1525.1, F&BI 508466 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0902R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 26, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M 1525.1, F&BI 508466 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
508466 -01	BT-01-W

The 200.8 silver laboratory control sample and laboratory control sample duplicate as well as the associated relative percent difference did not pass the acceptance criteria. The data were flagged accordingly.

The sample BT-01-W was filtered at Friedman and Bruya on August 26, 2015 at 15:02.

All other quality control requirements were acceptable.

Date of Report: 09/02/15
Date Received: 08/26/15
Project: B&L O&M 1525.1, F&BI 508466
Date Extracted: 08/26/15
Date Analyzed: 08/26/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 41-152)
BT-01-W 508466-01	ND	ND	ND	95
Method Blank 05-1738 MB	ND	ND	ND	99

ND - Material not detected at or above 0.3 mg/L gas, 0.5 mg/L diesel and 0.5 mg/L heavy oil.

Analysis For Total Metals By EPA Method 200.8

Client ID:	BT-01-W	Client:	Floyd-Snider
Date Received:	08/26/15	Project:	B&L O&M 1525.1, F&BI 508466
Date Extracted:	08/27/15	Lab ID:	508466-01
Date Analyzed:	08/28/15	Data File:	508466-01.047
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	2.54

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	B&L O&M 1525.1, F&BI 508466
Date Extracted:	08/27/15	Lab ID:	I5-480 mb
Date Analyzed:	08/28/15	Data File:	I5-480 mb.044
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	93	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	BT-01-W f	Client:	Floyd-Snider
Date Received:	08/26/15	Project:	B&L O&M 1525.1, F&BI 508466
Date Extracted:	08/26/15	Lab ID:	508466-01
Date Analyzed:	08/27/15	Data File:	508466-01.012
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	97	60	125
Holmium	99	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	47.8
Barium	122
Cadmium	<1
Chromium	1.37
Copper	<5
Lead	<1
Mercury	<1
Nickel	1.35
Selenium	<1
Silver	<1 jl
Zinc	7.86

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	B&L O&M 1525.1, F&BI 508466
Date Extracted:	08/26/15	Lab ID:	I5-474 mb
Date Analyzed:	08/27/15	Data File:	I5-474 mb.007
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	100	60	125
Indium	100	60	125
Holmium	100	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Mercury	<1
Nickel	<1
Selenium	<1
Silver	<1 jl
Zinc	<5

Date of Report: 09/02/15
Date Received: 08/26/15
Project: B&L O&M 1525.1, F&BI 508466

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 508466-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Chromium	ug/L (ppb)	2.54	2.66	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	20	99	102	80-119	3

Date of Report: 09/02/15
Date Received: 08/26/15
Project: B&L O&M 1525.1, F&BI 508466

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 508466-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Arsenic	ug/L (ppb)	47.8	42.4	12
Barium	ug/L (ppb)	122	116	5
Cadmium	ug/L (ppb)	<1	<1	nm
Chromium	ug/L (ppb)	1.37	1.24	10
Copper	ug/L (ppb)	<5	<5	nm
Lead	ug/L (ppb)	<1	<1	nm
Mercury	ug/L (ppb)	<1	<1	nm
Nickel	ug/L (ppb)	1.35	1.19	13
Selenium	ug/L (ppb)	<1	<1	nm
Silver	ug/L (ppb)	<1	<1	nm
Zinc	ug/L (ppb)	7.86	6.82	14

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	99	98	80-111	1
Barium	ug/L (ppb)	50	100	100	83-117	0
Cadmium	ug/L (ppb)	5	102	100	83-113	2
Chromium	ug/L (ppb)	20	104	103	80-119	1
Copper	ug/L (ppb)	20	101	99	78-123	2
Lead	ug/L (ppb)	10	103	103	83-115	0
Mercury	ug/L (ppb)	10	98	98	70-130	0
Nickel	ug/L (ppb)	20	102	101	79-122	1
Selenium	ug/L (ppb)	5	100	98	81-119	2
Silver	ug/L (ppb)	5	23 vo	36 vo	75-120	44 vo
Zinc	ug/L (ppb)	50	94	94	76-124	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

508466

SAMPLE CHAIN OF CUSTODY

ME 08-26-15

AT3

Page # 1 of 1

Send Report To Megan McCullough

Company Floyd/Snider

Address 601 Union Street, Ste. 600

City, State, ZIP Seattle, WA 98101

Phone # 206.292.2078 Fax #

SAMPLERS (signature)

PROJECT NAME/NO.: B+L O+M 1525.1

PO#

REMARKS: Metals sample was NOT field filtered

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☑ RUSH 24 hr

Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID	Dissolved Metals 200.8	Total Cr				Notes
BT-01-W	01A-B	8/26/15	1200	Water	2							✓	✓	X				X - per MN 8/26/15
														Samples received at 5 °C				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	William Beaulieu	F/S	8/26/15	1310
Received by:	DO VO	F+BI	11	13:10
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 21, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 16, 2015 from the B&L O&M 1525.1, F&BI 509265 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Erin Murray, Brett Beaulieu
FDS0921R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 16, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M 1525.1, F&BI 509265 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509265 -01	BT-02-W

All quality control requirements were acceptable.

Date of Report: 09/21/15
Date Received: 09/16/15
Project: B&L O&M 1525.1, F&BI 509265
Date Extracted: 09/16/15
Date Analyzed: 09/16/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 51-134)
BT-02-W 509265-01	D	ND	ND	94
Method Blank 05-1891 MB	ND	ND	ND	89

ND - Material not detected at or above 0.2 mg/L gas, 0.5 mg/L diesel and 0.5 mg/L heavy oil.

Date of Report: 09/21/15
Date Received: 09/16/15
Project: B&L O&M 1525.1, F&BI 509265
Date Extracted: 09/17/15
Date Analyzed: 09/17/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
BT-02-W 509265-01	3.4	78	24	140	1,100	118
Method Blank 05-1879 MB	<1	<1	<1	<3	<100	119

Date of Report: 09/21/15
Date Received: 09/16/15
Project: B&L O&M 1525.1, F&BI 509265

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 509282-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	90	72-119
Toluene	ug/L (ppb)	50	90	71-113
Ethylbenzene	ug/L (ppb)	50	89	72-114
Xylenes	ug/L (ppb)	150	80	72-113
Gasoline	ug/L (ppb)	1,000	100	70-119

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509265

SAMPLE CHAIN OF CUSTODY

ME 09/16/15 V1/DO4

Page 1 of 1

Send Report To Megan McCullough
Company Floyd|Snider
Address 601 Union Street, Ste. 600
City, State, ZIP Seattle, WA 98101
Phone # 206.292.2078 Fax #
Email Address Megan.McCullough

SAMPLERS (signature)

PROJECT NAME/NO. B+L O+M 1525.1

PO #

PROJECT ADDRESS B+L Woodwaste

• ELECTRONIC DATA REQUESTED

TURNAROUND TIME
• Standard Turnaround
✓RUSH 24 hr
Rush charges authorized by:

SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	HCID	Archive				Notes
BT-02-W	01AB	9/16/15	1135	Water	3		✓	✓				✓	✓				Hold Total VOAs until completion of HCID.

ANALYSES REQUESTED

Samples received at 5 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	William Bowker	F/S	9/16/15	1215 PM
Received by:	Khan Phan	FBI	9/16/15	1250
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 25, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 17, 2015 from the B&L O&M 1525.1, F&BI 509301 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0925R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 17, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B&L O&M 1525.1, F&BI 509301 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509301 -01	BT-03-W
509301 -02	BT-04-3

All quality control requirements were acceptable.

Date of Report: 09/25/15
Date Received: 09/17/15
Project: B&L O&M 1525.1, F&BI 509301
Date Extracted: 09/18/15
Date Analyzed: 09/18/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
BT-03-W 509301-01	120	91
BT-04-3 509301-02	710	94
Method Blank 05-1879 MB	<100	121

Date of Report: 09/25/15
Date Received: 09/17/15
Project: B&L O&M 1525.1, F&BI 509301

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 509282-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	70-119

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509301

SAMPLE CHAIN OF CUSTODY

ME 09-17-15

V2

Send Report To Megan McCullough
Company Floyd | Snider
Address 601 Union Street, Ste. 600
City, State, ZIP Seattle, WA 98101
Phone # 206.292.2077 Fax #
Email Address Megan.McCullough

SAMPLERS (signature)

PROJECT NAME/NO. B+L O+M 1525.1

PO #

PROJECT ADDRESS B+L Woodwaste

• ELECTRONIC DATA REQUESTED

Page # 1 of 1

TURNAROUND TIME
• Standard Turnaround
✓ RUSH 24 hr
Rush charges authorized by:

SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	HCID	Archive	Notes
BT-02-W		9/16/15	1135	Water	3							✓	✓	Hold Homel VOAs until completion of HCID.
BT-03-W	ORA-C			water	3		✓							
BT-04-3	021				3		✓							

NOT RECEIVED 9/17/15 MM

Samples received at 6 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044
FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		William Bowlen	F/S	9/16/15	12:50 pm
Received by:		Nhan Phan	FBI	9/16/15	12:50
Relinquished by:		William Bowlen	F/S	9/17/	13:15
Received by:		DO VO	FBI	9-17-15	12:25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 6, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 25, 2015 from the B+L O+M 1525.1, F&BI 509473 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu
FDS1006R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 25, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B+L O+M 1525.1, F&BI 509473 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509473 -01	BT-06-W

The 200.8 silver matrix spike, matrix spike duplicate, and laboratory control sample failed below the acceptance criteria. The results were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 10/06/15
Date Received: 09/25/15
Project: B+L O+M 1525.1, F&BI 509473
Date Extracted: NA
Date Analyzed: 09/25/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR pH USING EPA METHOD 9040C

Sample ID Laboratory ID	pH	Date Analyzed	Time Analyzed
BT-06-W 509473-01	7.01	09/25/15	17:29

Analysis For Total Metals By EPA Method 200.8

Client ID:	BT-06-W	Client:	Floyd-Snider
Date Received:	09/25/15	Project:	B+L O+M 1525.1, F&BI 509473
Date Extracted:	09/28/15	Lab ID:	509473-01
Date Analyzed:	09/28/15	Data File:	509473-01.021
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125
Indium	95	60	125
Holmium	96	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	84.2
Barium	133
Cadmium	<1
Chromium	1.14
Copper	<5
Lead	<1
Mercury	<1
Nickel	2.31
Selenium	<1
Silver	<1 jl
Zinc	45.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L O+M 1525.1, F&BI 509473
Date Extracted:	09/28/15	Lab ID:	I5-554 mb
Date Analyzed:	09/28/15	Data File:	I5-554 mb.019
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	98	60	125
Indium	98	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Mercury	<1
Nickel	<1
Selenium	<1
Silver	<1 jl
Zinc	<5

Date of Report: 10/06/15
Date Received: 09/25/15
Project: B+L O+M 1525.1, F&BI 509473
Date Extracted: NA
Date Analyzed: 09/28/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
BT-06-W 509473-01	12
Method Blank	<10

Date of Report: 10/06/15
Date Received: 09/25/15
Project: B+L O+M 1525.1, F&BI 509473

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR pH BY METHOD 9040C

Laboratory Code: 509473-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
pH	7.01	6.95	1	0-20

Date of Report: 10/06/15
Date Received: 09/25/15
Project: B+L O+M 1525.1, F&BI 509473

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 509473-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	84.2	139 b	156 b	60-150	12 b
Barium	ug/L (ppb)	50	133	112	122	79-126	9
Cadmium	ug/L (ppb)	5	<1	99	99	80-124	0
Chromium	ug/L (ppb)	20	1.14	98	97	64-132	1
Copper	ug/L (ppb)	20	<5	92	91	38-149	1
Lead	ug/L (ppb)	10	<1	98	99	79-121	1
Mercury	ug/L (ppb)	10	<1	98	100	50-150	2
Nickel	ug/L (ppb)	20	2.31	94	93	61-128	1
Selenium	ug/L (ppb)	5	<1	103	98	68-142	5
Silver	ug/L (ppb)	5	<1	28 vo	34	32-131	19
Zinc	ug/L (ppb)	50	45.7	95	95	55-141	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-111
Barium	ug/L (ppb)	50	96	83-117
Cadmium	ug/L (ppb)	5	100	83-113
Chromium	ug/L (ppb)	20	97	80-119
Copper	ug/L (ppb)	20	97	78-123
Lead	ug/L (ppb)	10	99	83-115
Mercury	ug/L (ppb)	10	97	70-130
Nickel	ug/L (ppb)	20	97	79-122
Selenium	ug/L (ppb)	5	98	81-119
Silver	ug/L (ppb)	5	30 vo	50-133
Zinc	ug/L (ppb)	50	96	76-124

Date of Report: 10/06/15
Date Received: 09/25/15
Project: B+L O+M 1525.1, F&BI 509473

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppb)	50	94	86	61-131	9

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509473

SAMPLE CHAIN OF CUSTODY

ME 09-25-15 AI2

Send Report To Megan McCullough
Company Floyd | Snider
Address 608 Union Street, Ste 600
City, State, ZIP Seattle, WA 98101
Phone # 206.292.2078 Fax #
Email Address Megan.McCullough@FloydSnider.com

SAMPLERS (signature)

PROJECT NAME/NO. B+L O+M 1525.1

PO #

PROJECT ADDRESS B+L Woodinville

• ELECTRONIC DATA REQUESTED

Page # 1 of 1

TURNAROUND TIME
• Standard Turnaround
• RUSH 24 hr
Rush charges authorized by:

SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Total Metals 200.8	pH	TSS			Notes
						ANALYSES REQUESTED											
BT-06-W	01 A-B	9/25/15	1420	water	2							✓	✓	✓			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044
FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Corey Wilson	Floyd / Snider	9/25/15	1600
Received by:		DO VO	FBI	9-25-15	16:00
Relinquished by:					
Received by:					

Samples received at 5 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 6, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on September 30, 2015 from the B+L O+M 1525.1, F&BI 509560 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu
FDS1006R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 30, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B+L O+M 1525.1, F&BI 509560 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
509560 -01	PH Adjust-1
509560 -02	PH Adjust-2

The VOA vials were received at Friedman and Bruya with headspace present in the samples. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 09/25/15
Date Received: 09/17/15
Project: B&L O&M 1525.1, F&BI 509301
Date Extracted: 09/18/15
Date Analyzed: 09/18/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
PH Adjust-1 hs 509560-01	180	90
PH Adjust-2 hs 509560-02	<100	90
Method Blank 05-1983 MB	<100	88

Date of Report: 10/06/15
Date Received: 09/30/15
Project: B+L O+M 1525.1, F&BI 509560

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 509549-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

1509560 ME 09/30/15 V1

Send Report To Megan McCullough
Company Floyd Snider
Address 601 Union Steet, Ste. 600
City, State, ZIP Seattle WA 98101
Phone # 206-292-2077 Fax #
Email Address Megan.McCullough

SAMPLERS (signature) William Beam
PROJECT NAME/NO. B+L O+M 1525.1
PO #
PROJECT ADDRESS B+L Wood Waste
• ELECTRONIC DATA REQUESTED

Page # ___ of ___

TURNAROUND TIME
• Standard Turnaround
• RUSH 24hr
Rush charges authorized by:

SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
PH Adjust-1	01	9/30/15	4:10	w	1		X										Contract F/S
PH Adjust-2	02	9/30/15	4:25	w	1		X										Before disposal
												Samples received at 2 °C					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	William Beam	F/S	9/30/15	6:45 PM
Received by:	Jon Shimmy	FBI	9/30/15	18:15
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 12, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on October 1, 2015 from the B+L O+M 1525.1, F&BI 510023 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu
FDS1012R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 1, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B+L O+M 1525.1, F&BI 510023 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
510023 -01	GAC-EFF-10-01-15
510023 -02	GAC-EFF-10-01-15
510023 -03	GAC-EFF-10-01-15
510023 -04	GAC-EFF-10-01-15
510023 -05	GAC-EFF-10-01-15

All quality control requirements were acceptable.

Date of Report: 10/12/15
Date Received: 10/01/15
Project: B+L O+M 1525.1, F&BI 510023
Date Extracted: 10/02/15
Date Analyzed: 10/02/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
GAC-EFF-10-01-15 510023-01	<100	99
GAC-EFF-10-01-15 510023-02	<100	98
GAC-EFF-10-01-15 510023-03	<100	98
GAC-EFF-10-01-15 510023-04	<100	100
GAC-EFF-10-01-15 510023-05	<100	97
Method Blank 05-2037 MB	<100	98

Date of Report: 10/12/15
Date Received: 10/01/15
Project: B+L O+M 1525.1, F&BI 510023

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 510023-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	70-119

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

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d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

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J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

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lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

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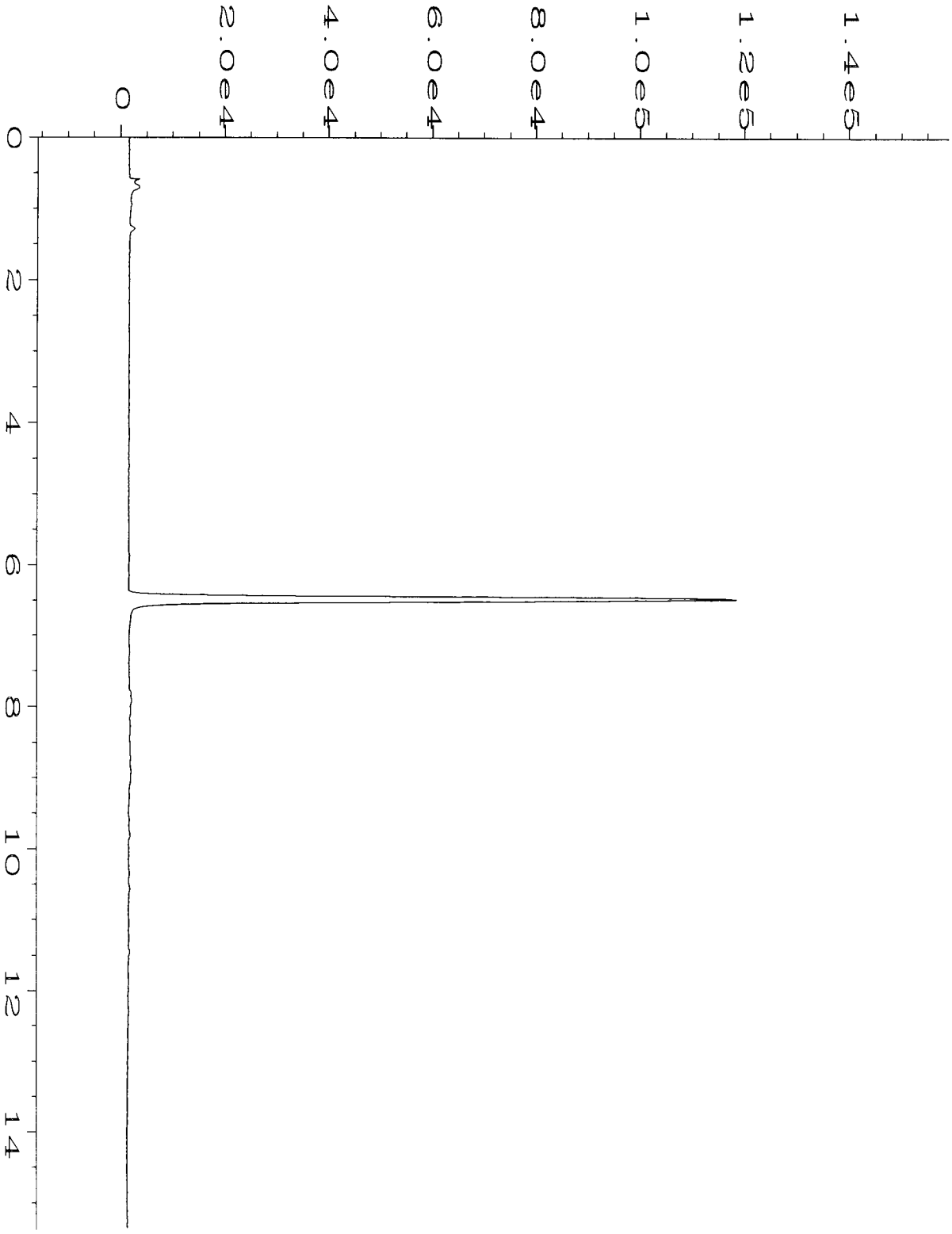
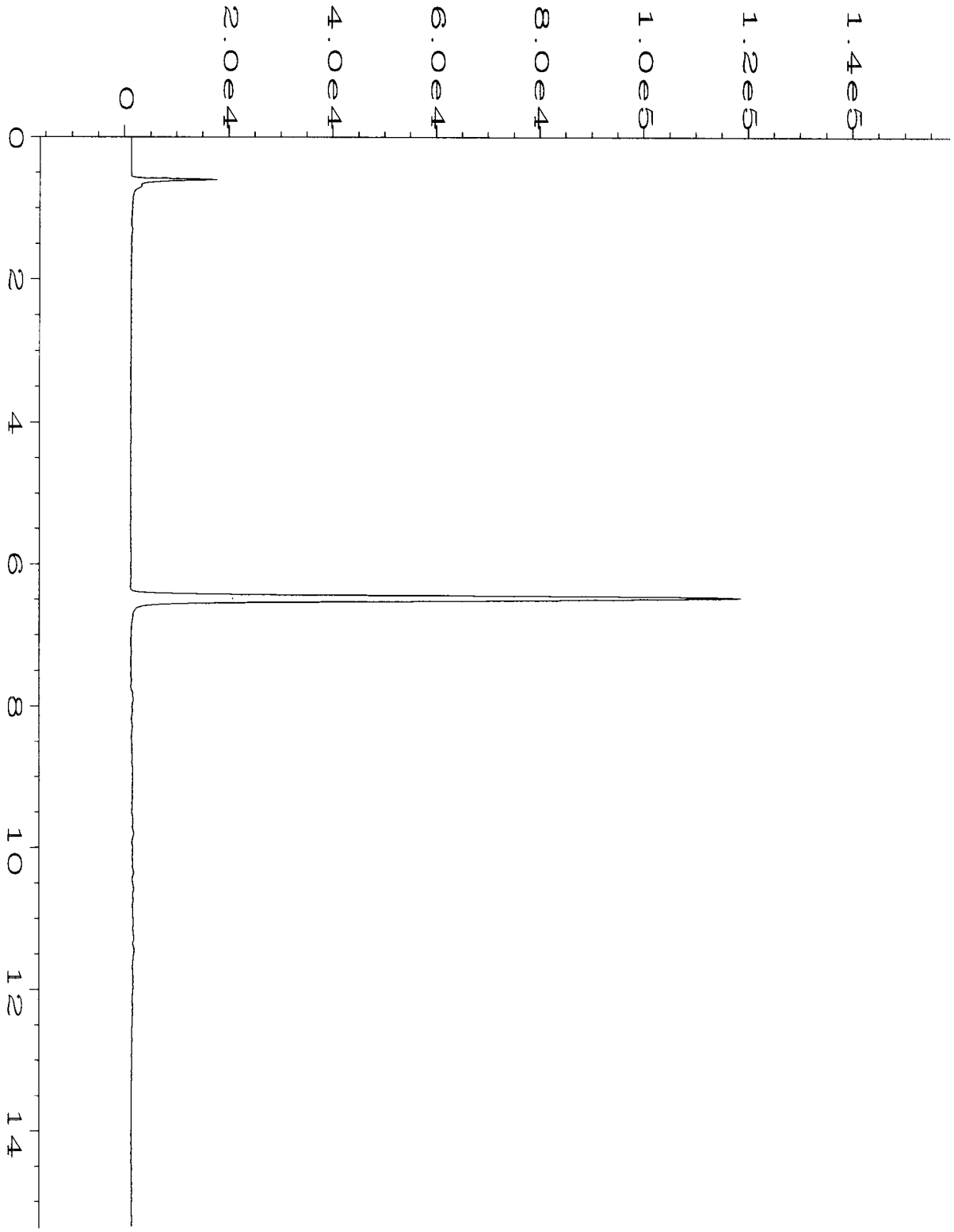
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

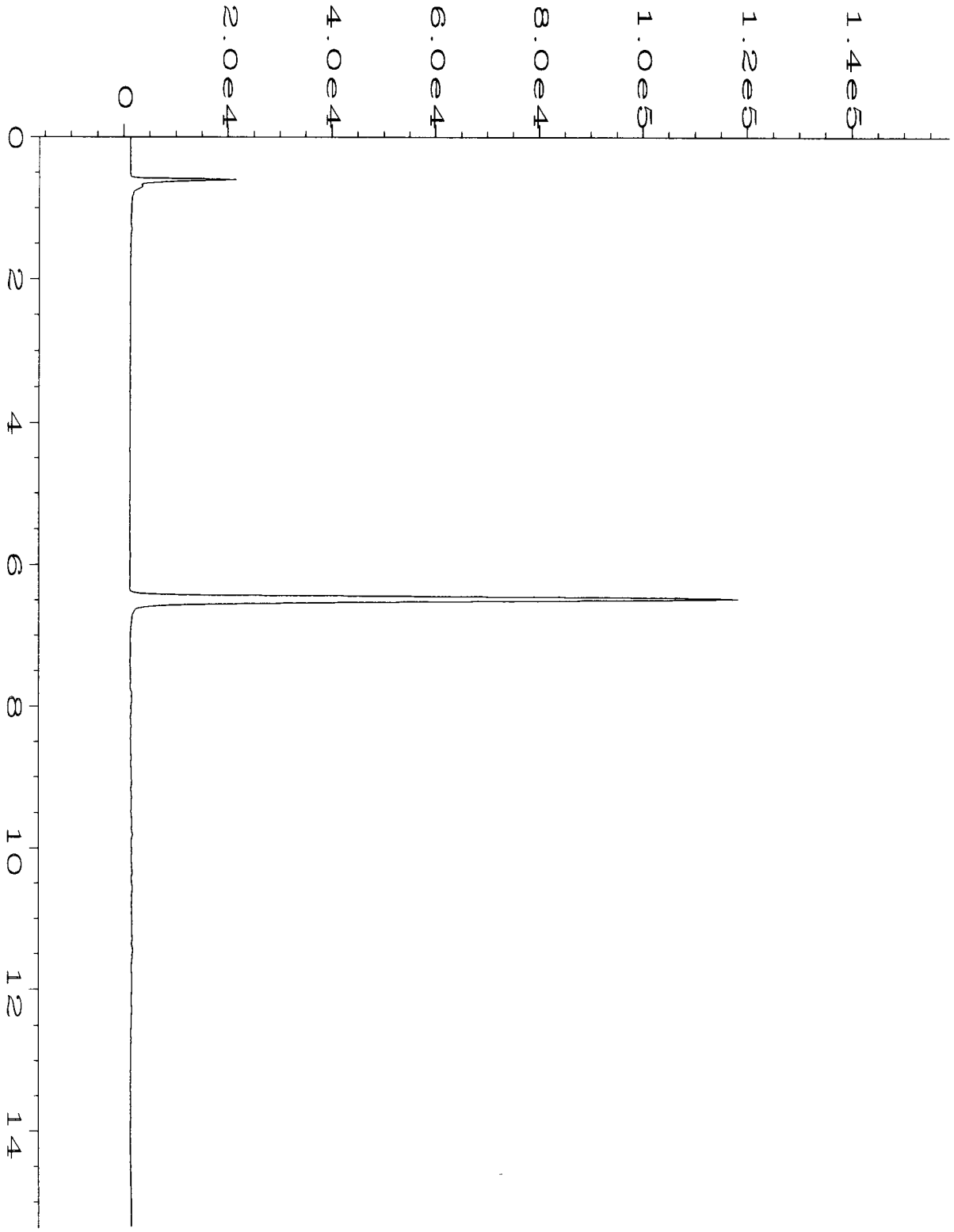
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



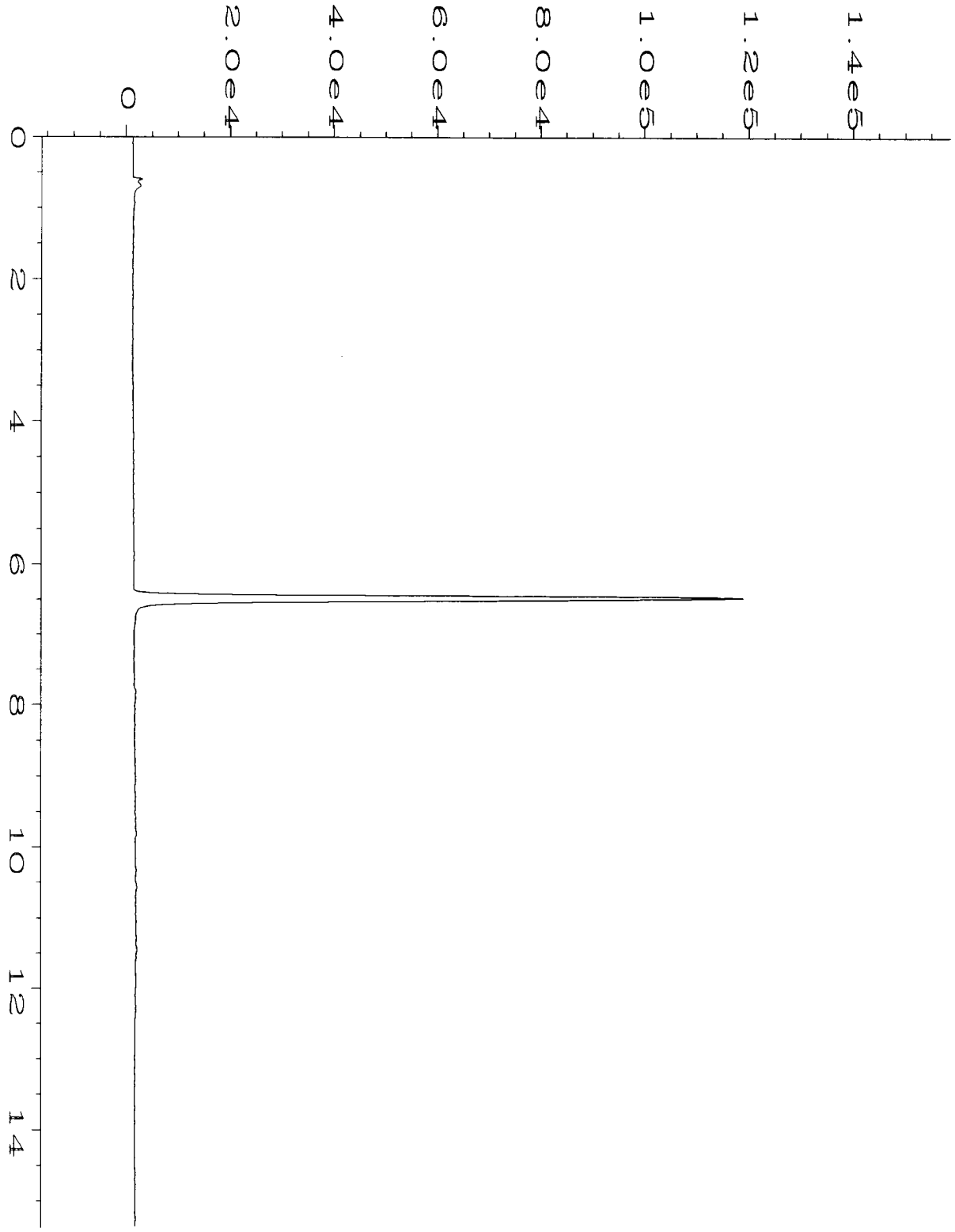
Data File Name	: C:\HPCHEM\3\DATA\10-02-15\006F0101.D		
Operator	: TM	Page Number	: 1
Instrument	: ANALYZER3	Vial Number	: 6
Sample Name	: 510023-01	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 02 Oct 15 09:29 AM	Instrument Method	: GX.MTH
Report Created on	: 09 Oct 15 03:20 PM	Analysis Method	: GX.MTH



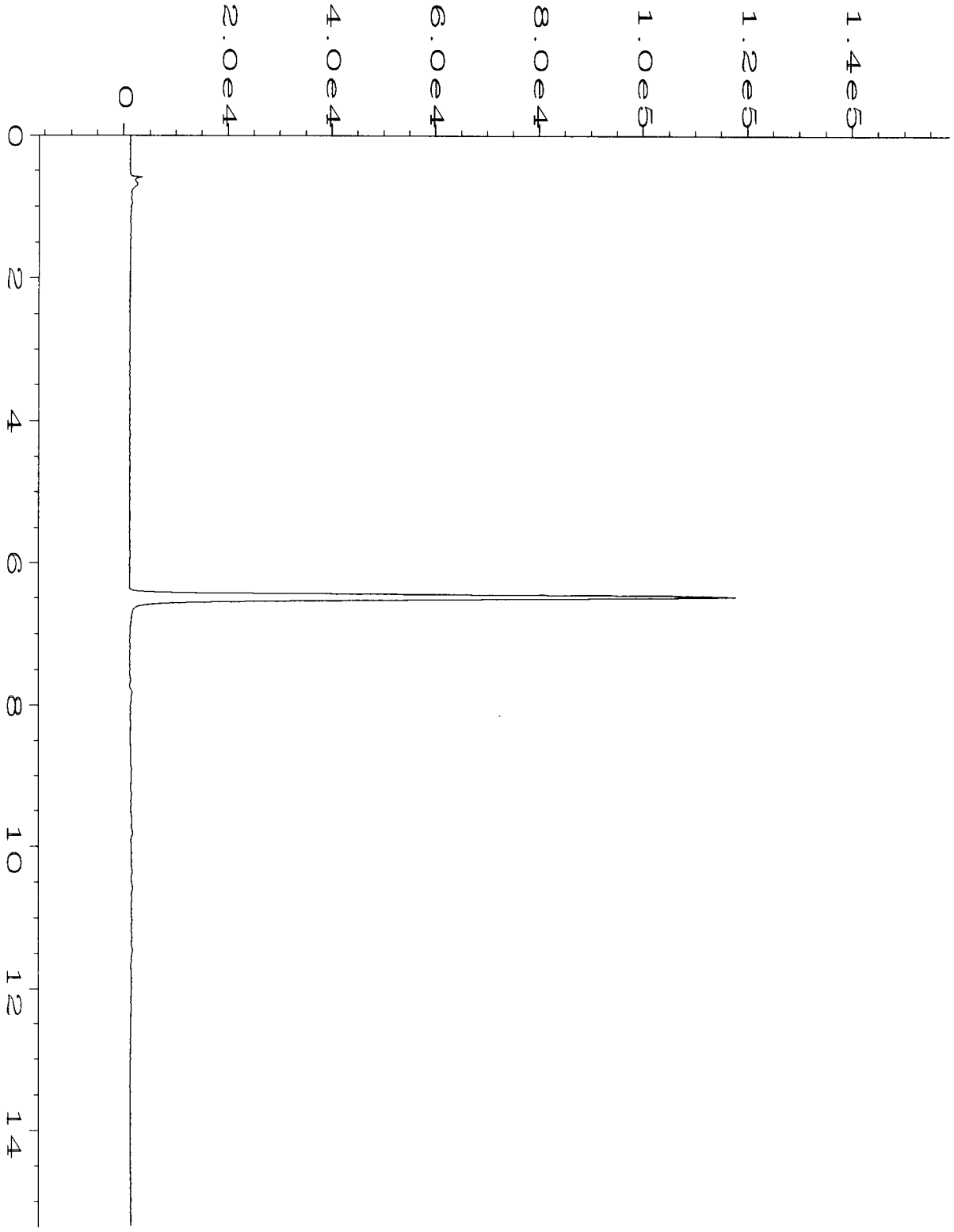
Data File Name	: C:\HPCHEM\3\DATA\10-02-15\007F0101.D		
Operator	: TM	Page Number	: 1
Instrument	: ANALYZER3	Vial Number	: 7
Sample Name	: 510023-02	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 02 Oct 15 09:50 AM	Instrument Method	: GX.MTH
Report Created on	: 09 Oct 15 03:21 PM	Analysis Method	: GX.MTH



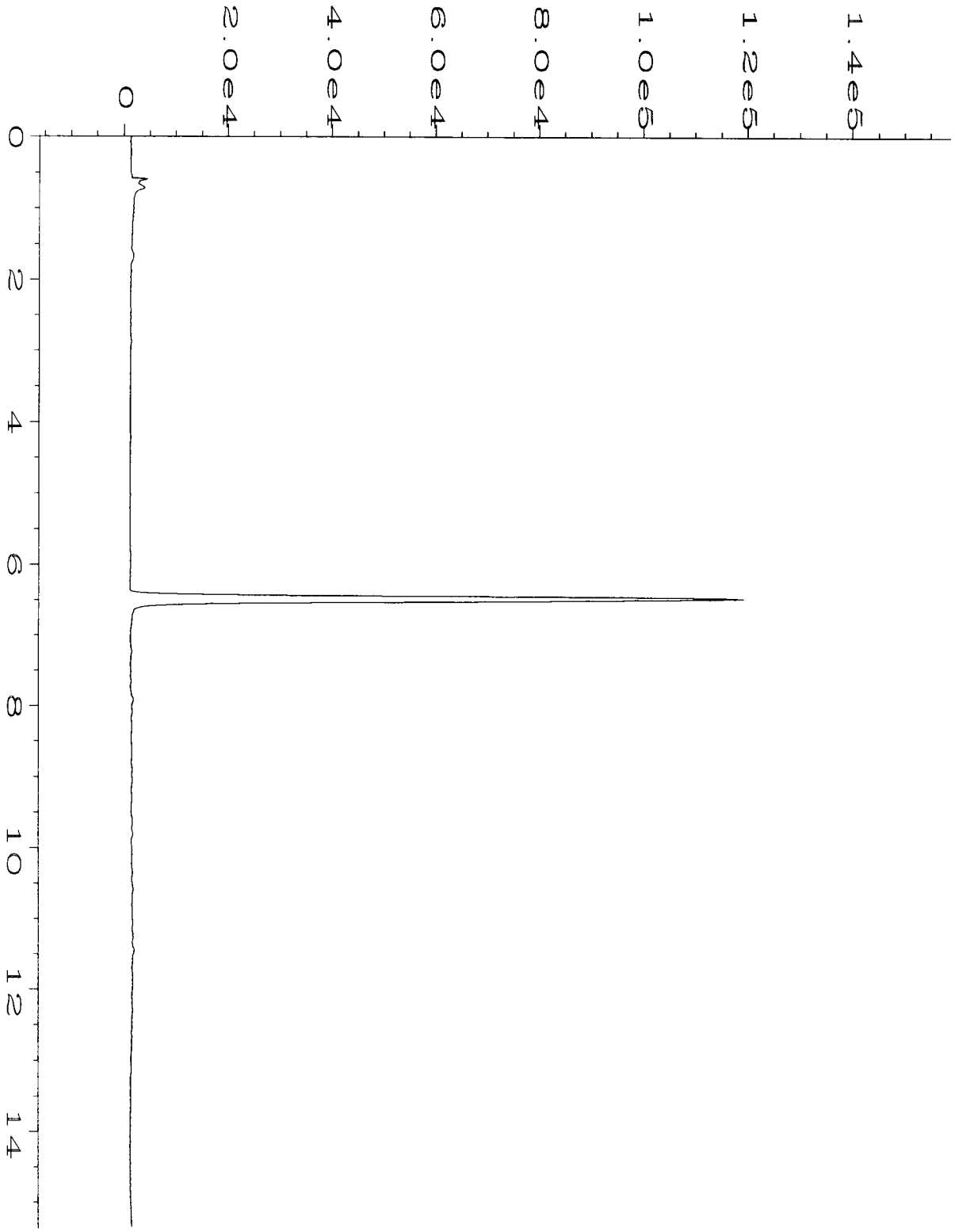
Data File Name	: C:\HPCHEM\3\DATA\10-02-15\008F0101.D		
Operator	: TM	Page Number	: 1
Instrument	: ANALYZER3	Vial Number	: 8
Sample Name	: 510023-03	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 02 Oct 15 10:10 AM	Instrument Method	: GX.MTH
Report Created on	: 09 Oct 15 03:21 PM	Analysis Method	: GX.MTH



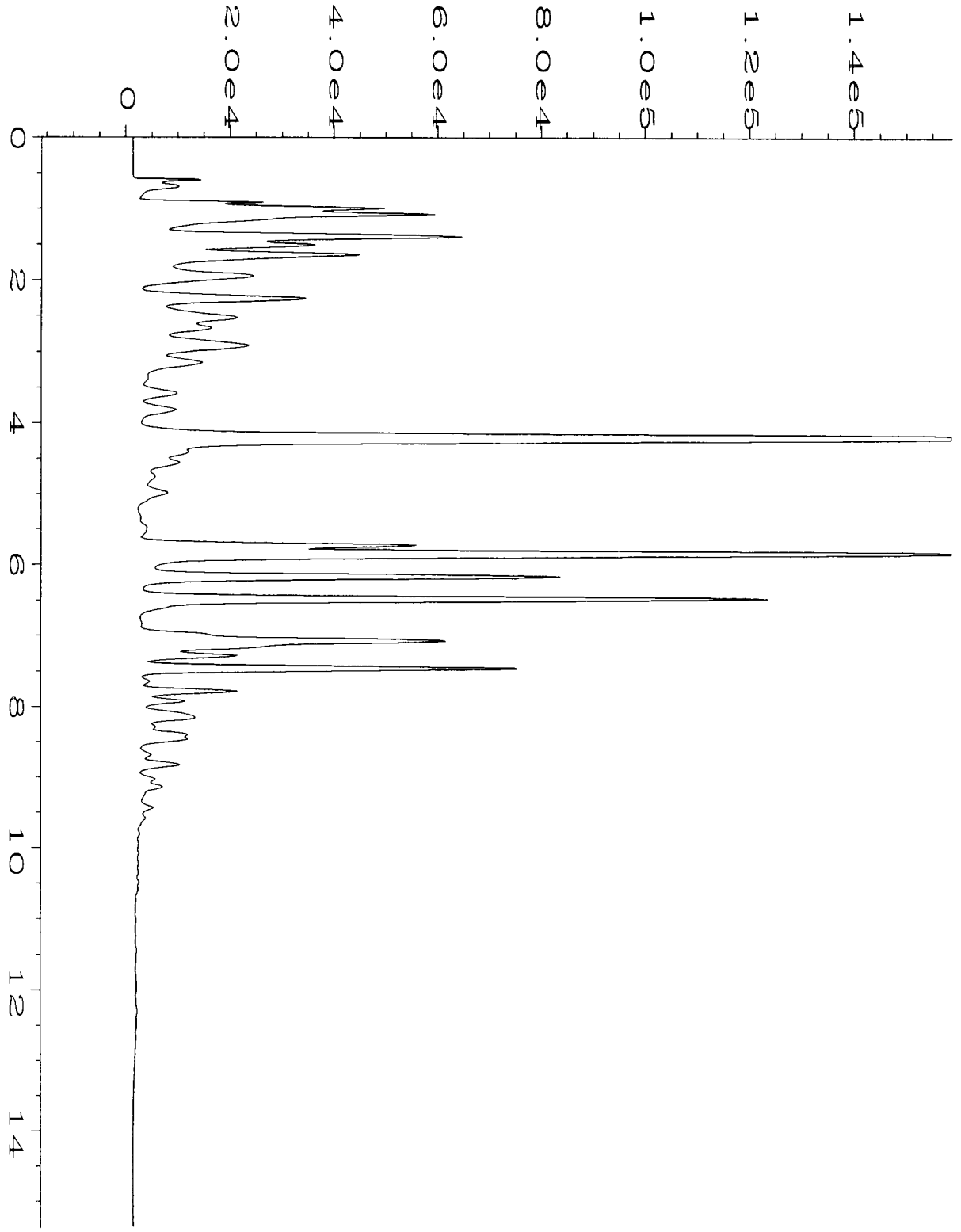
Data File Name	: C:\HPCHEM\3\DATA\10-02-15\009F0101.D		
Operator	: TM	Page Number	: 1
Instrument	: ANALYZER3	Vial Number	: 9
Sample Name	: 510023-04	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 02 Oct 15 10:31 AM	Instrument Method	: GX.MTH
Report Created on	: 09 Oct 15 03:21 PM	Analysis Method	: GX.MTH



Data File Name	: C:\HPCHEM\3\DATA\10-02-15\010F0101.D		
Operator	: TM	Page Number	: 1
Instrument	: ANALYZER3	Vial Number	: 10
Sample Name	: 510023-05	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 02 Oct 15 10:52 AM	Instrument Method	: GX.MTH
Report Created on	: 09 Oct 15 03:21 PM	Analysis Method	: GX.MTH



Data File Name	: C:\HPCHEM\3\DATA\10-02-15\005F0101.D		
Operator	: TM	Page Number	: 1
Instrument	: ANALYZER3	Vial Number	: 5
Sample Name	: 05-2037 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 02 Oct 15 09:08 AM	Instrument Method	: GX.MTH
Report Created on	: 09 Oct 15 03:22 PM	Analysis Method	: GX.MTH



Data File Name	: C:\HPCHEM\3\DATA\10-02-15\003F0101.D		
Operator	: TM	Page Number	: 1
Instrument	: ANALYZER3	Vial Number	: 3
Sample Name	: 1000GX 45-179#1	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 02 Oct 15 07:52 AM	Instrument Method	: GX.MTH
Report Created on	: 09 Oct 15 03:22 PM	Analysis Method	: GX.MTH

510023

SAMPLE CHAIN OF CUSTODY

ME 10/01/15 VI

Send Report To Megan McCullough
Company Floyd Snider
Address 601 Union Street, STE 600
City, State, ZIP Seattle WA 98101
Phone # 206-292-2078 Fax #
Email Address Megan.McCullough

SAMPLERS (signature) William Beaulieu
PROJECT NAME/NO. B+L O+M 1525.1
PO #
PROJECT ADDRESS B+L Wood Waste
• ELECTRONIC DATA REQUESTED

Page # of
TURNAROUND TIME
• Standard Turnaround
• RUSH 24 hr
Rush charges authorized by: William Beaulieu
SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions
Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Chromatogram					Notes
GAC-EFF100115	01AD	10/01/15	1445	W	4		X					X					
GAC-EFF10-01-15	02	10/01/15	1625	W	1		X					X					
GAC-EFF-10-01-15	03	10/01/15	1623	W	1		X					X					
GAC-EFF-10-01-15	04	10/01/15	1622	W	1		X					X					
GAC-EFF-10-01-15	05	10/01/15	1621	W	1		X					X					

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	William Beaulieu	F/S	10-01-15	1815
Received by:	Jon Shimura	F & BT	10/1/15	1815
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

DRAFT

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	T18270100315S	Client:	Floyd-Snider
Date Received:	10/05/15	Project:	B&L O&M 1525.1, F&BI 510061
Date Extracted:	10/05/15	Lab ID:	510061-01
Date Analyzed:	10/05/15	Data File:	100515.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	20
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	110
Hexane	<1	o-Xylene	43
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	1.0
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	4.0
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	11
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	34
Benzene	6.1	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	84	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	4.8
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M 1525.1, F&BI 510061
Date Extracted:	10/05/15	Lab ID:	05-2019 mb
Date Analyzed:	10/05/15	Data File:	100505.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	T18270100315F	Client:	Floyd-Snider
Date Received:	10/05/15	Project:	B&L O&M 1525.1, F&BI 510061
Date Extracted:	10/05/15	Lab ID:	510061-02
Date Analyzed:	10/06/15	Data File:	100608.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	71	32	162
Phenol-d6	52	10	170
Nitrobenzene-d5	93	50	150
2-Fluorobiphenyl	91	43	158
2,4,6-Tribromophenol	107	43	146
Terphenyl-d14	83	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	2.8	2,6-Dinitrotoluene	<1
Bis(2-chloroethyl) ether	<0.2	3-Nitroaniline	<20
2-Chlorophenol	<2	Acenaphthene	<0.2
1,3-Dichlorobenzene	<0.2	2,4-Dinitrophenol	<6
1,4-Dichlorobenzene	<0.2	Dibenzofuran	0.22
1,2-Dichlorobenzene	<0.2	2,4-Dinitrotoluene	<1
Benzyl alcohol	3.1	4-Nitrophenol	<6
Bis(2-chloroisopropyl) ether	<0.2	Diethyl phthalate	<2
2-Methylphenol	<2	Fluorene	1.0
Hexachloroethane	<0.2	4-Chlorophenyl phenyl ether	<0.2
N-Nitroso-di-n-propylamine	<0.2	N-Nitrosodiphenylamine	<0.2
3-Methylphenol + 4-Methylphenol	<4	4-Nitroaniline	<20
Nitrobenzene	<0.2	4,6-Dinitro-2-methylphenol	<6
Isophorone	<0.2	4-Bromophenyl phenyl ether	<0.2
2-Nitrophenol	<2	Hexachlorobenzene	<0.2
2,4-Dimethylphenol	<2	Pentachlorophenol	<2
Benzoic acid	<10	Phenanthrene	2.8
Bis(2-chloroethoxy)methane	<0.2	Anthracene	0.22
2,4-Dichlorophenol	<2	Carbazole	<2
1,2,4-Trichlorobenzene	<0.2	Di-n-butyl phthalate	<2
Naphthalene	4.0	Fluoranthene	<0.2
Hexachlorobutadiene	<0.2	Pyrene	0.59
4-Chloroaniline	<20	Benzyl butyl phthalate	<2
4-Chloro-3-methylphenol	<2	Benz(a)anthracene	<0.2
2-Methylnaphthalene	3.4	Chrysene	0.56
1-Methylnaphthalene	2.1	Bis(2-ethylhexyl) phthalate	<3.2
Hexachlorocyclopentadiene	<0.6	Di-n-octyl phthalate	<2
2,4,6-Trichlorophenol	<2	Benzo(a)pyrene	<0.2
2,4,5-Trichlorophenol	<2	Benzo(b)fluoranthene	<0.2
2-Chloronaphthalene	<0.2	Benzo(k)fluoranthene	<0.2
2-Nitroaniline	<1	Indeno(1,2,3-cd)pyrene	<0.2
Dimethyl phthalate	<2	Dibenz(a,h)anthracene	<0.2
Acenaphthylene	<0.2	Benzo(g,h,i)perylene	<0.2

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	T18270100315R	Client:	Floyd-Snider
Date Received:	10/05/15	Project:	B&L O&M 1525.1, F&BI 510061
Date Extracted:	10/05/15	Lab ID:	510061-03
Date Analyzed:	10/06/15	Data File:	100609.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	71	32	162
Phenol-d6	57	10	170
Nitrobenzene-d5	100	50	150
2-Fluorobiphenyl	103	43	158
2,4,6-Tribromophenol	103	43	146
Terphenyl-d14	232 ip J	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	2.7	2,6-Dinitrotoluene	<1
Bis(2-chloroethyl) ether	<0.2	3-Nitroaniline	<20
2-Chlorophenol	<2	Acenaphthene	<0.2
1,3-Dichlorobenzene	<0.2	2,4-Dinitrophenol	<6
1,4-Dichlorobenzene	<0.2	Dibenzofuran	2.6
1,2-Dichlorobenzene	<0.2	2,4-Dinitrotoluene	<1
Benzyl alcohol	3.0	4-Nitrophenol	<6
Bis(2-chloroisopropyl) ether	<0.2	Diethyl phthalate	<2
2-Methylphenol	<2	Fluorene	10
Hexachloroethane	<0.2	4-Chlorophenyl phenyl ether	<0.2
N-Nitroso-di-n-propylamine	<0.2	N-Nitrosodiphenylamine	<0.2
3-Methylphenol + 4-Methylphenol	<4	4-Nitroaniline	<20
Nitrobenzene	<0.2	4,6-Dinitro-2-methylphenol	<6
Isophorone	<0.2	4-Bromophenyl phenyl ether	<0.2
2-Nitrophenol	<2	Hexachlorobenzene	<0.2
2,4-Dimethylphenol	<2	Pentachlorophenol	<2
Benzoic acid	<10	Phenanthrene	28
Bis(2-chloroethoxy)methane	<0.2	Anthracene	2.0
2,4-Dichlorophenol	<2	Carbazole	<2
1,2,4-Trichlorobenzene	<0.2	Di-n-butyl phthalate	<2
Naphthalene	6.2	Fluoranthene	0.99
Hexachlorobutadiene	<0.2	Pyrene	18 J
4-Chloroaniline	<20	Benzyl butyl phthalate	4.4 J
4-Chloro-3-methylphenol	<2	Benz(a)anthracene	1.7 J
2-Methylnaphthalene	23	Chrysene	6.6 J
1-Methylnaphthalene	16	Bis(2-ethylhexyl) phthalate	22 J fc
Hexachlorocyclopentadiene	<0.6	Di-n-octyl phthalate	<2 J
2,4,6-Trichlorophenol	<2	Benzo(a)pyrene	0.76 J
2,4,5-Trichlorophenol	<2	Benzo(b)fluoranthene	0.93 J
2-Chloronaphthalene	<0.2	Benzo(k)fluoranthene	<0.2 J
2-Nitroaniline	<1	Indeno(1,2,3-cd)pyrene	<0.2 J
Dimethyl phthalate	<2	Dibenz(a,h)anthracene	<0.2 J
Acenaphthylene	<0.2	Benzo(g,h,i)perylene	<0.2 J

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	T18270100315R	Client:	Floyd-Snider
Date Received:	10/05/15	Project:	B&L O&M 1525.1, F&BI 510061
Date Extracted:	10/05/15	Lab ID:	510061-03 1/10
Date Analyzed:	10/06/15	Data File:	100607.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	62 d	32	162
Phenol-d6	49 d	10	170
Nitrobenzene-d5	87 d	50	150
2-Fluorobiphenyl	92 d	43	158
2,4,6-Tribromophenol	93 d	43	146
Terphenyl-d14	105 d	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<20	2,6-Dinitrotoluene	<10
Bis(2-chloroethyl) ether	<2	3-Nitroaniline	<200
2-Chlorophenol	<20	Acenaphthene	<2
1,3-Dichlorobenzene	<2	2,4-Dinitrophenol	<60
1,4-Dichlorobenzene	<2	Dibenzofuran	2.7
1,2-Dichlorobenzene	<2	2,4-Dinitrotoluene	<10
Benzyl alcohol	<20	4-Nitrophenol	<60
Bis(2-chloroisopropyl) ether	<2	Diethyl phthalate	<20
2-Methylphenol	<20	Fluorene	11
Hexachloroethane	<2	4-Chlorophenyl phenyl ether	<2
N-Nitroso-di-n-propylamine	<2	N-Nitrosodiphenylamine	<2
3-Methylphenol + 4-Methylphenol	<40	4-Nitroaniline	<200
Nitrobenzene	<2	4,6-Dinitro-2-methylphenol	<60
Isophorone	<2	4-Bromophenyl phenyl ether	<2
2-Nitrophenol	<20	Hexachlorobenzene	<2
2,4-Dimethylphenol	<20	Pentachlorophenol	<20
Benzoic acid	<100	Phenanthrene	31
Bis(2-chloroethoxy)methane	<2	Anthracene	2.4
2,4-Dichlorophenol	<20	Carbazole	<20
1,2,4-Trichlorobenzene	<2	Di-n-butyl phthalate	<20
Naphthalene	5.8	Fluoranthene	<2
Hexachlorobutadiene	<2	Pyrene	8.3
4-Chloroaniline	<200	Benzyl butyl phthalate	<20
4-Chloro-3-methylphenol	<20	Benz(a)anthracene	2.1
2-Methylnaphthalene	24	Chrysene	6.2
1-Methylnaphthalene	17	Bis(2-ethylhexyl) phthalate	<32
Hexachlorocyclopentadiene	<6	Di-n-octyl phthalate	<20
2,4,6-Trichlorophenol	<20	Benzo(a)pyrene	<2
2,4,5-Trichlorophenol	<20	Benzo(b)fluoranthene	<2
2-Chloronaphthalene	<2	Benzo(k)fluoranthene	<2
2-Nitroaniline	<10	Indeno(1,2,3-cd)pyrene	<2
Dimethyl phthalate	<20	Dibenz(a,h)anthracene	<2
Acenaphthylene	<2	Benzo(g,h,i)perylene	<2

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B&L O&M 1525.1, F&BI 510061
Date Extracted:	10/05/15	Lab ID:	05-2055 mb
Date Analyzed:	10/06/15	Data File:	100605.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	57	32	162
Phenol-d6	39	10	170
Nitrobenzene-d5	92	50	150
2-Fluorobiphenyl	92	43	158
2,4,6-Tribromophenol	77	43	146
Terphenyl-d14	106	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<2	2,6-Dinitrotoluene	<1
Bis(2-chloroethyl) ether	<0.2	3-Nitroaniline	<20
2-Chlorophenol	<2	Acenaphthene	<0.2
1,3-Dichlorobenzene	<0.2	2,4-Dinitrophenol	<6
1,4-Dichlorobenzene	<0.2	Dibenzofuran	<0.2
1,2-Dichlorobenzene	<0.2	2,4-Dinitrotoluene	<1
Benzyl alcohol	<2	4-Nitrophenol	<6
Bis(2-chloroisopropyl) ether	<0.2	Diethyl phthalate	<2
2-Methylphenol	<2	Fluorene	<0.2
Hexachloroethane	<0.2	4-Chlorophenyl phenyl ether	<0.2
N-Nitroso-di-n-propylamine	<0.2	N-Nitrosodiphenylamine	<0.2
3-Methylphenol + 4-Methylphenol	<4	4-Nitroaniline	<20
Nitrobenzene	<0.2	4,6-Dinitro-2-methylphenol	<6
Isophorone	<0.2	4-Bromophenyl phenyl ether	<0.2
2-Nitrophenol	<2	Hexachlorobenzene	<0.2
2,4-Dimethylphenol	<2	Pentachlorophenol	<2
Benzoic acid	<10	Phenanthrene	<0.2
Bis(2-chloroethoxy)methane	<0.2	Anthracene	<0.2
2,4-Dichlorophenol	<2	Carbazole	<2
1,2,4-Trichlorobenzene	<0.2	Di-n-butyl phthalate	<2
Naphthalene	<0.2	Fluoranthene	<0.2
Hexachlorobutadiene	<0.2	Pyrene	<0.2
4-Chloroaniline	<20	Benzyl butyl phthalate	<2
4-Chloro-3-methylphenol	<2	Benz(a)anthracene	<0.2
2-Methylnaphthalene	<0.2	Chrysene	<0.2
1-Methylnaphthalene	<0.2	Bis(2-ethylhexyl) phthalate	<3.2
Hexachlorocyclopentadiene	<0.6	Di-n-octyl phthalate	<2
2,4,6-Trichlorophenol	<2	Benzo(a)pyrene	<0.2
2,4,5-Trichlorophenol	<2	Benzo(b)fluoranthene	<0.2
2-Chloronaphthalene	<0.2	Benzo(k)fluoranthene	<0.2
2-Nitroaniline	<1	Indeno(1,2,3-cd)pyrene	<0.2
Dimethyl phthalate	<2	Dibenz(a,h)anthracene	<0.2
Acenaphthylene	<0.2	Benzo(g,h,i)perylene	<0.2

510961 ME 10-05-15 E03/V1

SAMPLE CHAIN OF CUSTODY

Send Report To Megan McCullough
Company Floyd Snider
Address 601 Union Street, Ste600
City, State, ZIP Seattle, WA 98101
Phone # 206-292-2077 Fax #
Email Address Megan.mccullough

SAMPLERS (signature) William Beaulieu
PROJECT NAME/NO. B+L O+M 1525.1
PO #
PROJECT ADDRESS B+L WoodWaste
• ELECTRONIC DATA REQUESTED

Page # ___ of ___
TURNAROUND TIME
• Standard Turnaround
• RUSH 24
Rush charges authorized by: William Beaulieu
SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions
Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
T18260100315S	01 A-C	10/03/15	9:00	W	3				X								
T18270100315F	02 A-B	10/03/15	9:28	W	2					X							
T18270100315R	03 T	10/03/15	9:28	W	2					X							

Samples received at 3 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	William Beaulieu	F/S	10/05/15	9:50
Received by:	Elizabeth Webber-Bruya	FSBI	10/6/15	9:50
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 14, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on October 9, 2015 from the B+L O+M 1525.1, F&BI 510159 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS1014R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 9, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B+L O+M 1525.1, F&BI 510159 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
510159 -01	T4BL10092015
510159 -02	T4BL10092015
510159 -03	T42BL10092015
510159 -04	T42BL10092015

All quality control requirements were acceptable.

Date of Report: 10/14/15
Date Received: 10/09/15
Project: B+L O+M 1525.1, F&BI 510159
Date Extracted: 10/12/15
Date Analyzed: 10/12/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
T4BL10092015 510159-01	<100	97
T42BL10092015 510159-03	<100	96
Method Blank 05-2072 MB	<100	94

Analysis For Total Metals By EPA Method 200.8

Client ID:	T4BL10092015	Client:	Floyd-Snider
Date Received:	10/09/15	Project:	B+L O+M 1525.1, F&BI 510159
Date Extracted:	10/12/15	Lab ID:	510159-02
Date Analyzed:	10/12/15	Data File:	510159-02.010
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	48.6

Analysis For Total Metals By EPA Method 200.8

Client ID:	T42BL10092015	Client:	Floyd-Snider
Date Received:	10/09/15	Project:	B+L O+M 1525.1, F&BI 510159
Date Extracted:	10/12/15	Lab ID:	510159-04
Date Analyzed:	10/12/15	Data File:	510159-04.013
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	90	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	49.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L O+M 1525.1, F&BI 510159
Date Extracted:	10/12/15	Lab ID:	I5-584 mb
Date Analyzed:	10/12/15	Data File:	I5-584 mb.018
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	97	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Date of Report: 10/14/15
Date Received: 10/09/15
Project: B+L O+M 1525.1, F&BI 510159

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 510159-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

Date of Report: 10/14/15
Date Received: 10/09/15
Project: B+L O+M 1525.1, F&BI 510159

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 510159-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	48.6	117	115	60-150	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	98	80-111

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

510159

SAMPLE CHAIN OF CUSTODY

ME 10/9/15 VI / AI 2

Send Report To Megan McCollough
Company Floyd Snider
Address 601 Union Street, Suite 600
City, State, ZIP Seattle, WA 98101
Phone # 206-292-2077 Fax #
Email Address Megan.McCullough

SAMPLERS (signature)
PROJECT NAME/NO: B+L am 1525.1
PO #
PROJECT ADDRESS: B+L Wood Waste
• ELECTRONIC DATA REQUESTED

Page # ___ of ___

TURNAROUND TIME
• Standard Turnaround
• RUSH 24
Rush charges authorized by:

SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Total Arsenic					Notes
T4BL10092015	01 A-C	10/09/2015	2:00	W	3		X										
T4BL10092015	02	10/09/2015	12:00	W	1							X					
T42BL10092015	03 A-C	10/09/2015	3:15 PM	W	3		X										
T42BL10092015	04	10/09/2015	3:15 PM	W	1							X					
																	Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	William Beaulieu	F/S	10/09/15	
Received by:	Eric Hon	F&B	10/9	1700
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

Rec'd @ 4°C @ 10/9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 16, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on October 14, 2015 from the B+L O+M 1525.1, F&BI 510207 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu
FDS1016R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 14, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B+L O+M 1525.1, F&BI 510207 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
510207 -01	T21101415
510207 -02	T22101415
510207 -03	T2A101415

All quality control requirements were acceptable.

Date of Report: 10/16/15
Date Received: 10/14/15
Project: B+L O+M 1525.1, F&BI 510207
Date Extracted: 10/14/15
Date Analyzed: 10/14/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
T21101415 510207-01	<100	99
T22101415 510207-02	<100	100
Method Blank 05-2074 MB	<100	98

Analysis For Total Metals By EPA Method 200.8

Client ID:	T2A101415	Client:	Floyd-Snider
Date Received:	10/14/15	Project:	B+L O+M 1525.1, F&BI 510207
Date Extracted:	10/15/15	Lab ID:	510207-03
Date Analyzed:	10/15/15	Data File:	510207-03.018
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	37.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L O+M 1525.1, F&BI 510207
Date Extracted:	10/15/15	Lab ID:	I5-590 mb2
Date Analyzed:	10/15/15	Data File:	I5-590 mb2.017
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	99	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Date of Report: 10/16/15
Date Received: 10/14/15
Project: B+L O+M 1525.1, F&BI 510207

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 510184-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	101	70-119

Date of Report: 10/16/15
Date Received: 10/14/15
Project: B+L O+M 1525.1, F&BI 510207

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 510188-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	102	101	60-150	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	97	80-111

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

510207

MF 10/7-15

AI3/V1

SAMPLE CHAIN OF CUSTODY

Send Report To Megan McCullough
Company Floyd Snider
Address 601 Union Street, Ste. 600
City, State, ZIP Seattle WA, 98101
Phone # 206-292-2077 Fax #
Email Address Megan.mccullough

SAMPLERS (signature) William Beaulieu
PROJECT NAME/NO. B+L O+M 1525.1
PO #
PROJECT ADDRESS B+L ~~O+M~~ (wb) Wood Waste
• ELECTRONIC DATA REQUESTED

Page # _____ of _____
TURNAROUND TIME
• Standard Turnaround
• RUSH 24
Rush charges authorized by:

SAMPLE DISPOSAL
• Dispose after 30 days
• Return samples
• Will call with instructions
Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Total Arsenic					Notes
						ANALYSES REQUESTED											
T21101415	01 A-C	10/14/15	0700	w	3		X										
T22101415	02 A-C	10/14/15	0930	w	3		X										
T2A101415	03	10/14/15	0930	w	1							X					
													Samples received at -1 °C				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

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	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		William Beaulieu	F/S	10/14/15	1445
Received by:		Nhan Phan	F&BT	10/14/15	1445
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 22, 2015

Megan McCullough, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms. McCullough:

Included are the results from the testing of material submitted on October 19, 2015 from the B+L O+M 1525.1, F&BI 510276 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Brett Beaulieu
FDS1022R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 19, 2015 by Friedman & Bruya, Inc. from the Floyd-Snider B+L O+M 1525.1, F&BI 510276 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
510276 -01	T11101915
510276 -02	T12101915
510276 -03	T13101915

Sample T13101915 was sent to Fremont Analytical for metals analysis. The report is enclosed. Review of the enclosed report indicates that all quality assurance were acceptable.

The 8270D hexachlorocyclopentadiene laboratory control sample and laboratory control sample duplicate exceeded the acceptance criteria. This analyte was not detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 10/22/15
Date Received: 10/19/15
Project: B+L O+M 1525.1, F&BI 510276
Date Extracted: 10/19/15
Date Analyzed: 10/19/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
T11101915 510276-01	<100	105
T12101915 510276-02	<100	107
Method Blank 05-2130 MB	<100	98

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	T13101915	Client:	Floyd-Snider
Date Received:	10/19/15	Project:	B+L O+M 1525.1, F&BI 510276
Date Extracted:	10/20/15	Lab ID:	510276-03
Date Analyzed:	10/20/15	Data File:	102007.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	15 ip	56	115
Phenol-d6	13 ip	54	113
Nitrobenzene-d5	38	31	164
2-Fluorobiphenyl	42 ip	47	133
2,4,6-Tribromophenol	28 ip	35	141
Terphenyl-d14	43	24	188

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	2,6-Dinitrotoluene	<0.05
Bis(2-chloroethyl) ether	<0.01	3-Nitroaniline	<1
2-Chlorophenol	<0.1	Acenaphthene	<0.01
1,3-Dichlorobenzene	<0.01	2,4-Dinitrophenol	<0.3
1,4-Dichlorobenzene	<0.01	Dibenzofuran	<0.01
1,2-Dichlorobenzene	<0.01	2,4-Dinitrotoluene	<0.05
Benzyl alcohol	<0.1	4-Nitrophenol	<0.3
Bis(2-chloroisopropyl) ether	<0.01	Diethyl phthalate	<0.1
2-Methylphenol	<0.1	Fluorene	<0.01
Hexachloroethane	<0.01	4-Chlorophenyl phenyl ether	<0.01
N-Nitroso-di-n-propylamine	<0.01	N-Nitrosodiphenylamine	<0.01
3-Methylphenol + 4-Methylphenol	<0.2	4-Nitroaniline	<1
Nitrobenzene	<0.01	4,6-Dinitro-2-methylphenol	<0.3
Isophorone	<0.01	4-Bromophenyl phenyl ether	<0.01
2-Nitrophenol	<0.1	Hexachlorobenzene	<0.01
2,4-Dimethylphenol	<0.1	Pentachlorophenol	<0.1
Benzoic acid	<0.5	Phenanthrene	<0.01
Bis(2-chloroethoxy)methane	<0.01	Anthracene	<0.01
2,4-Dichlorophenol	<0.1	Carbazole	<0.1
1,2,4-Trichlorobenzene	<0.01	Di-n-butyl phthalate	0.13
Naphthalene	<0.01	Fluoranthene	<0.01
Hexachlorobutadiene	<0.01	Pyrene	<0.01
4-Chloroaniline	<1	Benzyl butyl phthalate	<0.1
4-Chloro-3-methylphenol	<0.1	Benz(a)anthracene	<0.01
2-Methylnaphthalene	<0.01	Chrysene	<0.01
1-Methylnaphthalene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
Hexachlorocyclopentadiene	<0.03	Di-n-octyl phthalate	<0.1
2,4,6-Trichlorophenol	<0.1	Benzo(a)pyrene	<0.01
2,4,5-Trichlorophenol	<0.1	Benzo(b)fluoranthene	<0.01
2-Chloronaphthalene	<0.01	Benzo(k)fluoranthene	<0.01
2-Nitroaniline	<0.05	Indeno(1,2,3-cd)pyrene	<0.01
Dimethyl phthalate	<0.1	Dibenz(a,h)anthracene	<0.01
Acenaphthylene	<0.01	Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L O+M 1525.1, F&BI 510276
Date Extracted:	10/20/15	Lab ID:	05-2147 mb
Date Analyzed:	10/20/15	Data File:	102005.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	95	56	115
Phenol-d6	93	54	113
Nitrobenzene-d5	92	31	164
2-Fluorobiphenyl	90	47	133
2,4,6-Tribromophenol	89	35	141
Terphenyl-d14	102	24	188

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	2,6-Dinitrotoluene	<0.05
Bis(2-chloroethyl) ether	<0.01	3-Nitroaniline	<1
2-Chlorophenol	<0.1	Acenaphthene	<0.01
1,3-Dichlorobenzene	<0.01	2,4-Dinitrophenol	<0.3
1,4-Dichlorobenzene	<0.01	Dibenzofuran	<0.01
1,2-Dichlorobenzene	<0.01	2,4-Dinitrotoluene	<0.05
Benzyl alcohol	<0.1	4-Nitrophenol	<0.3
Bis(2-chloroisopropyl) ether	<0.01	Diethyl phthalate	<0.1
2-Methylphenol	<0.1	Fluorene	<0.01
Hexachloroethane	<0.01	4-Chlorophenyl phenyl ether	<0.01
N-Nitroso-di-n-propylamine	<0.01	N-Nitrosodiphenylamine	<0.01
3-Methylphenol + 4-Methylphenol	<0.2	4-Nitroaniline	<1
Nitrobenzene	<0.01	4,6-Dinitro-2-methylphenol	<0.3
Isophorone	<0.01	4-Bromophenyl phenyl ether	<0.01
2-Nitrophenol	<0.1	Hexachlorobenzene	<0.01
2,4-Dimethylphenol	<0.1	Pentachlorophenol	<0.1
Benzoic acid	<0.5	Phenanthrene	<0.01
Bis(2-chloroethoxy)methane	<0.01	Anthracene	<0.01
2,4-Dichlorophenol	<0.1	Carbazole	<0.1
1,2,4-Trichlorobenzene	<0.01	Di-n-butyl phthalate	<0.1
Naphthalene	<0.01	Fluoranthene	<0.01
Hexachlorobutadiene	<0.01	Pyrene	<0.01
4-Chloroaniline	<1	Benzyl butyl phthalate	<0.1
4-Chloro-3-methylphenol	<0.1	Benz(a)anthracene	<0.01
2-Methylnaphthalene	<0.01	Chrysene	<0.01
1-Methylnaphthalene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
Hexachlorocyclopentadiene	<0.03	Di-n-octyl phthalate	<0.1
2,4,6-Trichlorophenol	<0.1	Benzo(a)pyrene	<0.01
2,4,5-Trichlorophenol	<0.1	Benzo(b)fluoranthene	<0.01
2-Chloronaphthalene	<0.01	Benzo(k)fluoranthene	<0.01
2-Nitroaniline	<0.05	Indeno(1,2,3-cd)pyrene	<0.01
Dimethyl phthalate	<0.1	Dibenz(a,h)anthracene	<0.01
Acenaphthylene	<0.01	Benzo(g,h,i)perylene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	T13101915	Client:	Floyd-Snider
Date Received:	10/19/15	Project:	B+L O+M 1525.1, F&BI 510276
Date Extracted:	10/19/15	Lab ID:	510276-03
Date Analyzed:	10/20/15	Data File:	102024.D
Matrix:	Soil/Solid	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L O+M 1525.1, F&BI 510276
Date Extracted:	10/19/15	Lab ID:	05-2110 mb
Date Analyzed:	10/20/15	Data File:	102023.D
Matrix:	Soil/Solid	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 10/22/15
Date Received: 10/19/15
Project: B+L O+M 1525.1, F&BI 510276

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 510270-04 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	93	70-119

Date of Report: 10/22/15
Date Received: 10/19/15
Project: B+L O+M 1525.1, F&BI 510276

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	0.33	92	94	51-119	2
Bis(2-chloroethyl) ether	mg/kg (ppm)	0.33	97	99	60-112	2
2-Chlorophenol	mg/kg (ppm)	0.33	99	101	59-114	2
1,3-Dichlorobenzene	mg/kg (ppm)	0.33	94	96	62-113	2
1,4-Dichlorobenzene	mg/kg (ppm)	0.33	94	95	61-114	1
1,2-Dichlorobenzene	mg/kg (ppm)	0.33	94	96	61-113	2
Benzyl alcohol	mg/kg (ppm)	0.33	103	104	50-119	1
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	0.33	93	94	59-113	1
2-Methylphenol	mg/kg (ppm)	0.33	100	101	58-115	1
Hexachloroethane	mg/kg (ppm)	0.33	95	96	63-114	1
N-Nitroso-di-n-propylamine	mg/kg (ppm)	0.33	98	99	62-114	1
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	0.33	100	103	54-120	3
Nitrobenzene	mg/kg (ppm)	0.33	97	99	59-114	2
Isophorone	mg/kg (ppm)	0.33	97	99	61-113	2
2-Nitrophenol	mg/kg (ppm)	0.33	96	98	59-114	2
2,4-Dimethylphenol	mg/kg (ppm)	0.33	92	94	54-107	2
Benzoic acid	mg/kg (ppm)	0.5	105	104	43-150	1
Bis(2-chloroethoxy)methane	mg/kg (ppm)	0.33	97	98	60-114	1
2,4-Dichlorophenol	mg/kg (ppm)	0.33	101	104	57-118	3
1,2,4-Trichlorobenzene	mg/kg (ppm)	0.33	94	95	56-112	1
Naphthalene	mg/kg (ppm)	0.33	95	95	61-113	0
Hexachlorobutadiene	mg/kg (ppm)	0.33	94	95	60-116	1
4-Chloroaniline	mg/kg (ppm)	0.66	66	73	10-126	10
4-Chloro-3-methylphenol	mg/kg (ppm)	0.33	101	102	59-115	1
2-Methylnaphthalene	mg/kg (ppm)	0.33	97	98	60-115	1
1-Methylnaphthalene	mg/kg (ppm)	0.33	96	98	70-130	2
Hexachlorocyclopentadiene	mg/kg (ppm)	0.33	109 vo	112 vo	41-107	3
2,4,6-Trichlorophenol	mg/kg (ppm)	0.33	99	100	47-119	1
2,4,5-Trichlorophenol	mg/kg (ppm)	0.33	103	104	61-121	1
2-Chloronaphthalene	mg/kg (ppm)	0.33	96	97	58-114	1
2-Nitroaniline	mg/kg (ppm)	0.33	101	103	55-119	2
Dimethyl phthalate	mg/kg (ppm)	0.33	98	99	58-116	1
Acenaphthylene	mg/kg (ppm)	0.33	97	98	56-114	1
2,6-Dinitrotoluene	mg/kg (ppm)	0.33	101	104	57-119	3
3-Nitroaniline	mg/kg (ppm)	0.66	81	83	10-143	2
Acenaphthene	mg/kg (ppm)	0.33	96	96	57-114	0
2,4-Dinitrophenol	mg/kg (ppm)	0.33	100	91	40-122	9
Dibenzofuran	mg/kg (ppm)	0.33	97	97	56-115	0
2,4-Dinitrotoluene	mg/kg (ppm)	0.33	108	108	53-126	0
4-Nitrophenol	mg/kg (ppm)	0.33	98	88	40-124	11
Diethyl phthalate	mg/kg (ppm)	0.33	103	104	57-116	1
Fluorene	mg/kg (ppm)	0.33	100	99	57-118	1
4-Chlorophenyl phenyl ether	mg/kg (ppm)	0.33	97	98	54-119	1
N-Nitrosodiphenylamine	mg/kg (ppm)	0.33	93	96	54-113	3
4-Nitroaniline	mg/kg (ppm)	0.66	95	93	47-109	2
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	0.33	98	95	55-147	3
4-Bromophenyl phenyl ether	mg/kg (ppm)	0.33	95	98	56-116	3
Hexachlorobenzene	mg/kg (ppm)	0.33	93	95	57-115	2
Pentachlorophenol	mg/kg (ppm)	0.33	107	107	45-123	0
Phenanthrene	mg/kg (ppm)	0.33	95	97	57-113	2
Anthracene	mg/kg (ppm)	0.33	97	99	60-118	2
Carbazole	mg/kg (ppm)	0.33	104	101	57-116	3
Di-n-butyl phthalate	mg/kg (ppm)	0.33	112	111	56-118	1
Fluoranthene	mg/kg (ppm)	0.33	108	104	58-117	4
Pyrene	mg/kg (ppm)	0.33	92	103	58-120	11
Benzyl butyl phthalate	mg/kg (ppm)	0.33	107	112	56-122	5
Benz(a)anthracene	mg/kg (ppm)	0.33	95	97	54-114	2
Chrysene	mg/kg (ppm)	0.33	96	98	57-119	2
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	0.33	103	101	56-155	2
Di-n-octyl phthalate	mg/kg (ppm)	0.33	86	89	58-120	3
Benzo(a)pyrene	mg/kg (ppm)	0.33	78	79	56-119	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.33	80	83	47-121	4
Benzo(k)fluoranthene	mg/kg (ppm)	0.33	82	86	59-126	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.33	77	75	52-137	3
Dibenz(a,h)anthracene	mg/kg (ppm)	0.33	78	76	51-138	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.33	74	73	48-138	1

Date of Report: 10/22/15
Date Received: 10/19/15
Project: B+L O+M 1525.1, F&BI 510276

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 510150-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	18	18	10-142	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	41	44	10-126	7
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	45	49	10-138	9
Bromomethane	mg/kg (ppm)	2.5	<0.5	56	59	10-163	5
Chloroethane	mg/kg (ppm)	2.5	<0.5	59	63	10-176	7
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	52	54	10-176	4
Acetone	mg/kg (ppm)	12.5	<0.5	82	81	10-163	1
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	59	62	10-160	5
Hexane	mg/kg (ppm)	2.5	<0.25	42	42	10-137	0
Methylene chloride	mg/kg (ppm)	2.5	<0.5	82	82	10-156	0
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	89	89	21-145	0
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	70	71	14-137	1
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	80	81	19-140	1
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	85	89	10-158	5
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	79	79	25-135	0
Chloroform	mg/kg (ppm)	2.5	<0.05	82	80	21-145	2
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	84	87	19-147	4
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	79	77	12-160	3
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	82	82	10-156	0
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	73	72	17-140	1
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	78	76	9-164	3
Benzene	mg/kg (ppm)	2.5	<0.03	77	76	29-129	1
Trichloroethene	mg/kg (ppm)	2.5	<0.02	77	76	21-139	1
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	86	85	30-135	1
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	82	80	23-155	2
Dibromomethane	mg/kg (ppm)	2.5	<0.05	80	78	23-145	3
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	93	90	24-155	3
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	87	84	28-144	4
Toluene	mg/kg (ppm)	2.5	<0.05	76	75	35-130	1
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	88	88	26-149	0
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	83	83	10-205	0
2-Hexanone	mg/kg (ppm)	12.5	<0.5	93	91	15-166	2
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	85	82	31-137	4
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	72	69	20-133	4
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	84	82	28-150	2
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	90	89	28-142	1
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	80	77	32-129	4
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	77	75	32-137	3
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	90	88	31-143	2
m,p-Xylene	mg/kg (ppm)	5	<0.1	77	74	34-136	4
o-Xylene	mg/kg (ppm)	2.5	<0.05	80	77	33-134	4
Styrene	mg/kg (ppm)	2.5	<0.05	81	79	35-137	2
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	78	75	31-142	4
Bromoform	mg/kg (ppm)	2.5	<0.05	83	80	21-156	4
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	75	70	23-146	7
Bromobenzene	mg/kg (ppm)	2.5	<0.05	81	78	34-130	4
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	75	69	18-149	8
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	86	84	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	87	85	25-144	2
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	76	73	31-134	4
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	77	72	31-136	7
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	78	71	30-137	9
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	0.051	74	69	10-182	7
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	75	67	23-145	11
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	73	66	21-149	10
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	76	73	30-131	4
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	77	73	29-129	5
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	79	76	31-132	4
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	89	88	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	74	68	22-142	8
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	72	62	10-142	15
Naphthalene	mg/kg (ppm)	2.5	<0.05	80	77	14-157	4
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	78	72	20-144	8

Date of Report: 10/22/15
Date Received: 10/19/15
Project: B+L O+M 1525.1, F&BI 510276

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	48	10-146
Chloromethane	mg/kg (ppm)	2.5	66	27-133
Vinyl chloride	mg/kg (ppm)	2.5	75	22-139
Bromomethane	mg/kg (ppm)	2.5	78	38-114
Chloroethane	mg/kg (ppm)	2.5	80	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	84	10-196
Acetone	mg/kg (ppm)	12.5	98	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	84	47-128
Hexane	mg/kg (ppm)	2.5	88	43-142
Methylene chloride	mg/kg (ppm)	2.5	102	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	106	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	91	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	100	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	116	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	95	72-113
Chloroform	mg/kg (ppm)	2.5	96	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	105	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	93	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	106	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	94	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	107	60-139
Benzene	mg/kg (ppm)	2.5	95	68-114
Trichloroethene	mg/kg (ppm)	2.5	95	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	105	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	99	72-130
Dibromomethane	mg/kg (ppm)	2.5	94	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	107	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	109	75-136
Toluene	mg/kg (ppm)	2.5	94	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	112	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	98	75-113
2-Hexanone	mg/kg (ppm)	12.5	105	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	100	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	96	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	104	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	111	74-132
Chlorobenzene	mg/kg (ppm)	2.5	96	76-111
Ethylbenzene	mg/kg (ppm)	2.5	96	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	108	69-135
m,p-Xylene	mg/kg (ppm)	5	98	78-122
o-Xylene	mg/kg (ppm)	2.5	99	77-124
Styrene	mg/kg (ppm)	2.5	97	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	99	76-127
Bromoform	mg/kg (ppm)	2.5	101	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	97	74-124
Bromobenzene	mg/kg (ppm)	2.5	98	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	99	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	99	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	100	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	96	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	95	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	100	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	97	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	98	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	98	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	96	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	95	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	95	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	109	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	94	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	98	50-153
Naphthalene	mg/kg (ppm)	2.5	97	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	96	63-138

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 510276
Lab ID: 1510247

October 20, 2015

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 10/19/2015 for the analyses presented in the following report.

Mercury by EPA Method 7471
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
President

Date: *10/20/2015*

CLIENT: Friedman & Bruya
Project: 510276
Lab Order: 1510247

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1510247-001	T13101915	10/19/2015 11:53 AM	10/19/2015 3:56 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1510247**
Date: **10/20/2015**

CLIENT: Friedman & Bruya
Project: 510276

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

WO#: **1510247**

Date Reported: **10/20/2015**

Client: Friedman & Bruya

Collection Date: 10/19/2015 11:53:00 AM

Project: 510276

Lab ID: 1510247-001

Matrix: Soil

Client Sample ID: **T13101915**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Mercury by EPA Method 7471				Batch ID: 12151		Analyst: MW
Mercury	ND	0.642		mg/Kg-dry	1	10/20/2015 10:33:32 AM
Total Metals by EPA Method 6020				Batch ID: 12145		Analyst: TN
Arsenic	14.0	0.207		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Barium	49.3	1.04		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Cadmium	ND	0.414		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Chromium	0.436	0.207		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Copper	7.50	0.414		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Lead	ND	0.414		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Nickel	1.49	0.207		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Selenium	ND	1.04		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Silver	ND	0.202		mg/Kg-dry	1	10/20/2015 2:09:49 PM
Zinc	13.1	0.829		mg/Kg-dry	1	10/19/2015 7:14:22 PM
Sample Moisture (Percent Moisture)				Batch ID: R25571		Analyst: SL
Percent Moisture	61.1			wt%	1	10/19/2015 4:52:23 PM

Work Order: 1510247
CLIENT: Friedman & Bruya
Project: 510276

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID	**MB-12145**	SampType:	**MBLK**	Units:	**mg/Kg**	Prep Date:	**10/19/2015**	RunNo:	**25574**
Client ID:	**MBLKS**	Batch ID:	**12145**			Analysis Date:	**10/19/2015**	SeqNo:	**482503**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.100									
Barium	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	0.100									
Copper	ND	0.200									
Lead	ND	0.200									
Nickel	ND	0.100									
Selenium	ND	0.500									
Zinc	ND	0.400									

Sample ID	**LCS-12145**	SampType:	**LCS**	Units:	**mg/Kg**	Prep Date:	**10/19/2015**	RunNo:	**25574**
Client ID:	**LCSS**	Batch ID:	**12145**			Analysis Date:	**10/19/2015**	SeqNo:	**482504**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.9	0.100	50.00	0	93.8	80	120				
Barium	48.6	0.500	50.00	0	97.2	80	120				
Cadmium	2.59	0.200	2.500	0	104	80	120				
Chromium	48.4	0.100	50.00	0	96.8	80	120				
Copper	48.1	0.200	50.00	0	96.2	80	120				
Lead	23.2	0.200	25.00	0	92.6	80	120				
Nickel	48.8	0.100	50.00	0	97.5	80	120				
Selenium	4.73	0.500	5.000	0	94.7	80	120				
Zinc	51.0	0.400	50.00	0	102	80	120				

Sample ID	**1510245-001ADUP**	SampType:	**DUP**	Units:	**mg/Kg-dry**	Prep Date:	**10/19/2015**	RunNo:	**25574**
Client ID:	**BATCH**	Batch ID:	**12145**			Analysis Date:	**10/19/2015**	SeqNo:	**482506**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.28	0.0863						2.295	0.782	20	
Barium	43.0	0.432						44.21	2.72	20	

Work Order: 1510247
CLIENT: Friedman & Bruya
Project: 510276

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID **1510245-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **10/19/2015** RunNo: **25574**
Client ID: **BATCH** Batch ID: **12145** Analysis Date: **10/19/2015** SeqNo: **482506**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.173						0		20	
Chromium	23.8	0.0863						24.16	1.51	20	
Copper	11.2	0.173						11.11	0.785	20	
Lead	2.02	0.173						1.971	2.47	20	
Nickel	29.2	0.0863						28.10	3.91	20	
Selenium	1.42	0.432						1.434	1.19	20	
Zinc	20.8	0.345						21.25	2.27	20	

Sample ID **1510245-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **10/19/2015** RunNo: **25574**
Client ID: **BATCH** Batch ID: **12145** Analysis Date: **10/19/2015** SeqNo: **482508**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.2	0.0877	43.84	2.295	100	75	125				
Barium	83.3	0.438	43.84	44.21	89.2	75	125				
Cadmium	2.27	0.175	2.192	0.05193	101	75	125				
Chromium	71.3	0.0877	43.84	24.16	108	75	125				
Copper	54.3	0.175	43.84	11.11	98.6	75	125				
Lead	22.8	0.175	21.92	1.971	95.1	75	125				
Nickel	76.0	0.0877	43.84	28.10	109	75	125				
Selenium	5.52	0.438	4.384	1.434	93.2	75	125				
Zinc	67.2	0.351	43.84	21.25	105	75	125				

Sample ID **1510245-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **10/19/2015** RunNo: **25574**
Client ID: **BATCH** Batch ID: **12145** Analysis Date: **10/19/2015** SeqNo: **482509**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.4	0.0921	46.03	2.295	100	75	125	46.20	4.69	20	
Barium	92.6	0.460	46.03	44.21	105	75	125	83.32	10.5	20	
Cadmium	2.42	0.184	2.302	0.05193	103	75	125	2.274	6.01	20	
Chromium	77.9	0.0921	46.03	24.16	117	75	125	71.31	8.77	20	

Work Order: 1510247
CLIENT: Friedman & Bruya
Project: 510276

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID	1510245-001AMSD	SampType:	MSD	Units:	mg/Kg-dry	Prep Date:	10/19/2015	RunNo:	25574
Client ID:	BATCH	Batch ID:	12145			Analysis Date:	10/19/2015	SeqNo:	482509

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	58.0	0.184	46.03	11.11	102	75	125	54.31	6.61	20	
Lead	24.4	0.184	23.02	1.971	97.5	75	125	22.81	6.76	20	
Nickel	77.7	0.0921	46.03	28.10	108	75	125	75.98	2.23	20	
Selenium	5.65	0.460	4.603	1.434	91.5	75	125	5.520	2.26	20	
Zinc	72.9	0.368	46.03	21.25	112	75	125	67.17	8.14	20	

Sample ID	MB-12157	SampType:	MBLK	Units:	mg/Kg	Prep Date:	10/20/2015	RunNo:	25590
Client ID:	MBLKS	Batch ID:	12157			Analysis Date:	10/20/2015	SeqNo:	482777

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.100									

Sample ID	LCS-12157	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/20/2015	RunNo:	25590
Client ID:	LCSS	Batch ID:	12157			Analysis Date:	10/20/2015	SeqNo:	482778

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	2.09	0.100	2.500	0	83.7	80	120				

Sample ID	1510255-001ADUP	SampType:	DUP	Units:	mg/Kg	Prep Date:	10/20/2015	RunNo:	25590
Client ID:	BATCH	Batch ID:	12157			Analysis Date:	10/20/2015	SeqNo:	482780

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.0787						0		20	

Sample ID	1510255-001AMS	SampType:	MS	Units:	mg/Kg	Prep Date:	10/20/2015	RunNo:	25590
Client ID:	BATCH	Batch ID:	12157			Analysis Date:	10/20/2015	SeqNo:	482782

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1.53	0.0787	1.969	0.02844	76.1	75	125				

Date: *10/20/2015*

Work Order: 1510247
CLIENT: Friedman & Bruya
Project: 510276

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID **1510255-001AMS**	SampType: **MS**			Units: **mg/Kg**		Prep Date: **10/20/2015**			RunNo: **25590**		
Client ID: **BATCH**	Batch ID: **12157**					Analysis Date: **10/20/2015**			SeqNo: **482782**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID **1510255-001AMSD**	SampType: **MSD**			Units: **mg/Kg**		Prep Date: **10/20/2015**			RunNo: **25590**		
Client ID: **BATCH**	Batch ID: **12157**					Analysis Date: **10/20/2015**			SeqNo: **482783**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1.37	0.0781	1.953	0.02844	68.5	75	125	1.527	11.1	20	S

NOTES:
S - Outlying spike recovery observed for Ag. Ag recovered within specification in MS.

Work Order: 1510247
CLIENT: Friedman & Bruya
Project: 510276

QC SUMMARY REPORT

Mercury by EPA Method 7471

Sample ID	MB-12151	SampType:	MBLK			Units:	mg/Kg	Prep Date:	10/19/2015		RunNo:	25580	
Client ID:	MBLKS	Batch ID:	12151					Analysis Date:	10/20/2015		SeqNo:	482625	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Mercury	ND	0.250											

Sample ID	LCS-12151	SampType:	LCS			Units:	mg/Kg	Prep Date:	10/19/2015		RunNo:	25580	
Client ID:	LCSS	Batch ID:	12151					Analysis Date:	10/20/2015		SeqNo:	482626	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Mercury	0.504	0.250	0.5000	0	101	80	120						

Sample ID	1510239-001ADUP	SampType:	DUP			Units:	mg/Kg	Prep Date:	10/19/2015		RunNo:	25580	
Client ID:	BATCH	Batch ID:	12151					Analysis Date:	10/20/2015		SeqNo:	482628	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Mercury	ND	0.250						0		20			

Sample ID	1510239-001AMS	SampType:	MS			Units:	mg/Kg	Prep Date:	10/19/2015		RunNo:	25580	
Client ID:	BATCH	Batch ID:	12151					Analysis Date:	10/20/2015		SeqNo:	482629	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Mercury	0.499	0.250	0.5000	0.009196	98.0	70	130						

Sample ID	1510239-001AMSD	SampType:	MSD			Units:	mg/Kg	Prep Date:	10/19/2015		RunNo:	25580	
Client ID:	BATCH	Batch ID:	12151					Analysis Date:	10/20/2015		SeqNo:	482630	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Mercury	0.518	0.250	0.5000	0.009196	102	70	130	0.4993	3.70	20			

Date: *10/20/2015*

Work Order: 1510247
CLIENT: Friedman & Bruya
Project: 510276

QC SUMMARY REPORT

Sample Moisture (Percent Moisture)

Sample ID **1510245-001ADUP** SampType: **DUP** Units: **wt%** Prep Date: **10/19/2015** RunNo: **25571**
Client ID: **BATCH** Batch ID: **R25571** Analysis Date: **10/19/2015** SeqNo: **482428**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	10.3	0.500						9.481	8.59	20	

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1510247**
Logged by:	**Clare Griggs**	Date Received:	**10/19/2015 3:56:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
	Sample received straight from field.			
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 1510247

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 510276

PO # D-689

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☒ RUSH 10/20/15

Rush charges authorized by: MS

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkflinity	Bundle Combine				Notes
T1310915		10/19/15	1153	Soil	1							X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	10/19/15	2:56
Received by:		Stephen Ve	FAI	10/19/15	15:56
Relinquished by:					
Received by:					

510276

SAMPLE CHAIN OF CUSTODY

ME 10/19/15 VI/ #23

Send Report To Megan McCullough

Company Floyd Snider

Address 601 Union Street, ste 600

City, State, ZIP Seattle WA 98101

Phone # 206-292-2077 Fax #

Email Address

SAMPLERS (signature)

PROJECT NAME/NO. B+L OtM 1525.1

PO #

PROJECT ADDRESS B+L Wood Waste

• ELECTRONIC DATA REQUESTED

TURNAROUND TIME
- Standard Turnaround
- RUSH 24

Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Return samples
- Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	RCRA 8	Cu	Ni	Zn		Notes
T1101915	01A-C	10/19/15	0945	W	3		X										
T2101915	02	10/19/15	1112	W	3		X										
T3101915	03	10/19/15	1153	W	1				X	X		X	X	X	X		

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		William Beaulieu	F3	10/19/15	1420
Received by:		JIM BICKG	F&B	10/19	1420
Relinquished by:					
Received by:			Samples received at 2 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

B&L Woodwaste Site

Ditch Bank Excavation
Construction Completion Report

Appendix I
Statistical Evaluation Results

1 SD-50’-C-2 South and West Ditch Combined
1 WD-13.5’-W-4
1 WD-25’-W-4
1.01 WD-13.5'-C-4
1.07 SD-183’-N-E
1.23 SD-225'-C
1.71 SD-183’-N-5
1.78 SD-250'-C
1.84 AV-20-3-4
1.88 AV-19-3-4
1.97 SD-10'-S
2.06 SD-133’-N-B
2.2 WD-125'-C
2.21 SD-200'-C
2.24 WD-13.5'-W-
2.24 SD-158’-N-5
2.45 SD-133’-N-5
2.52 SD-150'-C
2.53 SD-125'-C
2.53 WD-75'-C
2.75 SD-158’-N-B
2.9 SD-108’-N-5
2.91 SD-300'-C
2.95 SD-175'-C
2.95 SD-308’-N
2.97 SD-275'-C
3.29 SD-83’-N-B
3.34 WD-125'-E
3.46 WD-25'-C
3.54 WD-25a'-C
3.54 SD-208’-N
4.08 WD-75'-W
4.27 WD-25'-E
4.36 SD-283’-N
4.62 WD-25'-W-2
4.84 SD-350'-C
4.97 WD-75'-E
4.98 WD-125'-W
5.61 WD-25'-W
6.11 SD-375'-W
6.24 SD-258’-N
6.53 SD-240'-S
6.87 WD-145'-S
7.8 SD-290'-S
7.89 SD-340'-S
8.41 SD-233’-N
8.64 SD-11’-N-20
9.32 SD-75'-C
9.95 WD-50'-E
11.8 SD-100'-C
12.8 SD-10'-C2
13.5 WD-50'-W
13.7 WD-50'-C
14.8 SD-165'-S
15.3 AV-20-5-6

Number of samples			Uncensored values	
Uncensored	65		Mean	8.23
Censored	2		Lognormal mean	7.97
Detection limit or PQL	1		Std. devn.	10.6841066
Method detection limit	1		Median	4.27
TOTAL	67		Min.	1
			Max.	69.7
Lognormal distribution?			Normal distribution?	
r-squared is:	0.984		r-squared is:	0.642

Recommendations:
Use lognormal distribution.

UCL (Land's method) is 10.2978618981713
Simple substitution used with censored values.

15.5	SD-108’-N-B
15.6	SD-315'-S
15.9	AV-19-5-6
17.9	SD-265'-S
20.3	SD-358’-N
21.3	SD-0'-E
22.4	SD-333’-N
33.1	SD-325'-C
35	SD-30'-C2
69.7	WD-25'-C-2