FINAL PHASE 1 OFF-PROPERTY PORTION CONSTRUCTION COMPLETION REPORT

FORMER PACIFIC WOOD TREATING CO. SITE
FACILITY ID 1019, CLEANUP SITE ID 3020

Prepared for

PORT OF RIDGEFIELD

RIDGEFIELD, WA

October 27, 2021

Project No. 9003.01.55

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The material and data in this report were prepared under the supervision and direction of the undersigned.

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ACRONYMS AND ABBREVIATIONS

AEC	Anderson Environmental Contracting, LLC
AK	AK Timber
AKS	AKS Engineering & Forestry, LLC
All-Out	All-Out Sewer and Drain Services Inc.
Apex	Apex Laboratories, LLC
CCR	construction completion report
CQA	construction quality assurance
CUL	cleanup level
dioxins	chlorinated dibenzo-p-dioxins and dibenzofurans
Ecology	Washington State Department of Ecology
FS	feasibility study
H&H	H&H Wood Recyclers
IAWP	interim action work plan
IDP	inadvertent discovery plan
Klein	Klein & Associates, Inc.
LA	landscape architect
Livermore	Livermore Architecture & Engineering, Inc.
LRIS	Lake River Industrial Site
Madrone	Madrone Modern Arboriculture
MFA	Maul Foster & Alongi, Inc.
MTCA	Model Toxics Control Act
OPP	off-property portion
the Order	Agreed Order No. DE 11057 between the Port and Ecology
PBI	Paul Brothers, Inc.
the Port	Port of Ridgefield
PWT	Pacific Wood Treating Co.
RI	remedial investigation
ROW	right-of-way
RPZ	root-protection zone
the site	former PWT site
WAC	Washington Administrative Code
WillametteCRA	Willamette Cultural Resources Associates, Ltd.

1 INTRODUCTION

On behalf of the Port of Ridgefield (the Port), Maul Foster & Alongi, Inc. (MFA) has prepared this construction completion report (CCR) for the Phase 1 off-property portion (OPP) interim action completed in 2016 and 2017. The interim action involved removal of contaminated soil, soil replacement, and landscape restoration in the Phase 1 OPP of the former Pacific Wood Treating Co. (PWT) site (the site) in Ridgefield, Washington (see Figure 1-1). The Phase 1 OPP adjoins the Port's Millers' Landing, formerly known as the Lake River Industrial Site (LRIS).

The interim action was completed consistent with the Washington State Department of Ecology (Ecology)-approved interim action work plan (IAWP; MFA, 2016a). The interim action was technically necessary to immediately reduce threats to human health, and achieved final cleanup for the Phase 1 OPP. The need for cleanup in the adjacent area known as the Phase 2 OPP will be informed by the forthcoming OPP remedial investigation (RI) and feasibility study (FS).

This CCR fulfills the requirements of Washington Administrative Code (WAC) 173-340-400(6). This CCR was prepared under the authority of Agreed Order No. DE 11057 (the Order) between the Port and Ecology to address areas of known soil contamination in properties in the OPP, and public rights-of-way (ROWs) adjacent to those properties.

1.1 Site Location and History

The Phase 1 OPP is the portion of the site where RI was initially required under the Order. The Phase 1 OPP is located near 111 West Division Street in Ridgefield, Washington, and includes multiple residential properties and ROWs (see Figure 1-2).

PWT operated a wood-treating facility at the LRIS in the OPP vicinity from 1964 to 1993. These operations resulted in the release of hazardous substances, including chlorinated dibenzo-p-dioxins and dibenzofurans (dioxins). The site is defined by the extent of contamination caused by the release of hazardous substances from the historical wood-treating operations. The site constitutes a "Facility" under Revised Code of Washington 70.105D.020(4) and includes the Phase 1 OPP. The Phase 2 OPP is an area where additional RI was required by Ecology, based on the results of initial RI activities. The need for cleanup at the Phase 2 OPP will be informed by the forthcoming OPP RI/FS and is not further addressed in this CCR. Other areas addressed by previous site investigations and remedial actions include the LRIS, Port-owned properties, Carty Lake, and Lake River, pursuant to the 2013 Consent Decree (Ecology, 2013).

1.2 Interim Action Objectives

Interim action remediation and restoration activities were completed to remove soil from residential properties and adjacent ROWs that exceeded the Model Toxics Control Act (MTCA) Method B cleanup level (CUL) for the dioxin toxicity equivalent of 13 nanograms per kilogram. The completed

interim action removed contaminated soil and was technically necessary to reduce threats to human health and the environment (see Figure 1-3).

1.3 Regulatory Framework

The interim action was conducted consistent with the IAWP (MFA, 2016a). According to WAC 173-340-430, an interim action is distinguished from a final cleanup action in that an interim action only partially addresses the cleanup of a site. This interim action achieved final cleanup for the Phase 1 OPP areas (shown in Figure 1-3) where soils exceeded the CUL. Cleanup at other residential areas (Phase 2 OPP) may be conducted in the future, as determined by the forthcoming OPP RI/FS and cleanup action plan.

The interim action qualifies under WAC 173-340-430(1)(a), which defines one category of interim action as "a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance at a facility." This interim action remediated soils in areas known to exceed the CUL and mitigated the potential for exposure in these areas.

Additional requirements of an interim action, as stated in WAC 173-340-430(3), are that it will be consistent with, and shall not exclude reasonable alternatives for, the final cleanup action. This interim action is the final remedy for the areas in which it was implemented, and does not preclude the MTCA evaluation of alternatives and selection of a final cleanup action for the OPP.

1.4 Permits, Review, and Substantive Requirements for Off-Property Portion Interim Action

The acquired agency approvals and permits are listed below:

- National Pollutant Discharge Elimination System Construction Stormwater General Permit—Ecology
- State Environmental Policy Act Determination of Nonsignificance—Ecology
- ROW permit—City of Ridgefield
- Grading Permit—City of Ridgefield

1.5 Completion Report Objectives

This report describes the work completed and summarizes the construction quality assurance (CQA) program implemented to ensure that the project was constructed in compliance with the approved design and with any subsequent resolutions or changes to the design. The following information is included as appendices:

- Structural engineer pre-construction foundation evaluations (Appendix A)
- Structural engineer post-construction foundation evaluations (Appendix B)

- Sample daily construction report (Appendix C)
- Import fill material laboratory reports and chain-of-custody documentation (Appendix D)
- Data validation memorandum for imported fill analytical results (Appendix E)
- Analytical results summary for imported fill (Appendix F)
- Cultural resources inadvertent discovery plan (IDP) (Appendix G)
- Individual property remediation summary forms (Appendix H)
- Construction photograph array (Appendix I)

2 PROJECT TEAM AND ORGANIZATION

2.1 Project Team

- Owner—the Port
- Engineer and Construction Oversight—MFA. Responsible for project design and overall project conformance to the approved design.
- Landscape Architect (LA)—MFA. Responsible for restoration design and conformance of plantings and ground cover materials to the approved design.
- General Contractor—Anderson Environmental Contracting (AEC). AEC performed all demolition and remedial excavation activities and was responsible for hauling and disposal of contaminated material, as well as sourcing and importing clean backfill material.
- Subcontractors—Paul Brothers, Inc. (PBI), AK Timber (AK), and All-Out Sewer and Drain Services Inc. (All-Out). PBI performed restoration and landscaping activities. AK conducted tree removal and stump grinding. All-Out conducted daily street sweeping and inspected septic tanks encountered during remediation activities.
- Surveying—Klein & Associates, Inc. (Klein) and AKS Engineering & Forestry, LLC (AKS). Klein surveyed existing conditions and topography to provide information for development of design plans. AKS collected construction survey information, including depth of excavation, previously unidentified structures, and final topography.
- Structural Engineer—Livermore Architecture & Engineering, Inc. (Livermore). Livermore provided remediation details and recommendations for soil removal adjacent to existing structures. Livermore also conducted and pre- and post-construction inspections (Appendices A and B) of all existing building foundations to ensure that foundations had not been damaged during remediation and restoration activities.
- Arborist—Madrone Modern Arboriculture (Madrone). Madrone provided an inventory assessment of trees and shrubs larger than 6 inches in diameter located on the properties to be remediated in order to determine if they were healthy enough to remain during construction. Madrone also provided construction oversight and recommendations for

soil removal and placement adjacent to the large shrubs and trees that remained in place to ensure that tree preservation standards outlined in the contract documents were being upheld.

- Laboratory Testing—Apex Laboratories, LLC (Apex). Apex was the primary laboratory for testing of import topsoil material. Dioxin testing was subcontracted to Cape Fear Analytical, LLC, and Maxxam Analytics International Corporation.
- Archaeological Investigation—Willamette Cultural Resources Associates, Ltd (WillametteCRA). WillametteCRA conducted shovel probes and determined that no archaeological resources were present in properties surveyed. WillametteCRA prepared an IDP, which was implemented during the construction.

2.2 Project Schedule

Interim action project work was completed as follows:

Task	Time Frame
Develop Preliminary Restoration Plan with Homeowners	Spring 2016
Prepare Final Remediation and Restoration Plans	Spring 2016
Award Contractor Bid	June 2016
Remediation Construction of 20 Residential Properties and ROWs	July 2016–September 2016
Restoration of Residential Properties and ROWs	July 2016–December 2016
2017 Design, Remediation, and Restoration of Nine Residential Properties and ROWs	Winter 2016–September 2017

3 CONSTRUCTION QUALITY ASSURANCE

A robust, project-specific CQA program was implemented during construction to verify that the work was constructed to the performance standards detailed in the construction drawings and described in the technical specifications, which, in turn, fulfill the requirements of the remedial action prescribed by the IAWP (MFA, 2016a). Primary components of the CQA program are summarized below.

3.1 Construction Submittals

Technical submittals were provided by the contractors (AEC and PBI) before and during construction consistent with the project specifications. Submittals were reviewed by the engineer (MFA) for conformance with the technical specifications and/or construction details.

Submittals that were not in conformance with the specifications were notated regarding deficiencies and returned for revision and resubmittal by the contractor. The engineer keeps the submittal documentation on file.

3.2 Construction Meetings

Throughout the life of the project, weekly construction meetings were held on site during periods of active construction. Attendees included representatives from the Port, Ecology, MFA, AEC, and PBI. AEC led the meetings, providing construction progress updates and upcoming billing details. Meetings also addressed project schedule, outstanding items, homeowner issues, and other topics raised by attendees.

3.3 Construction Daily Reports

MFA produced construction daily reports, which were provided to the Port and distributed to the MFA project team. These reports tracked daily construction activities and conditions, outstanding items, subcontractors on site, and on-site verbal communications. A sample Construction Daily Report is included in Appendix C.

3.4 Construction Surveying

Klein provided surveying services primarily for the design of remediation and restoration.

AKS provided surveying services throughout construction and close-out of the project. For quality assurance, AKS provided electronic survey files for individual properties. The following surveys were obtained to ensure that the remediation and restoration were completed in accordance with the plans and specifications:

- Pre-construction Ground Survey—elevations of the pre-construction ground surface provided as a datum for excavation and subsequent backfill operations.
- Post-Excavation Ground Survey—elevations of post-excavation ground surface provided to MFA compared the pre-construction ground survey to the post-excavation ground survey to ensure that excavation had been completed to the appropriate depth. Comparisons were made using Autodesk® Civil3D® software.
- Final Conditions Ground Survey—elevations of the post-backfill ground surface provided assurance that restoration backfill had been completed consistent with the design. In most cases, post-backfill design surfaces mirrored existing conditions. However, the design called for minor grading adjustments on some properties.

Record Drawings (attached) reflect all changes made to the original design drawings during construction. Contours shown on the Record Drawings depict the original topographic surface provided by Klein. Final backfill operations were intended to match existing grades at each property to within 0.1 foot. Final grades at some properties were modified in the field, and adjusted contours are shown on the Record Drawings, where applicable. The contractor performed periodic surveys to ensure that final grades were within the design tolerance and matched preexisting grades.

3.5 Import Material Analytical Testing

In 2016, AEC submitted two potential topsoil sources as part of the bid process: Washington Rock Quarries, near Puyallup, Washington, and East County Materials in Vancouver, Washington. Import topsoil was a mix of 80/20 percent sandy loam soil and compost or 85/15 percent sandy loam soil and compost. MFA staff collected one or two five-point composite samples of import topsoil material for every 1,000 cubic yards, and samples were submitted to Apex for analysis in accordance with the contract specifications.

Import fill samples from both sources were compared against project acceptance criteria before they were approved for import to the job site. The soil and compost samples collected from Washington Rock Quarries in 2016 were mixed at an 80/20 ratio prior to sampling, and all mixed samples were below the screening criteria. Soil samples (collected from East County Materials) and compost samples (sourced from H&H Wood Recyclers [H&H] in Vancouver, Washington) were initially analyzed separately. Based on the results, it was determined that, at a mixing ratio of 85/15, the fill was below the screening criteria. Subsequent import material from East County Materials was mixed with the compost material from H&H at an 85/15 ratio before laboratory analysis; all samples were below the screening criteria.

Washington Rock Quarries material was imported for use as backfill early in the construction process, until sampling data were received for the East County Material source. Because of this company's close proximity to the project site, East County Material fill material was used for the remainder of the 2016 project work.

In 2017, H&H and Swanson Bark, both of Kelso, Washington, were selected for potential backfill materials. A three-way blend (1/3 silt, 1/3 sand, and 1/3 compost) from each supplier, and a two-way blend (1/2 sand and 1/2 compost) from H&H, were analyzed and compared against project acceptance criteria. The two-way blend was rejected because of the presence of dioxins above project acceptance criteria. The Swanson three-way blend was analyzed concurrently with the H&H three-way blend (i.e., every 1,000 cubic yards of soil) to serve as a secondary approved fill material. However, the blend was not required during the project. Although analytical results for both three-way blends were below clean fill screening criteria, H&H was selected as the source for backfill material based on the visual quality of the material and on H&H's closer proximity to the site.

All laboratory reports and chain-of-custody documentation can be found in Appendix D. MFA provided data validation services for all laboratory reports (Appendix E). Import fill analytical results are summarized in Appendix F.

3.6 Public Communications

3.6.1 Pre-cleanup Outreach

Prior to the construction phase of the project, Ecology and the Port worked with homeowners to develop a property-specific cleanup plan. Before finalizing the cleanup plan for each property, MFA and Ecology met with homeowners to:

- Provide an overview of RI results.
- Explain the human health risks associated with dioxins above the CUL and the need for cleanup.
- Verify and survey cleanup areas.
- Provide information on pre-cleanup activities and owner responsibilities.
- Provide information about the cleanup and restoration timeline.

3.6.2 Restoration Design Outreach

Following the pre-cleanup outreach meetings, homeowners were offered the opportunity to meet with the LA to develop the property landscape restoration designs during pre-cleanup planning visits. Homeowners were provided with two options for yard restoration:

1. Restore with lawn and mulched bed(s).
2. Restore with the same or in-kind landscaping that was to be removed.

After feedback from homeowners, MFA developed remediation and restoration designs. Designs were approved by the homeowner before the construction drawings were finalized. The Port and each homeowner then signed a Yard Cleanup and Restoration Plan Agreement, which documented both parties' understandings of the yard-specific cleanup plan and restoration design, and gave authorization to the Port, Ecology, and contractors to access the property.

3.6.3 Construction Window Communications

During the two weeks prior to construction on each property, the contractor met with the homeowner and conducted a pre-construction briefing, which included a preliminary schedule, an explanation of owner responsibilities, and a safety discussion.

Throughout the construction process, homeowners were encouraged to reach out to MFA via e-mail, phone, or in person with comments or questions. At least one MFA field member was on site during construction activities to oversee work and be available to receive and respond to homeowner concerns and questions in person. When construction was complete, the contractor and MFA met again with homeowners to receive feedback from the homeowner on any outstanding construction items, and to provide information regarding landscape care following yard restoration.

3.6.4 General Public Outreach

In coordination with Ecology, signage was developed and posted throughout construction areas with general information about the remedial actions being conducted, including Ecology and MFA contact information for interest or questions about the program. In addition, small flyers with similar information were distributed to neighboring residences.

As needed, additional flyers were distributed to notify residents of potential activities that might impact them. For example, during the removal of large trees, some power lines were temporarily removed by Clark Public Utilities to facilitate the tree-removal activity. A flyer was distributed to all potentially impacted households ahead of the tree removal to notify them of the potential power outage.

4 REMEDIAL ACTION METHODS

The project was divided into two phases: remediation and restoration. The remedial action, as described below in Sections 4.1 to 4.6, removed contaminated soils from the site. The restorative actions, as described in Section 4.7, replaced soil and landscaping to a condition equal to or better than the original. The construction portion of the project began on July 18, 2016, stopped for winter on November 21, 2016, began again on June 6, 2017, and ran through September 6, 2017. Individual property schedules are discussed in Section 5.

4.1 Site Preparation

WillametteCRA conducted a pedestrian and field survey of the project areas to identify any properties where construction activities would be likely to encounter cultural materials. Surveys were conducted in 2016 and 2017 prior to construction work at each property. The surveys found no significant archaeological resources. An IDP, prepared by WillametteCRA, was implemented during remediation work activities. The survey results and the IDP are provided in Appendix G.

AEC was given Notice to Proceed on July 14, 2016. Mobilization to the site began on July 18, 2016. The construction staging area for the project was located on Port-owned property on the west side of Railroad Avenue. The staging area was used to store equipment, the job trailer, construction materials, and crew vehicles. Given the residential nature of the project, use of public ROWs in front of project properties was minimized as much as possible.

Prior to construction, Madrone conducted a tree survey within the project boundary. The survey included trees and shrubs that were larger than 6 inches in diameter. As part of the survey, Madrone assessed the health of each tree and provided recommendations as to whether the tree was healthy enough to survive construction activities or should be removed and replaced.

Site preparation at individual properties included a topographical survey to document existing topographic conditions and site features. Then, a pre-construction walk-through led by MFA and AEC was conducted prior to construction to inform homeowners and tenants about construction

procedures and schedules. During the walk-through, owners and tenants were given a site-specific construction schedule and instructions for removing miscellaneous items from construction areas. If owners were unable to move larger items, both AEC and the Port offered assistance and temporary storage of large or heavy items (i.e., play structures). Owners were also asked to temporarily transplant small shrubs and flowers into pots if they did not want them removed during construction. Trees and larger shrubs were marked for removal, transplant, or protection in place, consistent with the design and pre-construction walk-through. Temporary construction fencing was used where necessary to keep the public and animals out of work zones.

4.1.1 Pre-Construction Structural Survey

Livermore conducted a pre-construction inspection of all existing building foundations and structures (e.g., sidewalks, storage sheds) to document the condition prior to restoration activities. An interior inspection of basement walls was included for properties with basements. A pre-construction survey for each property was documented on an individual survey report; these reports are provided in Appendix A.

4.1.2 Demolition

Demolition of permanent structures was minimized as much as possible. Necessary removal of ground coverings, including existing sod, gravel, pavers, and plants, was completed in conjunction with excavation. To gain or improve property access, AEC removed existing fences and planter boxes by hand or by mini-excavator, depending on access and proximity to structures. In some cases, items removed from the individual properties were preserved by AEC for reuse. All preserved items were stored in the construction staging area until restoration.

4.1.3 Tree and Stump Removal

Most shrubs and small trees were easily removed with excavated soil. Additional effort was required where root systems and stumps extended below the designated depth of excavation. For trees with smaller trunks but larger root systems, an excavator was used to dig around the root system and rip out the growth. Where stumps were too large to be handled by the excavators or extended far below the excavation depth, a stump grinder was used to remove the stump to approximately 6 inches below post-excavation grade. Debris from the stump-grinding process was removed with the excavated soil. Where trees were too large for an excavator or stump grinder, AEC contracted with a tree-removal company to remove the trees.

4.2 Erosion- and Sediment-Control Best Management Practices

AEC submitted a temporary erosion control plan and provided a certified erosion and sediment control lead for the duration of the project. AEC also completed a minimum of weekly inspections and submitted monthly discharge monitoring reports to Ecology to comply with the reporting requirements of the permit.

The nature of the excavated soil allowed only minimal tolerance for sediment-laden runoff, particularly during the remediation portion of the project. Techniques used to minimize erosion and contain loose sediment included the following:

- Straw wattles were installed along the toes of slopes.
- Loose straw or gravel was laid down in muddy, highly trafficked areas, such as the construction staging area.
- Catch basin inserts were installed in all project-area catch basins, and bio bags were installed at project-area curb inlets.
- Excavation areas and stockpiles were covered with plastic sheeting overnight and during extended periods of downtime.
- Plastic sheeting was used to cover roadway surfaces during truck loading and offloading activities.
- Roadways were vacuum-swept daily.
- Boot wash stations were placed on properties during active remediation to keep workers from tracking sediment off property.

In addition to sediment control, dust-control efforts minimized potential exposure via the air. During the first week of the project, AEC used particle air monitors to track dust. AEC's air monitoring results indicated that dust masks would not be required during excavation activities if dust-suppression techniques were properly implemented. Typical dust-suppression techniques used throughout the project included:

- Water was sprayed on excavated areas and stockpiled soil.
- Excavation was prioritized after rain events.
- Daily vacuum sweeping of roadways was conducted to minimize dust accumulation.

4.3 General Remediation Excavation

The excavation of contaminated soil during 2016 began on July 20 and continued through September 30. Excavation continued at the remaining properties and ROWs in June 2017 and was completed by September 2017. Based on sampling results obtained as part of RI and pre-design activities, individual property excavation depths extended to 12 or 18 inches below ground surface (MFA, 2016a,b). The base of each excavation was surveyed to verify that the required excavation depth had been met. The engineer reviewed and approved the survey information.

4.3.1 Restricted-Access Remediation Excavation

Restricted-access excavations were areas adjacent to existing structures, in root-protection zones (RPZs), and in areas with limited physical access. Restricted-access areas and standard details were included in the construction drawings. Details included recommended excavation offsets and slopes

away from existing structures. In areas of restricted-access excavation, excavation was performed with a mini-excavator or by hand. Restricted-access areas and the associated depth of excavation are included in the table below.

Restricted-Access Excavation Summary
Port of Ridgefield

Location	Excavation Offset	Hand Dig Allowed?	Excavation Slope Adjacent to Offset
Excavation near residential footing	2 feet	Yes, within offset	1:1 to max depth of 18 inches
Excavation near basement wall	2 feet	Yes, within offset	1:1 to max depth of 18 inches
Excavation near post	2 feet	Yes, within offset	1:1 to max depth of 18 inches
Excavation near segmental retaining wall	4 feet	Yes, only within offset on high side	1:1 to required depth on low side
Excavation between curb and sidewalk	0 inches	N/A	1:1 to design depth
Excavation adjacent to existing fence to remain	0 inches	N/A	1:1 to design depth

Various unknown utilities that had not been identified by the public and private utility locates were encountered during excavation. Particular instances are discussed in the individual property summaries included as Appendix H. Typically, when utilities were encountered, the excavation was offset 2 feet on each side of the utility and the depth of excavation was held to between 4 and 6 inches above the utility.

On multiple occasions, dry wells and abandoned sanitary septic tanks were encountered during excavation. Discovered tanks were inspected by All-Out to confirm that the tanks had not been structurally damaged during excavation operations. Homeowners were notified of the condition and location of the tanks.

4.3.2 Tree-Root-Protection Zones

Consistent with Madrone's arborist's report, tree RPZs were designated on the restoration plans. RPZs typically coincided with the breadth of the branch canopy (i.e., the drip line). In these areas, special construction techniques were used during excavation to limit the potential damage to established roots.

To the amount practicable, heavy equipment was restricted from RPZs. Any excavation required in an RPZ was performed under the supervision and/or direction of a certified arborist. Madrone

provided a certified arborist for construction oversight for the soil removal and placement in RPZs to ensure that the tree preservation standards outlined in the contract documents were being upheld. Generally, soil removal and placement in the RPZs were conducted by hand digging or by a mini-excavator to the maximum depth possible while still protecting the tree. Excavation depths in the RPZs typically did not exceed 6 inches.

After excavation, exposed roots were protected with geotextile fabric until the area was backfilled. The geotextile was watered as needed to maintain moisture and minimize root shock.

4.4 Loading Procedures

To the extent possible, excavated soil was loaded directly into trucks and trailers (truck and pup) and hauled off site for disposal. Given the limited access, excavated soil from multiple adjacent properties was sometimes consolidated and stockpiled on a single property that was easily accessible to the haul trucks. Plastic sheeting was placed under trucks and trailers during loading activities to minimize the tracking of contaminated material onto roadway surfaces. Traffic control was implemented by AEC and PBI as necessary.

4.5 Contaminated Soil Transport and Disposal

Excavated soil was loaded into trucks and trailers owned and operated by Dietrich Trucking, LLC. In accordance with the Ecology-approved waste determination memorandum (MFA, 2013), excavated soil was transported to Wasco County Landfill in The Dalles, Oregon (a Subtitle D landfill facility) for disposal. Trucks hauling excavated soil were tarped to minimize loss of material during transport.

4.5.1 Weight and Extents of Material Disposed Of

A total of 7,728 tons (5,038 in 2016 and 2,690 in 2017) of contaminated soil and associated debris (i.e., vegetation and demolition debris) was hauled off site and disposed of at the Wasco County Landfill. Shipping documents (consisting of truck scale tickets) are kept on file by the engineer.

4.6 Clean Backfill

Placement of clean backfill material proceeded in stages following the confirmation of remediation excavation depths on individual properties. Clean backfill materials included clean topsoil and driveway gravel (crushed surface base course).

PBI placed the backfill material to the design grade, using front-end loaders, skid steers, and hand tools. The clean backfill was compacted by incidental tracking of rolling stock used by PBI, while crushed aggregate was compacted with a tamping rammer. Survey measurements, provided in electronic format to MFA, ensured adequate backfill quantity and appropriate drainage. In some cases, field alterations were made in order to accommodate a homeowner's request or conditions that had changed since the design was finalized.

4.7 Landscaping and Restoration

MFA provided restoration design to the properties on an individual basis. Restoration plans were completed by the LA and approved by the homeowner prior to construction. Homeowners were provided with two options for landscape restoration: (1) restore with lawn and mulched bed(s), or (2) restore with the same or in-kind landscaping that was to be removed. Primary restoration design elements included the following:

- Preservation of trees where possible and approved by homeowner
- Replacement of removed trees
- Placement of sod or hydroseeding to restore lawns and other ground-covering material
- Installation of hardy native and adaptive plants
- Installation of 3-foot-high or 6-foot-high cedar or chain-link fencing to replace existing fencing
- Installation of small retaining walls to maintain drainage and access

Ground covering material included:

- Hydroseed
- Sod
- Pathway gravel
- Wood chips
- Walk-on bark mulch

Ground covers, shrubs, and trees were installed in accordance with the contract drawings to the extent possible. During construction, when daytime temperatures were too hot for effective transplanting, shrubs and trees originally identified for transplant in the contract drawings were either protected in place or replaced in kind. Plant substitutions for species that were not available at the time of construction were reviewed and approved by the homeowner and the LA.

The restoration portion of the project carries a warranty by the landscaping contractor, PBI. Lawn warranties were extended until either September 30 or for 30 days (whichever would come later) after installation. During this time, PBI maintained the lawn to ensure sufficient root establishment, which was field-verified by MFA. Lawn maintenance included watering and mowing as needed. Owners were instructed to keep people and pets off the lawns during the maintenance period or risk voiding the lawn warranty. Lawn maintenance became the responsibility of the homeowner after the 30-day maintenance period.

PBI also watered shrubs and trees during the maintenance period. Tree and shrub maintenance also became the responsibility of the homeowner after the 30-day maintenance period. Shrubs and trees have a one-year warranty and will be replaced by PBI if they are maintained by the homeowner yet perish within the first year. Site assessments were conducted to determine if plants had successfully

established and whether homeowners were maintaining plants. If it was determined that shrubs and trees were not being maintained, the homeowner was contacted and advised on steps to ensure establishment. For some properties, PBI used the homeowner's municipal metered water to care for lawn, shrubs, and trees. Homeowners were instructed to bring their water utility bill to MFA or the Port to receive reimbursement for the entire bill during restoration.

After restoration, a final walkthrough was conducted with each homeowner to clarify that lawn and plant care was the responsibility of the homeowner following the end of the 30-day maintenance period. In some cases, it was determined that additional work (e.g., patching sod) was necessary; the work was subsequently completed by the contractor. Homeowners were given yard maintenance flyers listing lawn and plant care tips and suggesting fertilizing and maintenance activities. Homeowners signed a close-out agreement documenting that all work and maintenance on the property had been completed (or would be completed) and that the homeowner was responsible for yard maintenance.

4.8 Post-Restoration Structural Survey

Livermore also conducted a post-construction inspection of all existing building foundations and structures assessed during the pre-construction survey at each property to ensure that foundations and structures had not been damaged during remediation and restoration activities. Field reports from the followup visits are included in Appendix B.

4.9 ROW Restoration

Restoration of ROWs was designed to match pre-remediation conditions. In most cases, hydroseed was placed in locations where the ROW had been remediated. At driveways and other areas where gravel had been present before remediation, coarse gravel was placed between the street and the property to provide access and parking. PBI maintained the hydroseed until it had fully established. Some ROWs contained city-owned sidewalks. Many of these sidewalks were in poor condition before remediation activities. Where sidewalks were damaged during construction, AEC installed new sidewalk panels at no additional cost.

In the case of the remediated Railroad Avenue ROW, quarry spalls were placed in the remediated areas to manage stormwater drainage from Maple Street and North Railroad Avenue.

No catch basins, utilities, or appurtenances were installed in the ROW during restoration; existing utility features were preserved.

AEC used the Railroad Avenue ROW (south of Division Street as the construction staging area. After all construction materials were removed, AEC restored the ROW with gravel and leveled it to its approximate original grade.

5 INDIVIDUAL PROPERTY/ROW NARRATIVES

Construction of the project was completed on an individual-property basis. The attached table summarizes individual properties' completed excavation depths, the construction start date, and the conclusion of the property maintenance period. For ROWs, the maintenance period ended approximately 30 days after construction completion. Appendix H contains forms that detail site-specific observations made during the construction and maintenance periods for each individual property.

6 DOCUMENTATION AND CERTIFICATION

6.1 Property Close-Out Documentation

No actions are required for remediated properties, except for landscape plant replacement within the one-year warranty period, as needed. At the conclusion of the one-year tree and shrub warranty period, the property owner will receive a close-out package that includes the following:

- A statement of cleanup completion from Ecology
- A copy of the cleanup contract with the Ecology-approved Record Drawing
- A copy of the close-out agreement documenting that all work and maintenance on the property have been completed

6.2 Certification Statement

The construction oversight and project engineering services described in this report were performed by MFA on behalf of the Port for the Off-Property Portion Interim Action. Based on the observations made during construction, the survey, the results, and the final product constructed on the site, it is the opinion of the engineer that the Off-Property Portion Interim Action has been constructed in substantial compliance with the plans, the specifications, and the IAWP (MFA, 2016a).

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

Ecology. 2013. Consent Decree No. 13-2-03830-1, former Pacific Wood Treating Co. site. Washington State Department of Ecology. November 5.

MFA. 2013. Memorandum (re: upland off-property dioxin waste designation, former Pacific Wood Treating site, Ridgefield, Washington, Agreed Order No. 01TCPSR-3119) to C. Rankin, Washington State Department of Ecology, from M. Novak and S. Taylor, Maul Foster & Alongi, Inc., Portland, Oregon. January 29.

MFA. 2016a. Off-property portion interim action work plan. Prepared for Port of Ridgefield. Maul Foster & Alongi, Inc. April 4.

MFA. 2016b. Off-property portion phase 2 rights-of-way remedial investigation results and proposed yard sampling approach. October 4.

TABLE

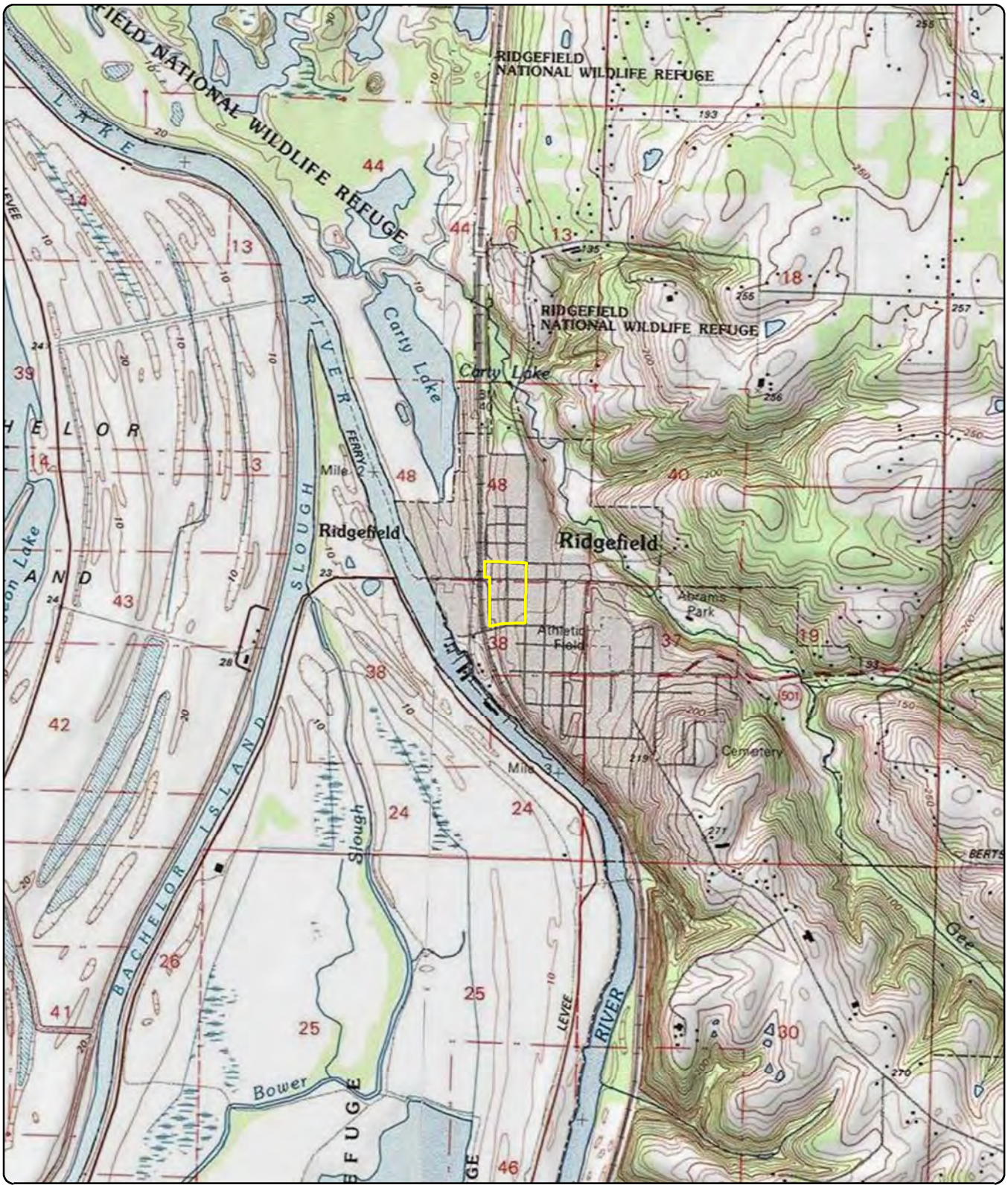
Table
Property Summary
Off-Property Portion Interim Action
Port of Ridgefield

Property ID	Construction Start Date	Completion of Maintenance Period Date	Final Walkthrough Date	Remedial Design Excavation Depth
Property 001	20-Oct-16	09-Dec-16	14-Dec-16	12"
Property 002	14-Jun-17	03-Aug-17	17-Aug-17	12"
Property 003	19-Jun-17	12-Aug-17	18-Aug-17	12"
Property 004	15-Aug-17	02-Oct-17	29-Aug-17	12"
Property 005	20-Jul-16	30-Sep-16	30-Sep-16	18"
Property 006	20-Jul-16	01-Oct-16	04-Oct-16	18"
Property 007	26-Jul-16	01-Oct-16	04-Oct-16	18"
Property 012	26-Jul-26	01-Oct-16	04-Oct-16	12"
Property 013	04-Aug-16	01-Oct-16	04-Oct-16	18"
Property 014	09-Aug-16	21-Oct-16	21-Oct-16	18"
Property 015	05-Aug-16	01-Oct-16	04-Oct-16	18"
Property 016	10-Aug-16	01-Oct-16	04-Oct-16	18"
Property 017	18-Aug-16	30-Oct-16	20-Oct-16	12"
Property 018	11-Aug-16	20-Oct-16	20-Oct-16	12"
Property 019	22-Aug-16	18-Oct-16	19-Oct-16	18"
Property 020A	23-Aug-16	18-Oct-16	19-Oct-16	12"
Property 020B	17-Jul-17	27-Aug-17	24-Aug-17	12"
Property 023	07-Jun-17	27-Aug-17	28-Aug-17	12"
Property 024	19-Sep-16	30-Nov-16	29-Nov-16	12"
Property 025	19-Sep-16	09-Dec-16	14-Dec-16	12"
Property 028B	11-Jul-17	24-Aug-17	29-Aug-17	18"
Property 029A	27-Jul-17	25-Sep-17	06-Sep-17	12"
Property 029B	24-Jul-17	07-Sep-17	06-Sep-17	12"
Property 032	05-Jul-17	17-Aug-17	17-Aug-17	12"
Property 035	15-Sep-16	15-Nov-16	15-Nov-16	12"
Property 036	29-Aug-16	15-Nov-16	15-Nov-16	12"
Property 037	31-Aug-16	22-Nov-16	18-Nov-16	12"
Property 038	02-Sep-16	30-Nov-16	29-Nov-16	12"
Property 039	02-Sep-16	22-Nov-16	18-Nov-16	12"
ROW 004	23-Sep-16	--	--	12"
ROW 008	23-Sep-16	--	--	18"
ROW 009	04-Oct-16	--	--	12"
ROW 010	04-Oct-16	--	--	12"
ROW 011	25-Aug-16	--	--	18"
ROW 020B	17-Jul-17	--	--	18"
ROW 021	26-Sep-16	--	--	12"

Table
Property Summary
Off-Property Portion Interim Action
Port of Ridgefield

Property ID	Construction Start Date	Completion of Maintenance Period Date	Final Walkthrough Date	Remedial Design Excavation Depth
ROW 022	26-Sep-16	--	--	12"
ROW 026	08-Aug-17	--	--	18"
ROW 027	27-Sep-16	--	--	12"
ROW 028A	09-Aug-17	--	--	12"
ROW 030	28-Sep-16	--	--	12"
ROW 031	28-Sep-16	--	--	12"
ROW 033	28-Sep-16	--	--	12"
ROW 034	29-Sep-16	--	--	12"
ROW Mill St	27-Jun-17	--	--	12"
ROW Railroad Ave	10-Oct-16	--	--	12"

FIGURES



Source: Topographic Quadrangle obtained from ArcGIS Online Services/NGS-USGS TOPO! US Geological Survey (1999)
7.5-minute topographic quadrangle: Ridgefield
Address: Lake River Industrial Site
111 W. Division Street, Ridgefield, WA 98642
Section: 24 Township: 4N Range: 1W Of Willamette Meridian

Legend

Phase I Off-Property Portion Boundary

Figure 1-1
Interim Action Location
Former PWT Site
Ridgefield, Washington

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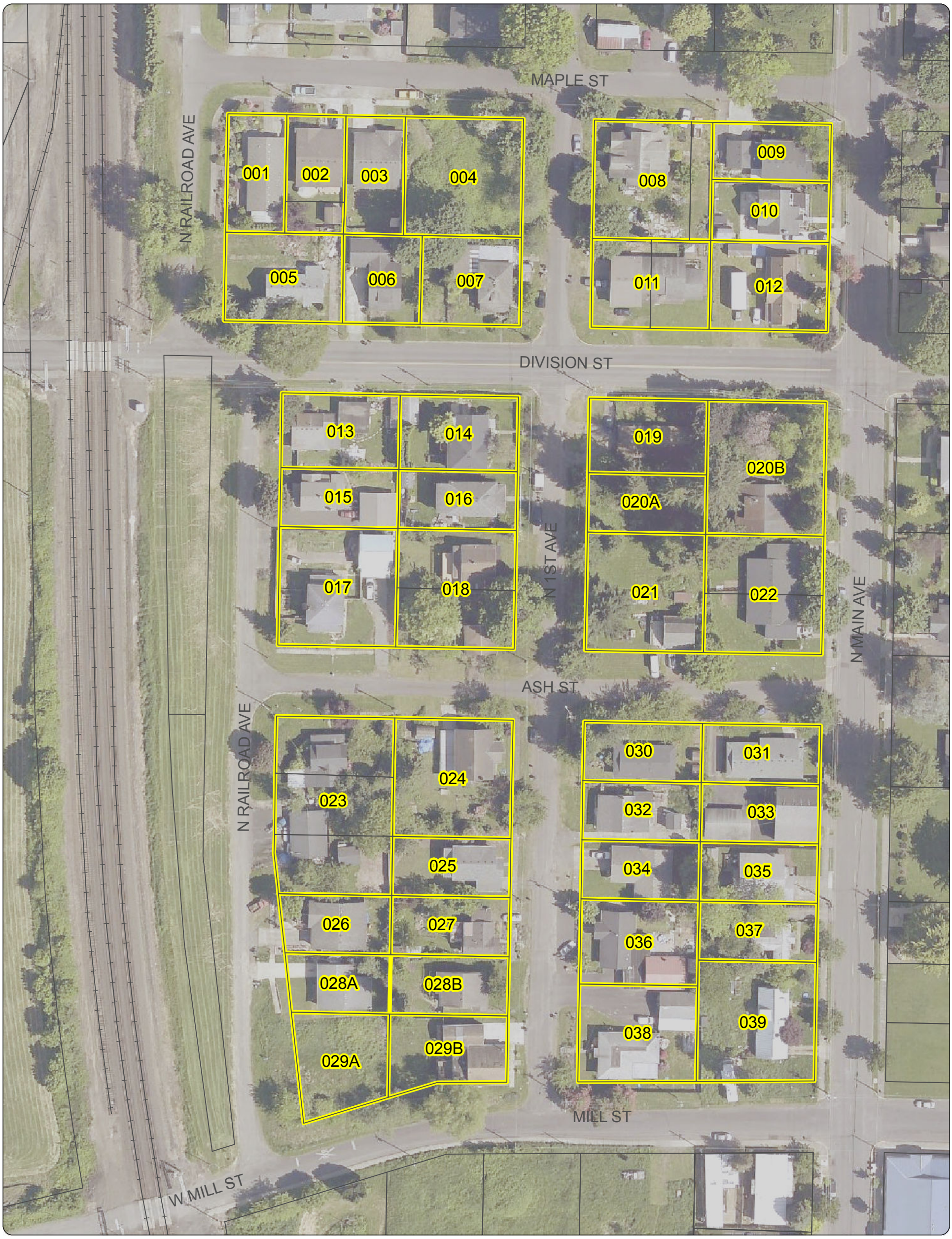
0 1,000 2,000
Feet

Path: X:\9003.01 Port of Ridgefield\40\Projects\06\Sediment Remedy\Fig1-1_Site Location.mxd
Print Date: 3/19/2018
Approved By: J. King
Produced By: mjosef
Project: 9003.01.20



Source: Aerial photograph (2010) obtained from Esri ArcGIS Online. Taxlots (2014) from Clark County GIS.

Legend

Property Boundary

Tax Lots

Figure 1-2
Property and Tax Lot Boundaries

Former PWT Site
Ridgefield, Washington

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Print Date: 12/13/2017
Approved By: pwiescher
Produced By: mjosef
Project: 9003.01.39

Source: Aerial photograph (May 2014) obtained from Clark County GIS.

Legend

- 2016 Cleanup Properties
- 2017 Cleanup Properties
- No Cleanup Needed
- 2016 ROW Cleanup Area (Completed)
- 2017 ROW Cleanup Area (Completed)

Figure 1-3
Interim Action Areas

Former PWT Site
Ridgefield, Washington

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Print Date: 3/19/2018
Approved By: P. Wiescher
Produced By: mjosef
Project: 9003.01.39

RECORD DRAWINGS

OFF-PROPERTY PORTION INTERIM ACTION

PROPERTIES COMPLETED IN 2016

PREPARED FOR:

PORT OF RIDGEFIELD

LOCATED IN SEC. 24 T. 4 N., R. 1 W., W.M., CLARK COUNTY, RIDGEFIELD, WASHINGTON

Know what's **below.** **Call** before you dig.

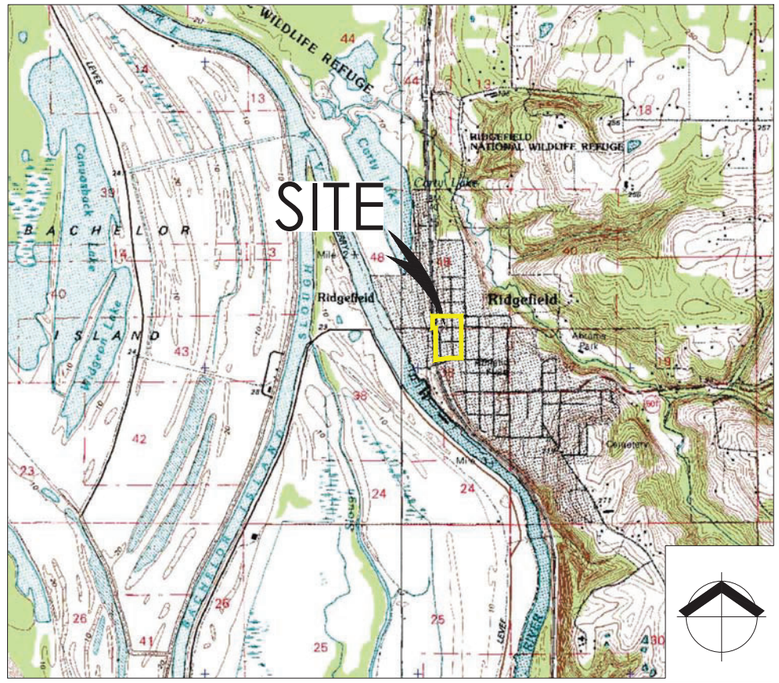
PROJECT CONTACTS

CONTRACTING AGENCY	CIVIL ENGINEER
PORT OF RIDGEFIELD 111 WEST DIVISION ST RIDGEFIELD, WASHINGTON, 98642 PHONE: (360) 887-3873 CONTACT: LAURIE OLIN, DIRECTOR OF OPERATIONS	MAUL FOSTER & ALONGI, INC. 400 E. MILL PLAIN BOULEVARD, SUITE 400 VANCOUVER, WASHINGTON 98660 PHONE: (360) 694-2691 CONTACT: LINDSEY CROSBY
SURVEYOR	**WASHINGTON DOE**
KLEIN & ASSOCIATES, INC 2517 252ND AVE, CAMAS, WASHINGTON, 98607 PHONE: (360) 687-0500 CONTACT: JAMES KLEIN	TOXICS CLEANUP PROGRAM VANCOUVER FIELD OFFICE 2108 GRAND BLVD VANCOUVER, WASHINGTON 98661 PHONE: (360) 690-4795 CONTACT: CRAIG RANKINE

PROJECT SUMMARY

PROJECT WORK:
PROJECT INCLUDES EXCAVATION AND REMOVAL OF DIOXIN CONTAMINATED SOIL FROM PRIVATE PROPERTIES AND ASSOCIATED RIGHT-OF-WAYS. DIOXIN CONTAMINATION IS A RESULT OF OPERATIONAL ACTIVITIES AT THE FORMER PACIFIC WOOD TREATING FACILITY LOCATED AT 111 WEST DIVISION STREET IN RIDGEFIELD, WASHINGTON.

SITE ADDRESS:
THE CLEANUP PROPERTIES INCLUDE 48 TAX LOTS EAST OF MAIN AVENUE AND SOUTH OF MILL STREET IN RIDGEFIELD, WASHINGTON.



VICINITY MAP

NOT TO SCALE

GENERAL NOTES

1. SURVEY PERFORMED BY KLEIN & ASSOCIATES, INC. IN 2016.
2. HORIZONTAL DATUM: WASHINGTON STATE PLANE COORDINATE SYSTEM SOUTH ZONE, NAD 83/91. ELEVATION DATUM: NAVD 88
3. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION. A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 (UTILITY NOTIFICATION CENTER) FOR LOCATION MARK-UP OF EXISTING UTILITIES.
4. ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE LATEST STANDARDS AND PRACTICES OF THE CITY OF RIDGEFIELD AND THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" PREPARED BY WSDOT/APWA.
5. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
6. ANY CHANGES TO THE DESIGN AND/OR CONSTRUCTION SHALL BE APPROVED BY THE PORT OR THE ENGINEER.
7. APPROVAL OF THESE PLANS DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION NOT SPECIFICALLY SHOWN ON THE PLANS. PLANS FOR STRUCTURES SUCH AS BRIDGES, BUILDINGS, TANKS, VAULTS, ROCKERIES, AND RETAINING WALLS MAY REQUIRE A SEPARATE REVIEW AND APPROVAL BY THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.
8. A COPY OF THESE APPROVED PLANS SHALL BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS AND PERMITS NECESSARY TO PERFORM THE WORK.
10. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING AND STAKING.
11. PUBLIC AND PRIVATE DRAINAGE WAYS SHALL BE PROTECTED FROM POLLUTION. NO MATERIAL IS TO BE DISCHARGED TO OR DEPOSITED IN STORMWATER SYSTEMS THAT MAY RESULT IN VIOLATION OF STATE OR FEDERAL WATER QUALITY STANDARDS.
12. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL HAVE AN APPROVED WORK PERMIT PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN THE RIGHT-OF-WAY.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES ON THE ADJACENT PUBLIC STREETS.
14. ANY PUBLIC OR PRIVATE CURB, GUTTER, SIDEWALK, OR ASPHALT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO CITY OF RIDGEFIELD STANDARDS AND PRACTICES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WATER, SANITARY SEWER, STORMWATER, POWER, TELEPHONE, CABLE TV, GAS, IRRIGATION, AND STREET LIGHTING. THE CONTRACTOR SHALL NOTIFY RESIDENTS AND BUSINESSES 48 HOURS IN ADVANCE OF ANY WORK AFFECTING ACCESS OR SERVICE AND SHALL MINIMIZE INTERRUPTIONS TO DRIVEWAYS FOR RESIDENTS AND BUSINESSES ADJACENT TO THE PROJECT.
16. ANY DISTURBANCE OR DAMAGE TO OTHER PROPERTY ON ADJACENT PARCELS SHALL BE REPAIRED OR RESTORED TO ORIGINAL CONDITION.

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D1.1	RESTORATION STANDARD DETAILS
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C04.1	ROW 004 REMEDIATION AND RESTORATION PLAN
C05.1	PROPERTY 005 REMEDIATION AND RESTORATION PLAN
C06.1	PROPERTY 006 REMEDIATION AND RESTORATION PLAN
C07.1	PROPERTY 007 REMEDIATION AND RESTORATION PLAN
C08.1	ROW 008 REMEDIATION AND RESTORATION PLAN
C09.1	ROW 009 AND 010 REMEDIATION AND RESTORATION PLAN
C11.1	ROW 011 REMEDIATION AND RESTORATION PLAN
C12.1	PROPERTY 012 REMEDIATION AND RESTORATION PLAN
C13.1	PROPERTY 013 REMEDIATION AND RESTORATION PLAN
C14.1	PROPERTY 014 REMEDIATION AND RESTORATION PLAN
C15.1	PROPERTY 015 REMEDIATION AND RESTORATION PLAN
C16.1	PROPERTY 016 REMEDIATION AND RESTORATION PLAN
C17.1	PROPERTY 017 REMEDIATION AND RESTORATION PLAN
C18.1	PROPERTY 018 REMEDIATION AND RESTORATION PLAN
C19.1	PROPERTY 019 REMEDIATION AND RESTORATION PLAN
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C22.1	ROW 022 REMEDIATION AND RESTORATION PLAN
C24.1	PROPERTY 024 REMEDIATION AND RESTORATION PLAN
C25.1	PROPERTY 025 REMEDIATION AND RESTORATION PLAN
C27.1	ROW 027 REMEDIATION AND RESTORATION PLAN
C30.1	ROW 030 REMEDIATION AND RESTORATION PLAN
C31.1	ROW 031 & 033 REMEDIATION AND RESTORATION PLAN
C34.1	ROW 034 REMEDIATION AND RESTORATION PLAN
C35.1	PROPERTY 035 REMEDIATION AND RESTORATION PLAN
C36.1	PROPERTY 036 REMEDIATION AND RESTORATION PLAN
C37.1	PROPERTY 037 REMEDIATION AND RESTORATION PLAN
C38.1	PROPERTY 038 REMEDIATION AND RESTORATION PLAN
C39.1	PROPERTY 039 REMEDIATION AND RESTORATION PLAN
C40.1	RR AVE ROW REMEDIATION AND RESTORATION PLAN
L01.0	PROPERTY 001 PLANTING PLAN
L05.0	PROPERTY 005 PLANTING PLAN
L06.0	PROPERTY 006 PLANTING PLAN
L07.0	PROPERTY 007 PLANTING PLAN
L12.0	PROPERTY 012 PLANTING PLAN
L13.0	PROPERTY 013 PLANTING PLAN
L14.0	PROPERTY 014 PLANTING PLAN
L15.0	PROPERTY 015 PLANTING PLAN
L16.0	PROPERTY 016 PLANTING PLAN
L17.0	PROPERTY 017 PLANTING PLAN
L18.0	PROPERTY 018 PLANTING PLAN
L19.0	PROPERTY 019 PLANTING PLAN
L20A.0	PROPERTY 020A PLANTING PLAN
L24.0	PROPERTY 024 PLANTING PLAN
L25.0	PROPERTY 025 PLANTING PLAN
L35.0	PROPERTY 035 PLANTING PLAN
L36.0	PROPERTY 036 PLANTING PLAN
L37.0	PROPERTY 037 PLANTING PLAN
L38.0	PROPERTY 038 PLANTING PLAN
L39.0	PROPERTY 039 PLANTING PLAN

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360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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---	06/17/2016	BID ADDENDUM NO. 2

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
COVER
SHEET
C0.0

PLOTTED ON: 2018-04-04 12:27 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\Off Interim Action\PLANS\2016\RECORD DRAWINGS\C0.0 COVER.dwg

ABBREVIATIONS

AVE	AVENUE
CIP	CAST IN PLACE
CMU	COCNRETE MASONRY UNITS
CONC	CONCRETE
CSBC	CRUSHED SURFACING BASE COURSE
DIA	DIAMETER
DWG	DRAWING
EG	EXISTING GRADE
EXTG	EXISTING
G.C.	GENERAL CONTRACTOR
GAL	GALLON
GRDN	GARDEN
GRVL	GRAVEL
J. MAPLE	JAPANESE MAPLE
N	NORTH
NTS	NOT TO SCALE
OC	ON CENTER
PIP	PROTECT IN PLACE
PSI	POUND PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RHOD	RHODODENDRON
SQ. FT.	SQUARE FEET
ST	STREET
TRI	TRIANGULAR
TYP	TYPICAL
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

GENERAL LEGEND

GAS/POWER/TELEPHONE SYMBOLS

SYMBOL EXIST.	DESCRIPTION
EM	ELECTRICAL METER
GM	GAS METER
GV	GAS VALVE
	UTILITY POLE
	UTILITY POLE ANCHOR
	LIGHT POLE

WATER SYMBOLS

SYMBOL EXIST.	DESCRIPTION
WM	WATER METER
	FIRE HYDRANT
	IRRIGATION SPRINKLER
W/V	WATER VALVE

MISCELLANEOUS SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		MONITORING WELL
		SIGN
		INLET PROTECTION PILLOW
		TREE TO BE REMOVED
		TREE TO BE TRANSPLANTED
		TREE TO REMAIN
		ROOT PROTECTION ZONE

DETAIL NUMBER

X
C1.X

DETAIL REFERENCE SHEET

TYPICAL DETAIL CALLOUT

SURVEY SYMBOLS

SYMBOL THEOR./ EXIST.	SYMBOL FOUND/ PROP.	DESCRIPTION
		MONUMENT
		CONTROL POINT

SANITARY/STORM SEWER SYMBOLS

SYMBOL EXIST.	DESCRIPTION
	SAN. SEWER CLEAN OUT
	SAN. SEWER MANHOLE
	STORM DRAIN CATCH BASIN
	STORM DRAIN MANHOLE

EXISTING GRADE MAJOR CONTOUR	20
EXISTING GRADE MINOR CONTOUR	21
EXISTING STORM DRAIN PIPE	SD_x
EXISTING WATER PIPE	W_x
EXISTING SANITARY SEWER PIPE	SS_x
EXISTING OVERHEAD POWER	P
EXISTING UNDERGROUND POWER	E_x
EXISTING UNDERGROUND TELEPHONE	T
EXISTING UNDERGROUND GAS	G
EXISTING CONCRETE SURFACING	
EXISTING GRAVEL SURFACING	
EXISTING BUILDING	
EXISTING EDGE OF ASPHALT	
EXISTING FENCE LINE	X X
EXISTING ROAD CENTERLINE	
EXISTING RIGHT-OF-WAY	
EXISTING PROPERTY LINE	PL

PROPOSED GRADE MAJOR CONTOUR (5.0' INTERVAL)	20
PROPOSED GRADE MINOR CONTOUR (1.0' INTERVAL)	21
PROPOSED SOIL REMOVAL AREA	
PROPOSED SOIL REMOVAL AREA - RESTRICTED ACCESS	
PROPOSED REPLACEMENT TOPSOIL	
PROPOSED CONCRETE SURFACING	
PROPOSED GRAVEL WALKWAY SURFACING	
PROPOSED GRAVEL DRIVEWAY/PAD SURFACING	
PROPOSED WOODCHIP SURFACING	
PROPOSED FENCE LINE	

RECORD DRAWING

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VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
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PROFESSIONAL ENGINEER

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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE

SHEET TITLE
MASTER LEGEND

SHEET
C0.1

PLOTTED ON: 2018-03-18 7:53 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2018\2016 RECORD DRAWINGS\C0.1 MASTER LEGEND.dwg

LEGEND

- 2016 RESTORATION AREA
- 2017 RESTORATION AREA
- PROPERTY BOUNDARY
- PROJECT BOUNDARY

NOTES

SEE INDIVIDUAL CLEANUP PLAN FOR REMEDIATION AND RESTORATION AREAS

SITES

Property ID Number	Tax Lot Parcel Number	Property Address	Owner Name
001	69314000	512 RAILROAD AVE, RIDGEFIELD, 98624	DAVIDSON DONALD L
005	69315000	4 W DIVISION ST, RIDGEFIELD, 98642	BURTON AKERS LLC (BURTON JOE)
006	69298000	8 DIVISION ST, RIDGEFIELD, 98642	HARRIS SEAN I
007	69316000	14 DIVISION ST, RIDGEFIELD, 98642	DOUGLAS JAMES & DOUGLAS PATRICIA
012	69330000	503 & 505 N MAIN AVE, RIDGEFIELD, 98642	ONEAL THOMAS R III AND CRUMPTON JANICE K
013	69416000	5 DIVISION ST, RIDGEFIELD, 98642	DAVIS DEBORAH L
014	69378000	413 N 1ST AVE, RIDGEFIELD, 98642	LUTES AMBER M & LUTES ANDREW
015	69414000	410 RAILROAD AVE, RIDGEFIELD, 98642	VAN VLYMEN ASHLEY NICOLE
016	69380000	409 N 1ST AVE, RIDGEFIELD, 98642	CLAYTON TARKALSON & BREA ROBERSON
017	69410000	6 ASH ST, RIDGEFIELD, 98642	BROWN MICHAEL JOHN & BROWN HALEE R
018	69382000	405 N 1ST AVE, RIDGEFIELD, 98642	PROUDFOOT STEPHANIE & WENTZEL FRANCO
	69384000	NA	PROUDFOOT STEPHANIE & WENTZEL FRANCO
019	69348000	412 N 1ST AVE, RIDGEFIELD, 98642	JOHNSON JODIE
020A	69350000	NA	KENWORTHY STEPHEN V
024	69386000	327 N 1ST AVE, RIDGEFIELD, 98642	MEADE CRAIG T & RICHARDS SHANNON R
025	69390000	319 N 1ST AVE, RIDGEFIELD, 98642	LASPA OSSIAN A & LASPA ROARK L
035	69362000	313 N MAIN AVE, RIDGEFIELD, 98642	PFEIFER RHONDA L
036	69370000	314 N 1ST AVE, RIDGEFIELD, 98642	COLE JONATHAN
037	69364000	309 N MAIN AVE, RIDGEFIELD, 98642	DOTTL DANA E
038	69368000	304 N 1ST AVE, RIDGEFIELD, 98642	CAMPBELL RYANN I
039	69366000	305 N MAIN AVE, RIDGEFIELD, 98642	SERFACE JUSTIN T & SERFACE RENEE M

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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

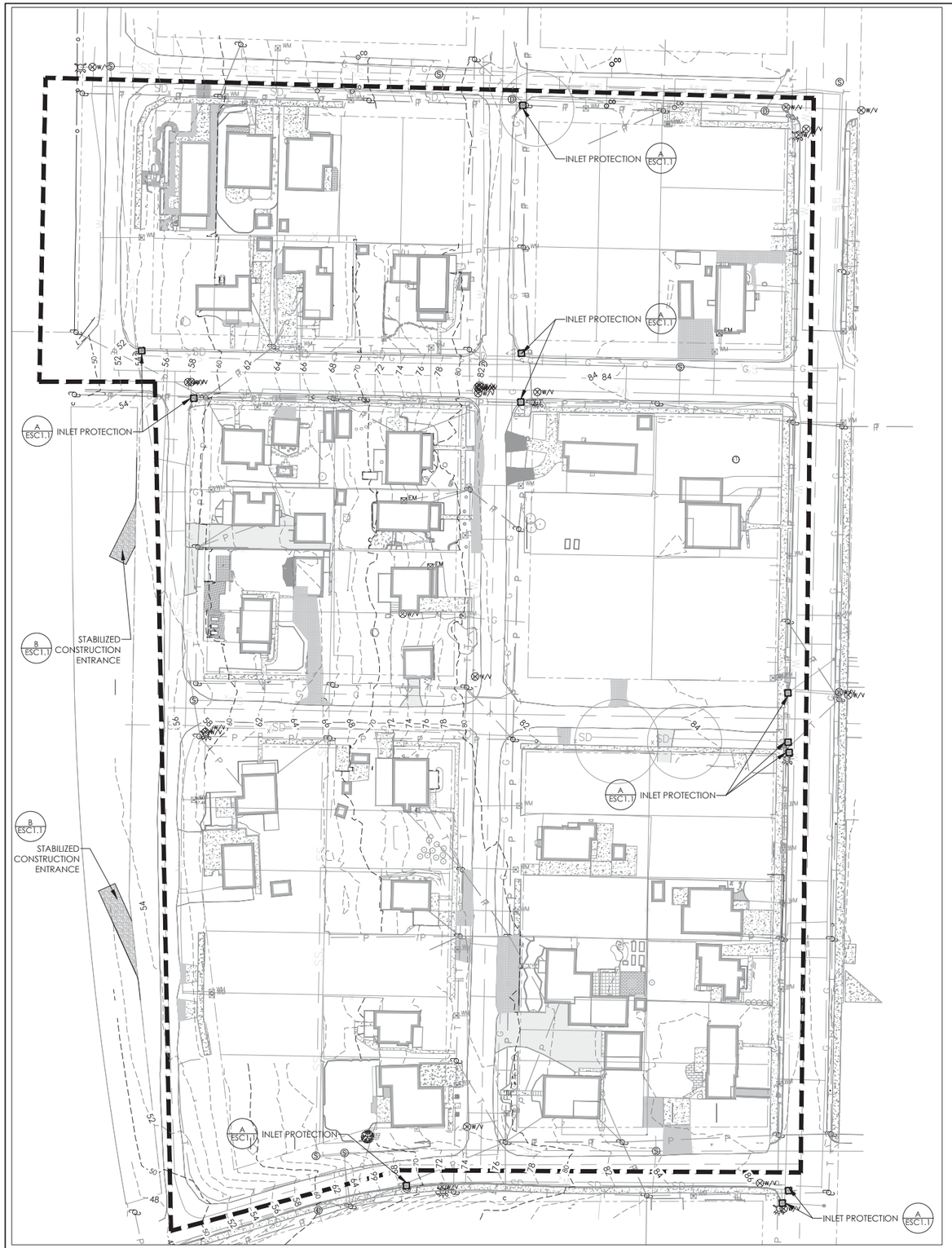
ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 60' 120'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
OVERALL PROJECT PLAN

SHEET
C0.2

PLOTTED ON: 2018.03.30 4:23 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\C0.2 OVERALL PROJECT PLAN.dwg



ESC PLAN LEGEND:

- EXISTING GRADE MAJOR CONTOUR (10' INTERVAL)
- EXISTING GRADE MINOR CONTOUR (2' INTERVAL)
- PROJECT BOUNDARY
- INLET PROTECTION

WASHINGTON STATE DEPARTMENT OF ECOLOGY & CITY OF RIDGEFIELD EROSION CONTROL NOTES

STANDARD NOTES FOR EROSION CONTROL MEASURES

1. THE IMPLEMENTATION OF THESE ESC MEASURES AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
2. THE PROJECT BOUNDARY SHOWN IN THE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED REMEDIATION LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
3. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
4. THE ESC FACILITIES SHOWN IN THE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
5. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
6. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
7. AT NO TIME SHALL CATCH BASIN FILTERS BE ALLOWED TO ACCUMULATE SEDIMENT MORE THAN ONE THIRD FULL.
8. NO WORK SHALL TAKE PLACE DURING A RAIN EVENT. PLASTIC SHEETING SHALL BE USED TO COVER OPEN EXCAVATION AREAS DURING A RAIN EVENT.
9. STABILIZED CONSTRUCTION ENTRANCES OR TRACK OFF PLATES SHALL BE INSTALLED WHERE NECESSARY AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
10. CONTRACTOR SHALL INSTALL REQUIRED BMPS IN ACCORDANCE WITH ECOLOGY'S 2014 STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.

CONTAMINATED SOIL TEMPORARY ESC MEASURE NOTES

1. DUST CONTROL: IMPLEMENT AGGRESSIVE DUST CONTROL PRIOR TO CONSTRUCTION. MAINTAIN THROUGHOUT CONSTRUCTION ACTIVITY. CONTRACTOR SHALL SUPPLY ALL EQUIPMENT AND WATER FOR DUST CONTROL AND OTHERWISE. THE PORT SHALL NOT SUPPLY THE WATER, HOSES, SPRAYERS, OR SPRINKLERS FOR DUST CONTROL OR OTHERWISE.
2. CLEAN AREA PROTECTION: PROTECT CLEAN AREAS WITH PLASTIC SHEETING PRIOR TO START OF CONTAMINATED SOIL REMOVAL.
3. BOTTOM OF EXCAVATION: THE BOTTOM OF THE EXCAVATION AREA (AND SIDEWALLS) WILL BE COVERED WITH PLASTIC SHEETING DURING A RAIN EVENT AND DURING NON-WORK DAYS. THE PLASTIC SHEETING SHALL BE PLACED AND SECURED WITH WEIGHTED MEDIA FILTER BOOMS OR OTHER METHOD APPROVED BY THE ENGINEER SO THAT WIND AND RAIN WILL NOT DISLODGE THE PLASTIC SHEETING.

RECORD DRAWING

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VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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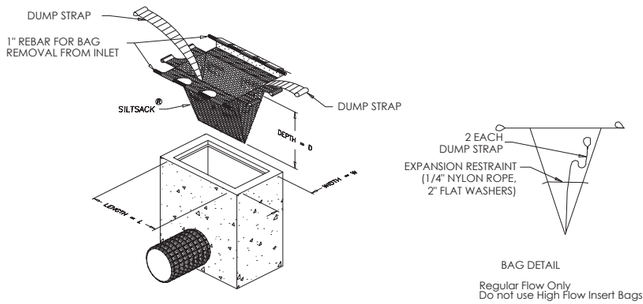
PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 50' 100'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

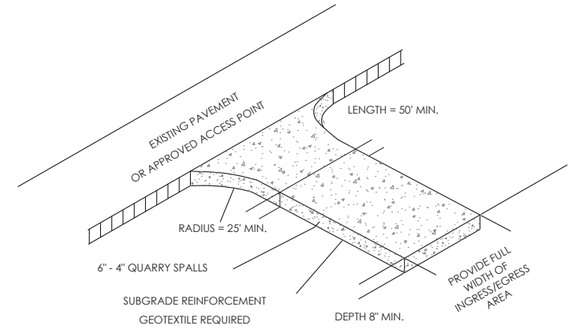
SHEET TITLE
EROSION AND SEDIMENT CONTROL PLAN

SHEET
ESC1.0

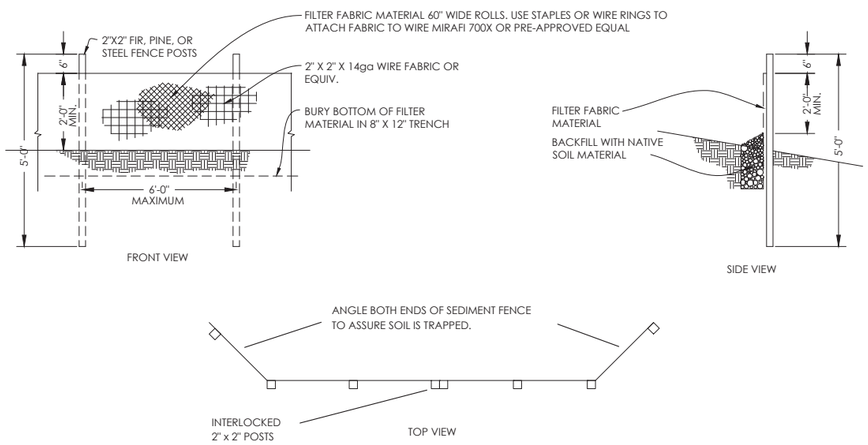
PLOTTED ON: 2018-03-18 8:02 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2018\2016 RECORD DRAWINGS\ESC1.0 ESC SITE MAP.dwg



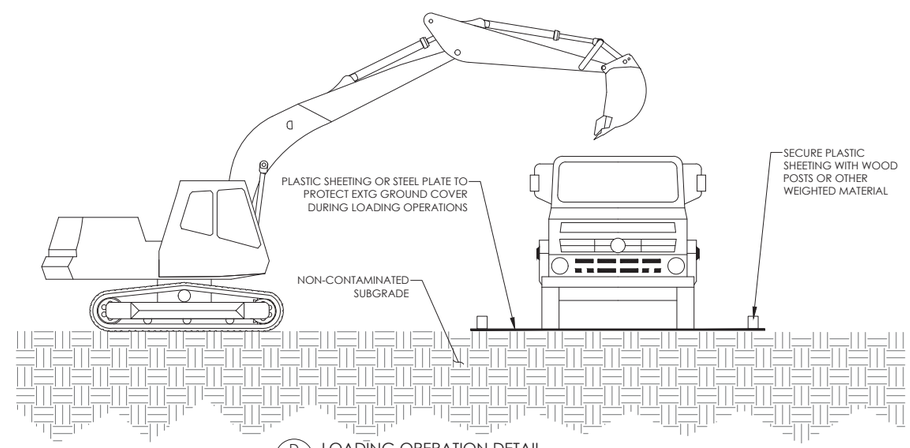
A -- INLET PROTECTION DETAIL
NTS



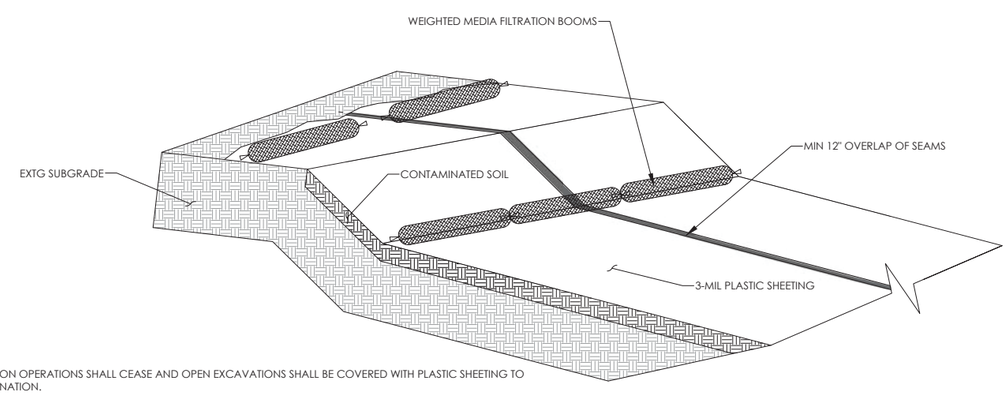
B -- STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL
NTS



C -- SILT FENCE DETAIL
NTS



D -- LOADING OPERATION DETAIL
NTS



NOTES:

1. DURING A RAIN EVENT, EXCAVATION OPERATIONS SHALL CEASE AND OPEN EXCAVATIONS SHALL BE COVERED WITH PLASTIC SHEETING TO PREVENT STORMWATER CONTAMINATION.
2. PLACE WEIGHTED MEDIA BOOMS END TO END ALONG BASE OF EXCAVATION. PLACE WEIGHTED MEDIA FILTRATION BOOMS OR SANDBAGS ALONG TOP OF EXCAVATION TO SECURE PLASTIC SHEETING.
3. REPLACE TORN SHEETS AND REPAIR OPEN SEAMS.

E -- EXCAVATION COVER DETAIL
NTS

RECORD DRAWING

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400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

JOSHUA CARSON ELLIOTT
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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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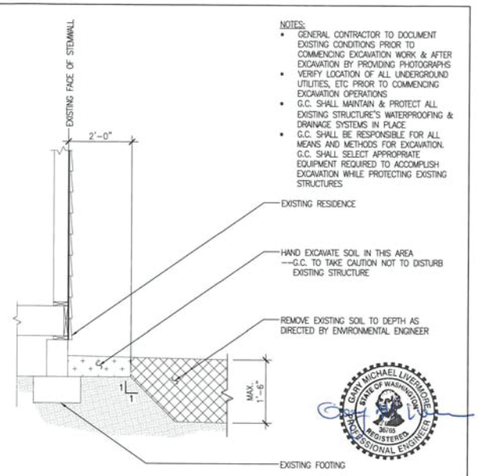
PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
EROSION AND SEDIMENT CONTROL DETAILS
SHEET
ESC1.1

PLOTTED BY: Brooke Harmon FILENAME: G:\JB_AFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2018\2018 RECORD DRAWINGS\ESC1.0 ESC SITE MAP.dwg
PLOTTED ON: 2018-03-18 8:03 PM

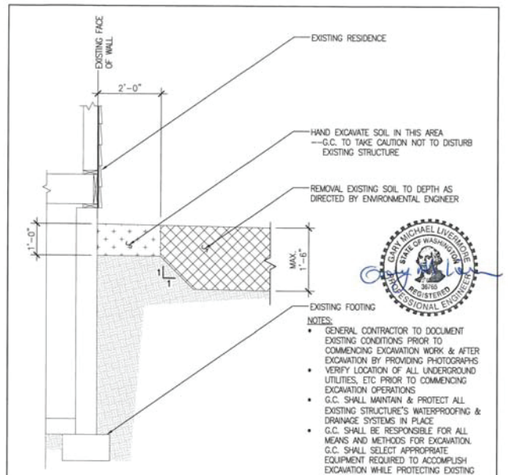


NOTES:
- GENERAL CONTRACTOR TO DOCUMENT EXISTING CONDITIONS PRIOR TO COMMENCING EXCAVATION WORK & AFTER EXCAVATION BY PROVIDING PHOTOGRAPHS
- VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, ETC PRIOR TO COMMENCING EXCAVATION OPERATIONS
- G.C. SHALL MAINTAIN & PROTECT ALL EXISTING STRUCTURE'S WATERPROOFING & DRAINAGE SYSTEMS IN PLACE
- G.C. SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS FOR EXCAVATION. G.C. SHALL SELECT APPROPRIATE EQUIPMENT REQUIRED TO ACCOMPLISH EXCAVATION WHILE PROTECTING EXISTING STRUCTURES

GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

1 SKS-1 EXCAVATION NEAR RESIDENTIAL FOOTING
1/2" = 1'-0"

DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003
DRAWING: SKS 1



NOTES:
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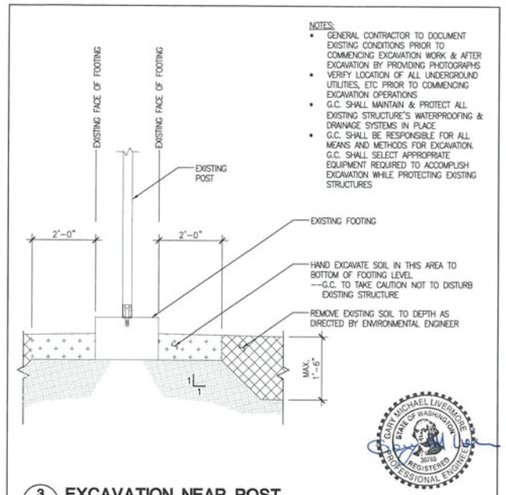
GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

2 SKS-1 EXCAVATION NEAR BASEMENT WALL
1/2" = 1'-0"

DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003
DRAWING: SKS 2



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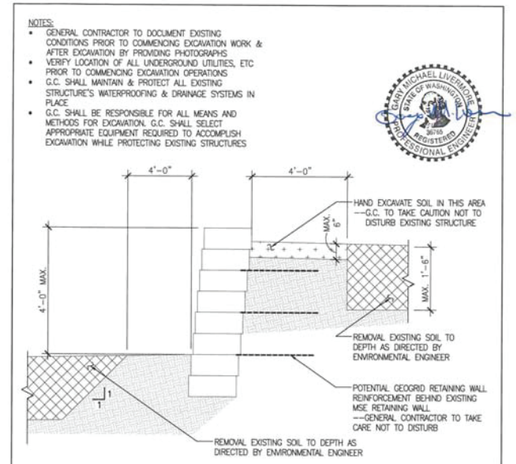
GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

3 SKS-1 EXCAVATION NEAR POST
1/2" = 1'-0"

DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003
DRAWING: SKS 3



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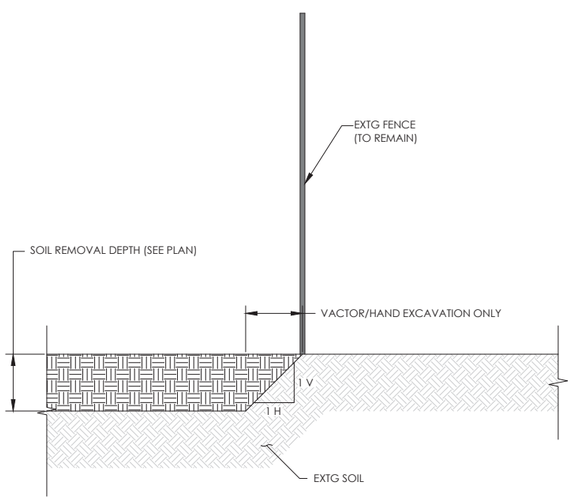
GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

4 SKS-1 EXCAVATION NEAR SEGMENTAL RETAINING WALL
1/2" = 1'-0"

DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003
DRAWING: SKS 4



A -- EXCAVATION ADJACENT TO EXTG FENCE TO REMAIN
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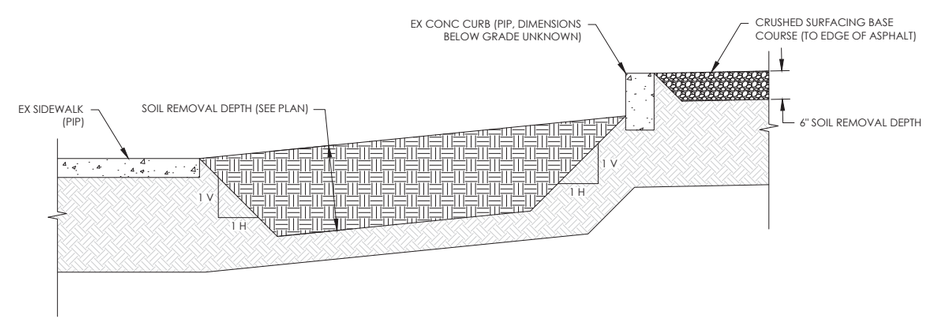

B -- EXCAVATION BETWEEN CURB & SIDEWALK DETAIL
NOT TO SCALE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

DONNA CARSON ELLIOTT — STATE OF WASHINGTON — 50320 — REGISTERED PROFESSIONAL ENGINEER

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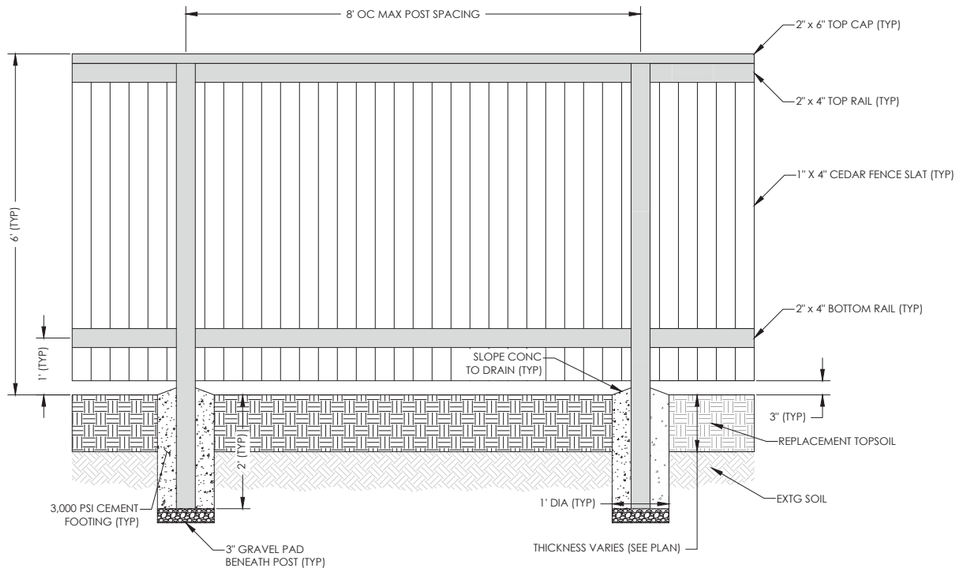
10-27-2021

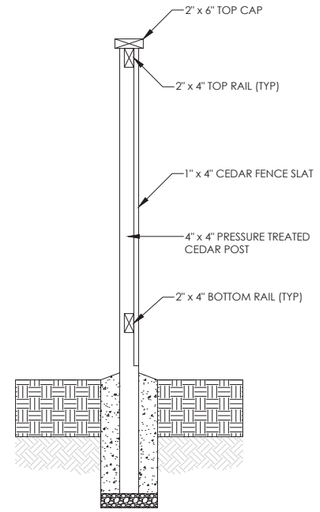
OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
---	---	---
---	---	---

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
REMEDIATION STANDARD DETAILS
SHEET
D1.0

PLOTTED ON: 2016-06-01 11:51 AM PLOTTED BY: Josh Elliott FILENAME: G:\JD_MFA Civil 3D\JD_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\IND SET\D1.0-STD-RAILS.dwg





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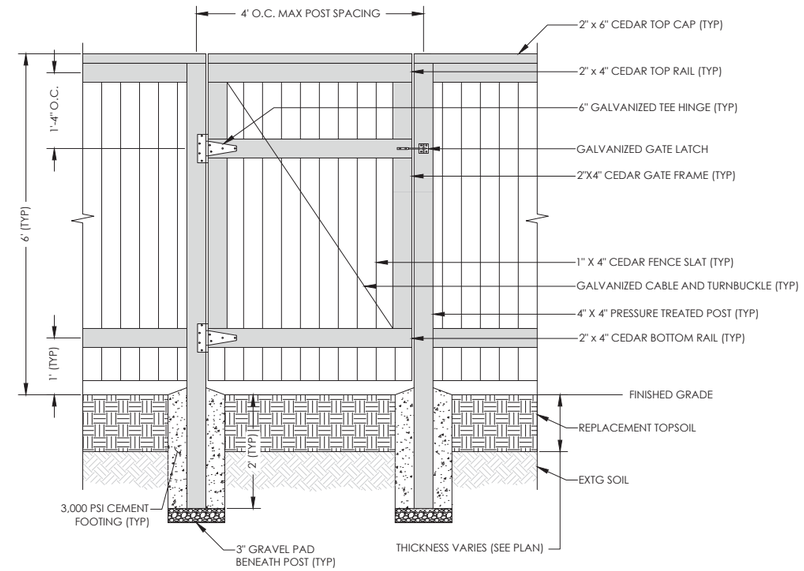
6 FOOT CEDAR FENCE DETAIL

NOT TO SCALE



B
--

6' CEDAR GATE DETAIL

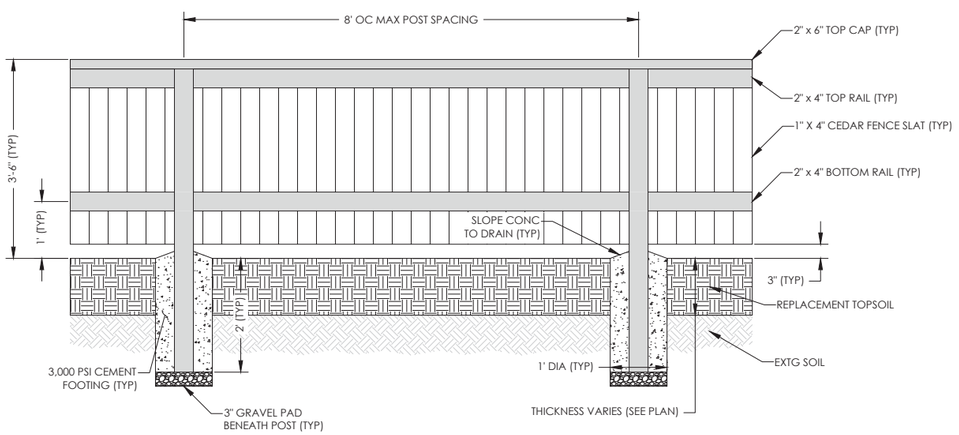
NOT TO SCALE

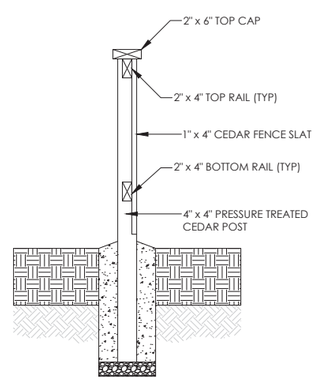
WOOD FENCE NOTES:

1. ALL WOOD MEMBERS SHALL BE TREATED WITH ECO WOOD TREATMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL TOP OF FENCING SHALL REMAIN LEVEL AND PLUMB.
3. FENCING SHALL BE STEPPED ON SLOPED SITES AS REQUIRED TO MAINTAIN THE INTENDED FENCE HEIGHT. STEPPING OF FENCES SHALL NOT EXCEED 1' PER EACH 8' FENCE PANEL.
4. STEEPER SLOPES MAY REQUIRE CLOSER POST SPACING TO ACCOMMODATE THE SLOPE. A POST SPACING OF 4' O.C. MAY BE USED WHERE REQUIRED.
5. BOTTOM OF FENCE BOARDS SHALL BE CUT TO CONTOUR TO THE SITE AS NEEDED TO MAINTAIN A MAXIMUM 3" GAP TO FINISHED GRADE.
6. STEEPER SLOPES MAY REQUIRE THE BOTTOM FENCE RAIL TO EXCEED THE TYPICAL 1' O.C. FROM FINISHED GRADE THOUGH SHALL NOT EXCEED 18" O.C. FROM FINISHED GRADE.

WOOD GATE NOTES:

1. ALL WOOD MEMBERS SHALL BE TREATED WITH ECO WOOD TREATMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. DOUBLE GATE CONSTRUCTION, AS IDENTIFIED ON SITE RESTORATION PLANS, SHALL INCLUDE A SINGLE GATE AND IT'S MIRROR TO ACCOMMODATE AN 8' O.C. POST SPACING.
3. 24" GALVANIZED DROP RODS SHALL BE INSTALLED ON ALL DOUBLE GATES.





C
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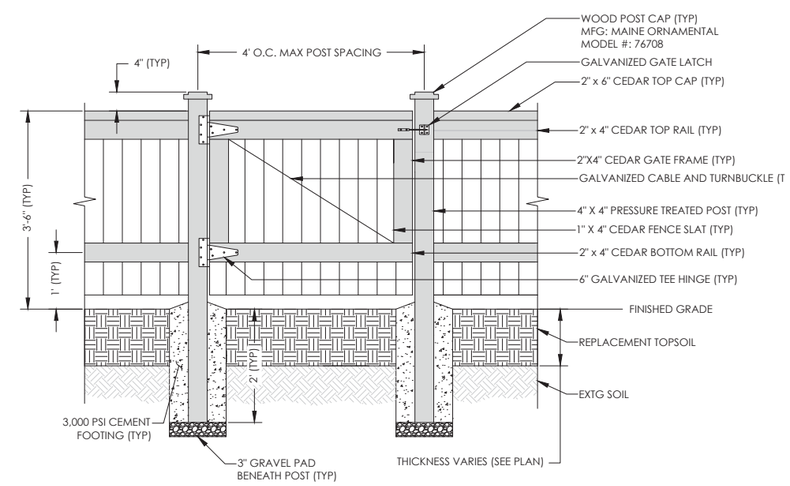
3.5 FOOT CEDAR FENCE DETAIL

NOT TO SCALE



D
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3.5' CEDAR GATE DETAIL

NOT TO SCALE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED
PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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---	---	---

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE

DRAWING NOT TO SCALE

SHEET TITLE

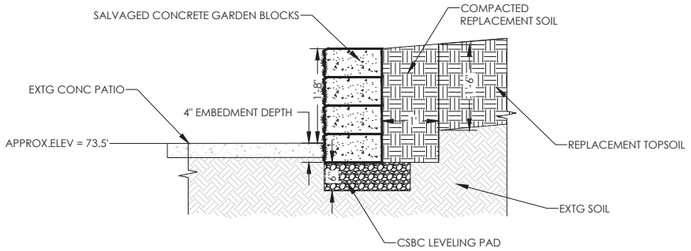
RESTORATION STANDARD DETAILS

SHEET

D1.1

PLOTTED BY: Brooke Harmon FILENAME: G:\JB_MFA Civil 3D\JB_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\DETAILS.dwg

PLOTTED ON: 2018-03-18 8:04 PM



A — BLOCK RETAINING DETAIL
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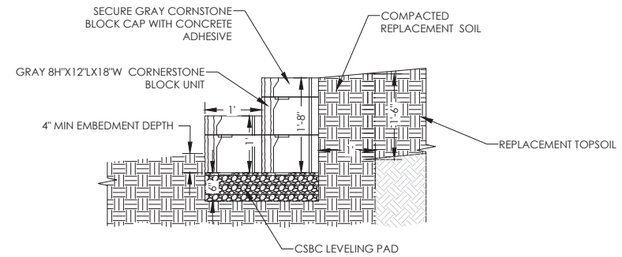
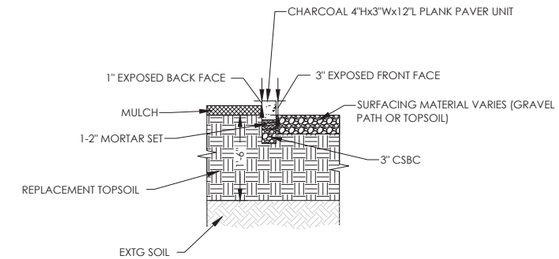
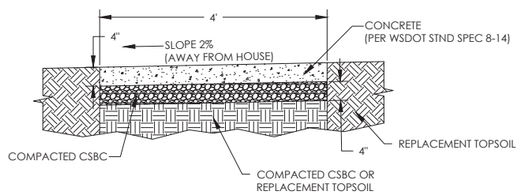


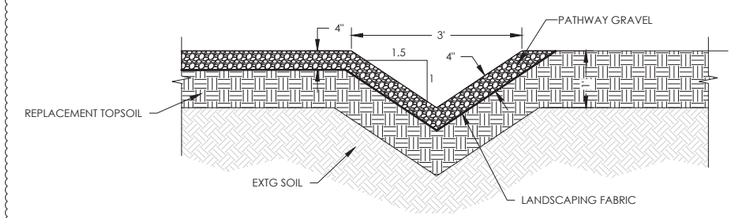
B / C14.1 — RETAINING WALL STAIR DETAIL
NOT TO SCALE



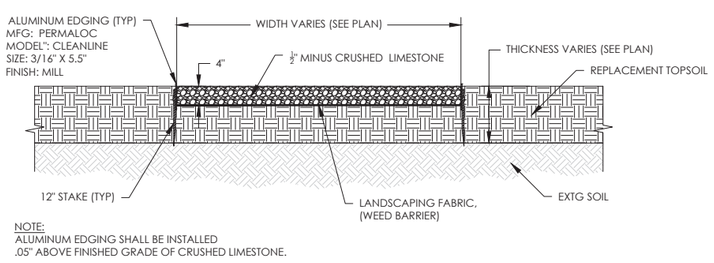
C / C14.1 — PLANK PAVER EDGING DETAIL
NOT TO SCALE



D / C15.1 — CONCRETE WALK DETAIL
NOT TO SCALE

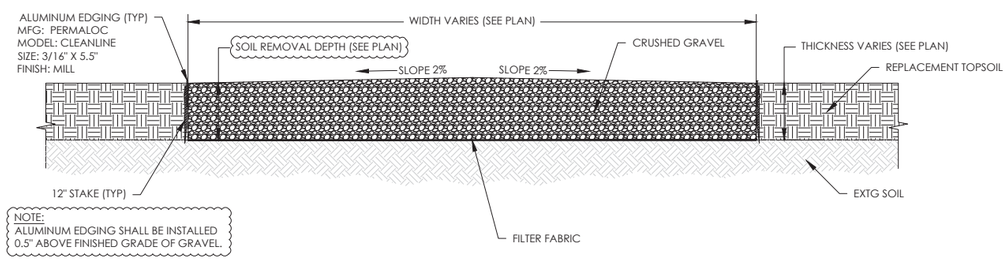


E / C25.1 — DRAINAGE SWALE DETAIL
NOT TO SCALE



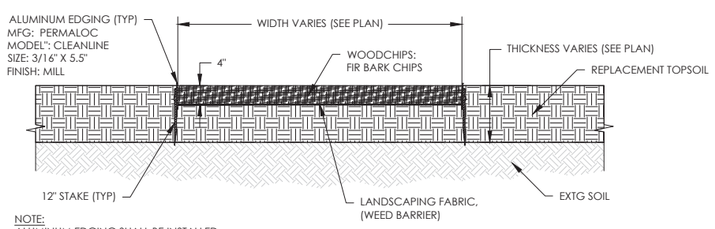
NOTE:
ALUMINUM EDGING SHALL BE INSTALLED .05" ABOVE FINISHED GRADE OF CRUSHED LIMESTONE.

F / -- — GRAVEL PATH DETAIL
NOT TO SCALE



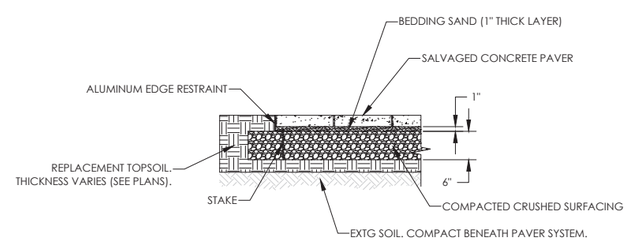
NOTE:
ALUMINUM EDGING SHALL BE INSTALLED 0.5" ABOVE FINISHED GRADE OF GRAVEL.

G / -- — GRAVEL DRIVE/PAD DETAIL
NOT TO SCALE



NOTE:
ALUMINUM EDGING SHALL BE INSTALLED .05" ABOVE FINISHED GRADE OF WOODCHIPS.

H / -- — WOODCHIP SURFACING DETAIL
NOT TO SCALE



I / -- — PAVER DETAIL
NOT TO SCALE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT — STATE OF WASHINGTON — 50320 — REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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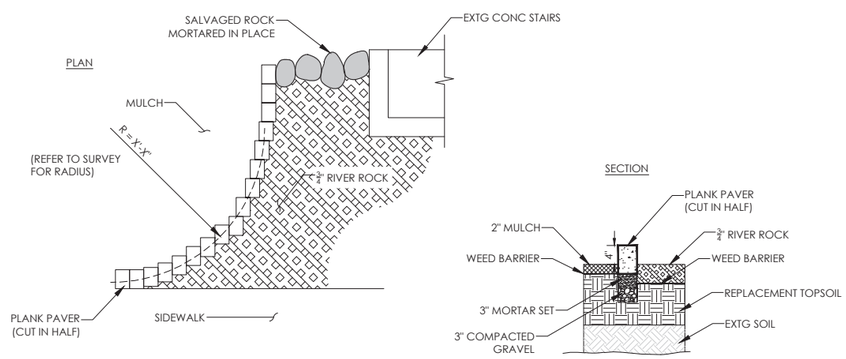
---	---	---
---	---	---
---	---	---
---	06/17/2016	BID ADDENDUM NO. 2
---	---	---

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
RESTORATION STANDARD DETAILS
SHEET
D1.2

PLOTTED ON: 2019-03-18 8:05 PM PLOTTED BY: Brooke Harmon FILENAME: G:\JB_MFA C14 3D\JB_PROJECTS\9003.01.39 Off-Property\OFP Interim Action\RLANS\2016\2016 RECORD DRAWINGS\D01A5.dwg



A C01.1 SHORT PAVER EDGING
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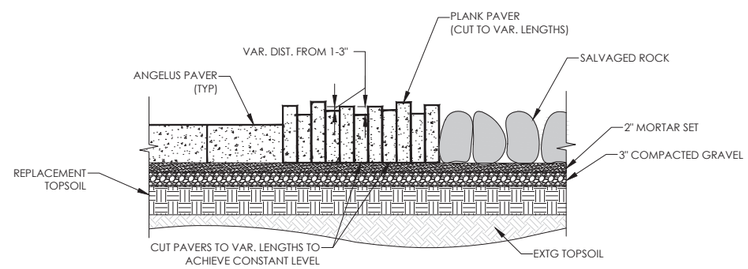

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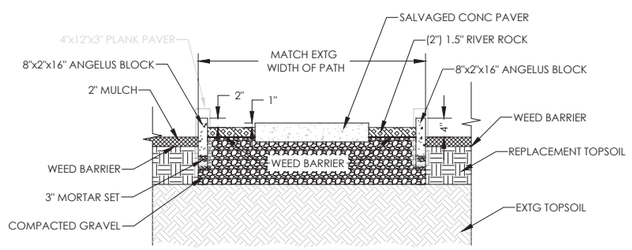
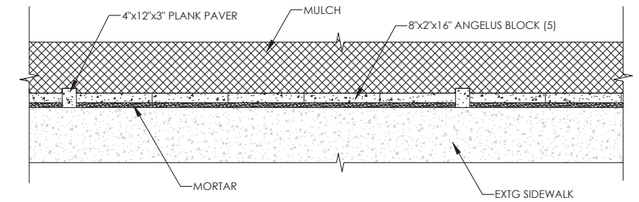
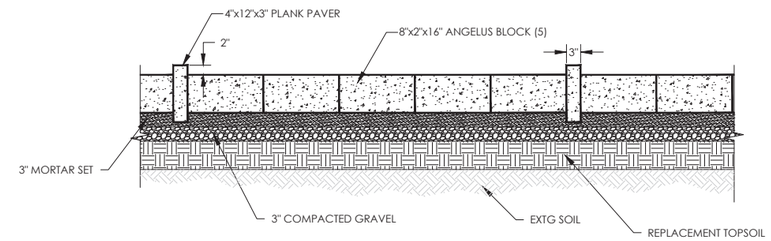
NOT TO SCALE



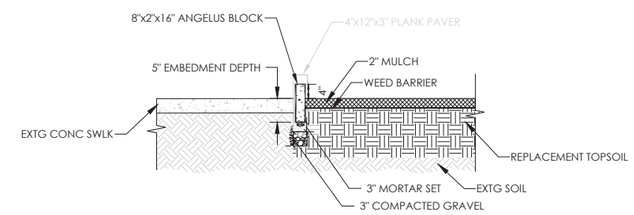
C C01.1 GARDEN PATHWAY
NOT TO SCALE



D C01.1 SIDEWALK EDGING (PLAN)
NOT TO SCALE



E C01.1 SIDEWALK EDGING (SECTION/ELEVATION)
NOT TO SCALE



F C01.1 SIDEWALK EDGING (CROSS SECTION)
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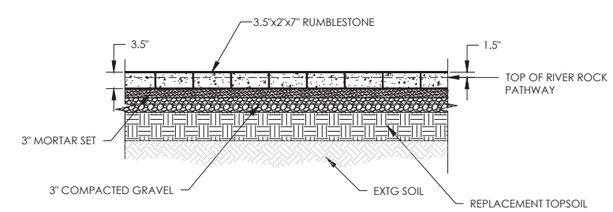

G C01.1 GARDEN PATHWAY SECONDARY EDGING
NOT TO SCALE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

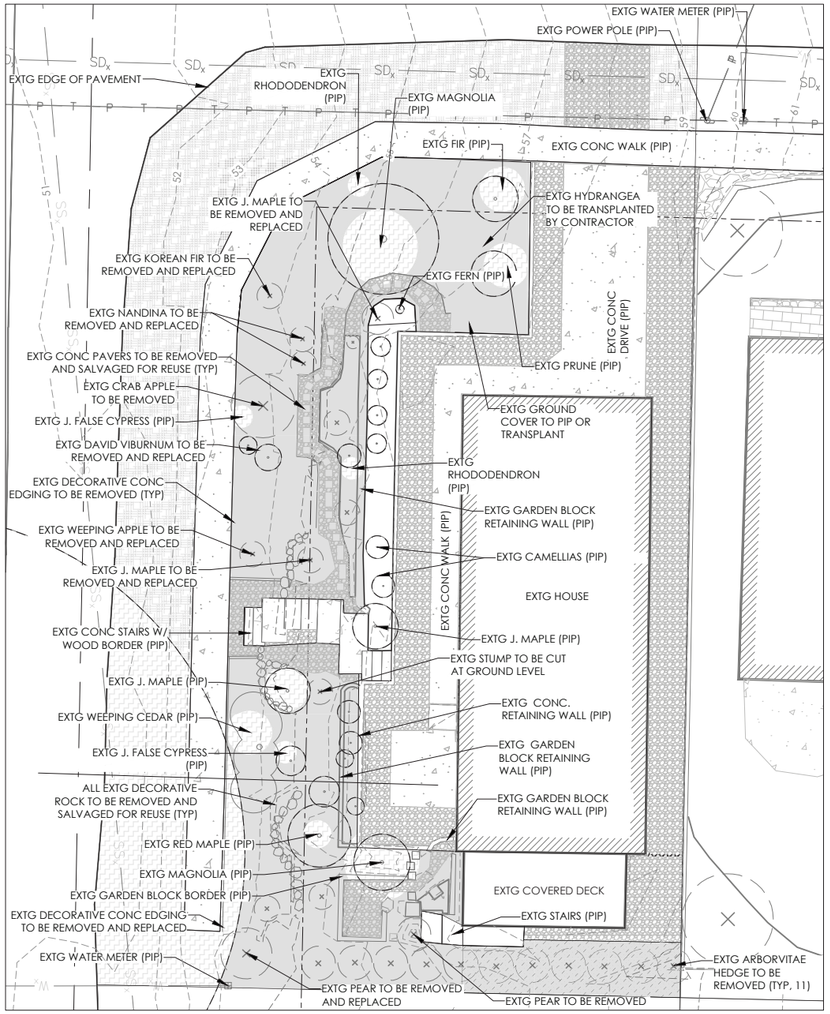
PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
RESTORATION STANDARD DETAILS
SHEET
D1.3

PLOTTED ON: 2018-03-18 7:39 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\001\DETAILS.dwg

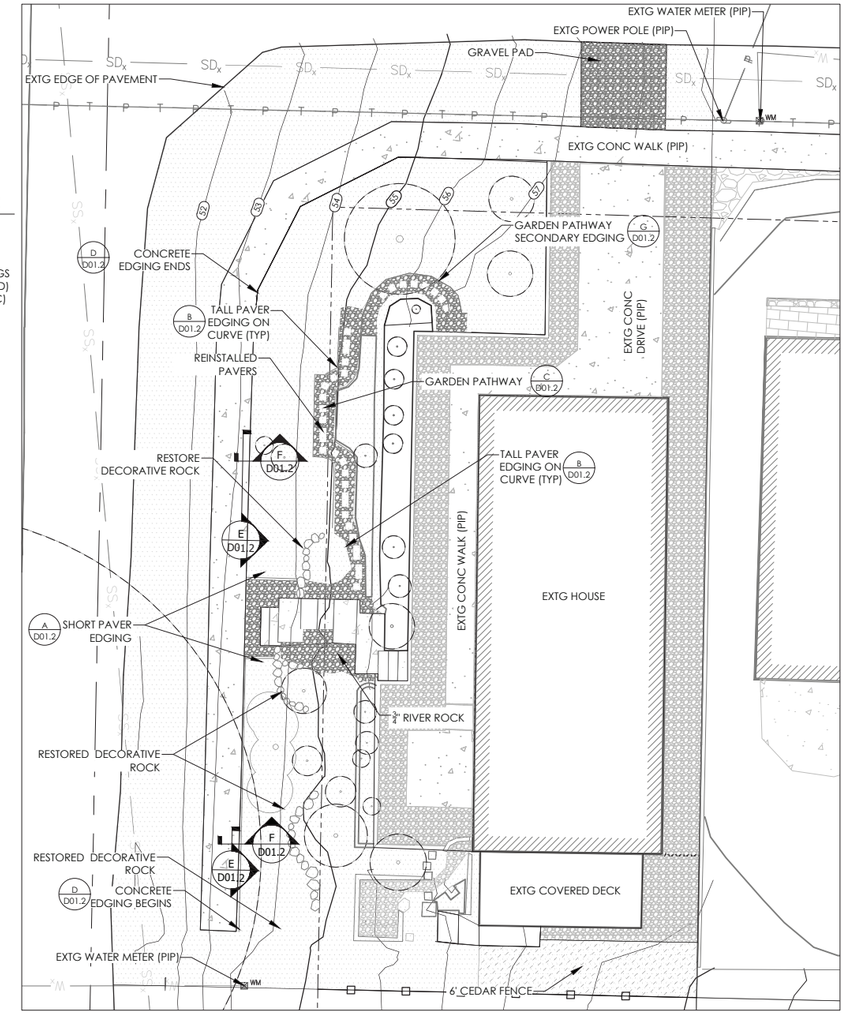


EXISTING CONDITIONS AND REMEDIATION PLAN

RESTORATION NOTES:

1) INSTALL A WEED BARRIER UNDER ALL RESTORATION SURFACES (SEE DETAIL)

2) UTILIZE SURVEYOR & OWNER MARKINGS FOR LOCATION OF PLANK PAVERS (DTL D) AND GARDEN PATHWAY PAVERS (DTL C)



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EXISTING BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0. EXCAVATION ADJACENT TO ALL EXISTING RETAINING WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-4 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. PROPOSED WALKWAY GRAVEL TO BE SAME AS EXISTING GRAVEL.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
001	6314000	512 RAILROAD AVE, RIDGEFIELD, WA 98642	DONALD DAVIDSON

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	2,262	12
SOIL REMOVAL	TRADITIONAL	1,503	18
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	953	6

LEGEND:

- EXTG MAJOR CONTOURS (5' INTERVAL)
- EXTG MINOR CONTOURS (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA - 12" DEPTH
- SOIL REMOVAL AREA - 18" DEPTH
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL DRIVE/PAD

RECORD DRAWING

MAUL FOSTER ALONGI
109 E 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

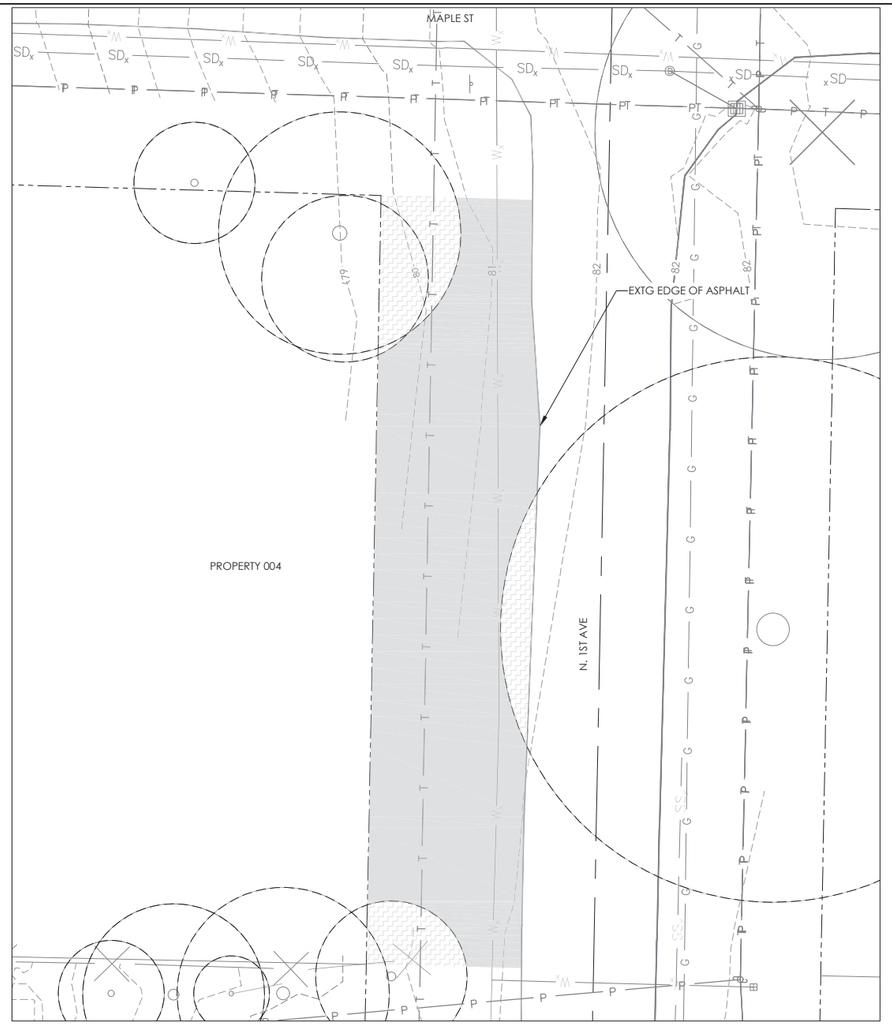
ISSUE	DATE	DESCRIPTION
REV 1	5/19/2021	UPDATED RECORD DRAWING
A	3/28/17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: --
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

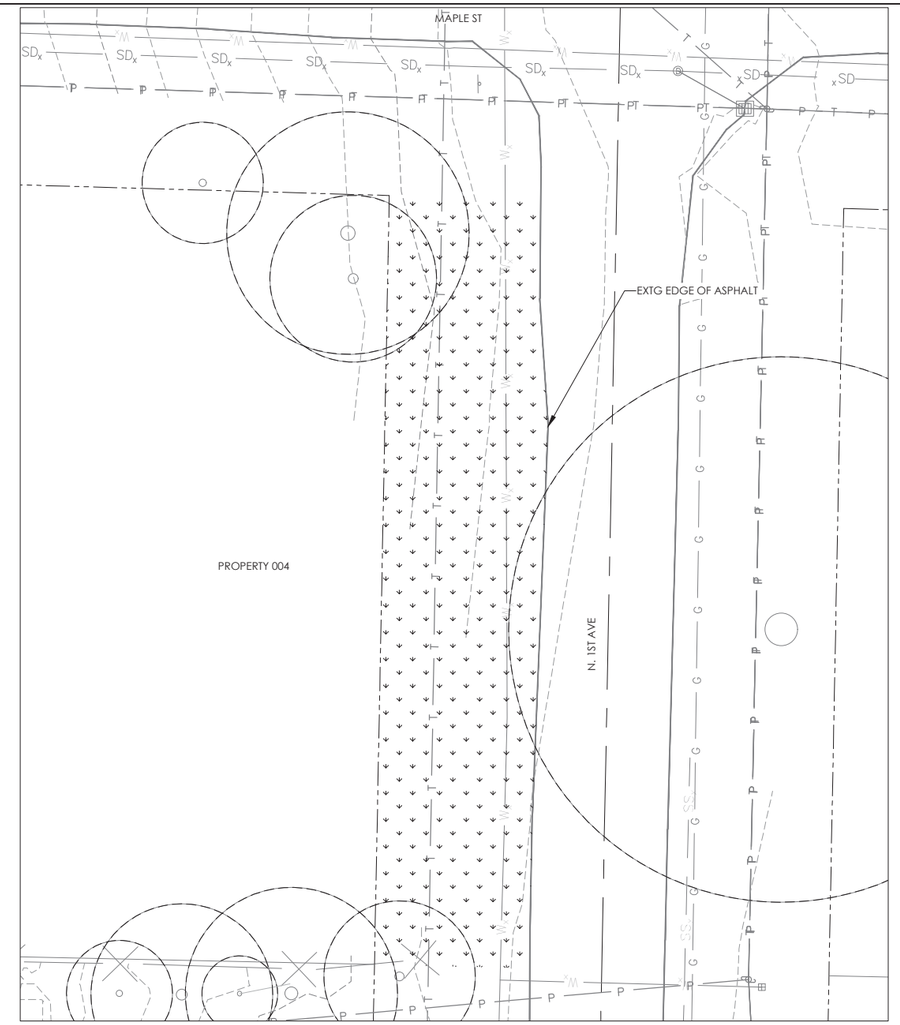
SHEET TITLE
PROPERTY 001 REMEDIATION AND RESTORATION PLAN

SHEET
C01.1

PLOTTED ON: 2021-07-14 5:37 PM PLOTTED BY: Brooke Jaimes FILENAME: \\sfmfs01.file.core.windows.net\cad\00_MFA Civil 3D\00_PROJECTS\9003\01.39 OFI Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C01.1 PROPERTY 001_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	1,748	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	356	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	1,748	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	356	6
ALL	HYDROSEED	2,104	-

LEGEND:

- 15 EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- PLANT TO PROTECT IN PLACE
- ROOT PROTECTION ZONE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL AND HYDROSEED MULCH

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER

This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

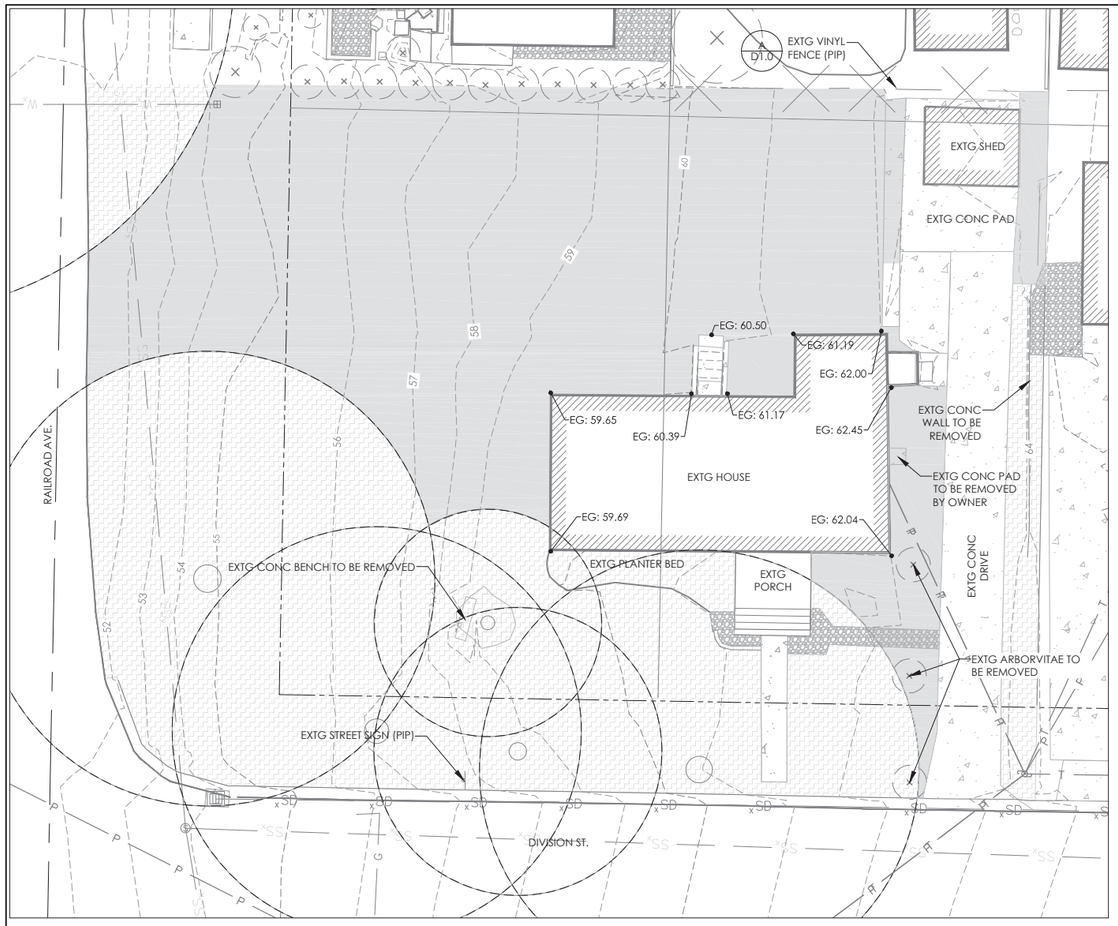
SHEET TITLE

ROW 004 REMEDIATION AND RESTORATION PLAN

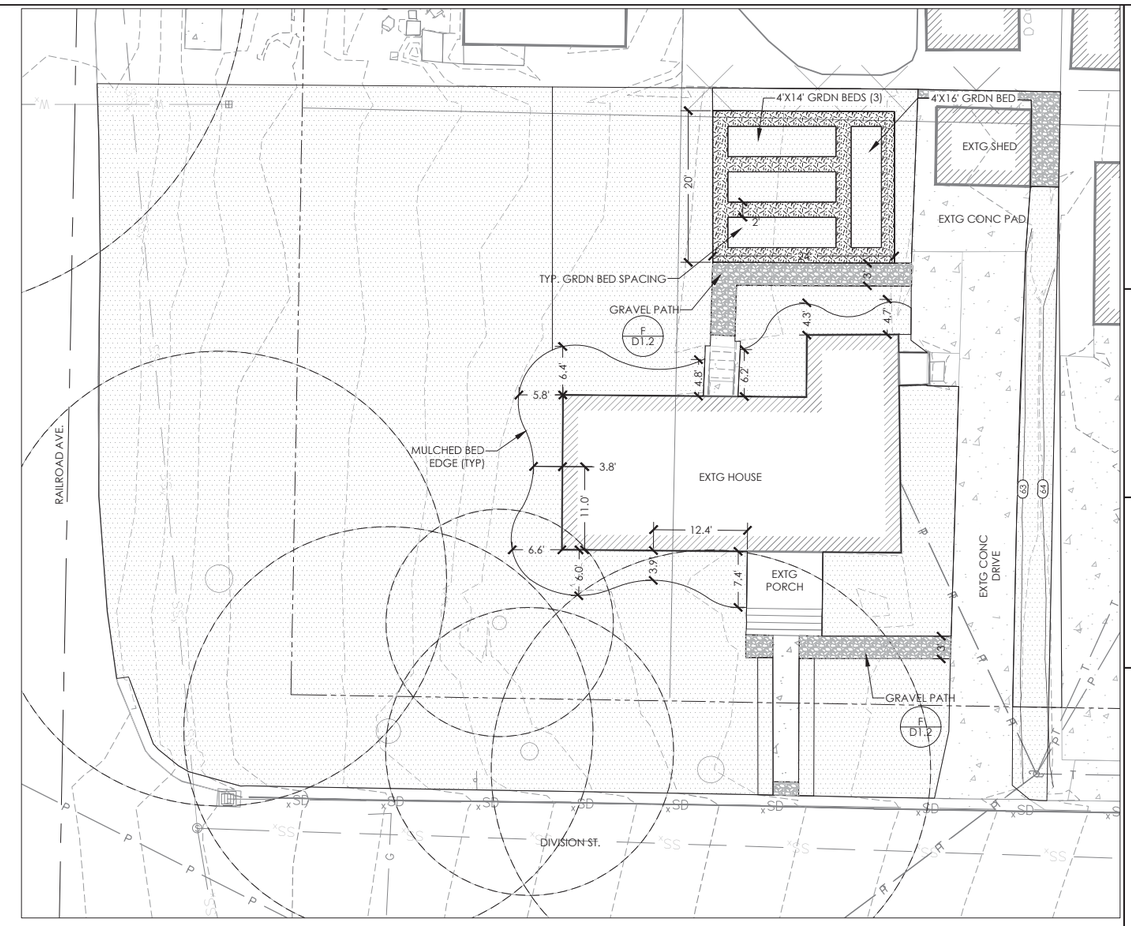
SHEET

C04.1

PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C04.1_004 ROW.dwg
PLOTTED ON: 2017-03-30 1:55 PM



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS WITH BASEMENT WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-2 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING WILL BE PROVIDED AROUND GARDEN BEDS, GRAVEL PATHS/PADS, AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION

PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
005	69315000	4 W DIVISION ST, RIDGEFIELD, WA 98642	TIM FREDRICKSON

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	4,670	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	4,614	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	4,670	18
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	4,614	6
GRAVEL PATH	GRAVEL SURFACING	242	4
GARDEN	WOODCHIPS	245	4
ON PROPERTY	PLANTER BED	1,434	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO PROTECT IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

JOSHUA CARSON ELLIOTT
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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

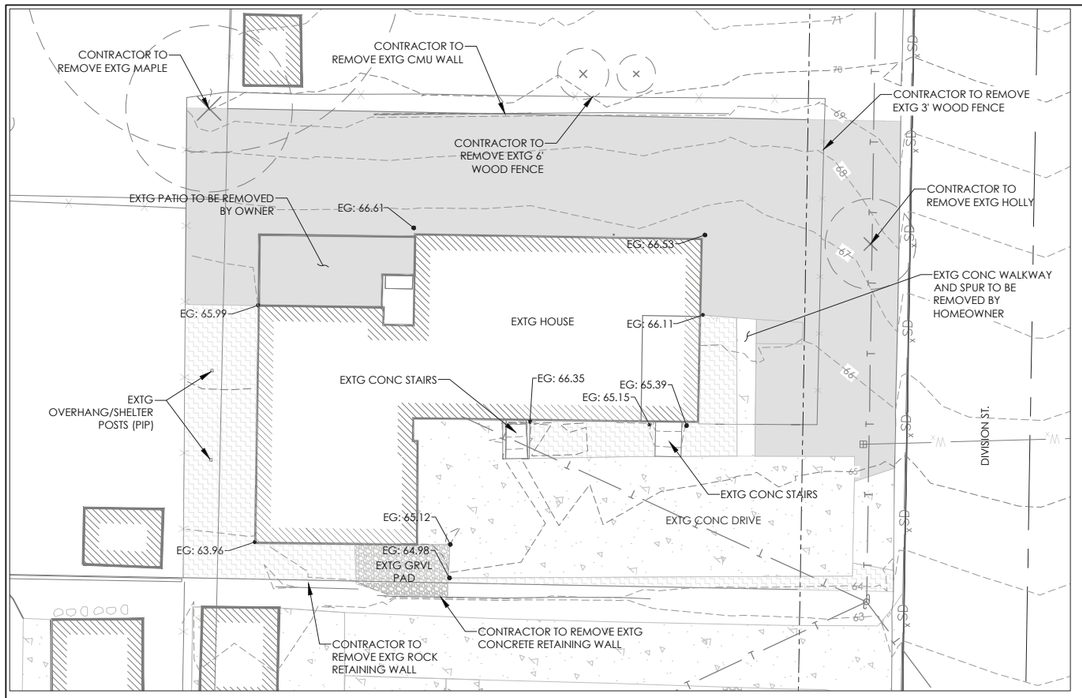
ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE, BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

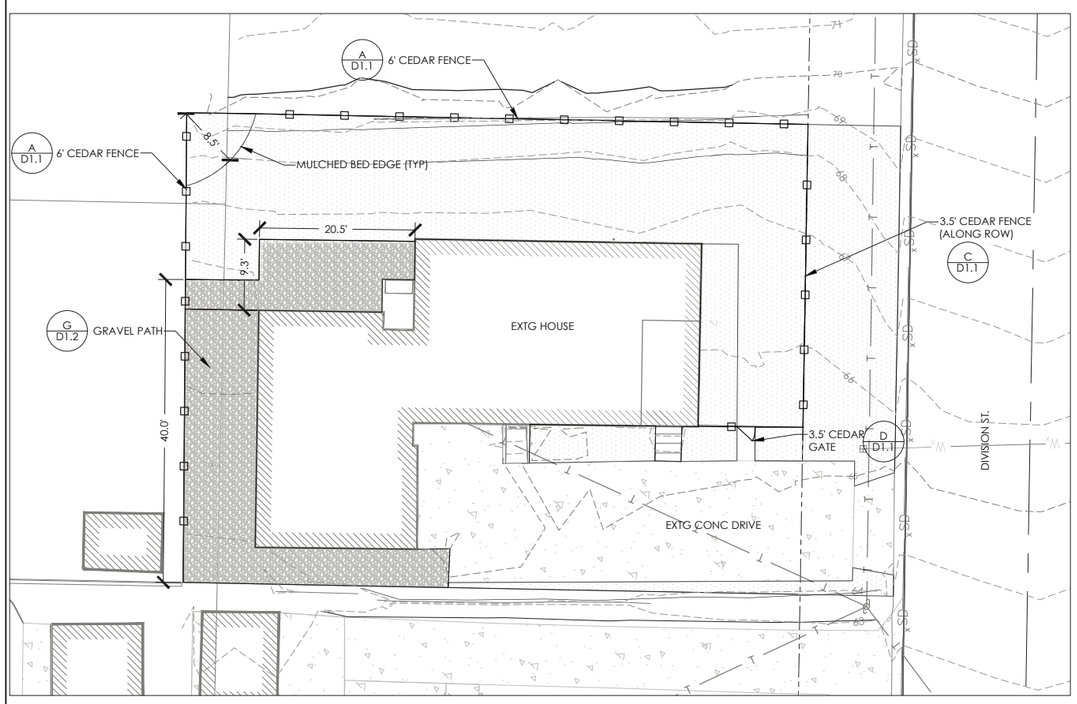
SHEET TITLE
PROPERTY 005 REMEDIATION AND RESTORATION PLAN

SHEET
C05.1

PLOTTED BY: Lindsey Crosby FILENAME: G:\90-MFA Civil\90.00_PROJECTS\9003.01.39 Off-Property\OIP Interim Action\PLANS\2016 RECORD DRAWINGS\C05.1 PROPERTY 005.dwg
PLOTTED ON: 2017-03-29 3:45 PM



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS AND PAVEMENTS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0. EXCAVATION ADJACENT TO OVERHANG FOOTERS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-3 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING WILL BE PROVIDED BETWEEN GRAVEL PATHS/PADS AND VEGETATION.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
006	69298000	8 DIVISION ST, RIDGEFIELD, WA 98642	SEAN HARRIS

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	2,405	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	739	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	2,405	18
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	268	6
GRAVEL PATH	GRAVEL SURFACING	471	6
GRAVEL PATH	GRAVEL SURFACING	212	4
ON PROPERTY	PLANTER BED	253	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
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Port of Ridgefield

JOSHUA CARSON ELLIOTT
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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

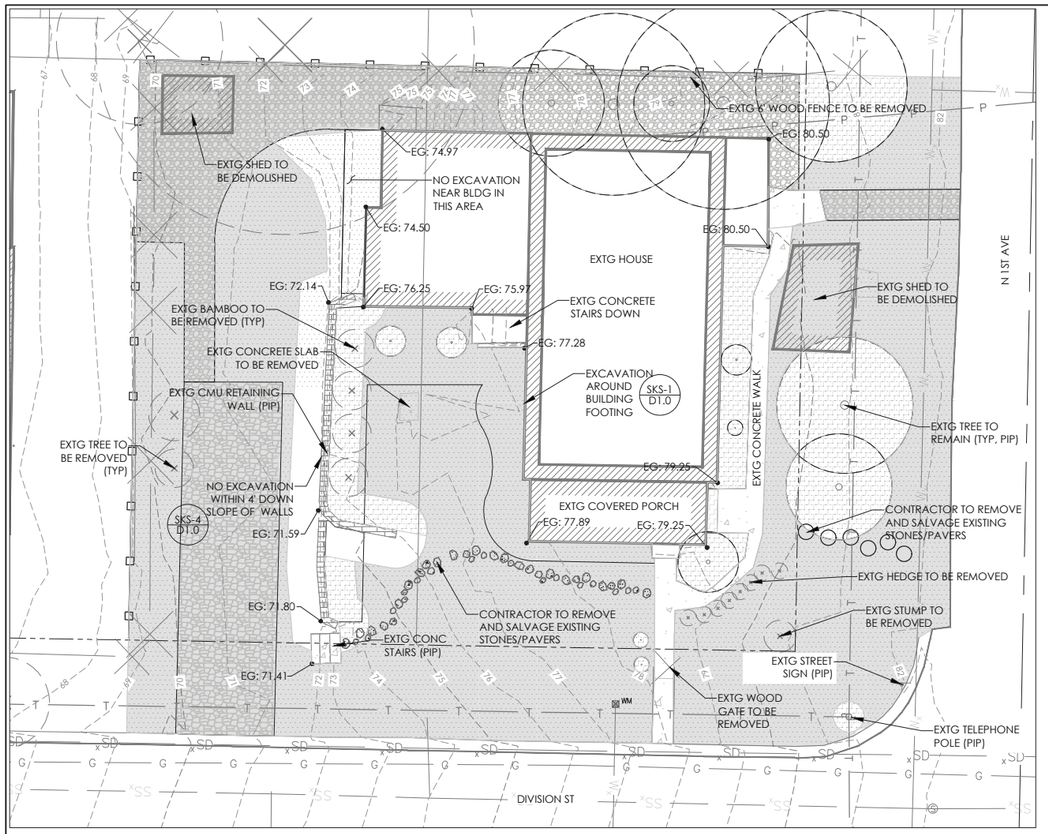
ISSUE	DATE	DESCRIPTION
REV 1	5/19/2021	UPDATED RECORD DRAWING
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED:--
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

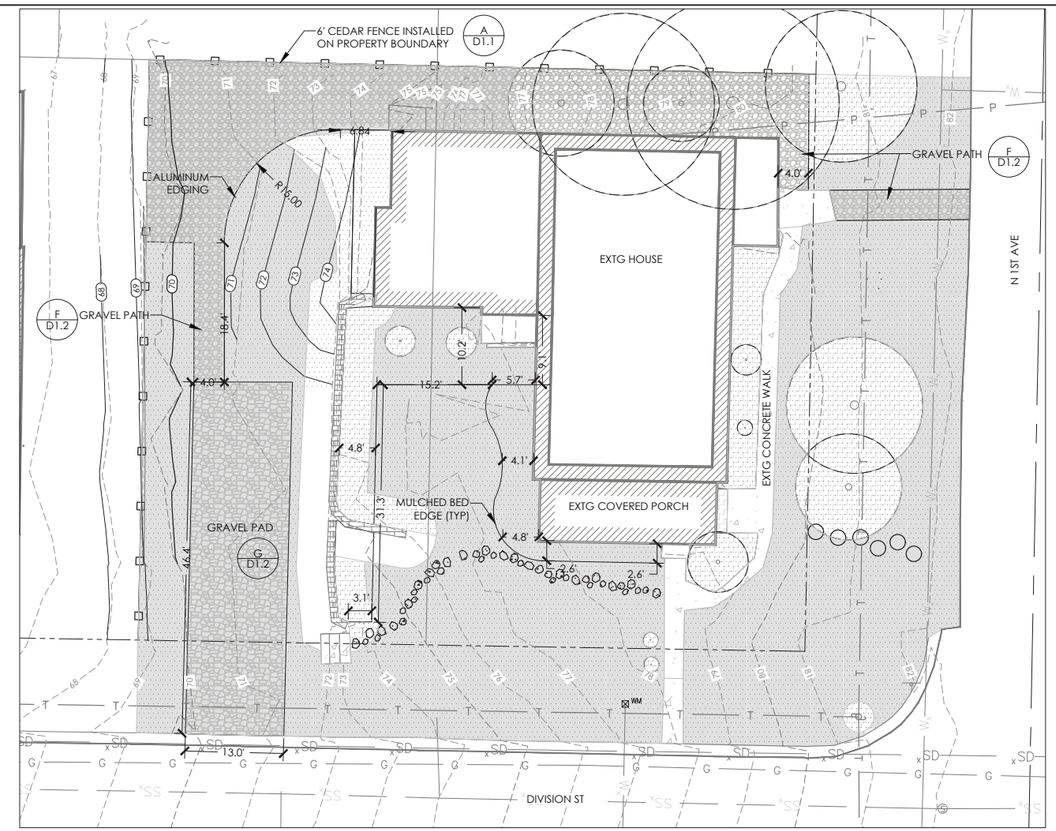
SHEET TITLE
PROPERTY 006 REMEDIATION AND RESTORATION PLAN

SHEET
C06.1

PLOTTED ON: 2021-07-14 4:01 PM PLOTTED BY: Brooke Jaimes FILENAME: \\sfmf001.file.core.windows.net\fcore\000_MFA Cost 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C06.1 PROPERTY 006_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG C07.3. EXCAVATION ADJACENT TO ALL RETAINING WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-4 ON DWG C07.3.
2. REPLACEMENT TOPSOIL OR GRAVEL DRIVE DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE UNLESS OTHERWISE SHOWN.
3. ALUMINUM EDGING TO BE PROVIDED BETWEEN GRAVEL PATHS & DRIVES AND VEGETATED AREAS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
007	69316000	14 DIVISION ST, RIDGEFIELD, WA 98642	JAMES & PATRICA DOUGLAS

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	5,500	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,317	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	5,500	18
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	1,317	6
GRAVEL DRIVE	GRAVEL SURFACING	606	12
GRAVEL PATH	GRAVEL SURFACING	1,133	4
ON PROPERTY	PLANTER BED	996	2

NOTE: RESTORATION AREAS AND DEPTHS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL DRIVE/PAD
- NEW GRAVEL PATH

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

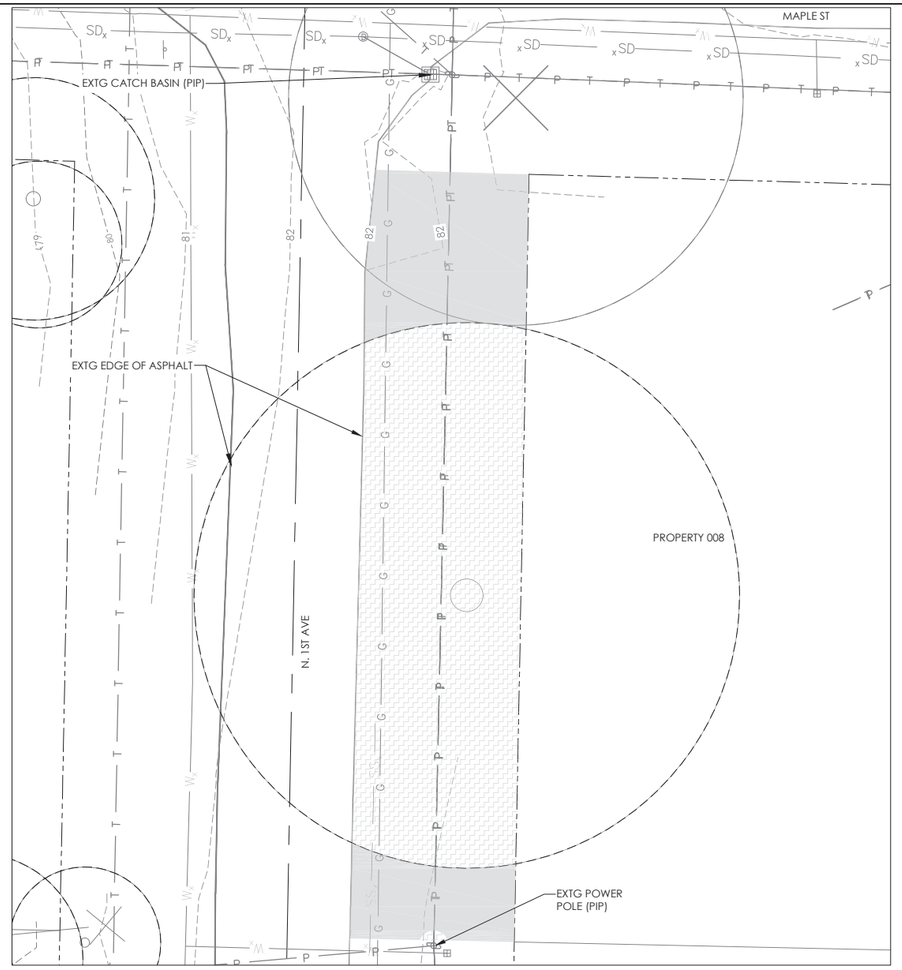
ISSUE	DATE	DESCRIPTION
REV 1	5/24/2021	UPDATED RECORD DRAWING
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: --
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

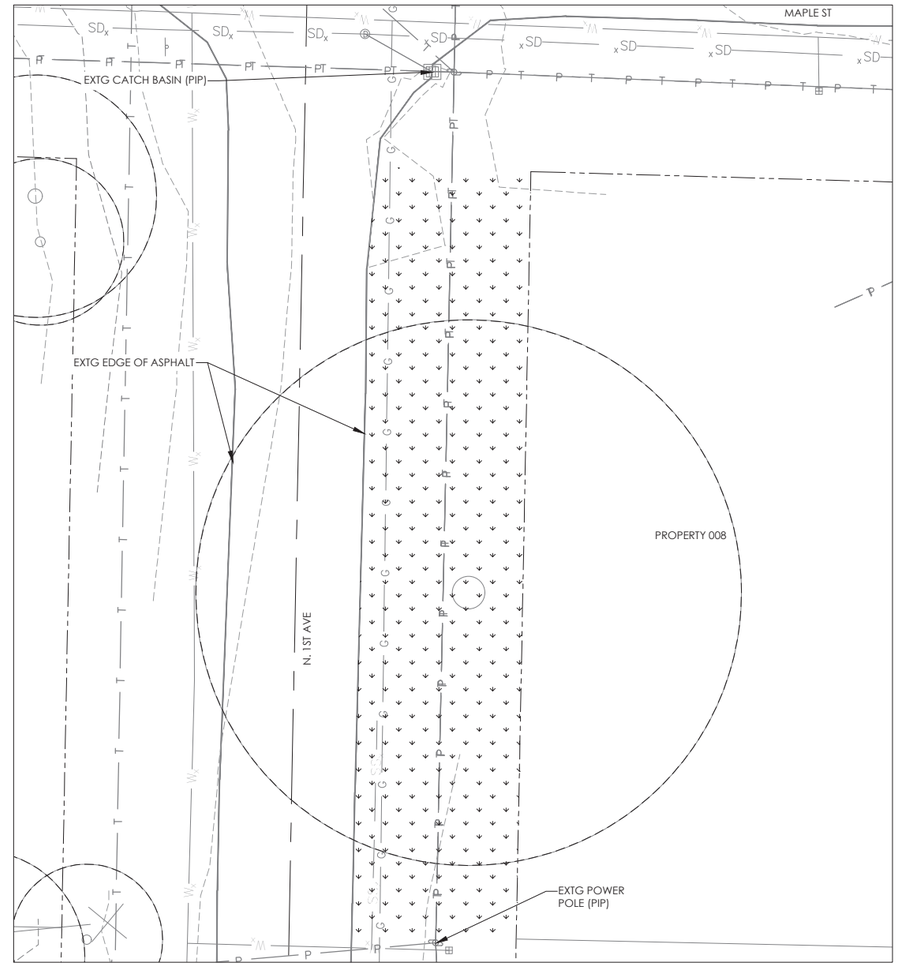
SHEET TITLE
PROPERTY 007 REMEDIATION AND RESTORATION PLAN

SHEET
C07.1

PLOTTED ON: 2021-09-15 5:29 PM PLOTTED BY: Michael Tarbert FILENAME: G:\20_MFA Civil\30\00_PROJECTS\9003.01.39 OR Property\OPP Interim Action\PLANS\2016\2018 RECORD DRAWINGS\ECOLOGY RESPONSE\C07.1 PROPERTY 007_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	652	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,518	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	652	18
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	1,518	6
ALL	HYDROSEED	2,170	-

LEGEND:

- 15 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- PLANT TO PROTECT IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL AND HYDROSEED MULCH

RECORD DRAWING

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PHONE: 360.694.2691
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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
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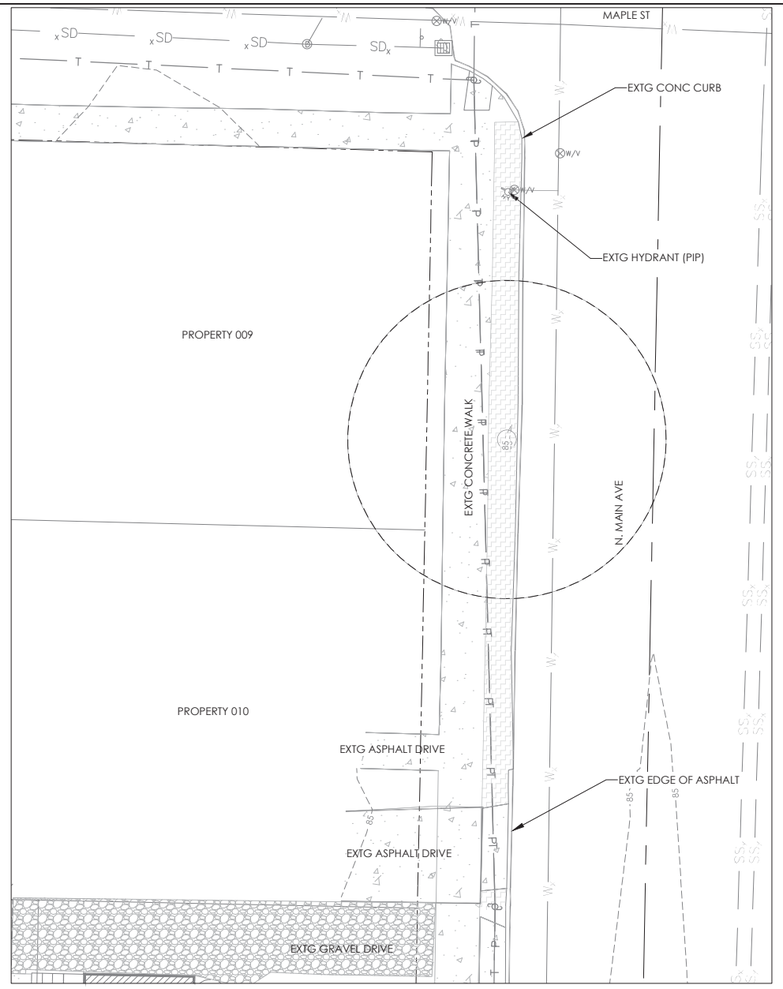
SHEET TITLE

ROW 008 REMEDIATION AND RESTORATION PLAN

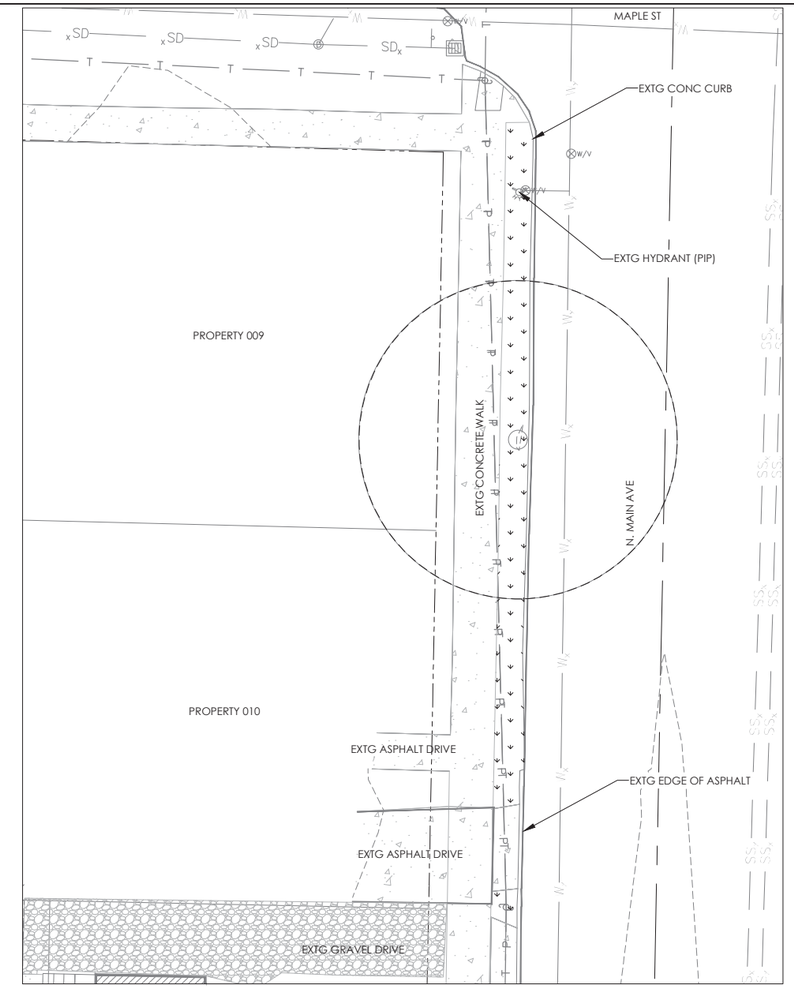
SHEET

C08.1

PLOTTED ON: 2017-03-30 1:57 PM PLOTTED BY: Lindsey Crosby FILENAME: G:\03_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C08.1_008 ROW.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
RESTRICTED ACCESS	VACTOR/HAND TOOLS	338	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	338	6
ALL	HYDROSEED	338	-

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- PLANT TO PROTECT IN PLACE
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL AND HYDROSEED MULCH

RECORD DRAWING

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400 EAST MILL PLAIN BLVD, SUITE 400
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PHONE: 360.694.2691
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Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

10-27-2021

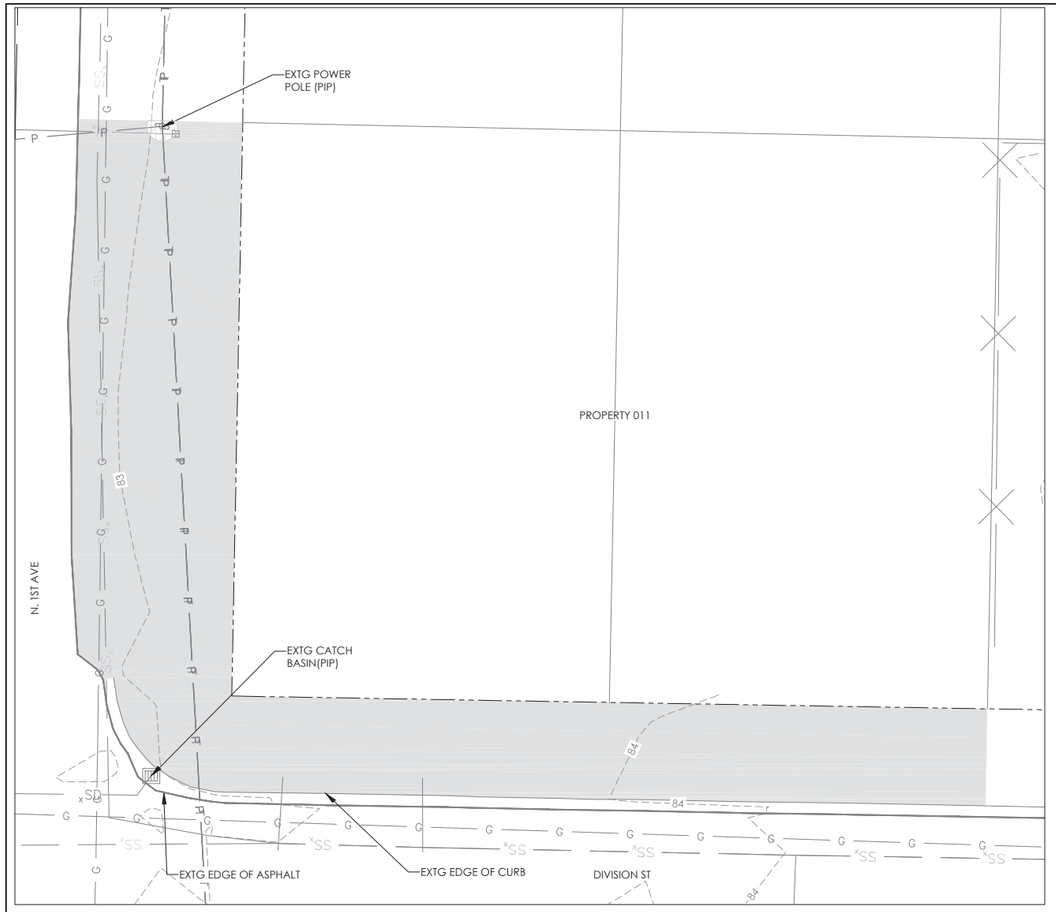
ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

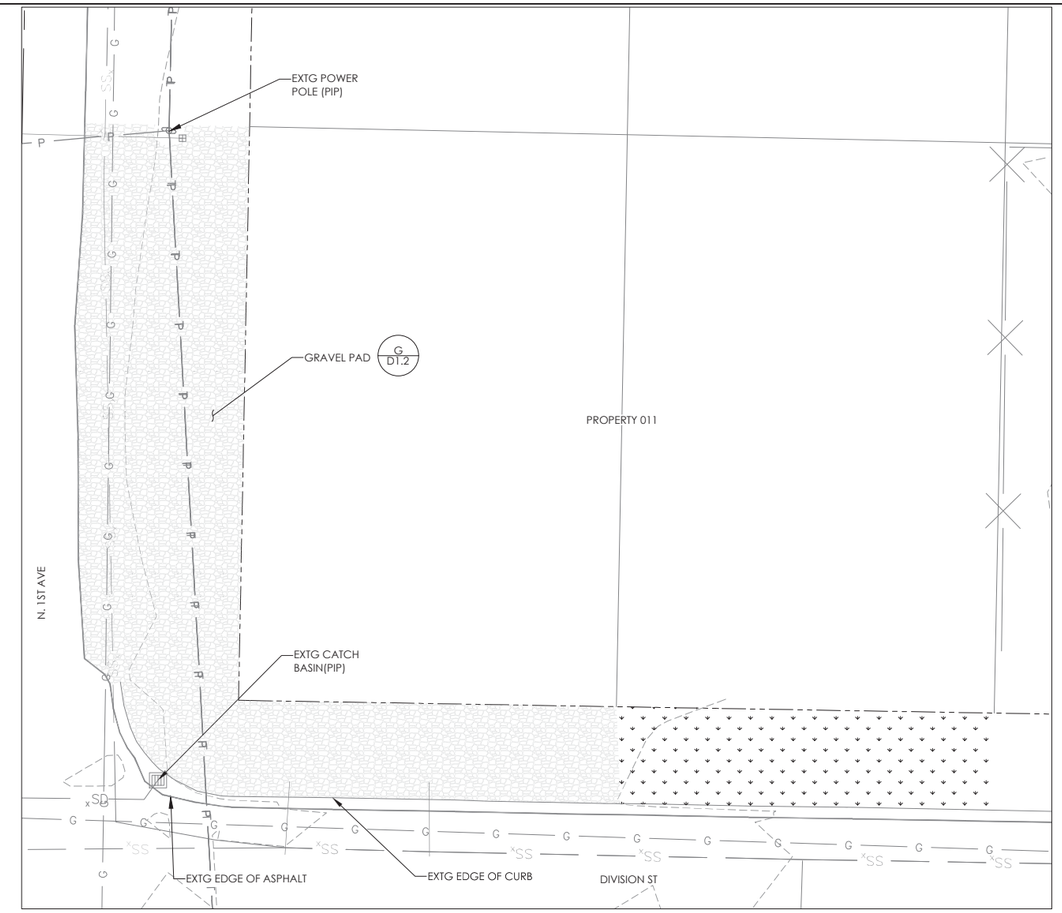
SHEET TITLE
ROW 009 & 010 REMEDIATION AND RESTORATION PLAN

SHEET
C09.1

PLOTTED ON: 2017-03-30 1:58PM PLOTTED BY: Lindsey Crosby FILENAME: G:\02_MFA Civil 3D\00_PROJECTS\9003\01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C09.1-009 ROW.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	3,037	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	9	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	GRAVEL DRIVE/PAD	3,037	18
SOIL REMOVAL-RESTRICTED ACCESS	GRAVEL DRIVE/PAD	9	6

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE LINE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW GRAVEL DRIVE/PAD
- NEW TOPSOIL AND HYDROSEED MULCH

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

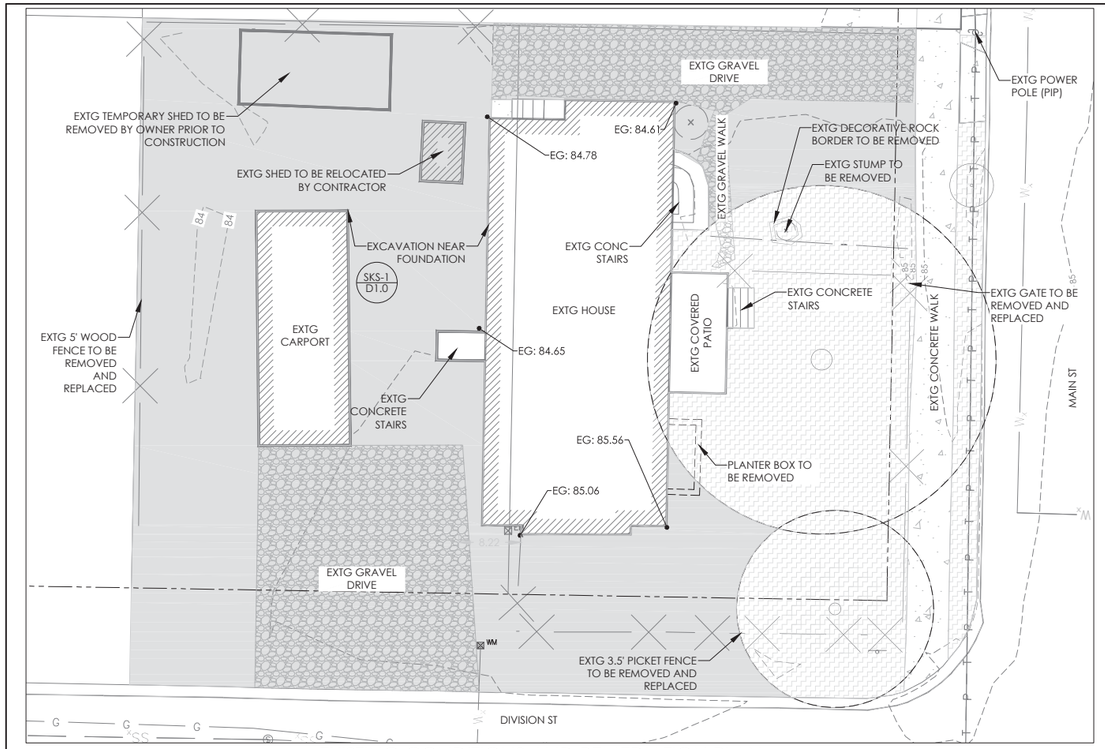
ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE, BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

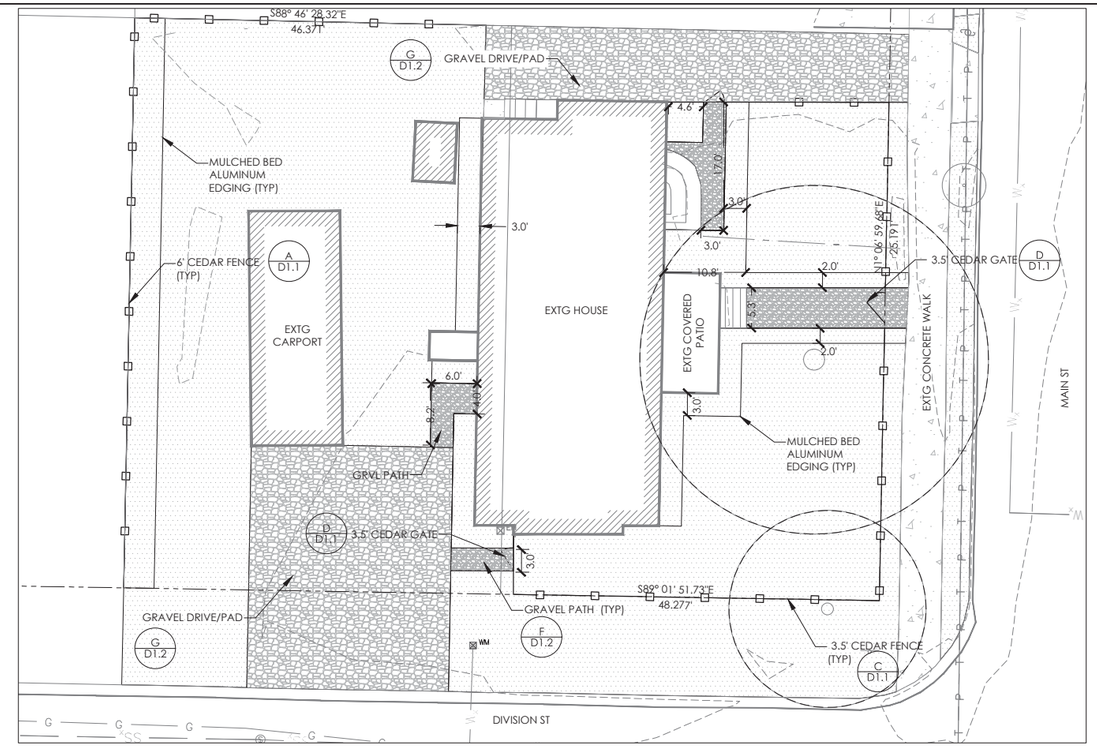
SHEET TITLE
ROW 011 REMEDIATION AND RSTORATION PLAN

SHEET
C11.1

PLOTTED ON: 2017-03-28 8:32 AM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C11.1 - 011 ROW.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG C12.3.
2. REPLACEMENT TOPSOIL/GRAVEL DRIVE DEPTHS TO MATCH REMEDIATION DEPTHS AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING WILL BE PROVIDED AROUND GRAVEL PATHS AND PADS, AND VEGETATED AREAS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
012	69330000	503 & 505 N. MAIN AVE, RIDGEFIELD, WA 98642	THOMAS ONEAL & JANICE CRUMPTON

REMEDIAL EXCAVATION AREAS			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	5,439	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,896	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	4,212	12
RESTRICTED ACCESS	TOPSOIL	1,896	6
GRAVEL PAD	GRAVEL SURFACING	1,385	12
GRAVEL PATH	GRAVEL SURFACING	238	4
ON PROPERTY	PLANTER BED	805	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL DRIVE/PAD

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

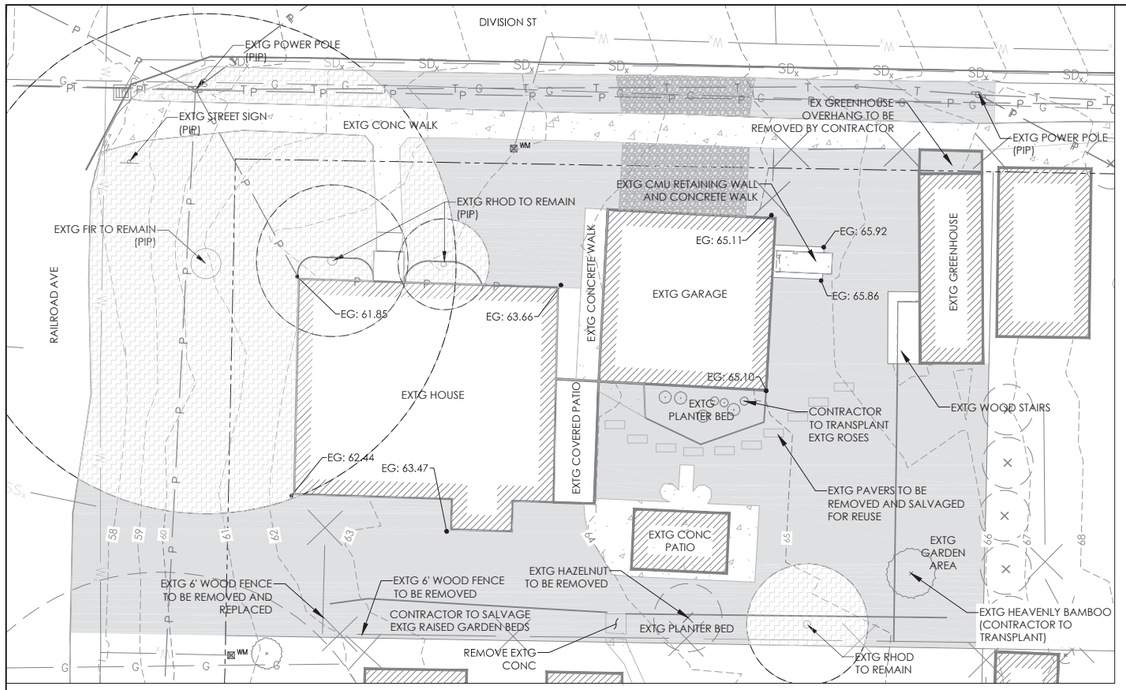
ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

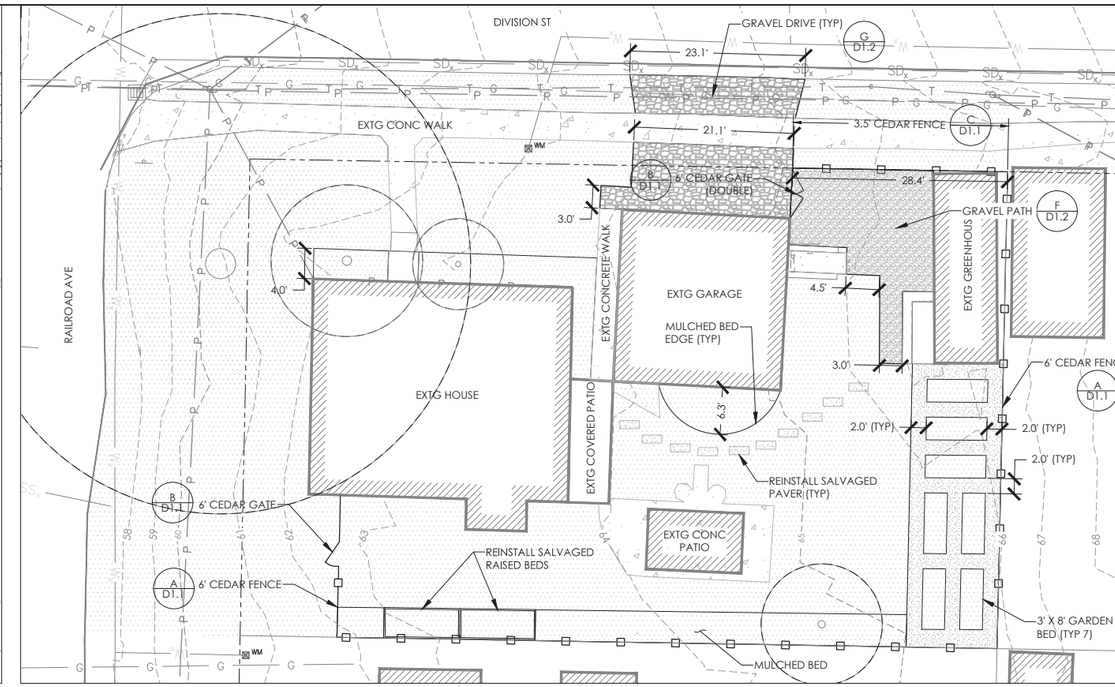
SHEET TITLE
PROPERTY 012 REMEDIATION AND RESTORATION PLAN

SHEET
C12.1

PLOTTED ON: 2017-03-30 9:09 AM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003\01.39 Off-Property\OFP Interim Action\PLANS\BID SET\Property 012\C12.1 PROPERTY 012.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG C13.3.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING WILL BE PROVIDED AROUND GARDEN BEDS, GRAVEL PATHS/PADS, AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
5. CONTRACTOR TO ASSIST HOMEOWNER IN REMOVING/RELOCATING DEBRIS IN YARD PRIOR TO CONSTRUCTION.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
013	69416000	5 DIVISION ST, RIDGEFIELD, WA 98642	MARK & DEBORAH DAVIS

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	4,138	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,953	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	3,821	18
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	1,953	6
GRAVEL DRIVE/ PAD	GRAVEL SURFACING	317	18
GAVEL PATH	GRAVEL SURFACING	280	4
GARDEN	WOODCHIPS	282	4
ON PROPERTY	PLANTER BED	471	2

NOTE: RESTORATION AREAS AND DEPTHS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EX CONC
- EX GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL DRIVE/PAD
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
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Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

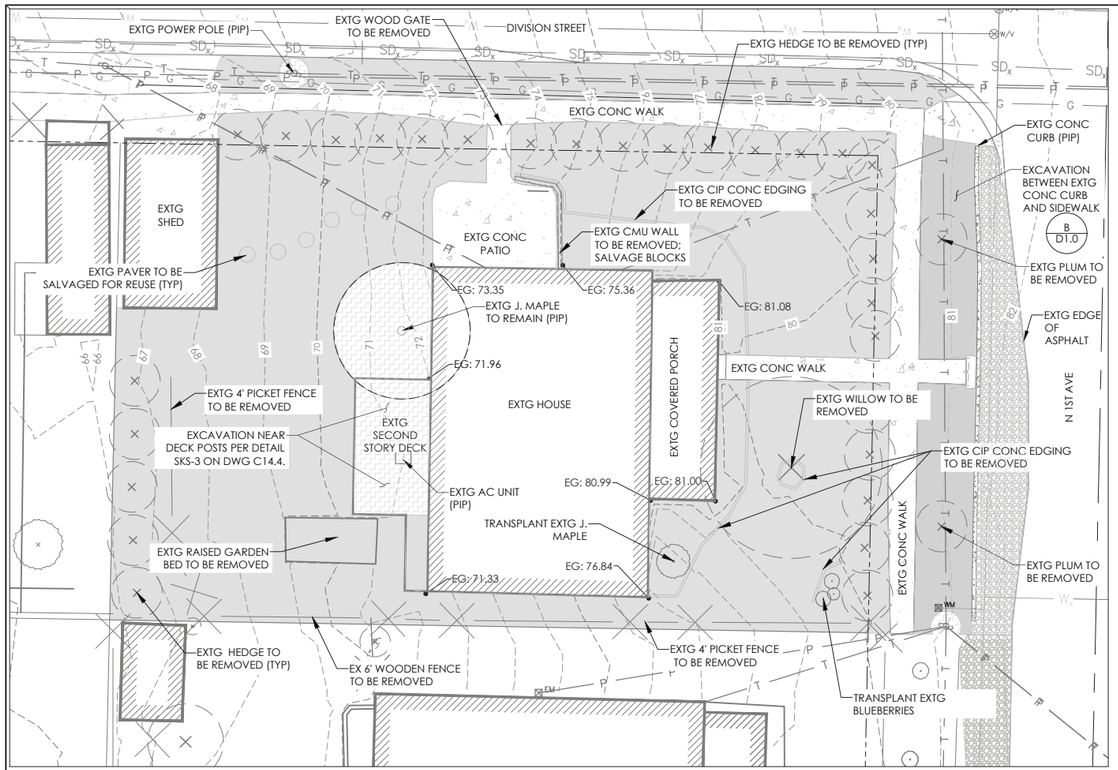
ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

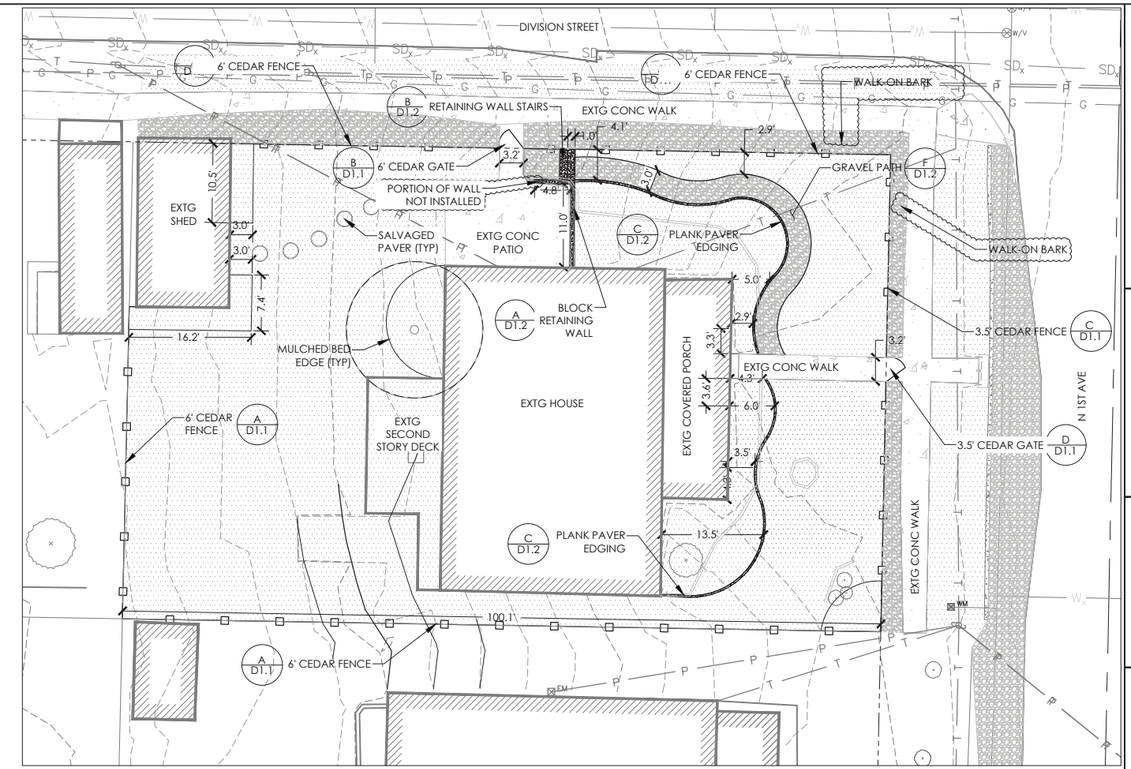
SHEET TITLE
PROPERTY 013 REMEDIATION AND RESTORATION PLAN

SHEET
C13.1

PLOTTED ON: 2017-03-30 9:22 AM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C13.1 PROPERTY 013.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG C14.4. EXCAVATION ON ALL SIDES OF STRUCTURAL POSTS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-3 ON DWG C14.4. EXCAVATION BETWEEN EXTG SIDEWALK AND CURB (EXCEPT WITHIN TREE RPZs) TO BE COMPLETED IN ACCORDANCE WITH DETAIL G ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET, EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING WILL BE PROVIDED BETWEEN GRAVEL PATHS AND VEGETATED AREAS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
014	69378000	413 N 1ST AVE, RIDGEFIELD, WA 98642	ANDREW & AMBER LUTES

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	5,189	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	796	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	4,847	18
RESTRICTED ACCESS	TOPSOIL	454	6
GRAVEL PATH	GRAVEL SURFACING	666	4
GRAVEL PAD	GRAVEL SURFACING	342	6
ON PROPERTY	PLANTER BED	717	2

NOTE: RESTORATION AREAS AND DEPTHS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL

RECORD DRAWING

MAUL FOSTER ALONGI
109 E 13TH STREET
VANCOUVER, WA 98660
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Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

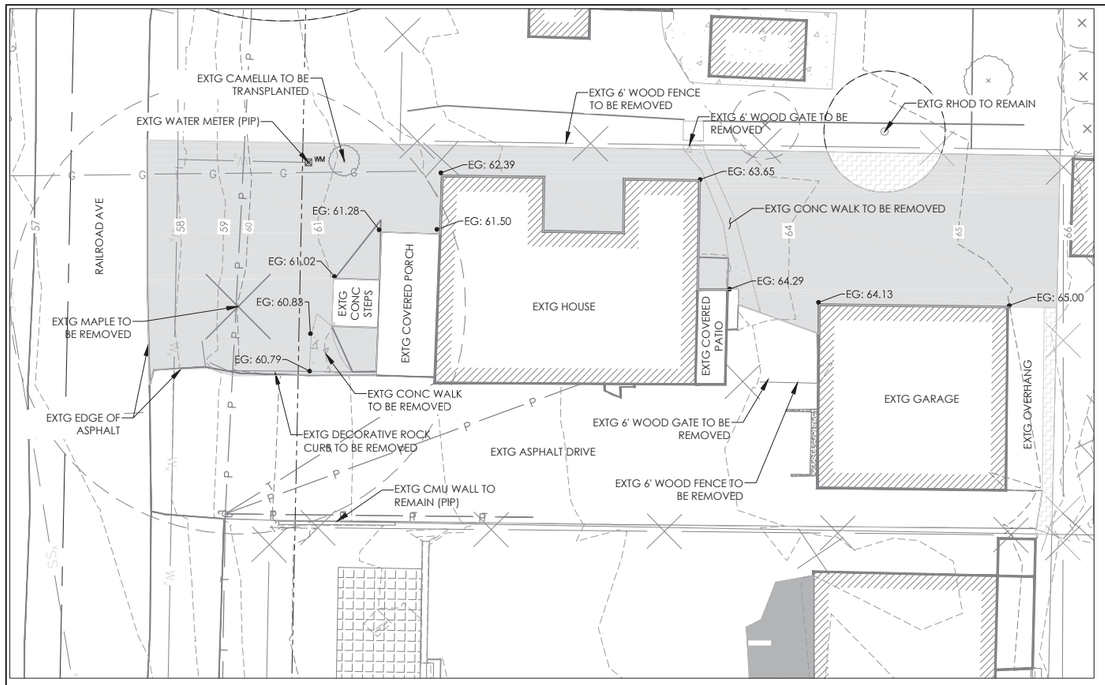
ISSUE	DATE	DESCRIPTION
REV 1	03/25/2021	UPDATED RECORD DRAWING
A	03/28/2017	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED:--
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

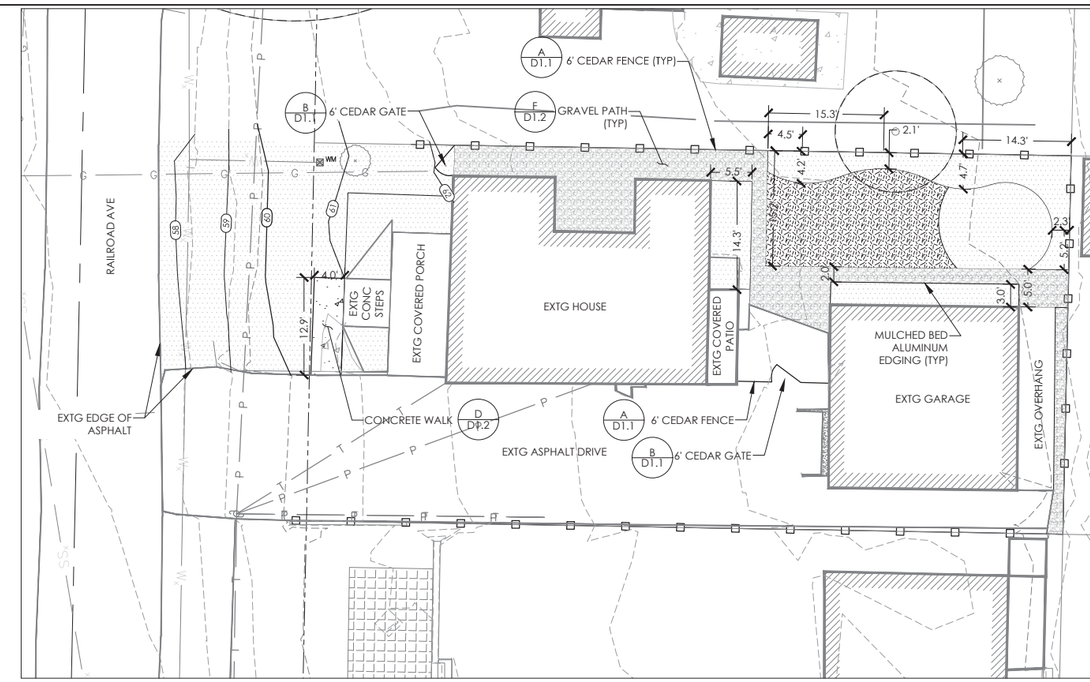
SHEET TITLE
PROPERTY 014 REMEDIATION AND RESTORATION PLAN

SHEET
C14.1

PLOTTED ON: 2021-09-10 9:06 AM PLOTTED BY: Josh Elliott FILENAME: G:\JOB_AFA Civil 3D\JB_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2018 RECORD DRAWINGS\ECOLOGY RESPONSES\C14.1 PROPERTY 014_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTHS (OR COMBINED TOPSOIL AND WOODCHIPS OR GRAVEL PATH DEPTHS) TO MATCH REMEDIATION DEPTHS AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE UNLESS OTHERWISE SHOWN.
3. ALUMINUM EDGING WILL BE PROVIDED AROUND GRAVEL PATHS, PADS, AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
5. CONTRACTOR TO COORDINATE SALVAGING PORTION OF REMOVED MAPLE WITH HOMEOWNER.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
015	69414000	410 RAILROAD AVE, RIDGEFIELD, WA 98642	ASHLEY VAN VLYMEN

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	2,114	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	104	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	2,114	18
RESTRICTED ACCESS	TOPSOIL	104	6
GRAVEL PATH	GRAVEL SURFACING	469	4
ON PROPERTY	WOODCHIPS	279	4
ON PROPERTY	CONCRETE WALK	51	4
ON PROPERTY	PLANTER BEDS	477	2

NOTE: RESTORATION AREAS AND DEPTHS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL
- NEW HEMLOCK WOODCHIPS

RECORD DRAWING

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Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

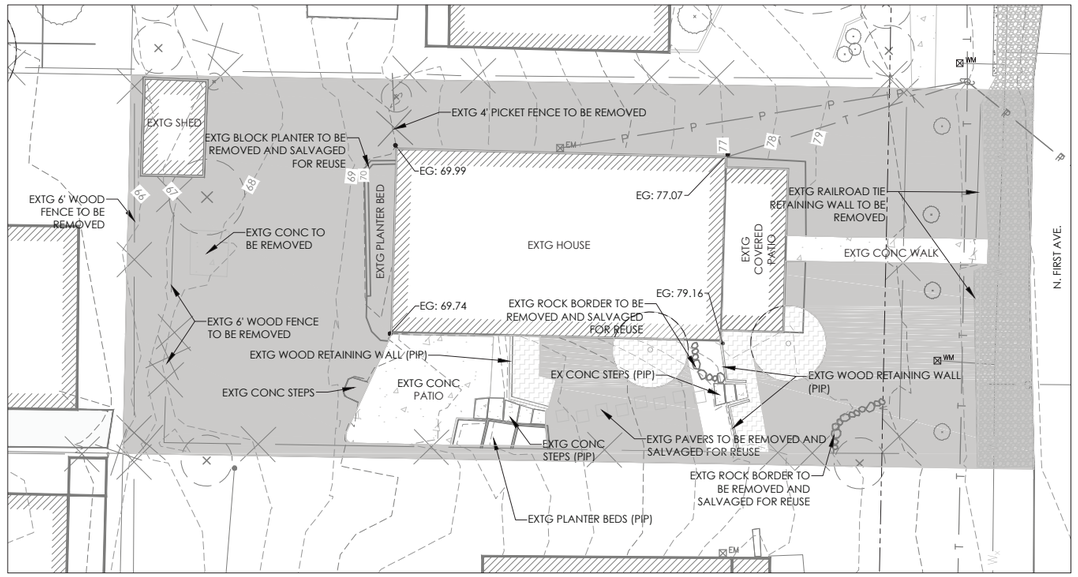
PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT

SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

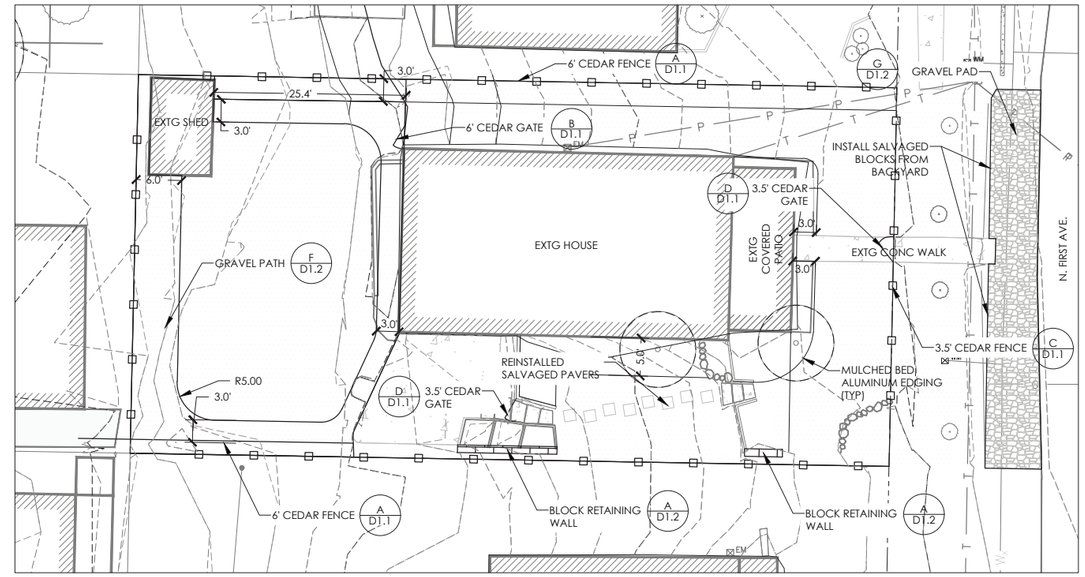
SHEET TITLE
PROPERTY 015 REMEDIATION AND RESTORATION PLAN

SHEET
C15.1

PLOTTED ON: 2017-03-30 9:24 AM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C15.1 PROPERTY 015.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0. EXCAVATION ADJACENT TO ALL EX. RETAINING WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-4 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED BETWEEN GRAVEL PATHS /PADS AND VEGETATED AREAS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
016	6380000	409 N 1ST AVE, RIDGEFIELD, WA 98642	CLAYTON TARKALSON & BREA ROBERSON

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	3,945	18
RESTRICTED ACCESS	VACTOR/HAND TOOLS	225	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	3,612	18
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	225	6
GRAVEL PAD	GRAVEL SURFACING	333	12
GRAVEL PATH	GRAVEL SURFACING	512	4

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO TRANSPLANTED BY CONTRACTOR
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PAD
- NEW GRAVEL WALK

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
REV 1	03/24/2021	UPDATED RECORD DRAWING
A	03/28/2017	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED:--
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
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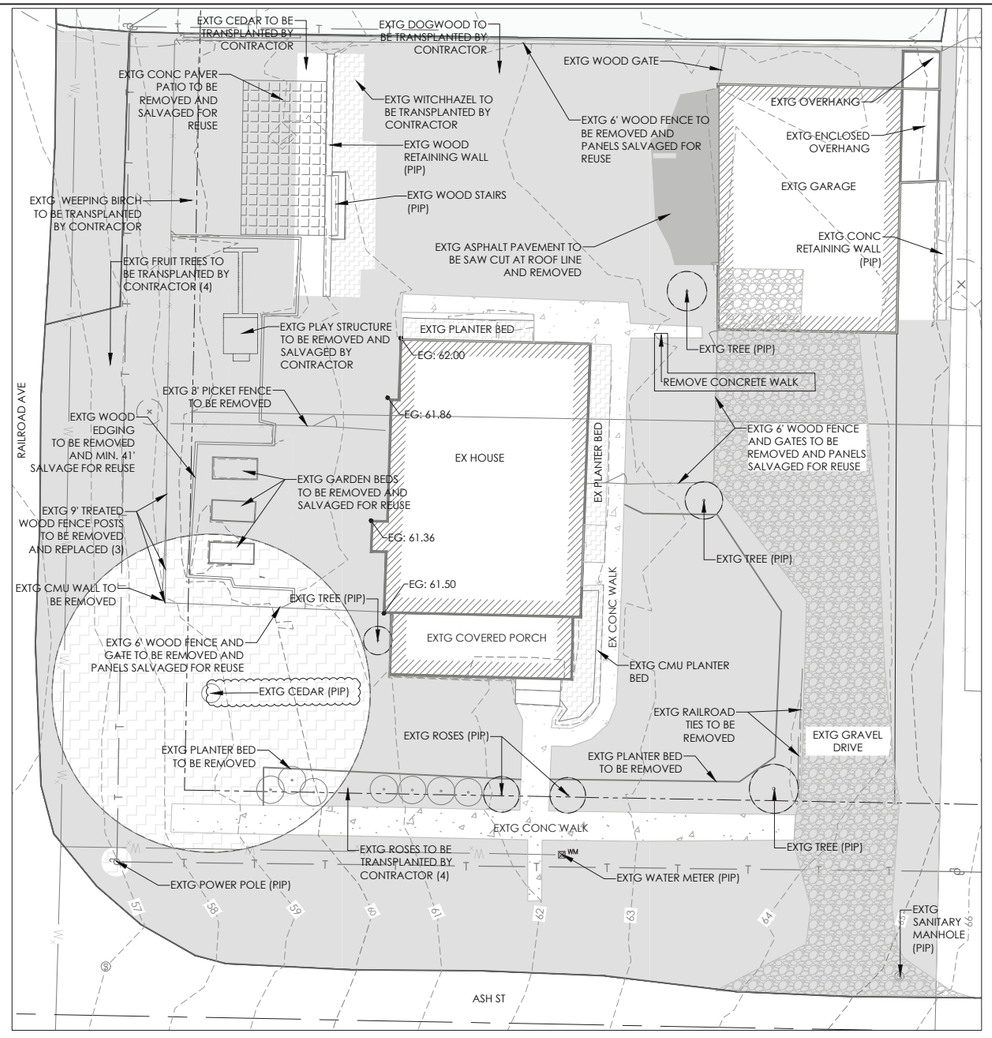
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

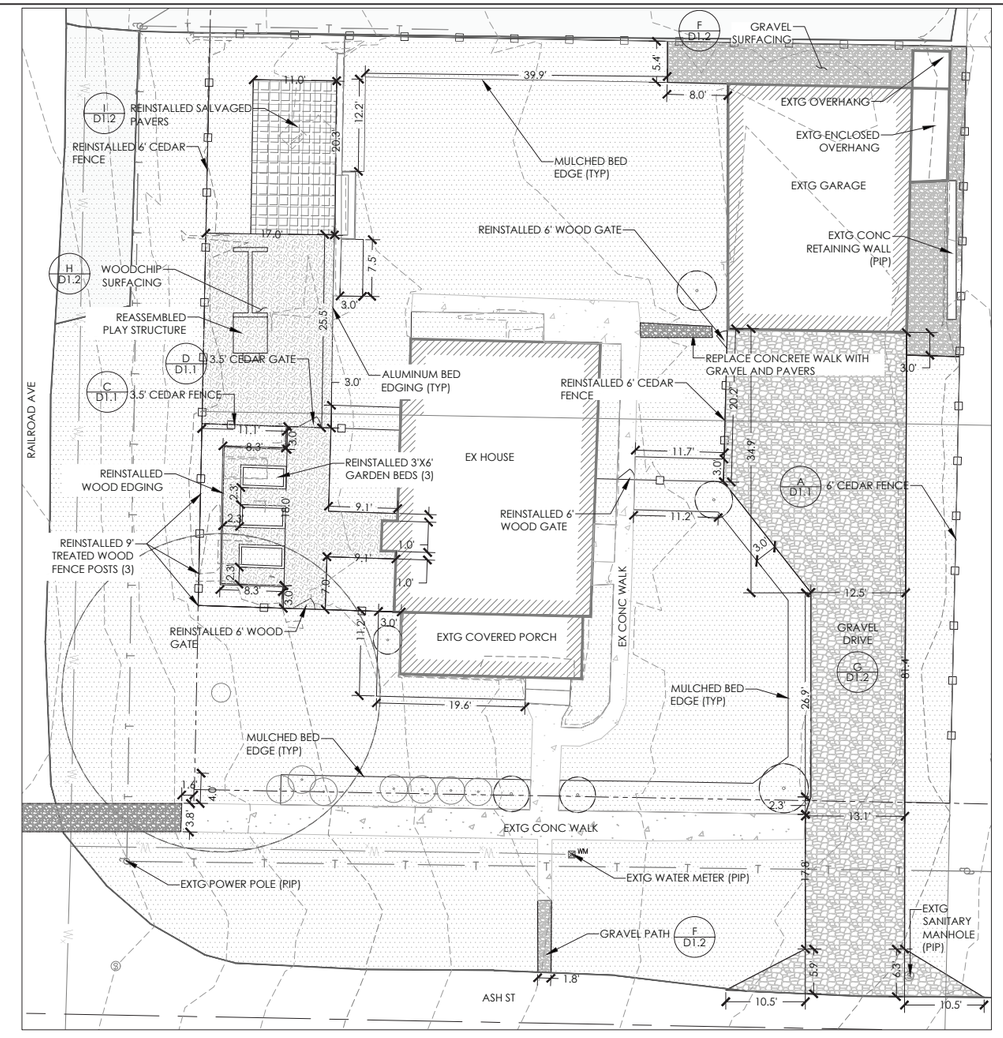
SHEET TITLE
PROPERTY 016 REMEDIATION AND RESTORATION PLAN

SHEET
C16.1

PLOTTED ON: 2021-07-14 4:16 PM PLOTTED BY: Brooke James FILENAME: \\smfs01\file-cave.windows.net\cavefs00_MFA Cat 3D\00_PROJECTS\9003\01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C16.1 PROPERTY 016_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EXISTING BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0. EXCAVATION ADJACENT TO ALL EXISTING RETAINING WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-4 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED BETWEEN GRAVEL /WOODCHIP SURFACING AND AREAS OF GRASS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
017	69410000	6 ASH ST, RIDGEFIELD, WA 98642	MICHAEL AND HALEE BROWN

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	10,216	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	1,694	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	10,216	18
RESTRICTED ACCESS	TOPSOIL	1,694	6
GRAVEL PAD	GRAVEL SURFACING	1,484	18
GRAVEL PATH	GRAVEL SURFACING	302	4
GARDEN/PLAY AREA	WOODCHIP SURFACING	707	4
ON PROPERTY	PLANTER BEDS	2,015	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- EXTG WOODCHIPS
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL DRIVE/PAD
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
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Port of Ridgefield

JOSHUA CARSON ELLIOTT STATE OF WASHINGTON 50320 REGISTERED PROFESSIONAL ENGINEER

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OFF-PROPERTERY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING
1	04/17/2018	BID ADDENDUM NO. 2

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

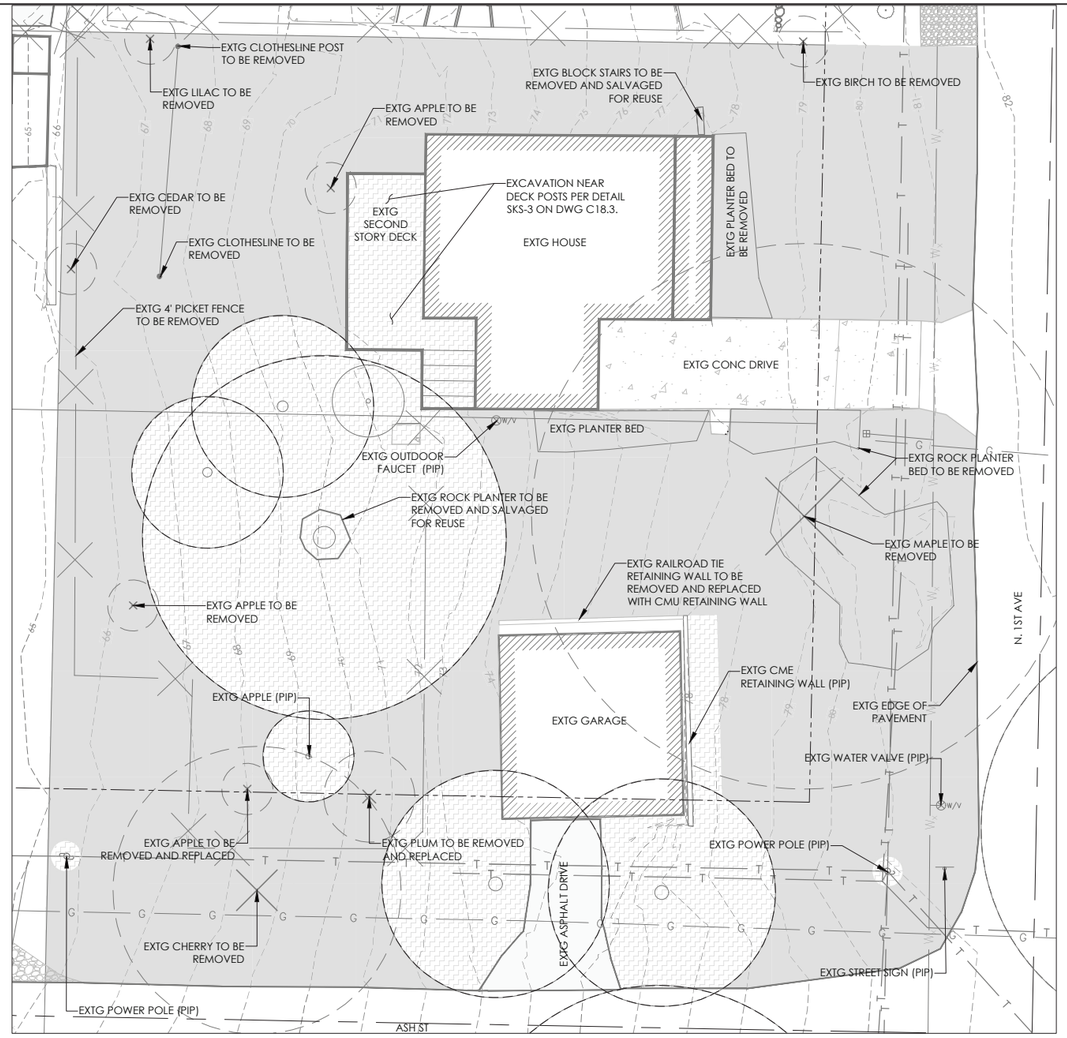
SHEET TITLE

PROPERTY 017 REMEDIATION AND RESTORATION PLAN

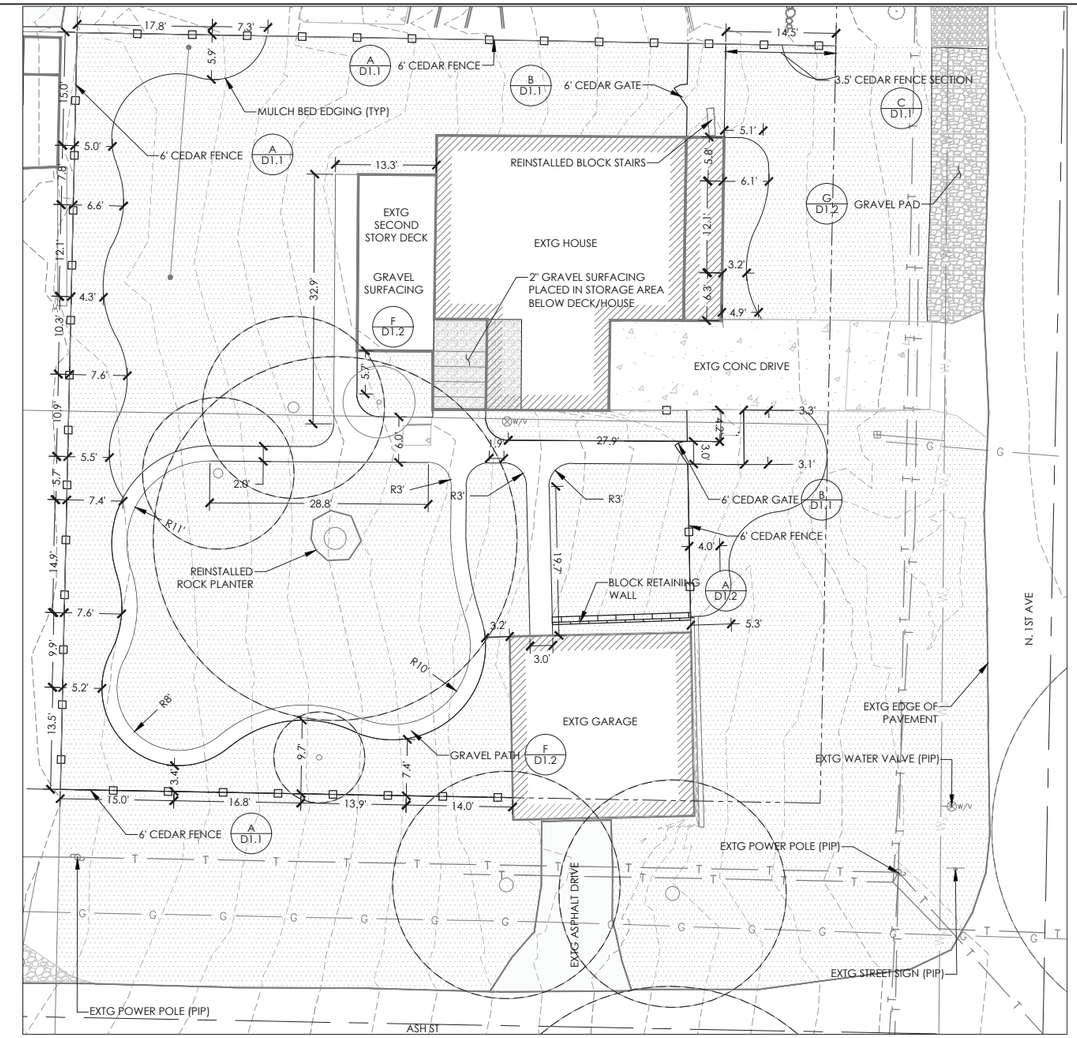
SHEET

C17.1

PLOTTED ON: 2021-07-14 4:24 PM PLOTTED BY: Brooke James FILENAME: \\uhfsg01\files\core-workgroups\environmental\JOB_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2018\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C17.1 PROPERTY 017_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:
1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, POSTS, AND RETAINING WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED BETWEEN GRAVEL PATHS AND AREAS OF GRASS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION

PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
018	69382000	405 N 1ST AVE, RIDGEFIELD, WA 98642	STEPHANIE PROUDFOOT AND FRANCO WENTZEL

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	9,024	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	3,445	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	9,024	12
RESTRICTED ACCESS	TOPSOIL	3,444	6
GRAVEL PATH	GRAVEL SURFACING	941	4
ON PROPERTY	MULCH BEDS	1,636	2

LEGEND:

- 15 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 — EXTG MINOR CONTOUR (1' INTERVAL)
- 15 — NEW MAJOR CONTOURS (5' INTERVAL)
- 14 — NEW MINOR CONTOURS (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT — STATE OF WASHINGTON — 50320 — REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTERY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

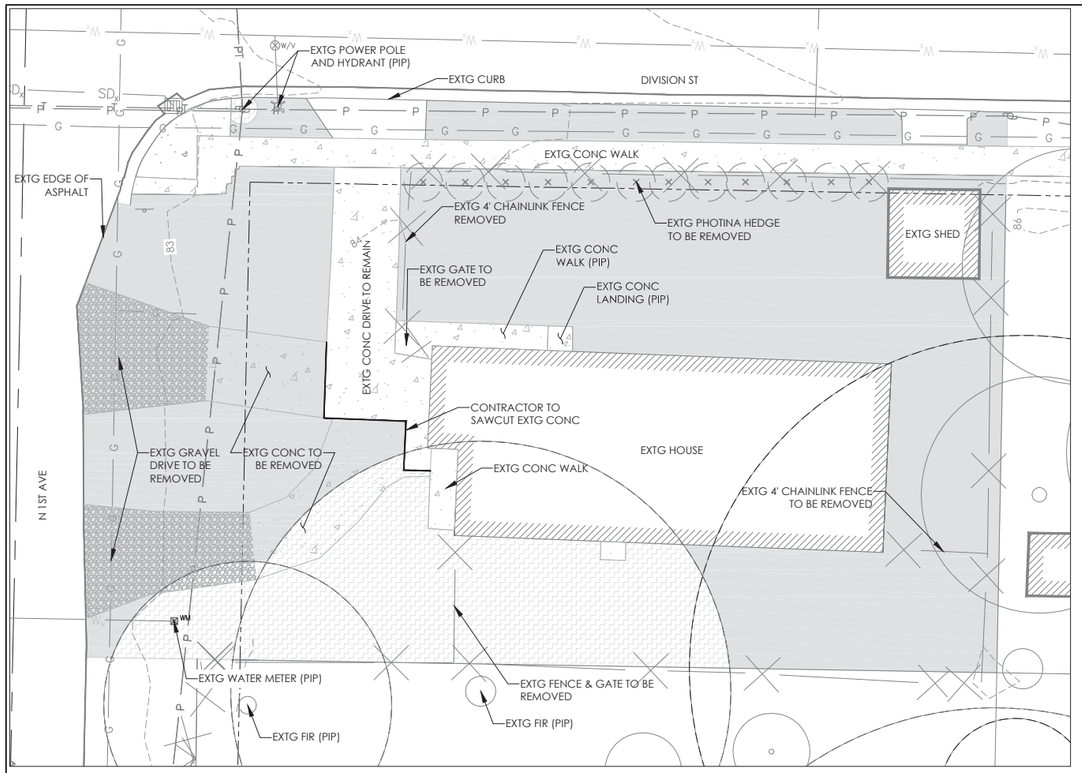
ISSUE	DATE	DESCRIPTION
REV 1	03/25/2021	UPDATED RECORD DRAWING
A	03/28/2017	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: --
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

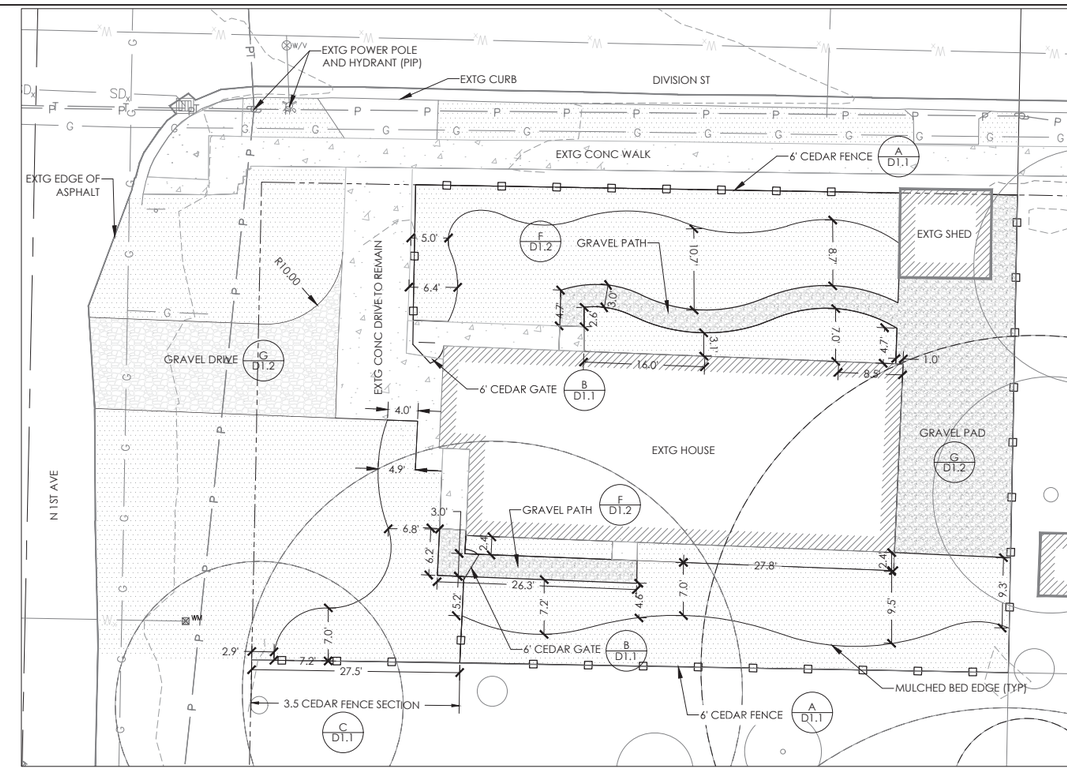
SHEET TITLE
PROPERTY 018 REMEDIATION AND RESTORATION PLAN

SHEET
C18.1

PLOTTED ON: 2021-07-14 4:48 PM PLOTTED BY: Brooke James FILENAME: \\ultrag1.file.core.windows.net\coso\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C18.1 PROPERTY 018_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL/GRAVEL DRIVE DEPTHS TO MATCH REMEDIATION DEPTHS AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED BETWEEN VEGETATED AREAS AND GRAVEL PATHS, PAD AND DRIVES.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
019	69348000	412 N 1ST AVE, RIDGEFIELD, WA 98642	JODIE JOHNSON

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	4,798	18
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	1,311	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	4,460	18
RESTRICTED ACCESS	TOPSOIL	1,311	6
GRAVEL PAD	GRAVEL SURFACING	410	18
GRAVEL PATH	GRAVEL SURFACING	839	4
ON PROPERTY	PLANTER BEDS	1,400	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EX CONC
- EX GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH/PAD
- NEW GRAVEL DRIVE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JODIE CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

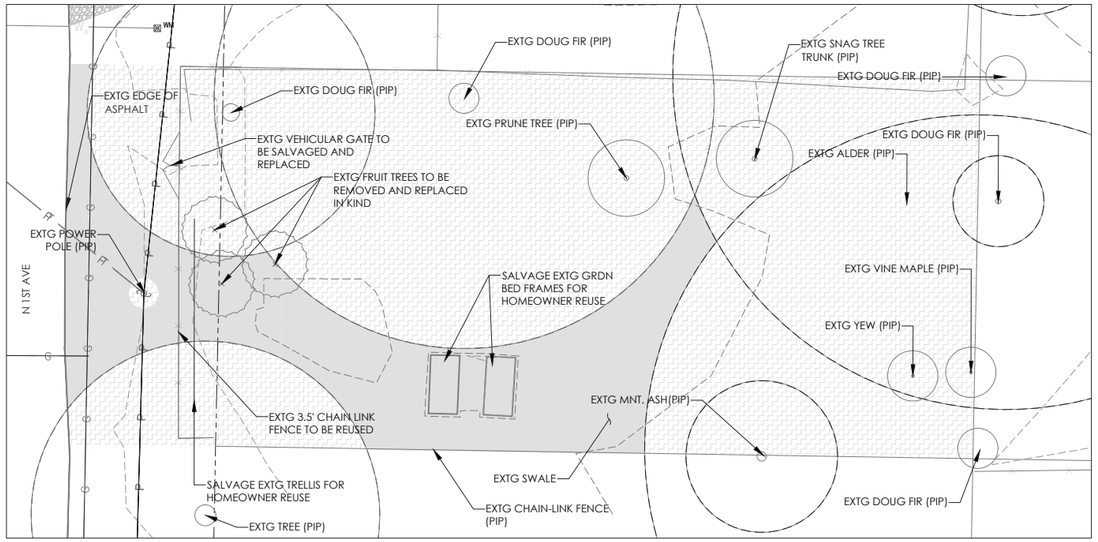
ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

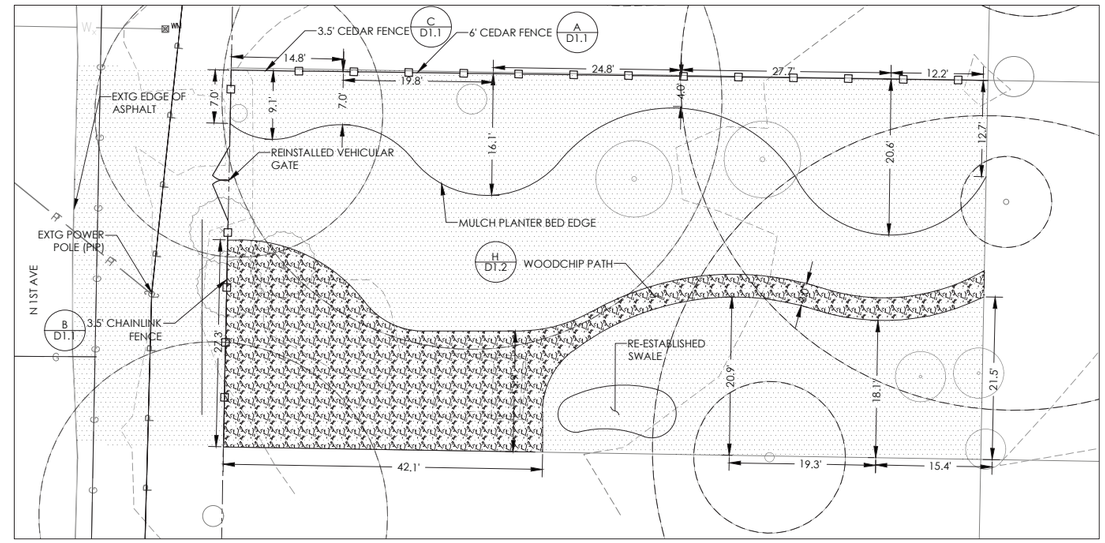
SHEET TITLE
PROPERTY 019 REMEDIATION AND RESTORATION PLAN

SHEET
C19.1

PLOTTED BY: Lindsey Crosby FILENAME: G:\90_MFA Civil\9003.01.39 Off-Property\OIP Interim Action\PLANS\2016 RECORD DRAWINGS\C19.1 PROPERTY 019.dwg
PLOTTED ON: 2017-03-30 11:21 AM



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:
1. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
2. NEW CHAIN-LINK FENCE AND APPURTENANCES TO BE POWDER COATED FOREST GREEN TO MATCH EXISTING FENCE.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
20A	69350000	--	STEVEN KENWOTHY

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	1,318	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	4,693	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 15 EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
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10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

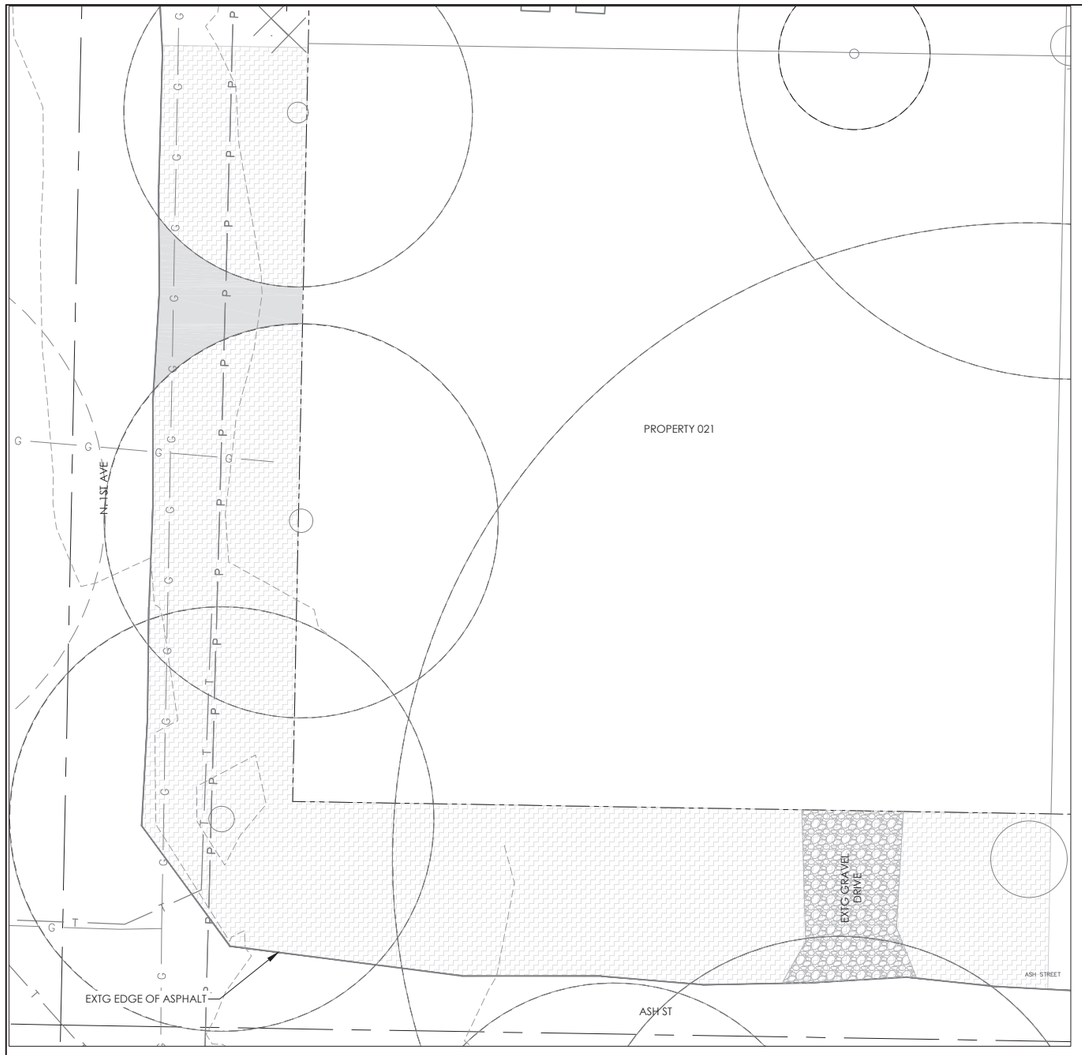
ISSUE	DATE	DESCRIPTION
REV 1	5/25/2021	UPDATED RECORD DRAWING
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: --
DRAWN: M.TARBERT
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

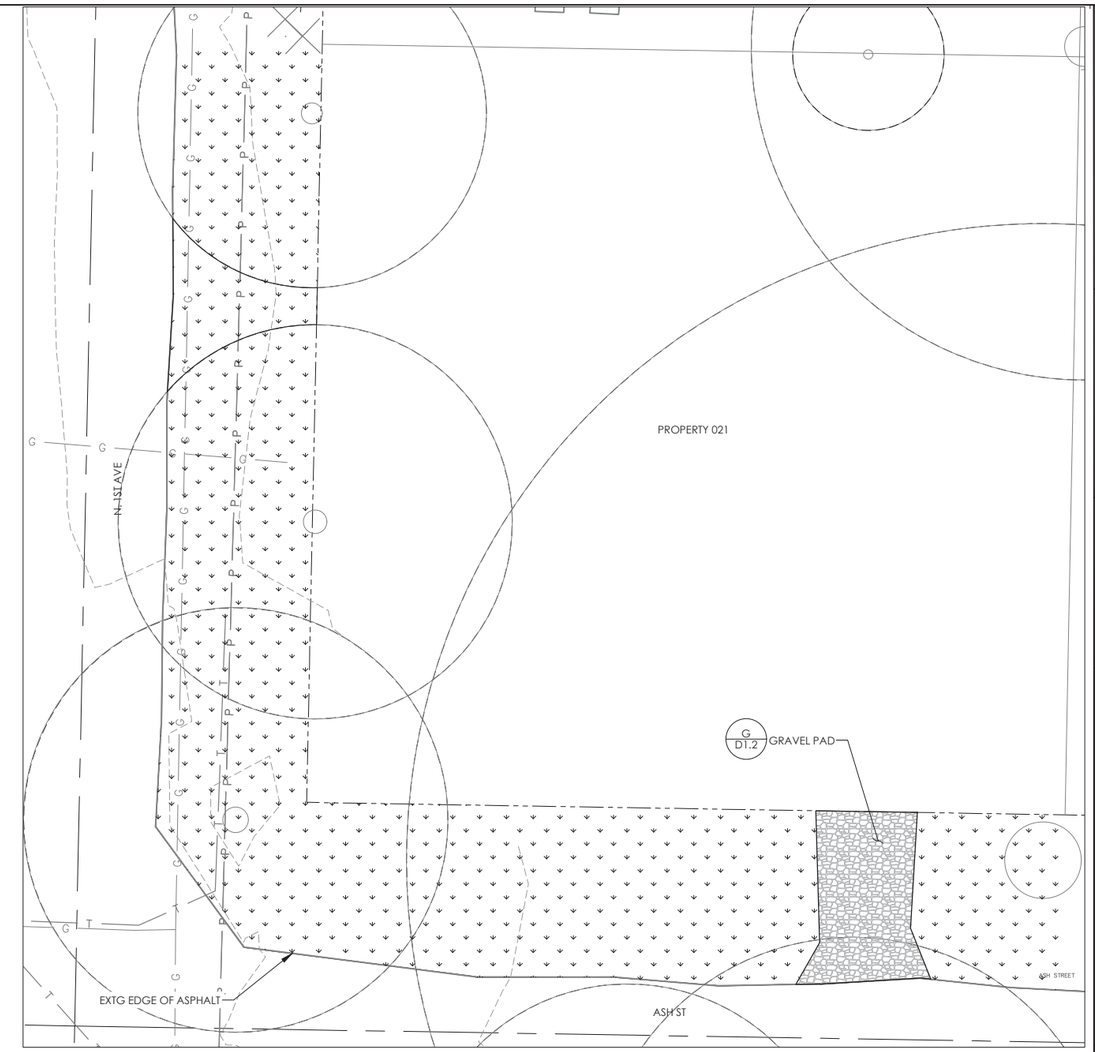
SHEET TITLE
PROPERTY 20A REMEDIATION AND RESTORATION PLAN

SHEET
C20A.1

PLOTTED ON: 2021-10-27 7:51 PM PLOTTED BY: Michael Tarbert FILENAME: G:\JOB_MFA Civil\9300\01.39 OFP\Property\OFP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C20.1 PROPERTY 020_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	194	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	4,261	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	194	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	4,261	6
SOIL REMOVAL	HYDROSEED	4,157	-
SOIL REMOVAL - RESTRICTED ACCESS	GRAVEL DRIVE/PAD	298	4

LEGEND:

- 15 EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- PLANT TO PROTECT IN PLACE
- ROOT PROTECTION ZONE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- EXTG GRAVEL
- NEW TOPSOIL AND HYDROSEED MULCH
- NEW GRAVEL DRIVE/PAD

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
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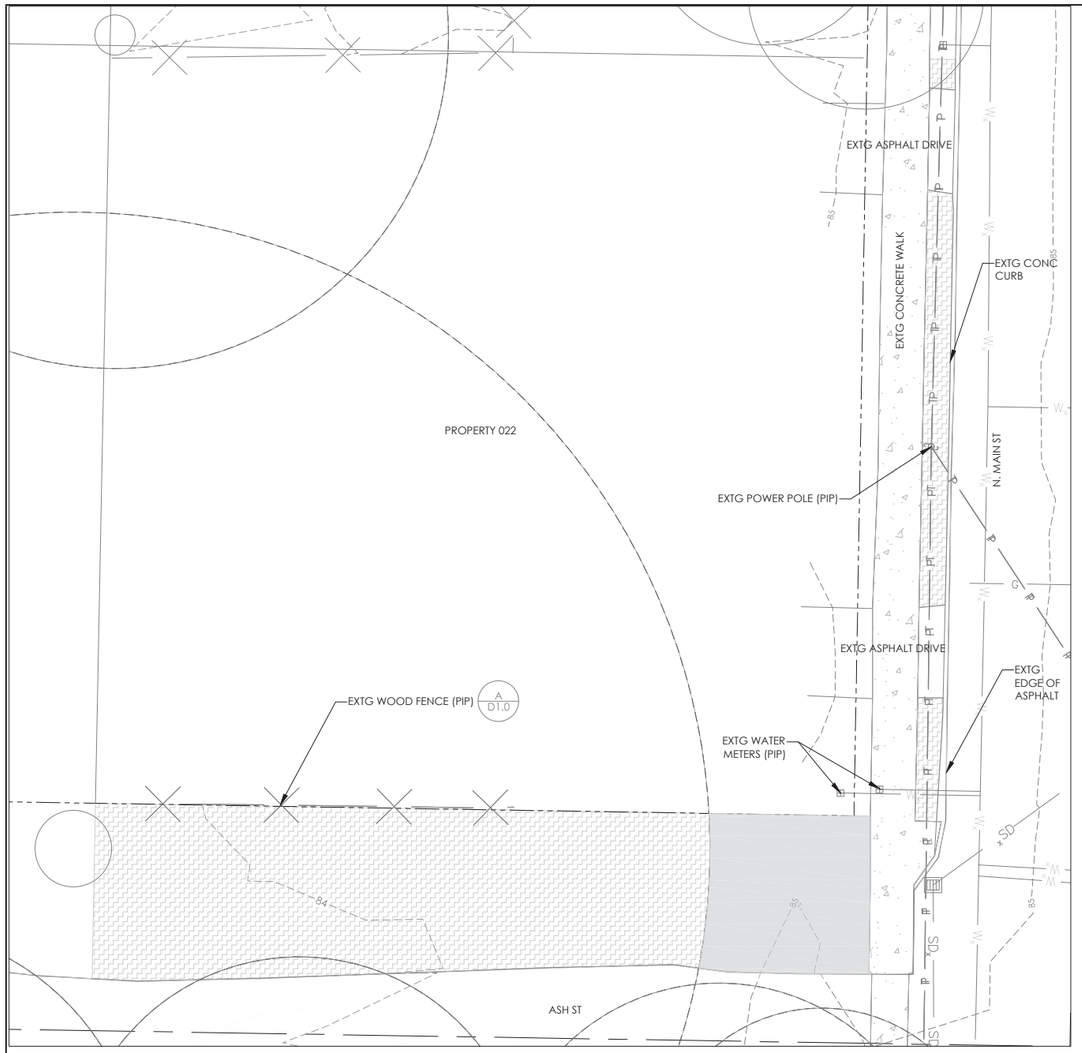
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

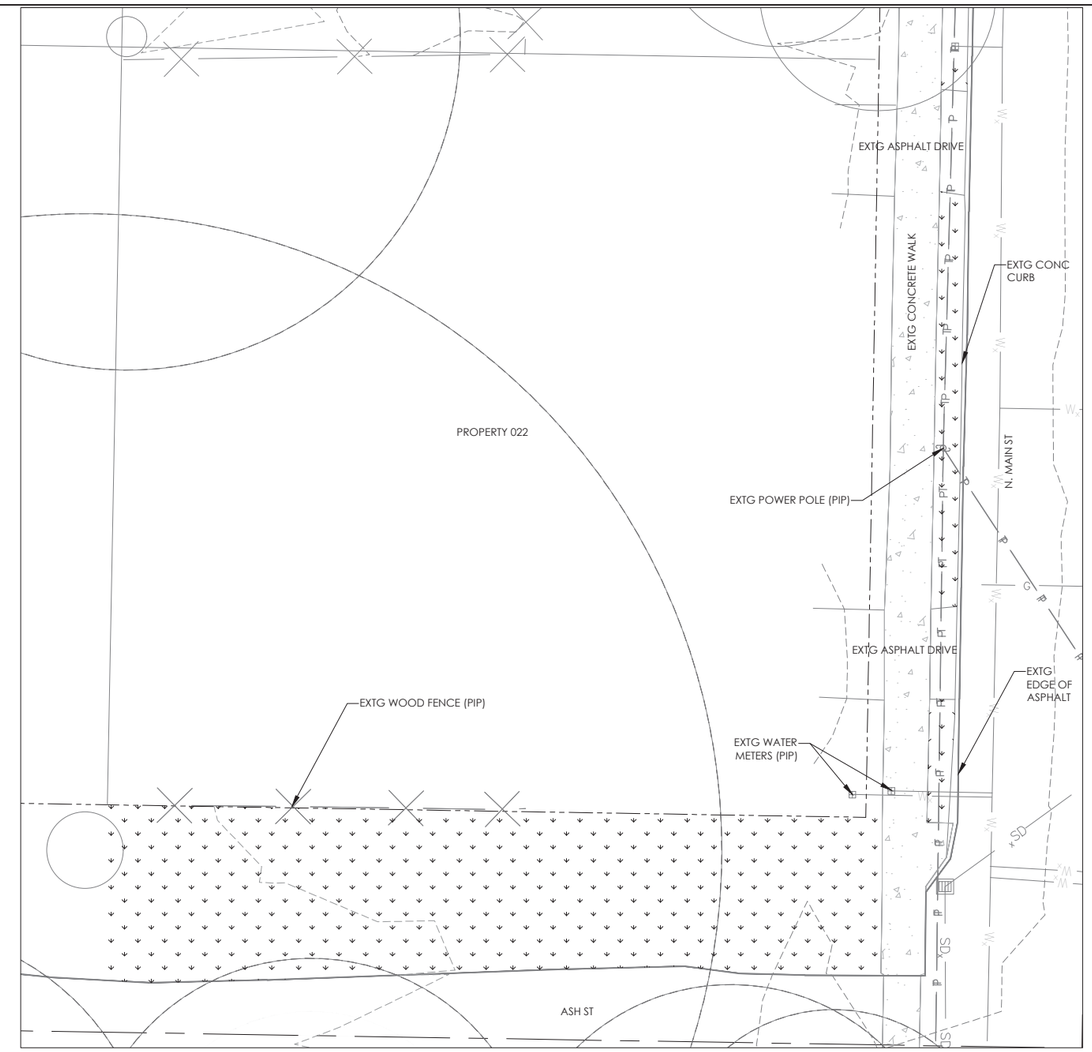
SHEET TITLE
ROW 021 REMEDIATION AND RESTORATION PLAN

SHEET
C21.1

PLOTTED ON: 2017-03-30 3:25 PM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\Off Interim Action\PLANS\2016 RECORD DRAWINGS\C21.1 - 021 ROW.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	449	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	2,014	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	449	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	2,014	6
SOIL REMOVAL	HYDROSEED	2,463	-

LEGEND:

- 15 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL AND HYDROSEED MULCH

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

10-27-2021

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

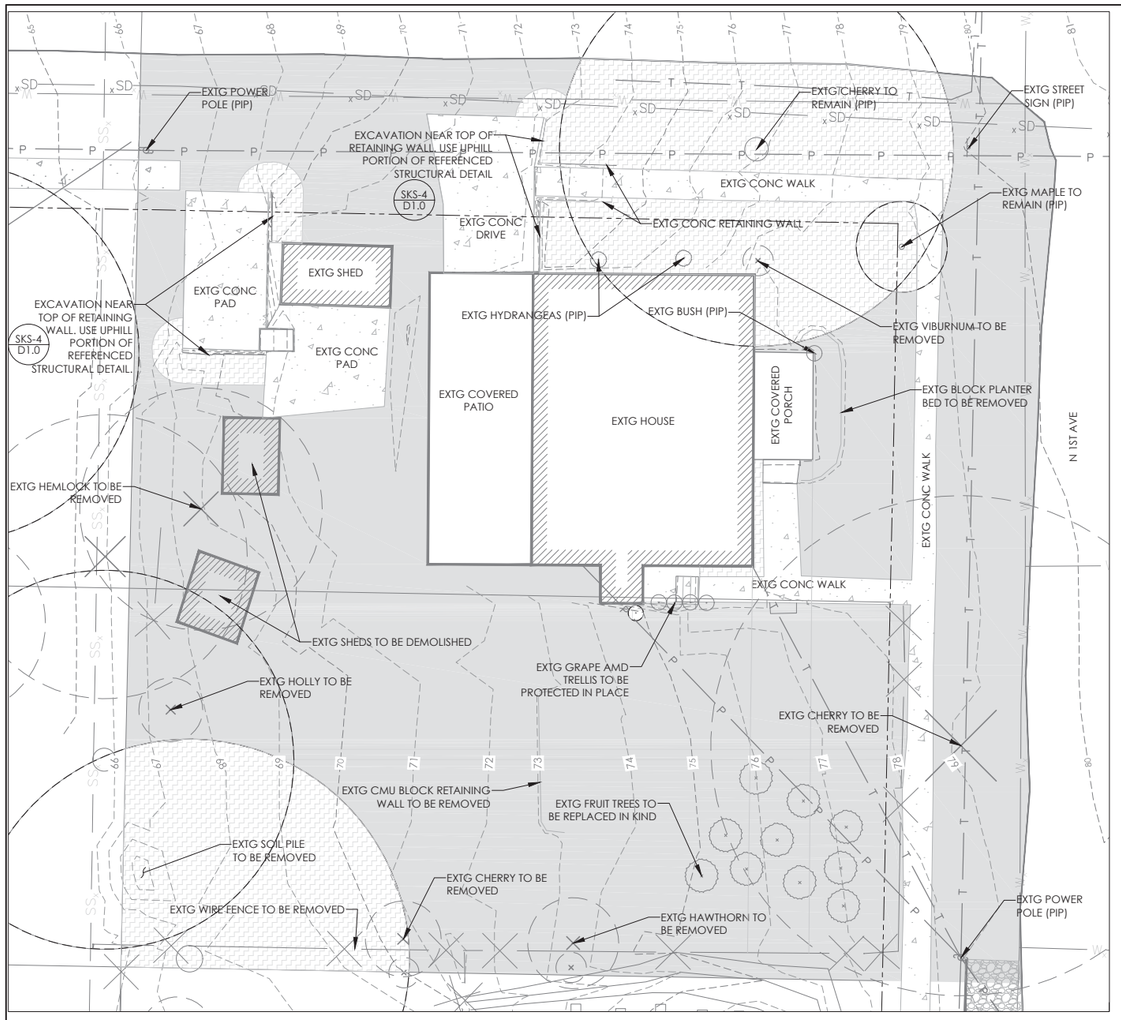
PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT

SCALE
0 10' 20'
NOTE, BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

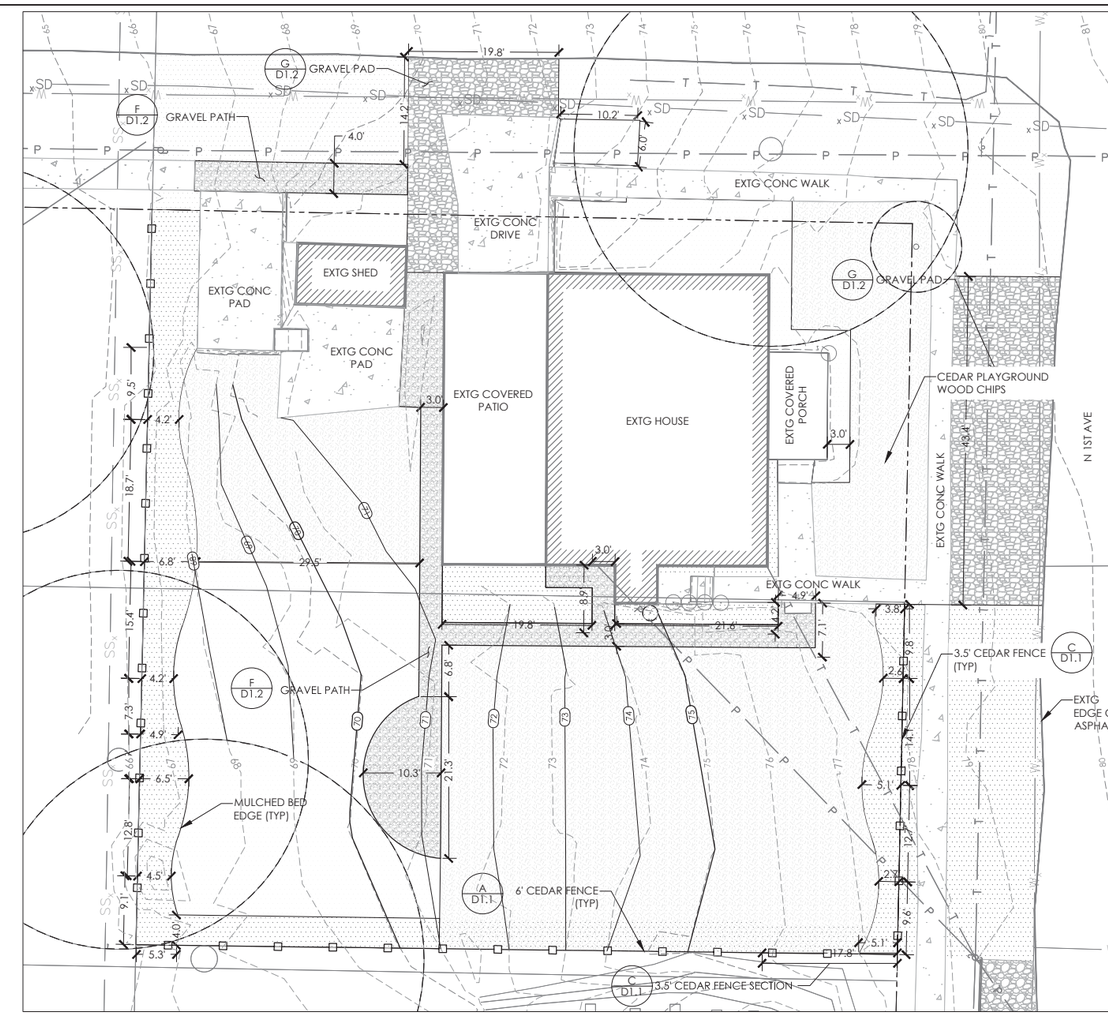
SHEET TITLE
ROW 022 REMEDIATION AND RESTORATION PLAN

SHEET
C22.1

PLOTTED ON: 2017-03-30 3:28 PM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil\9003.01.39_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C22.1_1022 ROW.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
024	69386000	327 N 1ST AVE, RIDGEFIELD, WA 98642	CRAIG MEADE AND SHANNON RICHARDS

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	8,319	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	2,486	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	4,090	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	2,486	6
GRAVEL DRIVE/PAD	GRAVEL SURFACING	846	12
GRAVEL PATH	GRAVEL SURFACING	695	4
ON PROPERTY	PLANTER BEDS	1,556	2
GARDEN	WOOD CHIPS	3,755	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

NOTES:
1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE EXCEPT WHERE SHOWN OTHERWISE.
3. ALUMINUM EDGING TO BE PROVIDED AROUND GRAVEL DRIVES/PATHS AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

LEGEND:

- 15 EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 EXTG MINOR CONTOUR (1' INTERVAL)
- 15 NEW MAJOR CONTOUR (5' INTERVAL)
- 14 NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL DRIVE/PAD
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT, STATE OF WASHINGTON, 50320, REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 024 REMEDIATION AND RESTORATION PLAN

SHEET
C24.1

PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003\01.39 Off-Property\Off Interim Action\PLANS\2016 RECORD DRAWINGS\C24.1 PROPERTY 024.dwg
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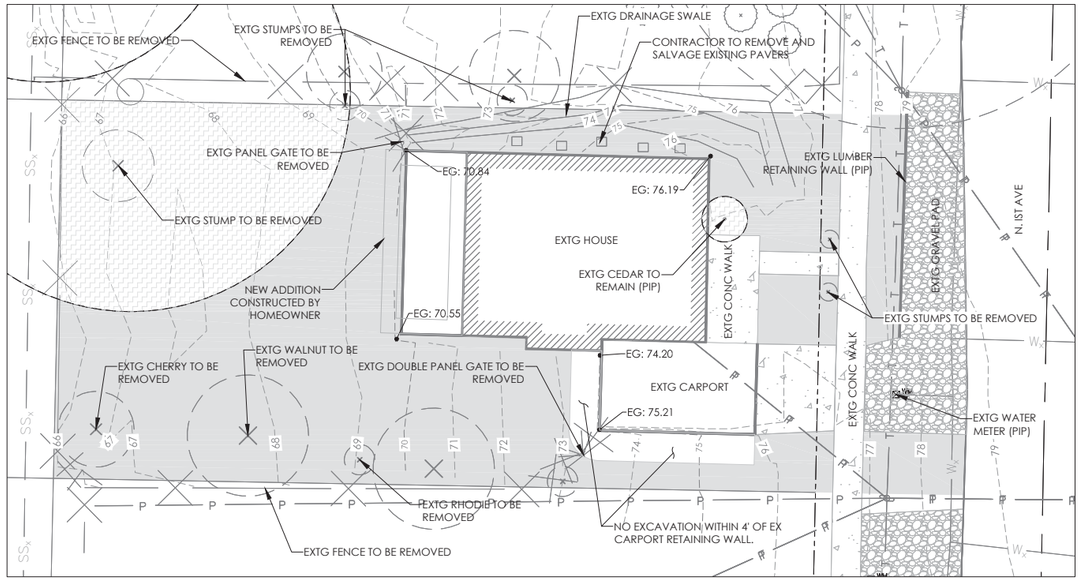
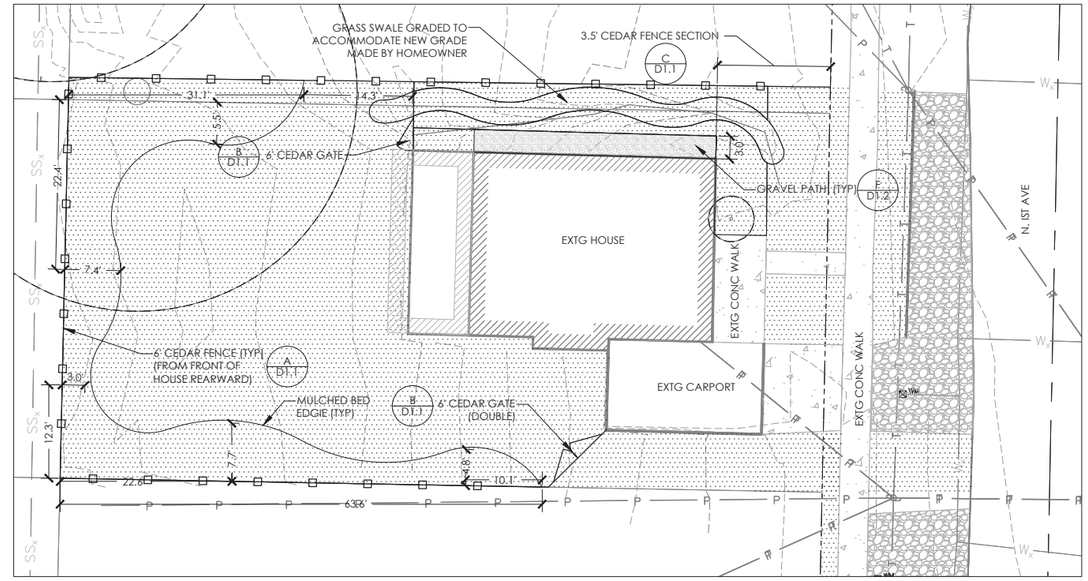


EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 & SKS-2 ON DWG C25.3.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED BETWEEN GRAVEL DRIVES AND AREAS OF GRASS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
5. SOIL STOCKPILED IN FRONT OF HOUSE TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
025	69390000	319 N 1ST AVE, RIDGEFIELD, WA 98642	OSSIAN AND ROARK LASPA

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	2,877	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	897	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	2,877	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	897	6
GRAVEL PATH	GRAVEL SURFACING	88	4
ON PROPERTY	PLANTER BEDS	1,066	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
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PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

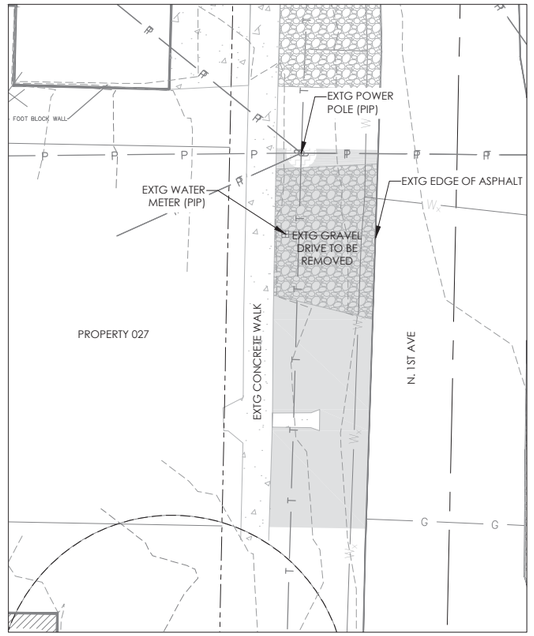
ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

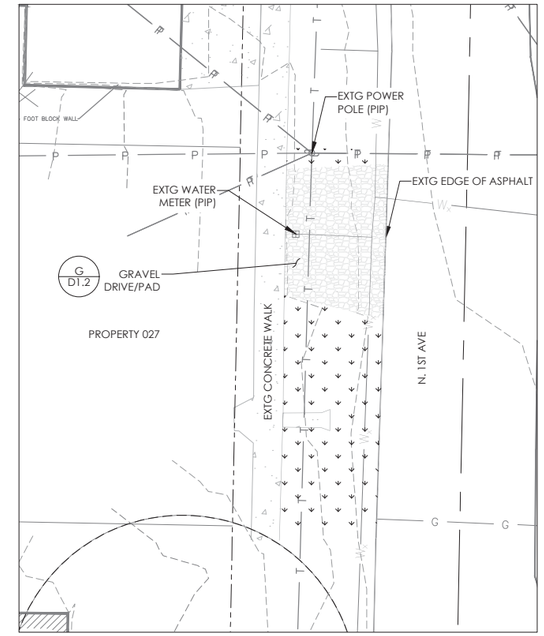
SHEET TITLE
PROPERTY 025 REMEDIATION AND RESTORATION PLAN

SHEET
C25.1

PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003\01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C25.1 PROPERTY 025.dwg
PLOTTED ON: 2017-04-05 5:21 PM



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	631	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	9	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	384	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	9	6
SOIL REMOVAL	GRAVEL DRIVE/PAD	247	12
SOIL REMOVAL	HYDROSEED	393	-

LEGEND:

- 15 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- PLANT TO PROTECT IN PLACE
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- NEW TOPSOIL AND HYDROSEED MULCH
- NEW GRAVEL DRIVE/PAD

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

10-27-2021

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
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SHEET TITLE
ROW 027 REMEDIATION AND RESTORATION PLAN

SHEET
C27.1

PLOTTED BY: Lindsey Crosby FILENAME: G:\02_MFA Civil 3D\03_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C27.1 - 027 ROW.dwg
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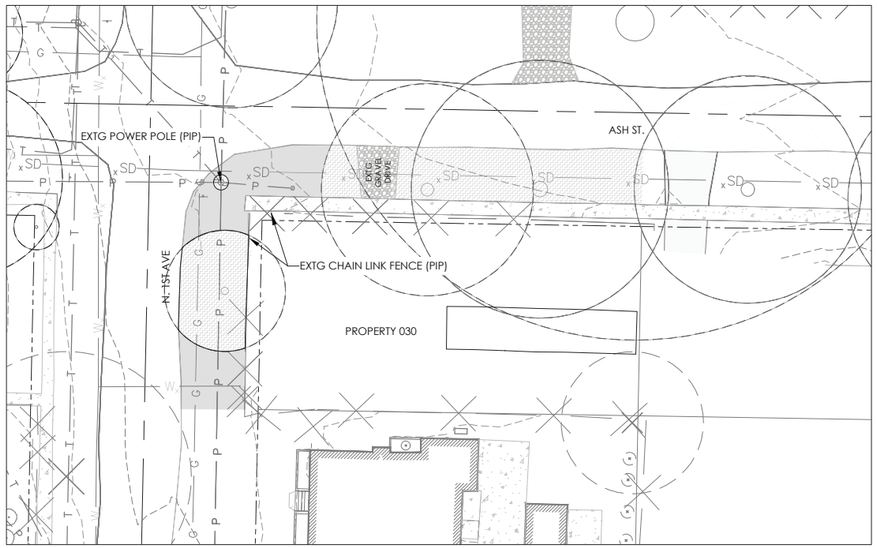


EXISTING CONDITIONS AND REMEDIATION PLAN

NOTES:

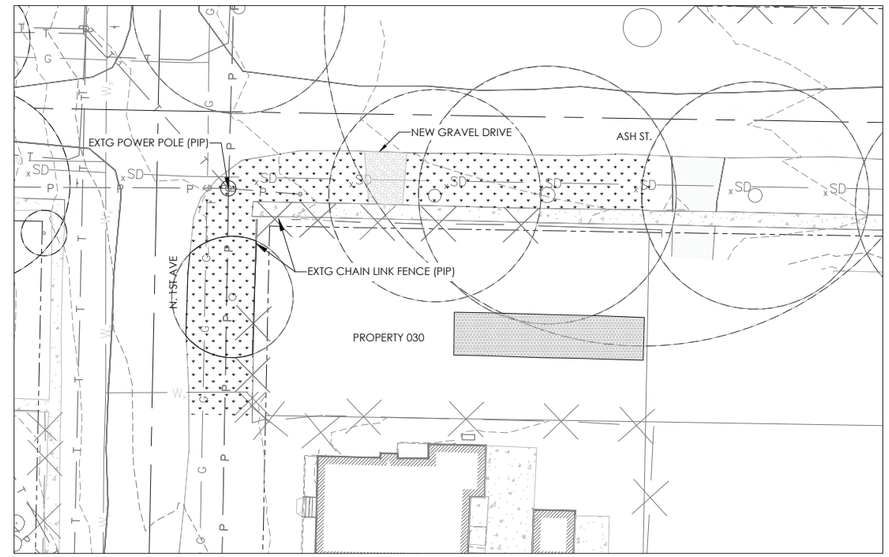
1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	803	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,580	6
GRAVEL DRIVEWAY	TRADITIONAL	140	12

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION TYPE	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	803	12
RESTRICTED ACCESS	TOPSOIL	1,580	6
GRAVEL DRIVEWAY	GRAVEL	140	12



RESTORATION AND PLANTING PLAN

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- NEW TOPSOIL AND HYDROSEED MULCH
- SOIL REMOVAL AREA - RESTRICTED ACCESS

RECORD DRAWING

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109 E 13TH STREET
VANCOUVER, WA 98660
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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

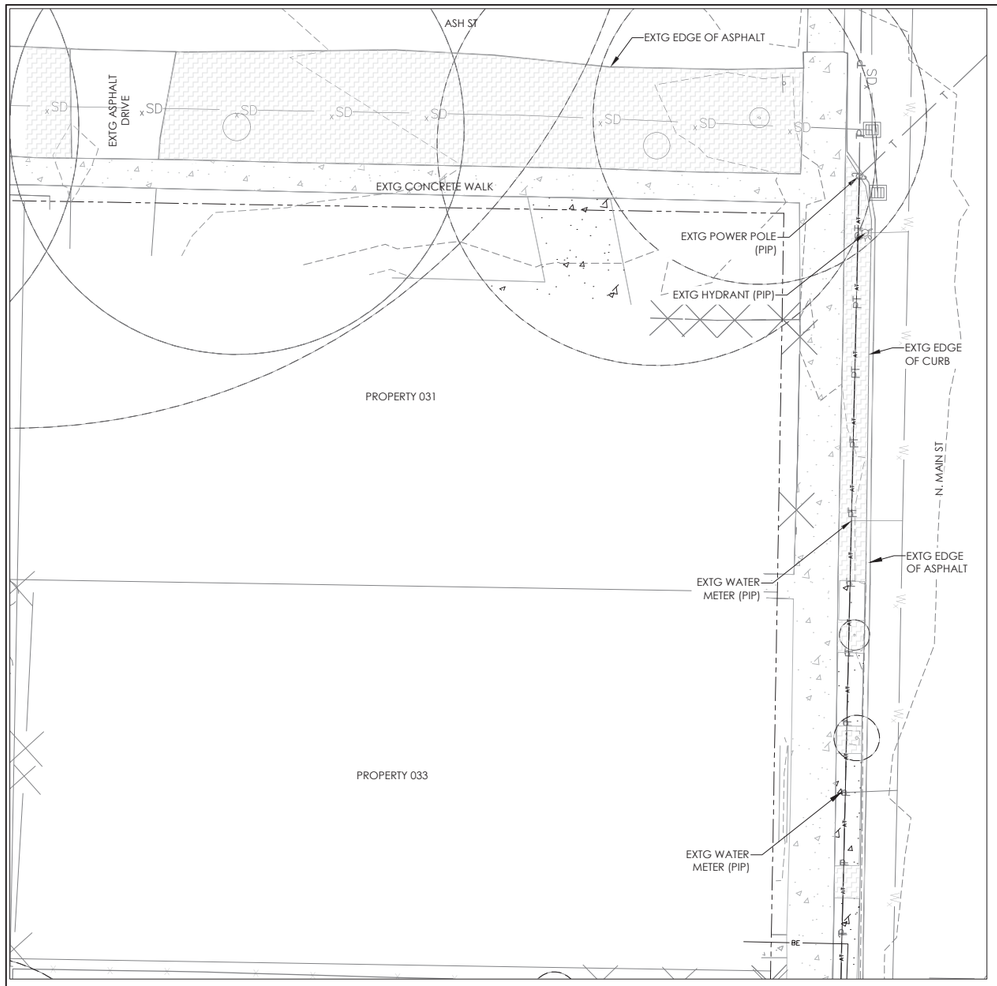
ISSUE	DATE	DESCRIPTION
A	1.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

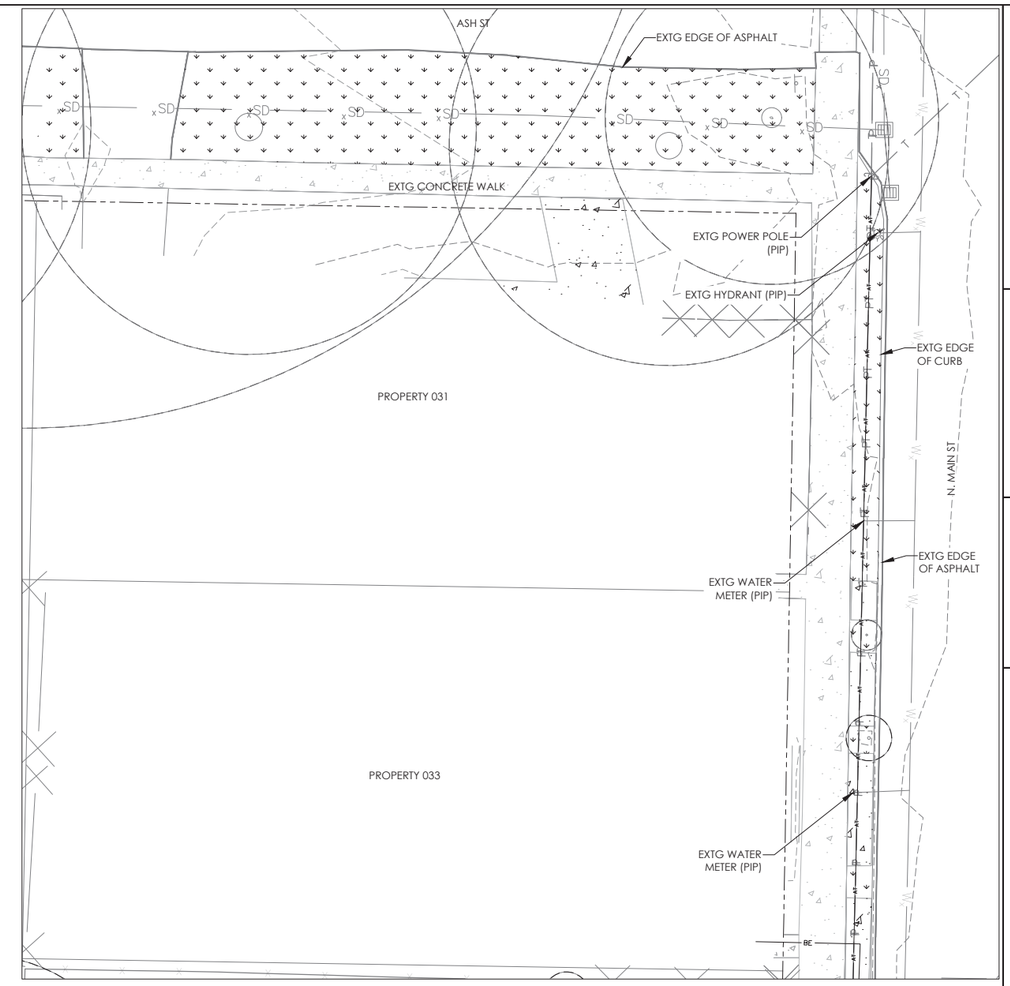
SHEET TITLE
ROW 030 REMEDIATION AND RESTORATION PLAN

SHEET
C30.1

PLOTTED ON: 2021-09-15 3:52 PM PLOTTED BY: Michael Tarbert FILENAME: G:\00_MFA Civil\30-00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C30.1 - 030 ROW_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,516	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	1,516	6
SOIL REMOVAL	HYDROSEED	1,516	-

LEGEND:

- 15 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- PLANT TO PROTECT IN PLACE
- ROOT PROTECTION ZONE
- EXTG CONC
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL AND HYDROSEED MULCH

RECORD DRAWING

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
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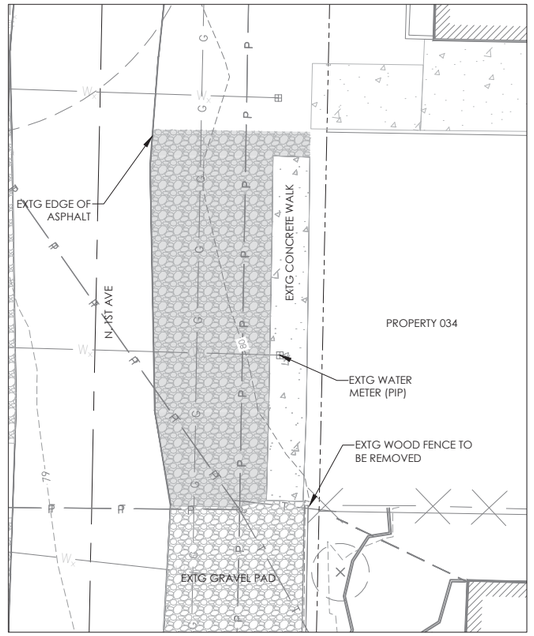
SHEET TITLE

ROW 031 & 033 REMEDIATION AND RESTORATION PLAN

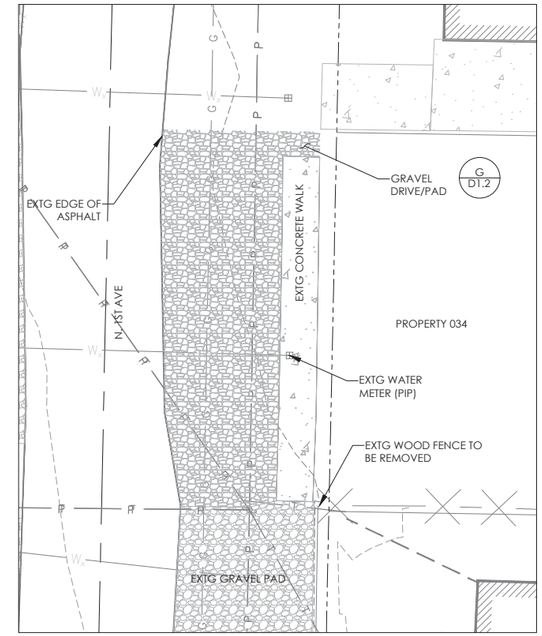
SHEET

C31.1

PLOTTED BY: Lindsey Crosby FILENAME: G:\03_MFA Civil 3D\03_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C31.1-031 ROW.dwg
PLOTTED ON: 2017-03-30 3:39 PM



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	770	12

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	GRAVEL DRIVE/PAD	770	12

LEGEND:

- 15 EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- NEW GRAVEL DRIVE/PAD

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
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OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
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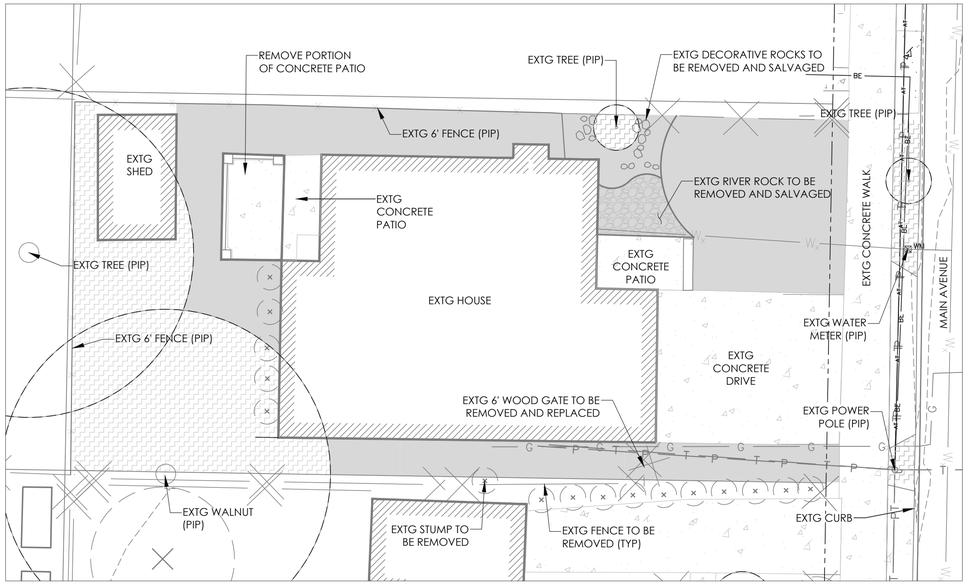
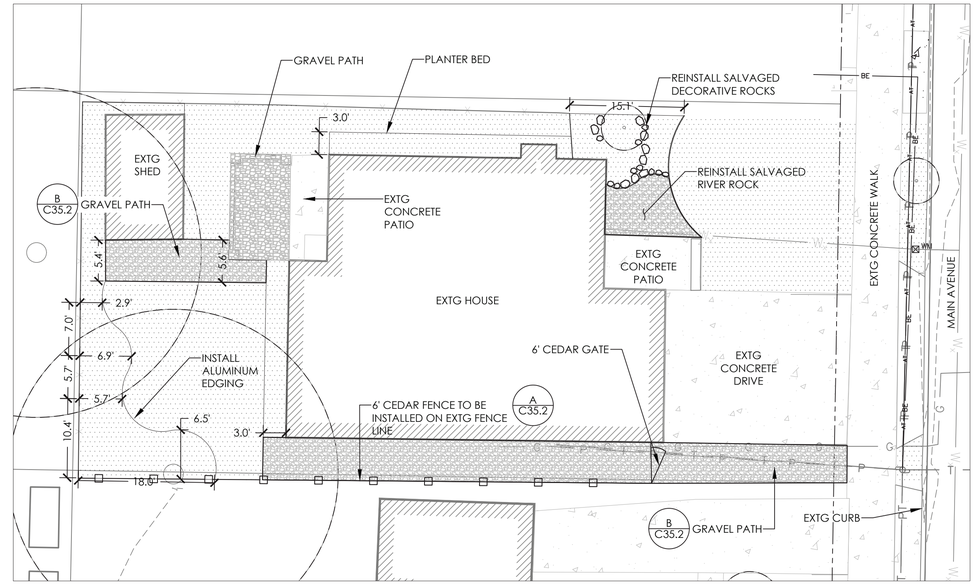
SHEET TITLE
ROW 034 REMEDIATION AND RESTORATION PLAN

SHEET
C34.1

PLOTTED ON: 2017-03-30 3:44 PM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003\01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORD DRAWINGS\C34.1-034 ROW.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EXISTING BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG C35.2.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED ALONG GRAVEL PATHS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
035	39362000	313 MAIN AVE, RIDGEFIELD, WA 98642	RHONDA PFEIFER

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	1,555	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	915	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	1,555	12
RESTRICTED ACCESS	TOPSOIL	915	6
GRAVEL PATH	GRAVEL SURFACING	632	4
ON PROPERTY	MULCH BEDS	541	2

LEGEND:

- 15 EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

OFF-PROPERTERY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

RHONDA CARSON ELLIOTT — STATE OF WASHINGTON — 50320 — REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

ISSUE	DATE	
REV 1	05/25/2021	UPDATED RE
A	03/28/17	RECORDED DR

PROJECT: 9003.01.39
DESIGNED: --
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE
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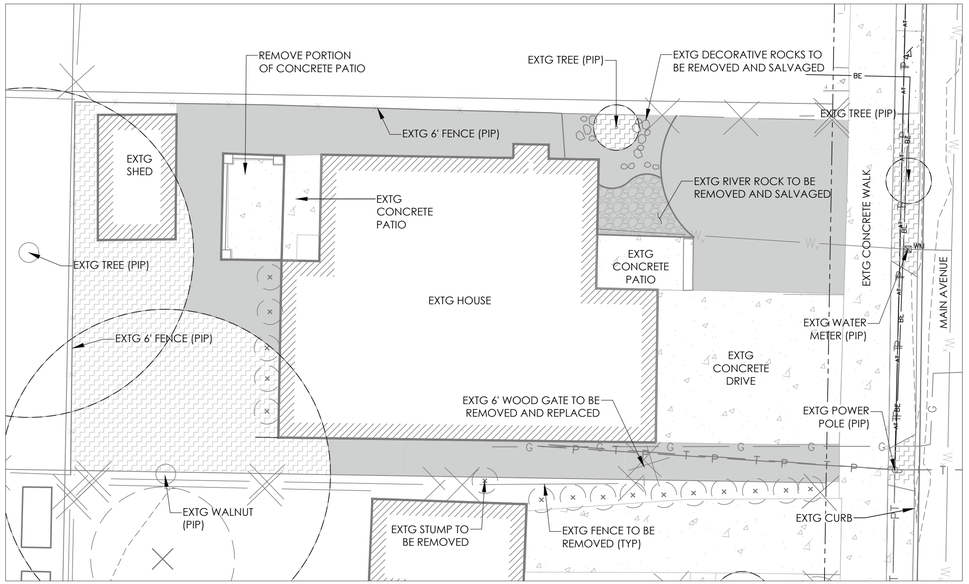
SHEET TITLE

PROPERTY 035 REMEDIATION AND RESTORATION PLAN

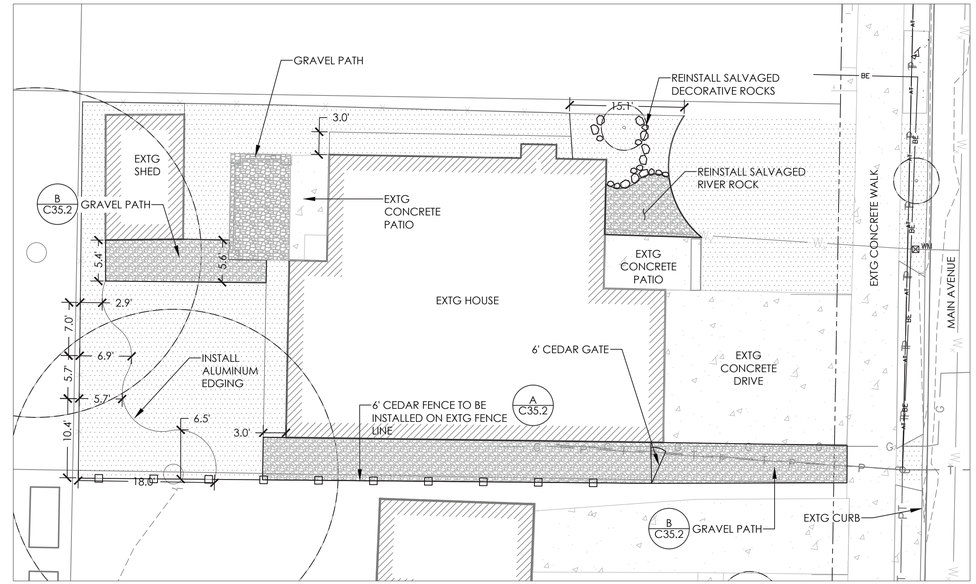
SHEET

C35.1

PLOTTED ON: 2021-09-15 3:53 PM PLOTTED BY: Michael Tarbert FILENAME: G:\00_MFA CAD 20\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C35.1 PROPERTY 035_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EXISTING BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG C35.2.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED ALONG GRAVEL PATHS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
035	39362000	313 MAIN AVE, RIDGEFIELD, WA 98642	RHONDA PFEIFER

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	1,555	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	915	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	1,555	12
RESTRICTED ACCESS	TOPSOIL	915	6
GRAVEL PATH	GRAVEL SURFACING	632	4
ON PROPERTY	MULCH BEDS	541	2

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

OFF-PROPERTERY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

RHONDA CARSON ELLIOTT — STATE OF WASHINGTON — 50320 — REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

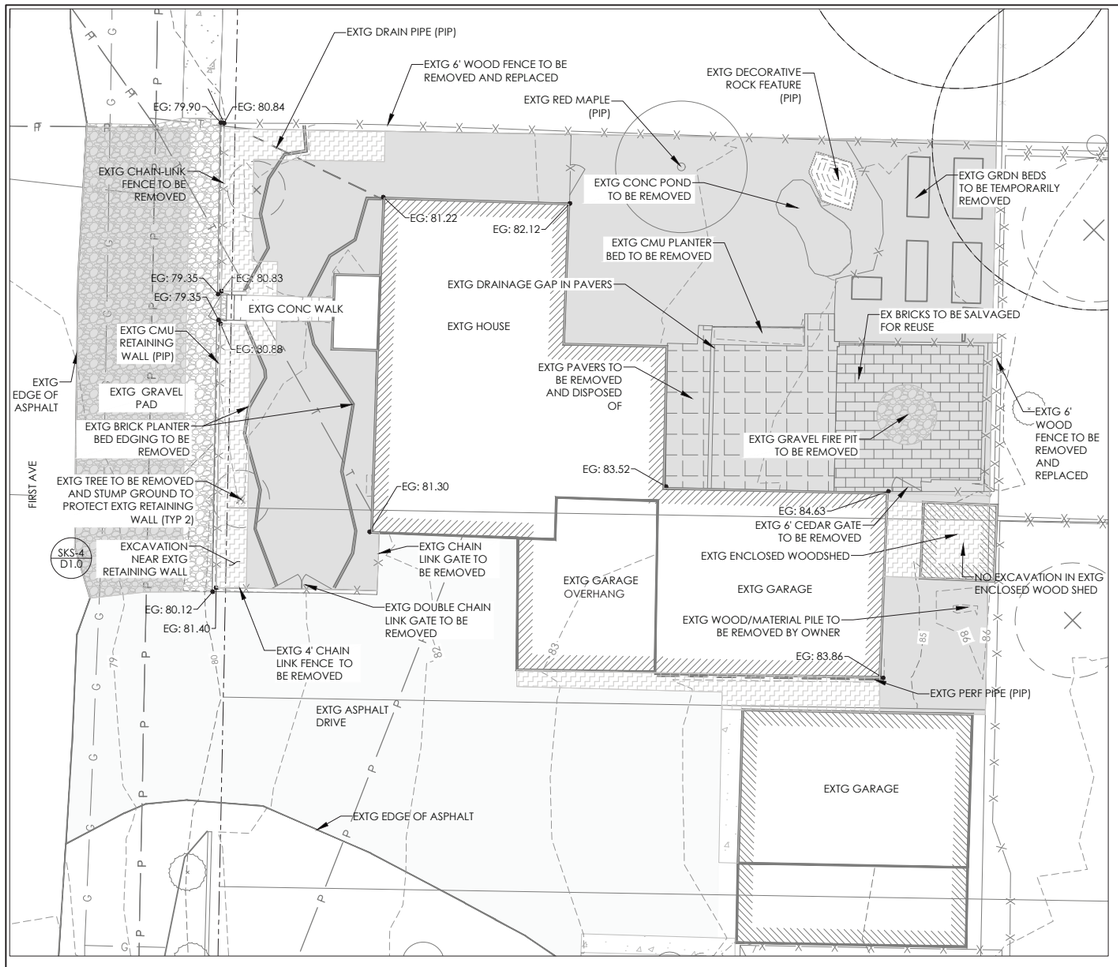
ISSUE	DATE	
REV1	05/25/2021	UPDATED RE
A	03/28/17	RECORDED DR

PROJECT: 9003.01.39
DESIGNED: --
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

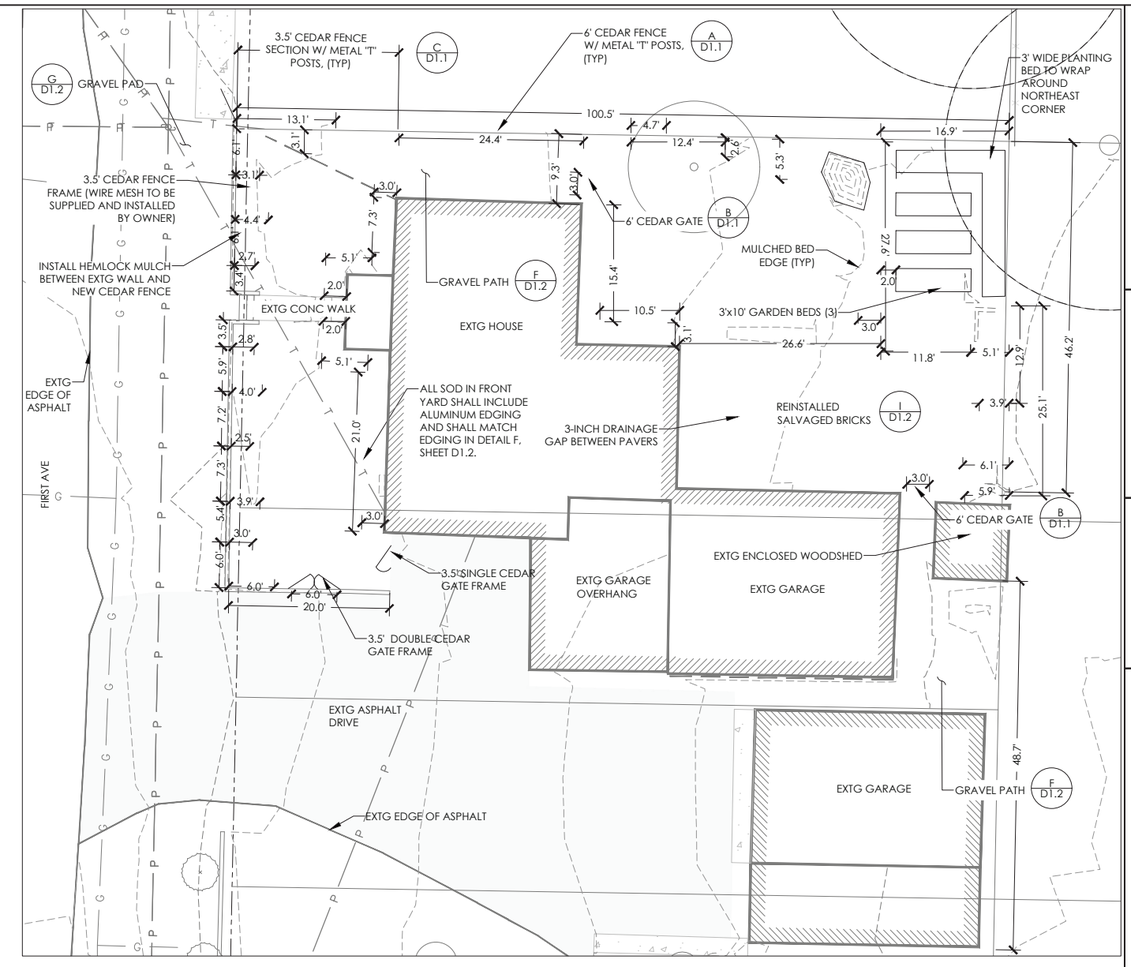
SHEET TITLE
PROPERTY 035 REMEDIATION AND RESTORATION PLAN

SHEET
C35.1

PLOTTED ON: 2021-09-09 8:14 PM PLOTTED BY: Michael Tarbert FILENAME: G:\00_MFA CAD 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C35.1 PROPERTY 035_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG C36.3.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED ALONG PATHS, AROUND WOODCHIP AREAS, AND AROUND GARDEN BEDS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
036	69370000	314 N 1ST AVE, RIDGEFIELD, WA 98642	JONATHAN COLE

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	4,274	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	878	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	3,396	12
RESTRICTED ACCESS	TOPSOIL	629	6
GRAVEL PAD	GRAVEL SURFACING	1,126	12
GRAVEL PATH	GRAVEL SURFACING	799	4
ON PROPERTY	PLANTER BEDS	830	2
GARDEN	WOOD CHIPS	282	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EX FENCE
- NEW FENCE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO REMAIN IN PLACE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL
- NEW GRAVEL DRIVE/PAD
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

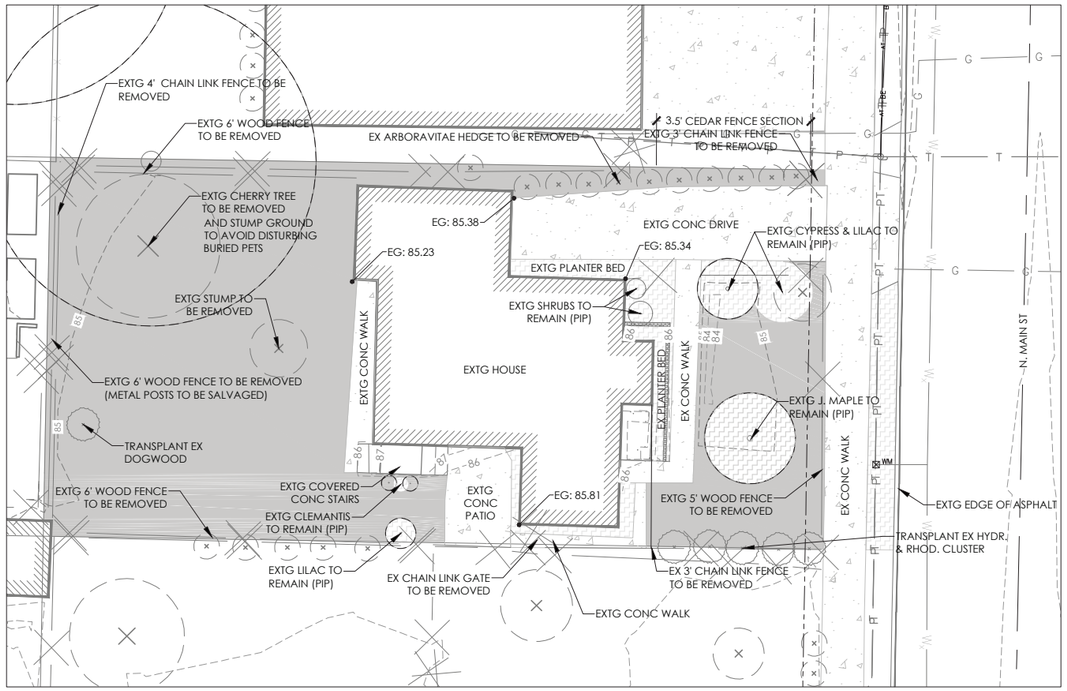
ISSUE	DATE	DESCRIPTION
REV 1	03/25/2021	UPDATED RECORD DRAWING
A	03/28/2017	RECORD DRAWINGS

PROJECT: 9003.01.39
DESIGNED:--
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

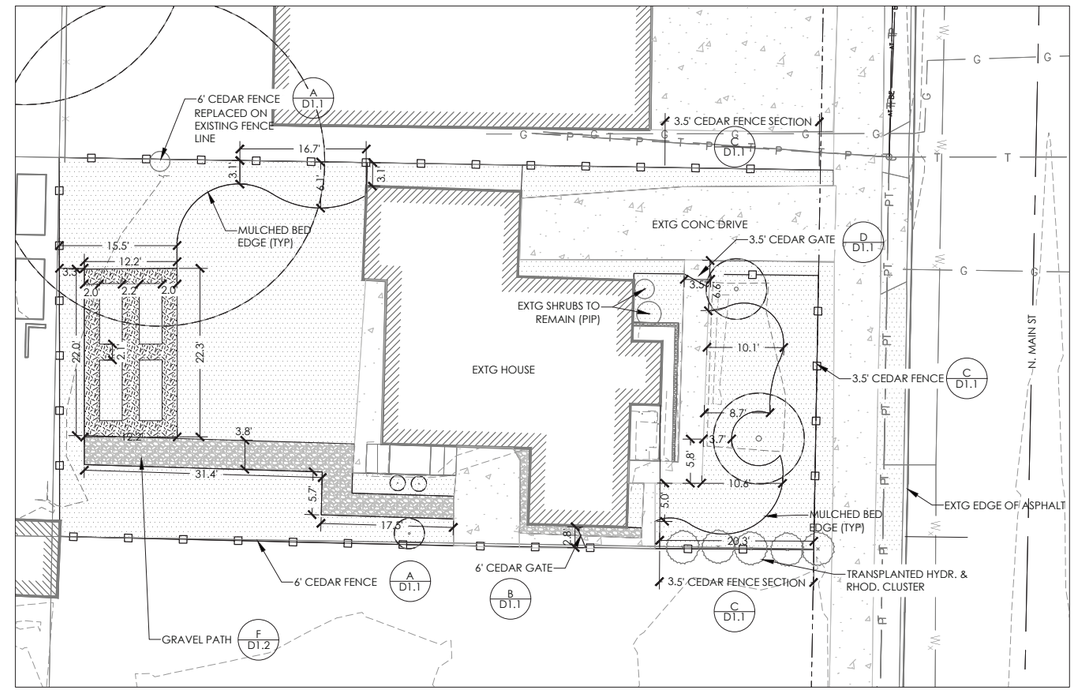
SHEET TITLE
PROPERTY 036 REMEDIATION AND RESTORATION PLAN

SHEET
C36.1

PLOTTED ON: 2021-07-14 4:56 PM PLOTTED BY: Brooke James FILENAME: \\sfmf601.file.core.windows.net\fcore\00_MFA Cost 30\00_PROJECTS\9003\01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C36.1 PROPERTY 036_R.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED ALONG PATHS, AROUND WOODCHIP AREAS, AND AROUND GARDEN BEDS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
037	693640000	309 N 1ST AVE, RIDGEFIELD, WA 98642	DANA DOTTL

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	2,775	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	541	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	2,775	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	541	6
GRAVEL PATH	GRAVEL SURFACING	233	4
ON PROPERTY	PLANTER BEDS	1,431	2
GARDEN	WOOD CHIPS	176	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

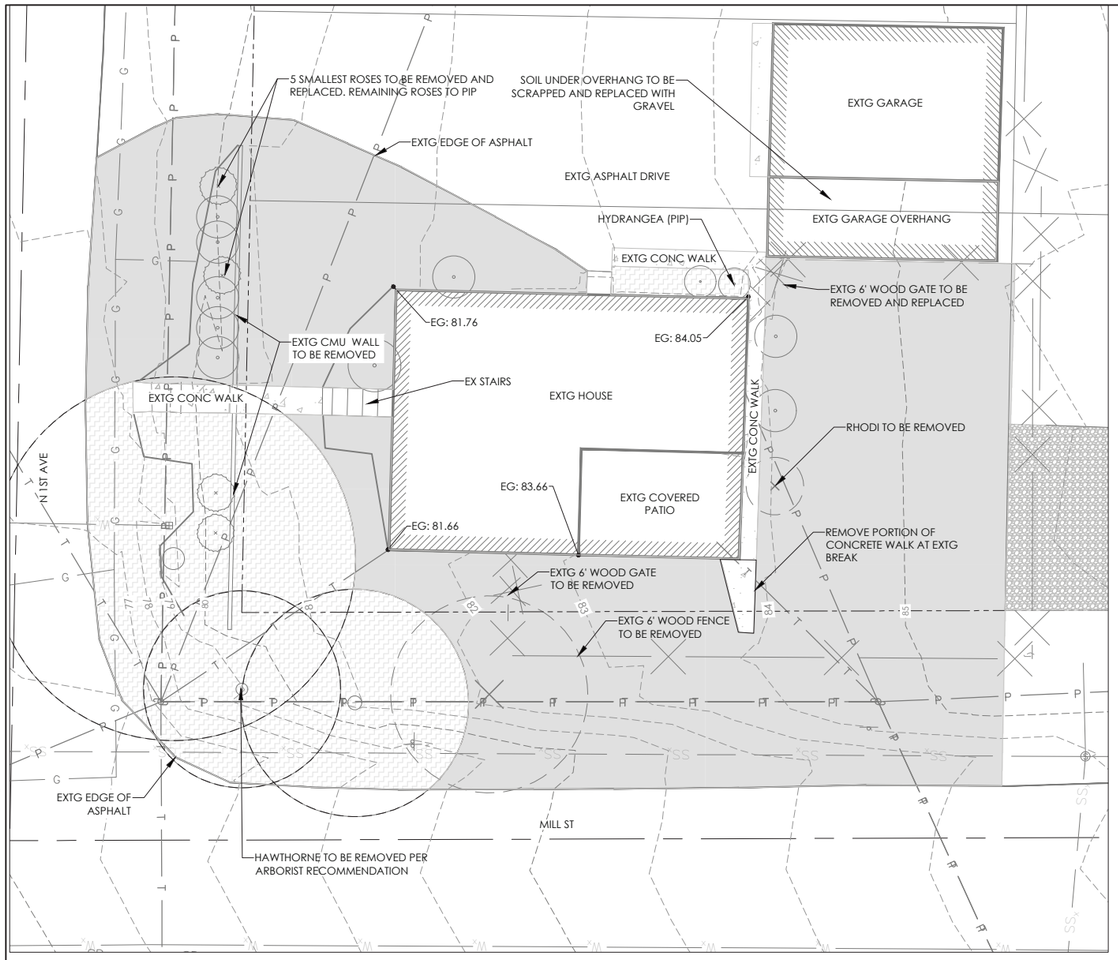
ISSUE	DATE	DESCRIPTION
REV 1	03/25/2021	UPDATED RECORD DRAWING
A	1.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: --
DRAWN: M. TARBERT
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

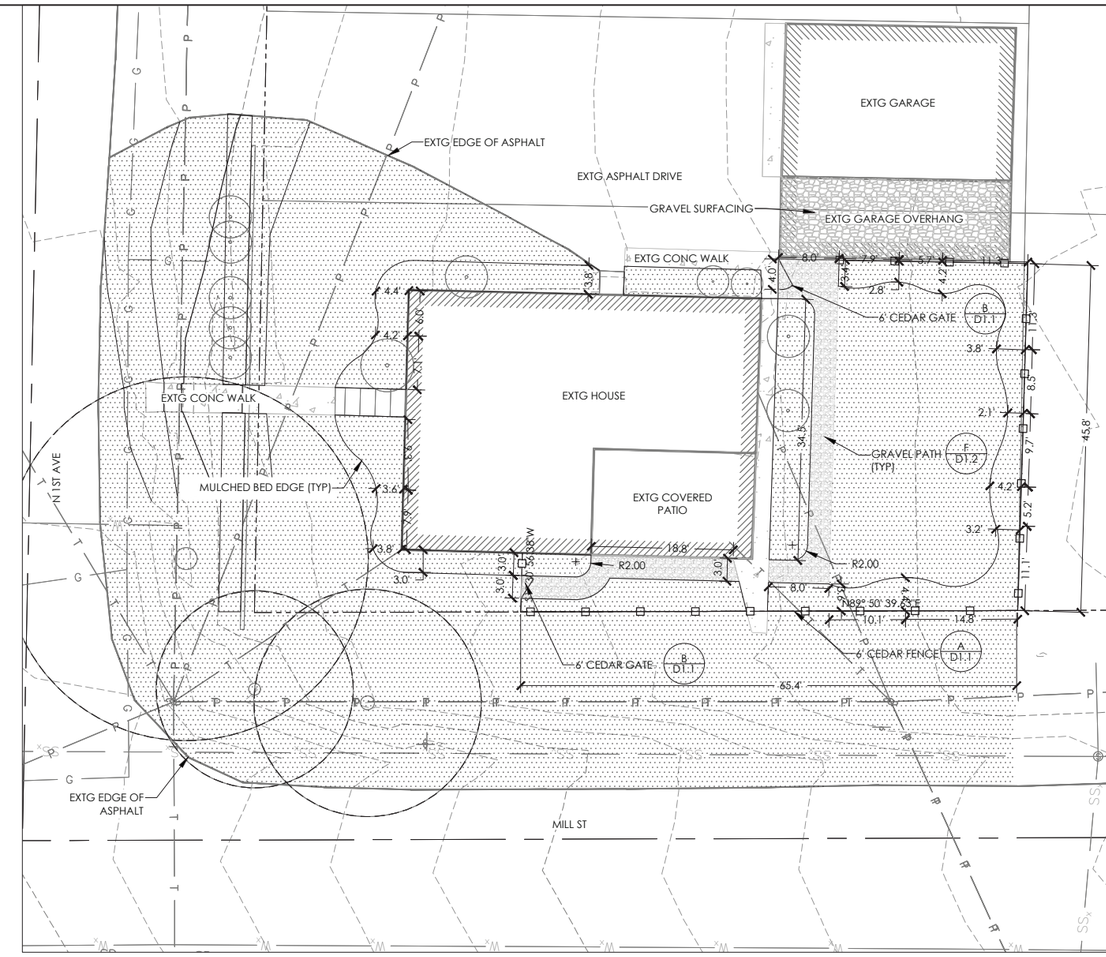
SHEET TITLE
PROPERTY 037 REMEDIATION AND RESTORATION PLAN

SHEET
C37.1

PLOTTED BY: Michael Tarbert FILENAME: G:\00_MFA Civil\9003.01_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C37.1 PROPERTY_R.dwg
PLOTTED ON: 2021-09-09 8:25 PM



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG D1.0.
2. REPLACEMENT TOPSOIL/GRAVEL DRIVE DEPTHS TO MATCH REMEDIATION DEPTHS AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
038	69368000	304 N 1ST AVE, RIDGEFIELD, WA 98642	RYANN CAMPBELL

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	5,148	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	2,395	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	5,148	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	2,247	6
GARAGE OVERHANG	GRAVEL SURFACING	317	2
GRAVEL PATH	GRAVEL SURFACING	261	4
ON PROPERTY	MULCH BEDS	1,211	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PAD
- NEW GRAVEL PATH

RECORD DRAWING

MAUL FOSTER ALONGI
109 EAST 13TH STREET
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.30.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 038 REMEDIATION AND RESTORATION PLAN

SHEET
C38.1

PLOTTED BY: Michael Tarbert FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 OFI Property IOPP Interim Action\PLANS\2016\2016 RECORD DRAWINGS\ECOLOGY RESPONSE\C38.1 PROPERTY 038.dwg
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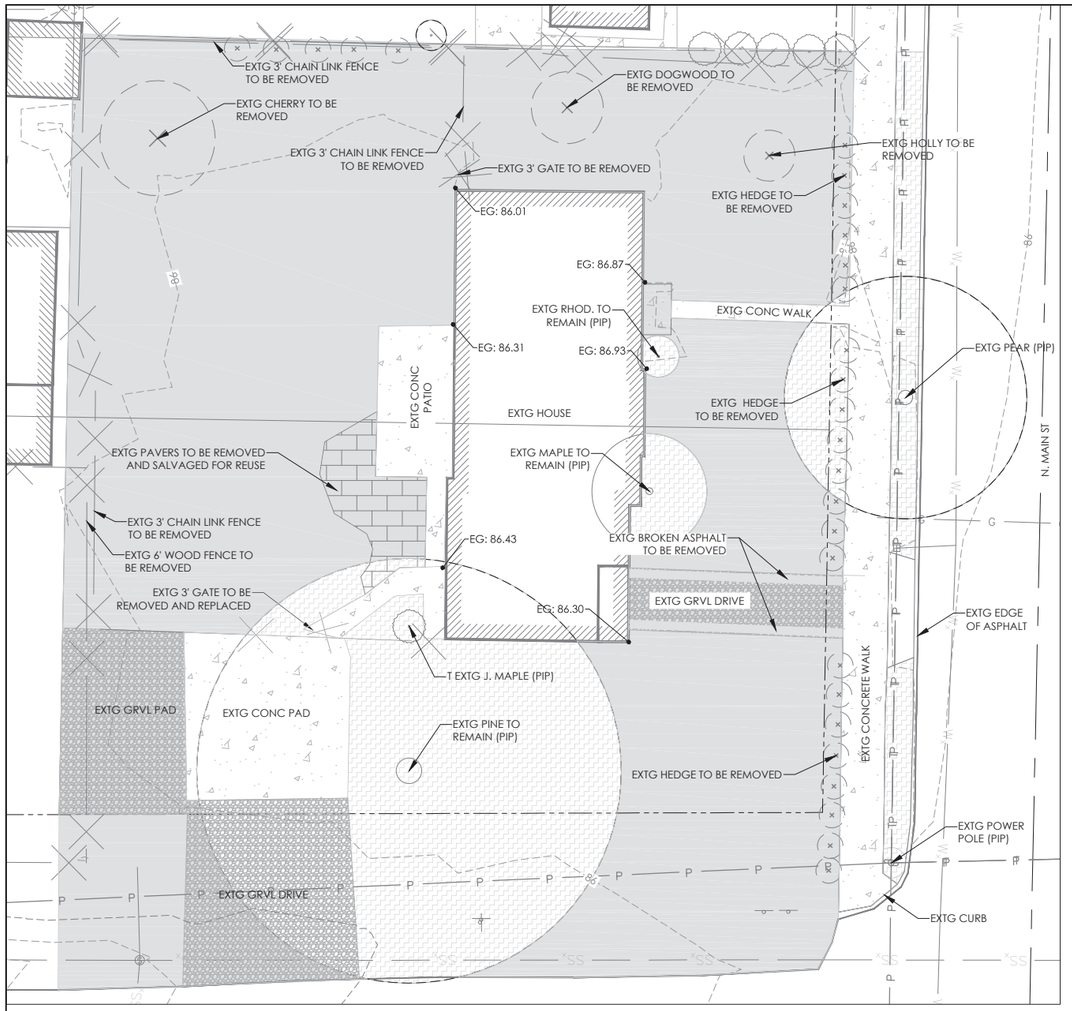
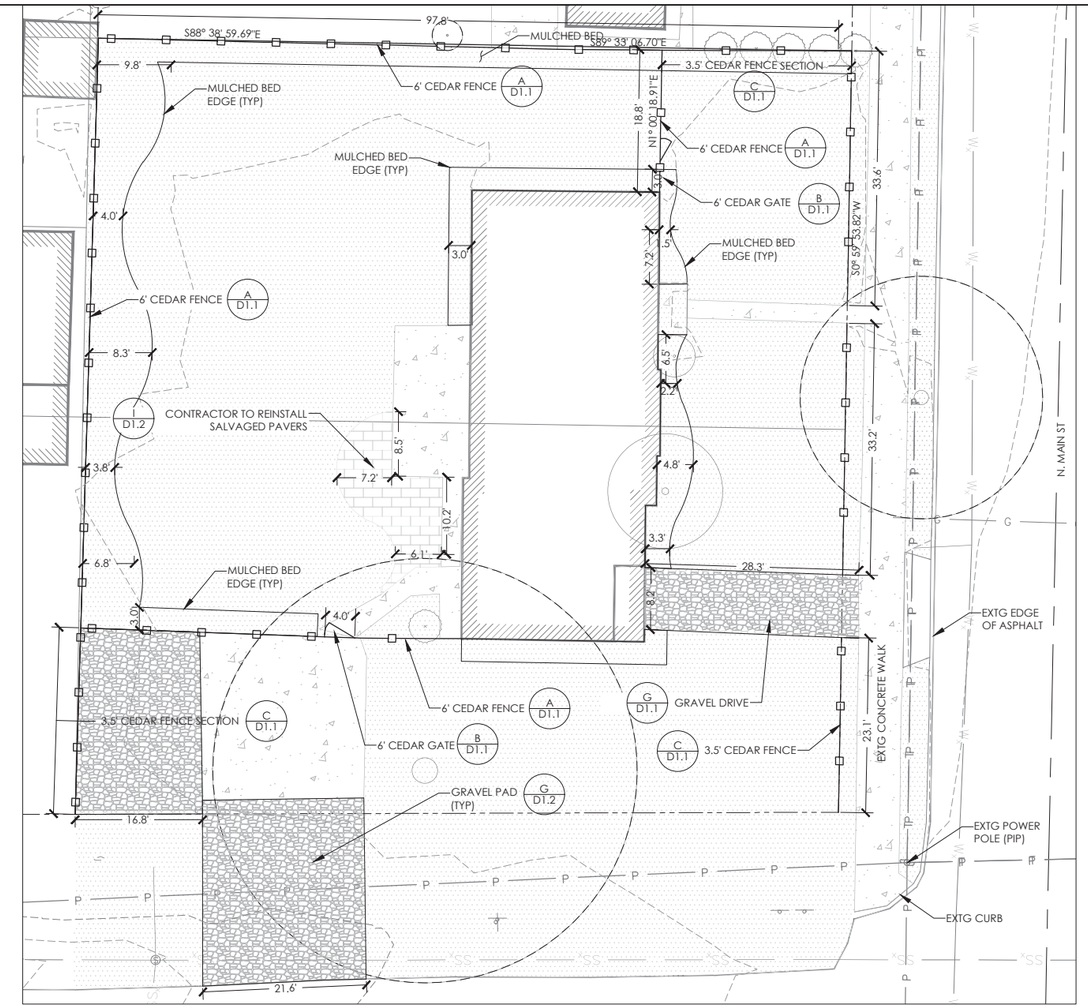


EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION PLAN

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. ALUMINUM EDGING TO BE PROVIDED BETWEEN GRAVEL PAD/DRIVE AND AREAS OF GRASS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION

PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
039	69366000	305 N 1ST AVE, RIDGEFIELD, WA 98642	JUSTIN & RENEE SERFACE

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	8,230	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	2,494	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	7,406	12
RESTRICTED ACCESS	TOPSOIL	2,172	6
RESTRICTED ACCESS GRAVEL DRIVE/PAD	GRAVEL SURFACING	322	4
GRAVEL DRIVE/PAD	GRAVEL SURFACING	1,146	12
ON PROPERTY	PLANTER BED	1,221	2
ON PROPERTY	PAVER RESTORATION	171	--

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- PLANT TO BE TRANSPLANTED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA - 12" DEEP
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL DRIVE/PAD

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

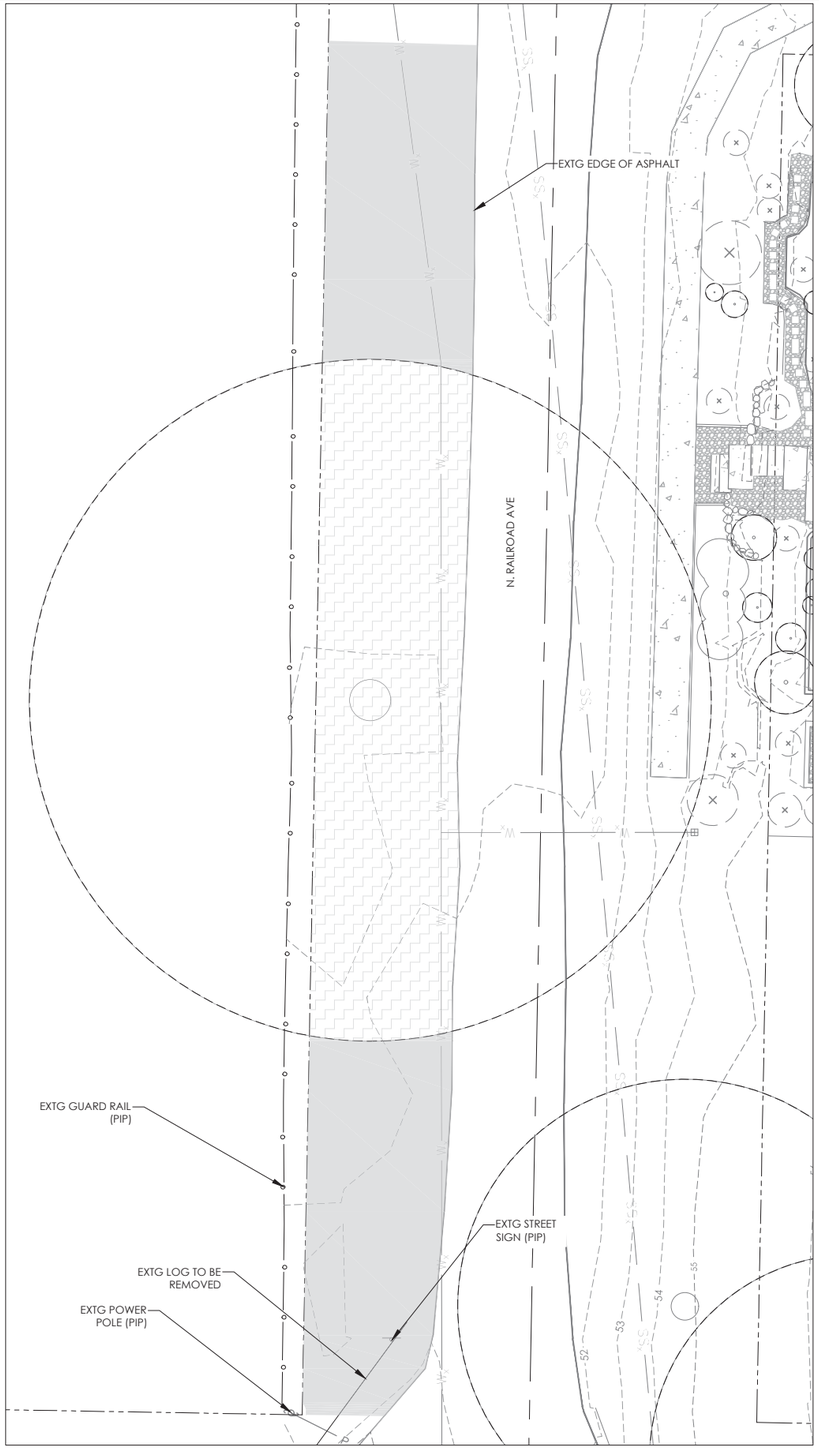
ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

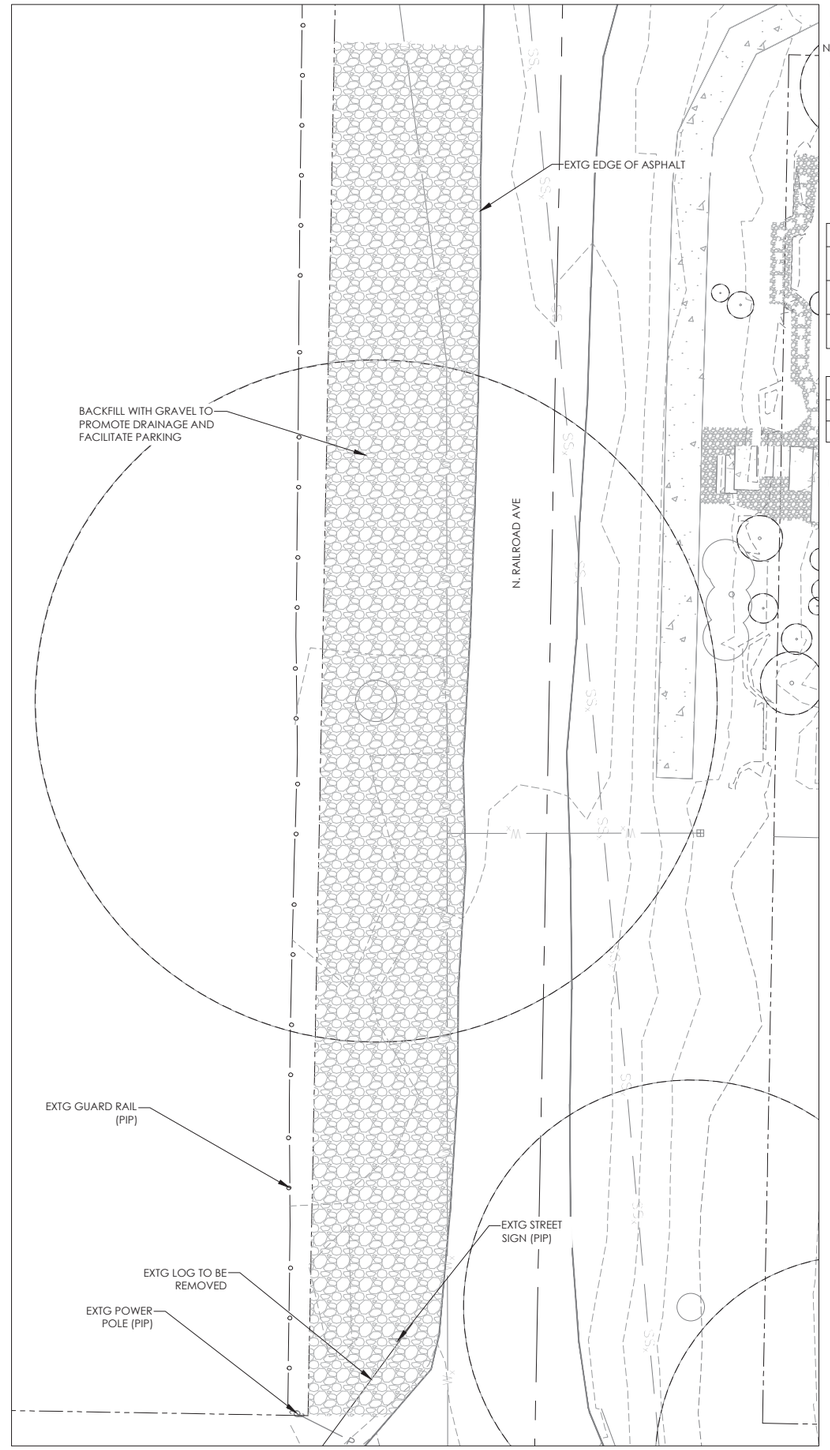
SHEET TITLE
PROPERTY 039 REMEDIATION AND RESTORATION PLAN

SHEET
C39.1

PLOTTED ON: 2017-04-05 5:34 PM PLOTTED BY: Lindsay Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003\01.39 Off-Property\OPP Interim Action\PLANS\2016 RECORDED DRAWINGS\C39.1 PROPERTY 039.dwg



EXISTING CONDITIONS AND REMEDIATION PLAN



RESTORATION AND PLANTING PLAN

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	1,705	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,724	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	GRAVEL PAD	3,429	-

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 15 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 14 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- PLANT TO PROTECT IN PLACE
- ROOT PROTECTION ZONE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW GRAVEL

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
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PROFESSIONAL ENGINEER

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
A	3.28.17	RECORD DRAWING

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT

SCALE

0 10' 20'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

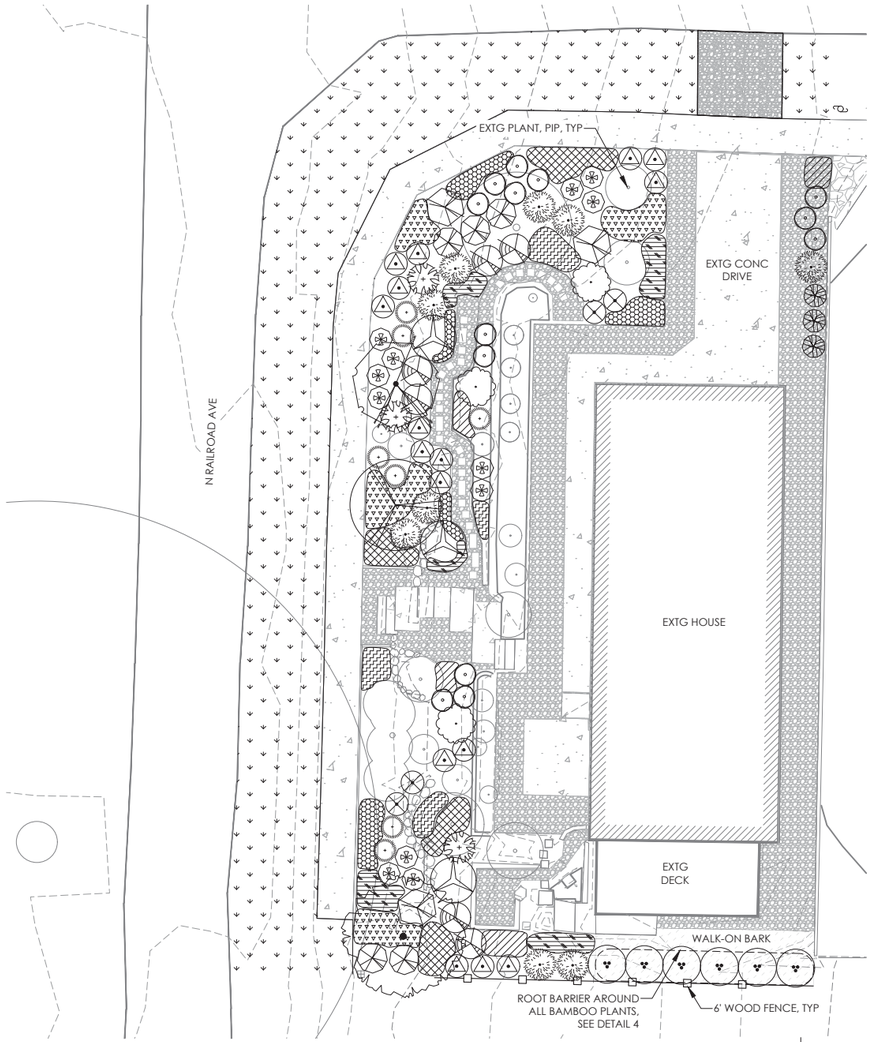
SHEET TITLE

RR AVE ROW REMEDIATION AND RESTORATION PLAN

SHEET

C40.1

PLOTTED ON: 2017-03-30 3:52 PM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003\01.39 Off-Property\Off Interim Action\PLANS\2016 RECORD DRAWINGS\C40.1 - RR Ave ROW.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	SUMMER CHOCOLATE MIMOSA	ALBIZIA JULIBRISSIN 'SUMMER CHOCOLATE'	#15	AS SHOWN
	1	CHEROKEE CHIEF FLOWERING DOGWOOD	CORNUS FLORIDA 'CHEROKEE CHIEF'	#15	AS SHOWN
	1	VICTORIA SOUTHERN MAGNOLIA	MAGNOLIA GRANDIFLORA 'VICTORIA'	#15	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	3	APPLE BLOSSOM CAMELLIA	CAMELLIA SASANQUA 'APPLE BLOSSOM'	#2	6'-0", O.C.
	3	SETSUGEKKA CAMELLIA	CAMELLIA SASANQUA 'SETSUGEKKA'	#2	5'-0", O.C.
	6	SCABRIDA BAMBOO	FARGESIA 'SCABRIDA'	#5	5'-0", O.C.
	3	COMPACT STRAWBERRY TREE	ARBUTUS UNEDO 'COMPACTA'	#5	5'-0", O.C.
	5	DWARF MUGO PINE	PINUS MUGO 'PUMILLO'	#5	4'-0", O.C.
	3	NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	#5	4'-0", O.C.
	9	VARIEGATED FALSE HOLLY	OSMANTHUS HETEROPHYLLUS 'GOSHIKI'	#3	4'-0", O.C.
	6	YAKU PRINCESS RHODODENDRON	RHODODENDRON 'YAKU PRINCESS'	#3	4'-0", O.C.
	3	GOLDEN SPIRE ARBORVITAE	THUJA OCCIDENTALIS 'GOLDEN SPIRE'	#3	4'-0", O.C.
	4	WESTERN LIGHTS AZALEA	AZALEA 'WESTERN LIGHTS'	#3	3'-0", O.C.
	12	GOLD MOUND SPIRAEA	SPIRAEA JAPONICA 'GOLD MOUND'	#2	3'-0", O.C.
	16	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	#2	AS SHOWN
	7	MUSHROOM JAPANESE CEDAR	CRYPTOMERIA JAPONICA 'MUSHROOM'	#2	3'-0", O.C.
	13	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	#2	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	12	JAPANESE FOREST GRASS	HAKONECHLOA MACRA 'ALBA STRIATA'	#1	2'-6", O.C., TRI.
	19	CORAL BELLS HUECHERA	HUECHERA 'CORAL BELLS'	#1	2'-0", O.C., TRI.
	15	SLENDER DEUTZIA	DEUTZIA GRACILIS 'NIKKO'	#1	2'-0", O.C., TRI.
	25	WHEELER'S DWARF JAPANESE MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	#1	2'-6", O.C., TRI.
	21	BOX-LEAF HONEYSUCKLE	LONICERA PILEATA	#1	2'-6", O.C., TRI.
	18	ANGELINA STONECROP	SEDUM RUPESTRE 'ANGELINA'	4" POT	2'-0", O.C., TRI.

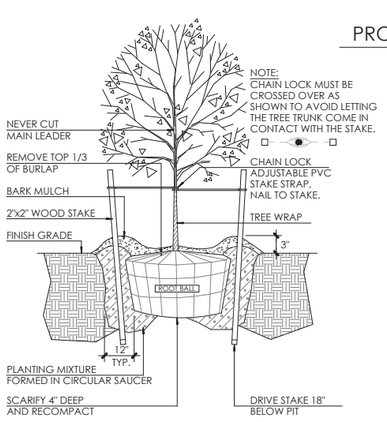
SEED MIXES

HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 1,995 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

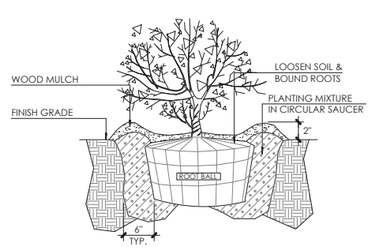
ADDITIONAL SEED: POCO BARLEY, HORDEUM VULGARE 'POCO' - SUNMARK SEEDS
TOTAL AREA: 1,995 SF; APPLICATION RATE: 1 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

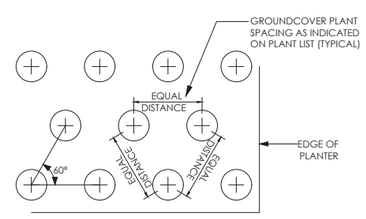
1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK HEMLOCK MULCH.



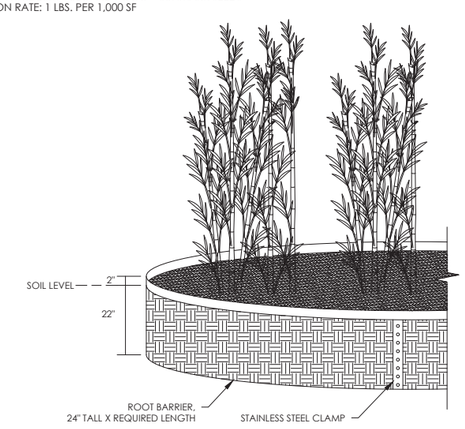
1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN



ROOT BARRIER NOTES

1. BAMBOO ROOT BARRIER SHALL BE 60 MIL HIGH DENSITY POLYETHYLENE PLASTIC THAT IS 24" TALL X 65' IN LENGTH.
2. DIG A 22" DEEP TRENCH AROUND ALL BAMBOO PLANTS. AVOID CREATING TIGHT CORNERS.
3. TOP OF ROOT BARRIER SHALL BE INSTALLED AT 2" ABOVE SOIL.
4. OVERLAP ENDS OF ROOT BARRIER BY 3". SECURE OVERLAPPING ENDS WITH STAINLESS STEEL STRIPS. STRIPS SHALL BE 22" TALL AND MUST NOT PROTRUDE ABOVE SOIL LEVEL.
5. SURROUNDING MULCH SHALL BE LEVEL WITH THE TOP OF THE ROOT BARRIER.

4 BAMBOO ROOT BARRIER
NTS

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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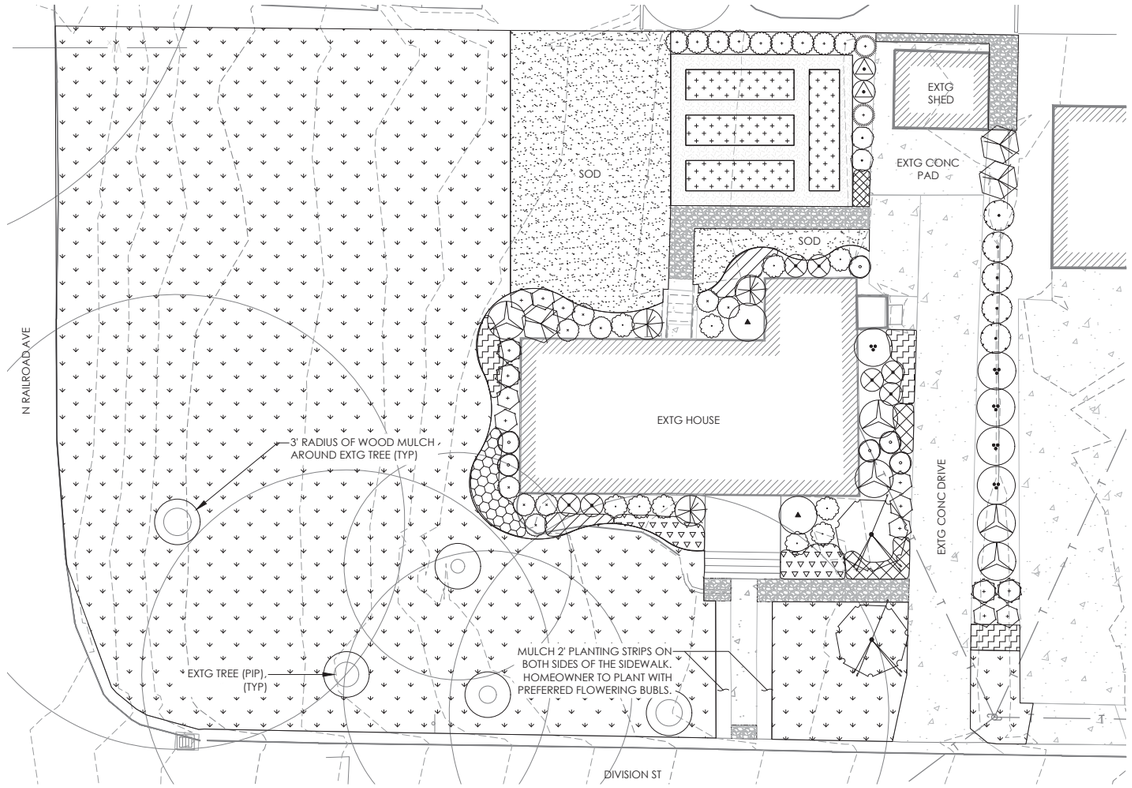
---	10/28/2016	PROPERTY 001 PLANTING PLAN

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 001 PLANTING PLAN

SHEET
L01.0

PLOTTED ON: 2018-04-02 5:27 PM PLOTTED BY: Brooke Harmon FILENAME: G:\30_JMFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\Off-Interim Action\PLANS\2016\2016HOMEOWNERS\Property 001\PLANTING PLAN_L01.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	AUSTRIAN PINE	PINUS NIGRA	4'-6' HT	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	3	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	5'-0", O.C.
	5	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	2	WESTERN REDBUD	CERCIS OCCIDENTALIS	3 GAL	AS SHOWN
	5	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	3	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	AS SHOWN
	5	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	10	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	5	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	9	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	10	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	9	FALL GOLD RASPBERRY	RUBUS IDAEUS VAR. STRIGOSUS 'FALL GOLD'	1 GAL	3'-0", O.C.
	7	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	AS SHOWN
	2	EARLIBLUE BLUEBERRY	VACCINIUM CORYMBOSUM 'EARLIBLUE'	1 GAL	3'-0", O.C.
	2	JERSEY BLUEBERRY	VACCINIUM CORYMBOSUM 'JERSEY'	1 GAL	3'-0", O.C.
	2	GLOBE ARTICHOKE	CYNARA SCOLYMUS	1 GAL	3'-0", O.C.
	6	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	35	BOULDER BLUE FESCUE	FESTUCA GLAUCA 'BOULDER BLUE'	6" POT	1'-6", O.C., TRI.
	14	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	6" POT	2'-0", O.C., TRI.
	12	CORAL BELLS HEUCHERA	HEUCHERA 'PLUM PUDDING'	6" POT	1'-6", O.C., TRI.
	18	STAR JASMINE	TRACHELOSPERMUM JASMINOIDES	6" POT	2'-0", O.C., TRI.
	27	SEA PINK	ARMERIA MARITIMA	6" POT	1'-6", O.C., TRI.
	758 SF	SOD			

SEED MIXES

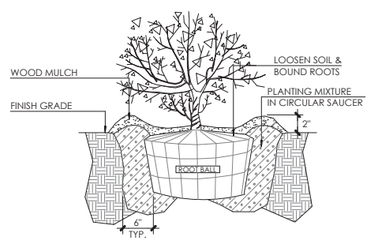
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 6,262 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GARDEN COVER CROP
TOTAL AREA: 235 SF; APPLICATION RATE: 1 LBS PER 250 SF

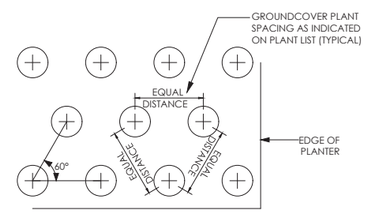
COMMON NAME	BOTANICAL NAME	%
CEREAL RYE	SECALE CEREALE	40%
AUSTRIAN PEAS	PISUM SATIVUM	25%
WINTER WHEAT	TRITICUM AESTIVUM	25%
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM)	10%

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
2001 NW 19TH AVE, SUITE 200
PORTLAND, OR 97209
PHONE: 971.544.2139
www.maulfoster.com

Port of Ridgefield

This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

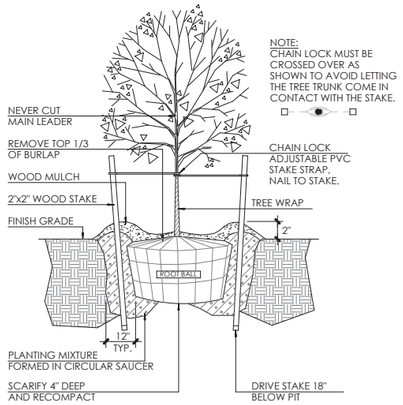
ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

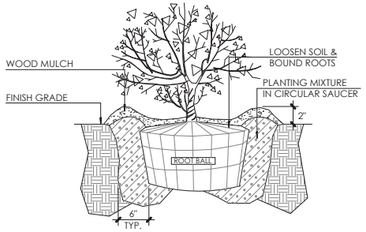
SHEET TITLE
PROPERTY 005
PLANTING PLAN

SHEET
L05.0

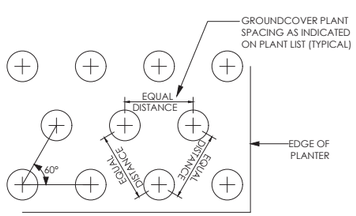
PLOTTED ON: 2016-05-26 4:02 PM PLOTTED BY: Curtis Riley FILENAME: G:\GIS_MTA Civil 3D\GIS_PROJECTS\9003.01.39 Off-Property\OPP-Interim Action\PLANS\BID SET\Property 005\PLANTING PLAN_005.dwg



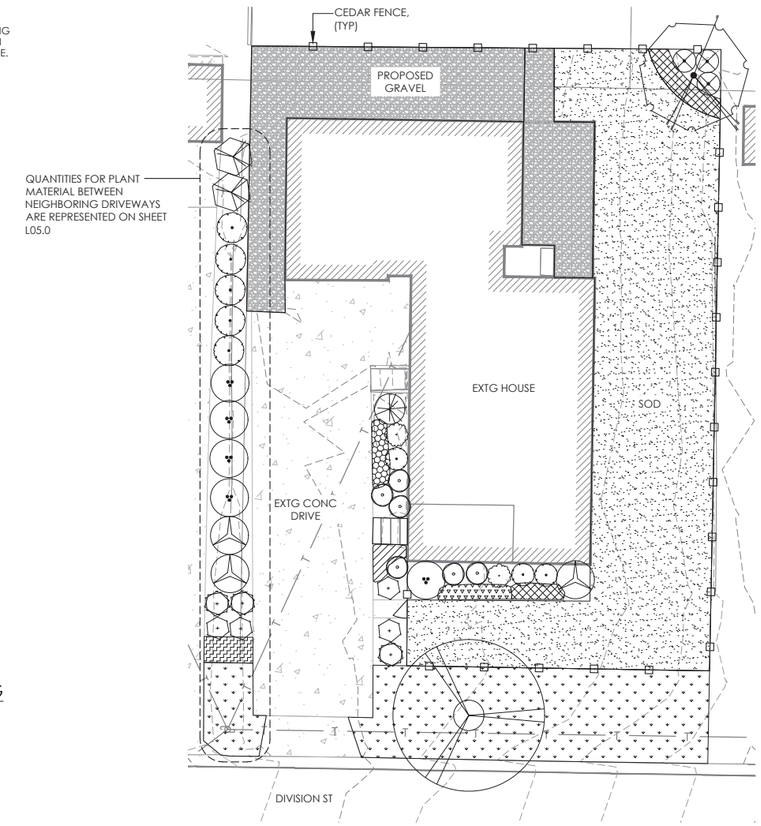
1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	JAPANESE ZELKOVA	ZELKOVA SERRATA	1.5" CAL	AS SHOWN
	1	MAIDENHAIR GINKO	GINKGO BILOBA	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	0*	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	5'-0", O.C.
	1*	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	5	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	1	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	3*	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	2*	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	1*	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	2	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	3'-0", O.C.
	3	CAUCASIAN DAPHNE	DAPHNE CAUCASIA	1 GAL	3'-0", O.C.
	6	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	0*	ELIJAH BLUE FESCUE	FESTUCA GLAUCA 'ELIJAH'	6" POT	1'-6", O.C., TRI.
	12	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	3	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	6" POT	2'-6", O.C., TRI.
	4	CANDYTUFT	IBERIS SEMPERVIRENS	6" POT	2'-0", O.C., TRI.
	9	SEA PINK	ARMERIA MARITIMA	6" POT	1'-6", O.C., TRI.
	1,532	SOD			

SEED MIXES

HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 628 SF*; APPLICATION RATE: 8 LBS. PER 1,000 SF

NOTE

* PLANTING QUANTITIES FOR PLANT MATERIAL ALONG THE WESTERN PROPERTY BOUNDARY (SEE AREA IDENTIFIED ON THE PLAN) ARE ACCOUNTED FOR ON THE 005 PLANTING PLAN, L05.0.

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
---	---	---
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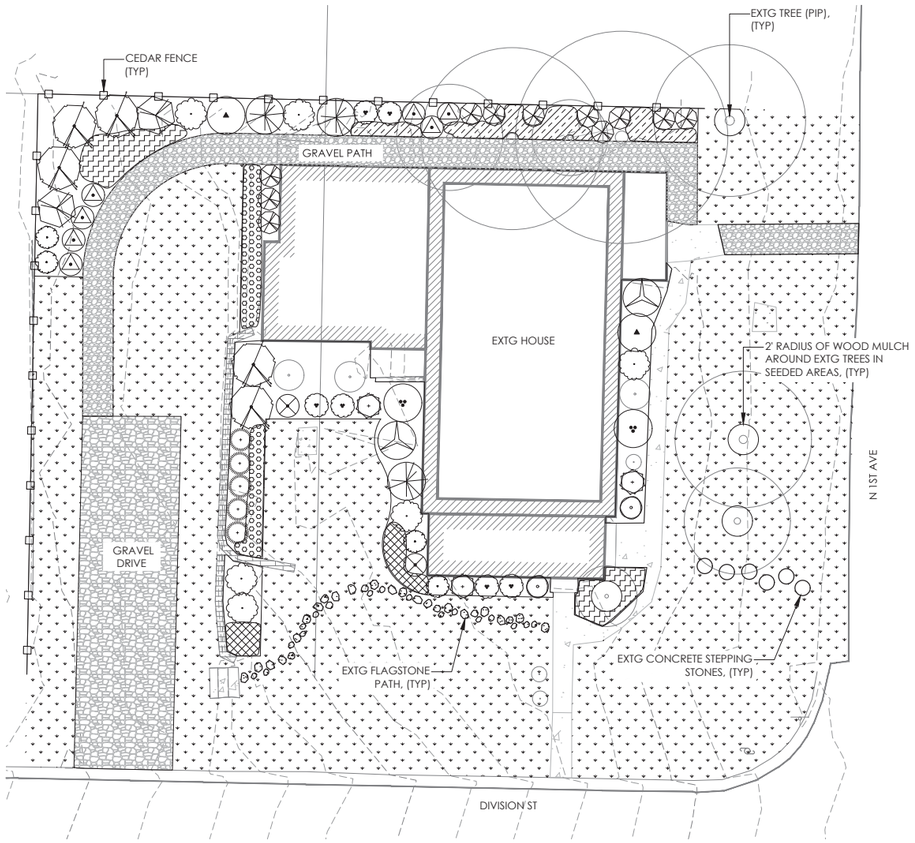
PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 006 PLANTING PLAN

SHEET
L06.0

PLOTTED ON: 2016-05-09 12:14 PM PLOTTED BY: Josh Elliott FILENAME: G:\30_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\BID SET\Property 006\PLANTING PLAN_006.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	5	PACIFIC WAX MYRTLE	MYRICA CALIFORNICA	3 GAL	6'-0", O.C.
	2	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	2	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	2	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	3	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	3'-0", O.C.
	6	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	4	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	3	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	6	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	2	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	7	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	11	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	2	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	5	SKYROCKET JUNIPER	JUNIPERUS SCOPULORUM 'SKYROCKET'	3 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

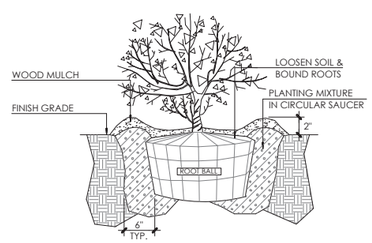
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	12	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	15	WILLOWLEAF COTONEASTER	COTONEASTER SALICIFOLIUS 'REPENS'	6" POT	2'-0", O.C., TRI.
	25	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	6" POT	2'-0", O.C., TRI.
	27	CANDYTUFT	IBERIS SEMPERVIRENS	6" POT	2'-0", O.C., TRI.

SEED MIXES

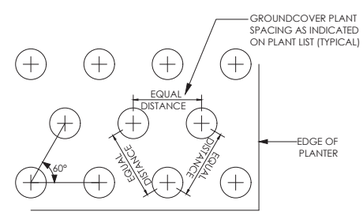
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 4,572 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MUCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

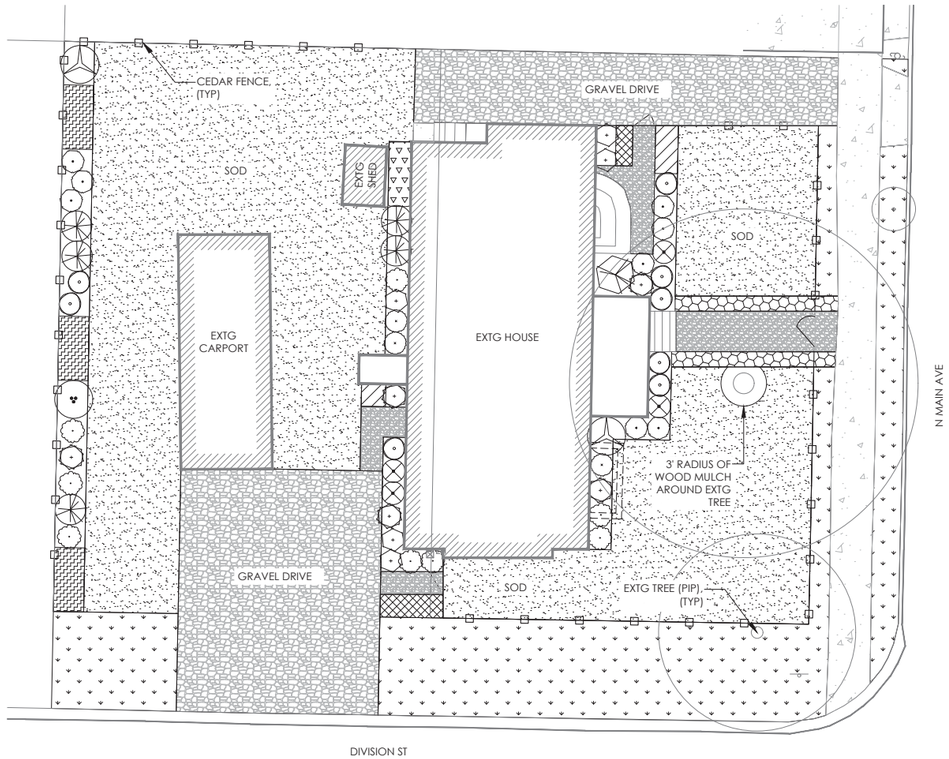
ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE 0 10' 20
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 007 PLANTING PLAN

SHEET
L07.0

PLOTTED ON: 2016-05-26 12:28 PM PLOTTED BY: Josh Elliott FILENAME: G:\JB_MFA Civil 3D\00_PROJECTS\9003.01.39 OR-Property\OPP Interim Action\PLANS\MD SET\Property 007\PLANTING PLAN_007.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	FLOWERING QUINCE	CHAENOMELES SPECIOSA	3 GAL	AS SHOWN
	5	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	4'-0", O.C.
	5	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	5	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	3	DWARF BLUE SCOTT'S PINE	PINUS SYLVESTRIS 'GLAUCA NANA'	2 GAL	3'-0", O.C.
	8	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	3'-0", O.C.
	4	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	8	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	8	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

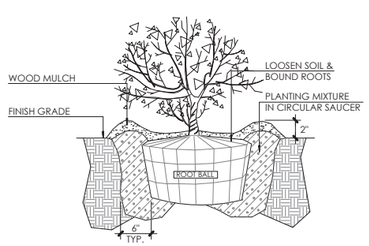
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	17	ELIJAH BLUE FESCUE	FESTUCA GLAUCA 'ELIJAH BLUE'	6" POT	1'-6", O.C., TRI.
	24	ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA	6" POT	2'-0", O.C., TRI.
	7	CANDYTUFT	IBERIS SEMPERVIRENS	6" POT	2'-0", O.C., TRI.
	7	POINT REYES CEANOTHUS	CEANOTHUS GLORIOSUS	6" POT	2'-0", O.C., TRI.
	7	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	3,390 SF SOD				

SEED MIXES

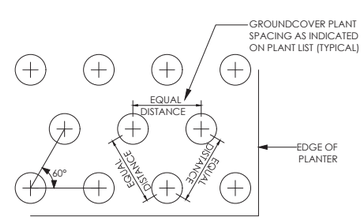
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 1,379 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED
PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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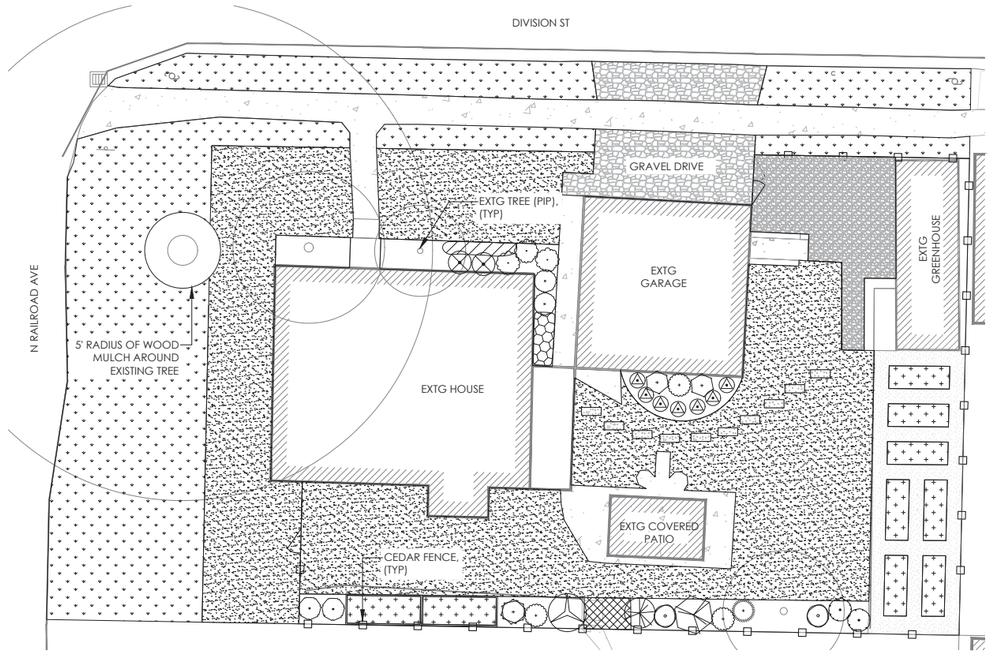
PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 012 PLANTING PLAN

SHEET
L12.0

PLOTTED ON: 2016-05-28 12:43 PM PLOTTED BY: Josh Elliott FILENAME: G:\JB_JMFA C\14-30\100_PROJECTS\9003.01.39 OR-Property\OPP Interim Action\PLANS\BID SET\Property 012\PLANTING PLAN_012.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	FLOWERING QUINCE	CHAENOMELES SPECIOSA	3 GAL	AS SHOWN
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	2	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	2	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	1	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	2	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	3	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	3	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	3'-0", O.C.
	2	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	2	JERSEY BLUEBERRY	VACCINIUM CORYMBOSUM 'JERSEY'	1 GAL	3'-0", O.C.
	2	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	7	TRANSPLANTED ROSES			
	1	TRANSPLANTED HEAVENLY BAMBOO			

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	5	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	6" POT	2'-0", O.C., TRI.
	8	CORAL BELLS HEUCHERA	HEUCHERA 'PLUM PUDDING'	6" POT	1'-6", O.C., TRI.
	7	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	2,541 SF SOD				

SEED MIXES

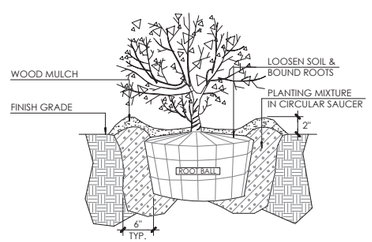
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 1,857 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GARDEN COVER CROP
TOTAL AREA: 240 SF; APPLICATION RATE: 1 LBS PER 250 SF

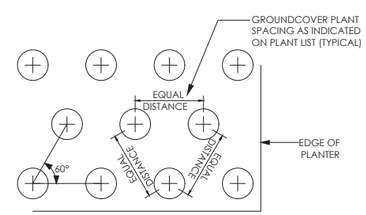
COMMON NAME	BOTANICAL NAME	%
CEREAL RYE	SECALE CEREALE	40%
AUSTRIAN PEAS	PISUM SATIVUM	25%
WINTER WHEAT	TRITICUM AESTIVUM	25%
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM)	10%

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING
NTS
PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED
PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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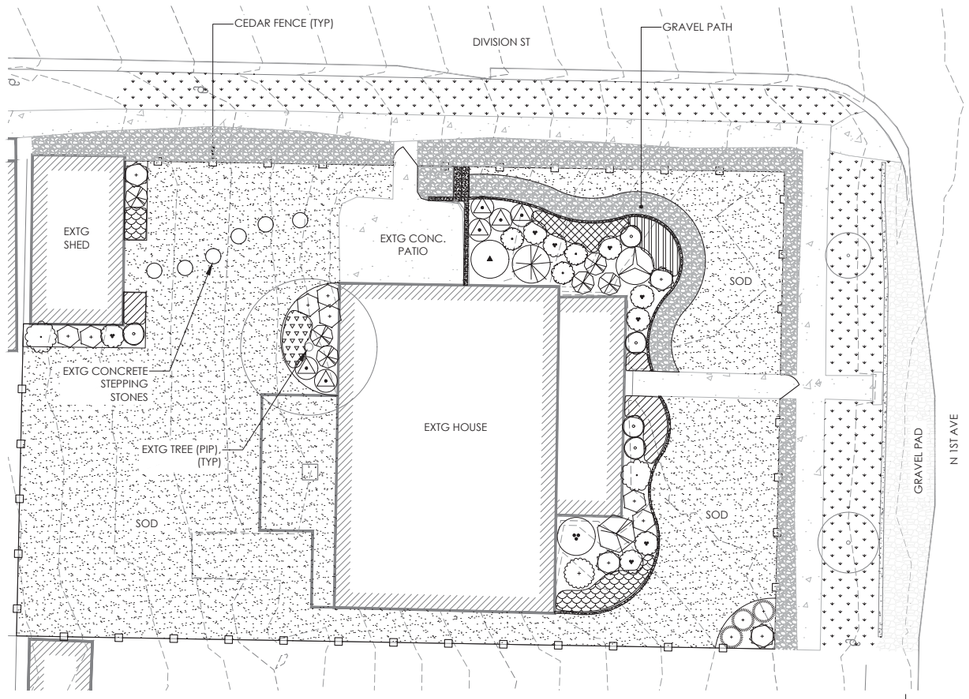
PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 013 PLANTING PLAN

SHEET
L13.0

PLOTTED ON: 2016-05-09 12:53 PM PLOTTED BY: Josh Elliott FILENAME: G:\30_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\BID SET\Property 013\PLANTING PLAN_013.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	1	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	1	WESTERN REDBUD	CERCIS OCCIDENTALIS	3 GAL	5'-0", O.C.
	2	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	3	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	7	RED FLOWERING CURRANT	RIBES SANGUINEUM	1 GAL	3'-0", O.C.
	4	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	8	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	6	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	6	CAROL MACKIE DAPHNE	DAPHNE X BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	5	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	1	TRANSPLANTED JAPANESE MAPLE			
	3	TRANSPLANTED BLUEBERRIES			

GRASSES, PERENNIALS & GROUNDCOVERS

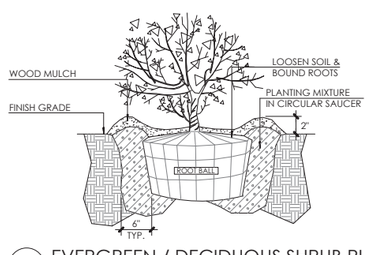
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	9	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	14	BOLDER BLUE FESCUE	FESTUCA GLAUCA 'BOLDER BLUE'	6" POT	1'-6", O.C., TRI.
	9	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	6" POT	2'-6", O.C., TRI.
	14	CUSHION EUPHORBIA	EUPHORBIA POLYCHROMA	6" POT	2'-0", O.C., TRI.
	6	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.
	3,255 SF SOD				

SEED MIXES

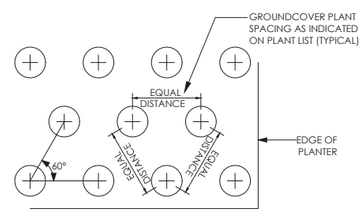
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 926 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING PLAN
NTS

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

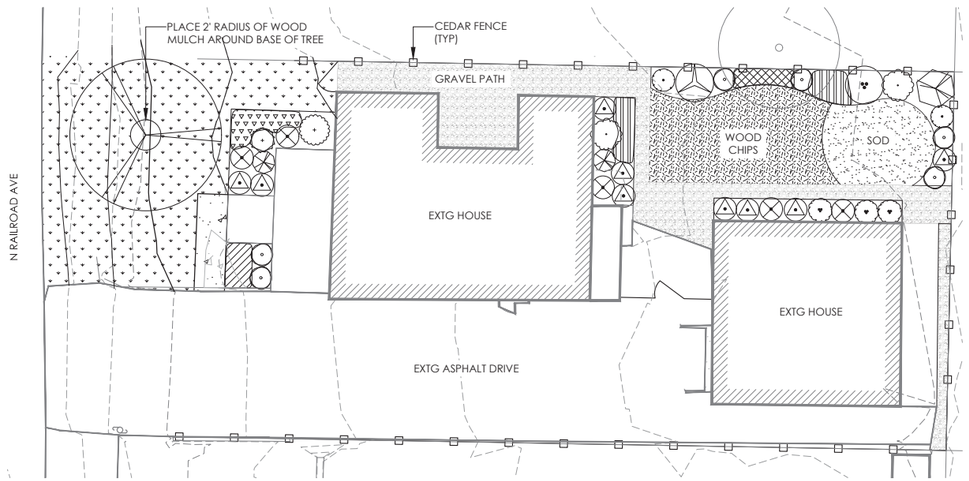
ISSUE	DATE	DESCRIPTION
---	---	---
---	---	---

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 014 PLANTING PLAN

SHEET
L14.0

PLOTTED ON: 2014-05-28 1:24 PM PLOTTED BY: Josh Elliott FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\Off Interim Action\PLANS\3D SET\Property 014\PLANTING PLAN_014.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	JAPANESE ZELKOVA	ZELKOVA SERRATA	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	2	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	2	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	1	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	3	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	9	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	5	CAUCASIAN DAPHNE	DAPHNE CAUCASIA	1 GAL	3'-0", O.C.
	2	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	6	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	1	TRANSPLANTED CAMELLIA			

GRASSES, PERENNIALS & GROUNDCOVERS

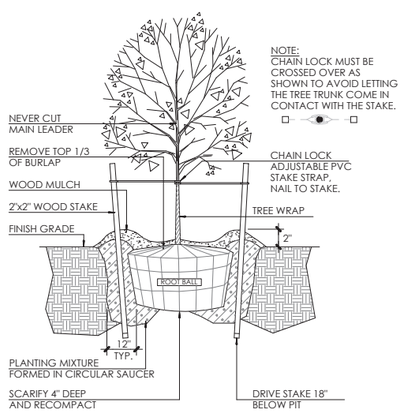
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	5	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	21	BOULDER BLUE FESCUE	FESTUCA GLAUCA 'BOULDER BLUE'	6" POT	1'-6", O.C., TRI.
	10	CUSHION EUPHORBIA	EUPHORBIA POLYCHROMA	6" POT	1'-6", O.C., TRI.
	8	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.
	146 SF	SOD			

SEED MIXES

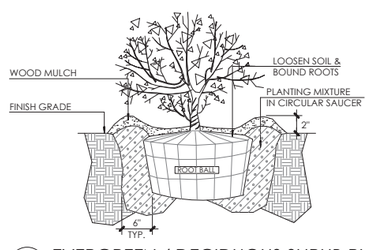
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 776 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

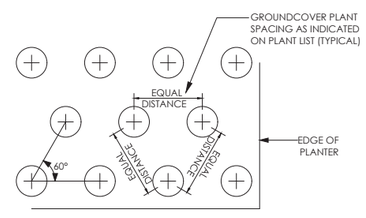
1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

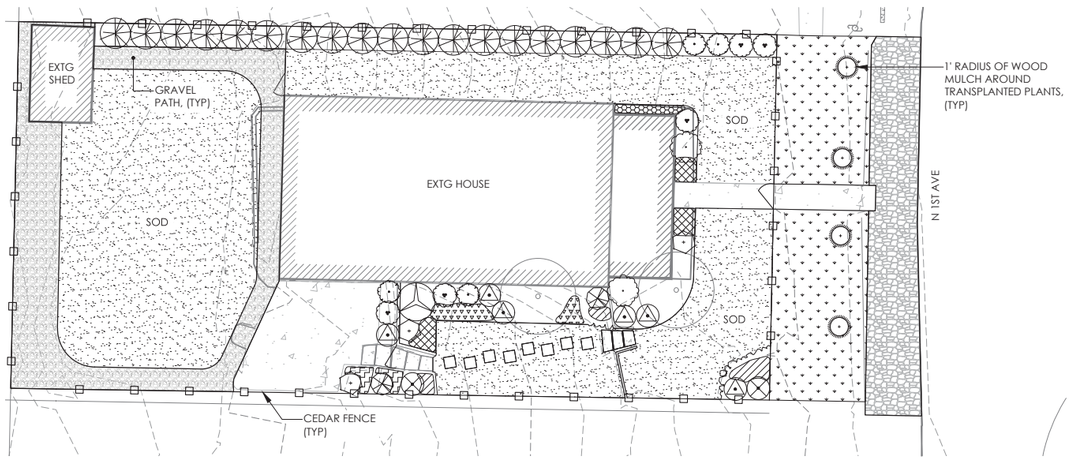
ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

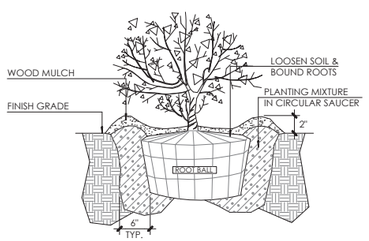
SHEET TITLE
PROPERTY 015 PLANTING PLAN

SHEET
L15.0

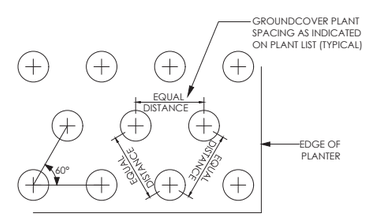
PLOTTED ON: 2016-05-28 2:08 PM PLOTTED BY: Josh Elliott FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 OR-Property\OPP Interim Action\PLANS\BID SET\Property 015\PLANTING PLAN_015.dwg



PROPOSED PLANTING PLAN



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING PLAN
NTS

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	19	EMERALD GREEN ARBORVITAE	THUJA OCCIDENTALIS 'SMARAGD'	2 GAL	4'-0", O.C.
	2	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	2	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE"	2 GAL	3'-0", O.C.
	4	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	3	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	5	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	6	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	2	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	4	TRANSPLANTED PLANTS			

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	8	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	3	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	6" POT	2'-0", O.C., TRI.
	12	SEA PINK	ARMERIA MARITIMA	6" POT	1'-6", O.C., TRI.
	4	CANDYTUFT	IBERIS SEMPERVIRENS	6" POT	2'-0", O.C., TRI.
	7	CUSHION EUPHORBIA	EUPHORBIA POLYCHROMA	6" POT	2'-0", O.C., TRI.
	2,030 SF SOD				

SEED MIXES

HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 545 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF DETERMINING REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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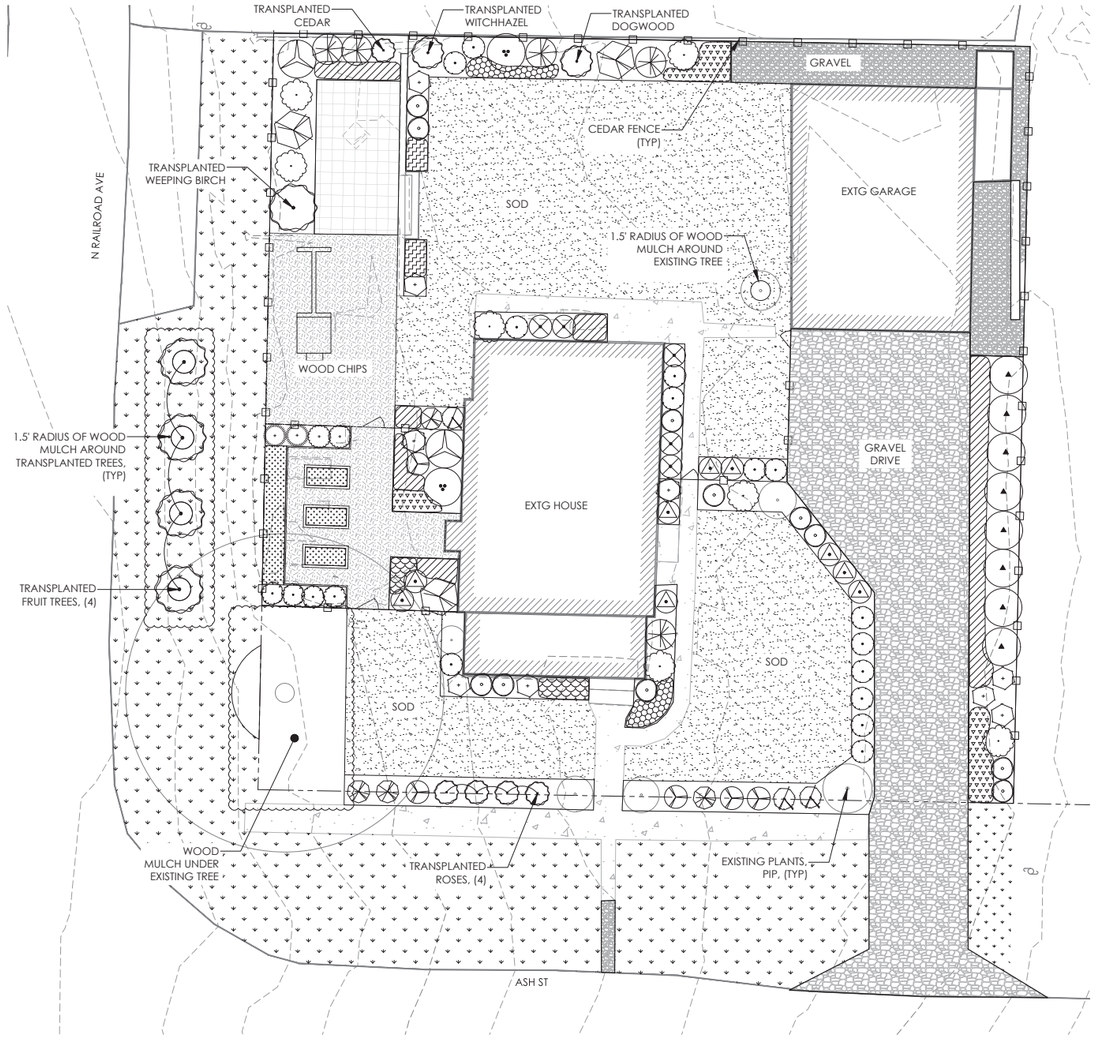
PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 016 PLANTING PLAN

SHEET
L16.0

PLOTTED ON: 2014-05-28 3:16 PM PLOTTED BY: Josh Elliott FILENAME: G:\00_MFA Civil 3D\05_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\3BD SET\Property 016\PLANTING PLAN_016.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	8	PACIFIC WAX MYRTLE	MYRICA CALIFORNICA	3 GAL	6'-0", O.C.
	3	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	2	WESTERN REDBUD	CERCIS OCCIDENTALIS	3 GAL	AS SHOWN
	5	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	AS SHOWN
	7	JAPANESE BARBERRY	BERBERIS THUNBERGII	3 GAL	4'-0", O.C.
	14	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	3 GAL	3'-0", O.C.
	7	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	2	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	3 GAL	3'-0", O.C.
	11	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	9	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	5	CAROL MACKIE DAPHNE	DAPHNE X BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	3	BONICA ROSE	ROSA 'BONICA'	1 GAL	4'-0", O.C.
	4	POP THE CORK ROSE	ROSA 'POP THE CORK'	1 GAL	4'-0", O.C.
	5	DOUBLE KNOCKOUT ROSE	ROSA 'RADTKO'	1 GAL	4'-0", O.C.
	2	EARLIBLUE BLUEBERRY	VACCINIUM CORYMBOSUM 'EARLIBLUE'	1 GAL	3'-0", O.C.
	2	JERSEY BLUEBERRY	VACCINIUM CORYMBOSUM 'JERSEY'	1 GAL	3'-0", O.C.
	4	FALL GOLD RASPBERRY	RUBUS IDAEUS VAR. STRIGOSUS 'FALL GOLD'	1 GAL	3'-0", O.C.
	12	TRANSPLANTED PLANTS			

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	11	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	35	SEA PINK	ARMERIA MARITIMA	4" POT	1'-6", O.C., TRI.
	5	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	1 GAL	2'-6", O.C., TRI.
	13	CORAL BELLS HEUCHERA	HEUCHERA 'PLUM PUDDING'	6" POT	1'-6", O.C., TRI.
	56	CANDYTUFT	IBERIS SEMPERVIRENS	4" POT	2'-0", O.C., TRI.
	2,989 SF SOD				

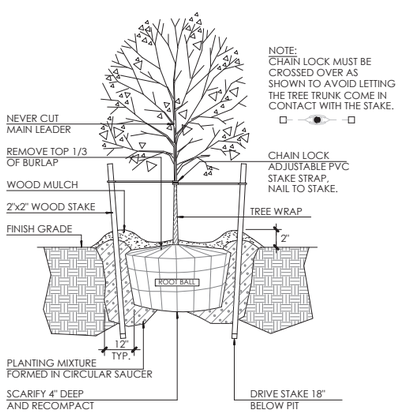
SEED MIXES

HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 2,720 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

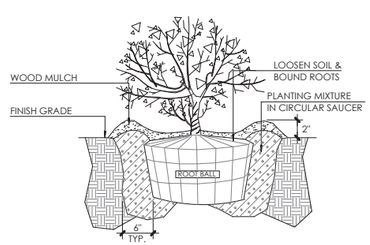
GARDEN COVER CROP
TOTAL AREA: 90 SF; APPLICATION RATE: 1 LBS PER 250 SF

GENERAL LANDSCAPE NOTES

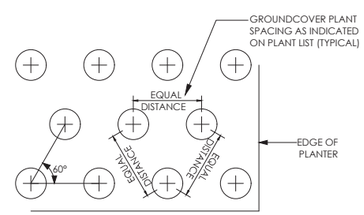
1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
---	07/11/2016	CHANGE ORDER NO. 1
---	06/17/2016	BID ADDENDUM NO. 2

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 017
PLANTING PLAN

SHEET
L17.0

PLOTTED ON: 2016-08-07 12:04 PM PLOTTED BY: Lindsay Crosby FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OFP Interim Action\PLANS\BID SET\Property 017\PLANTING PLAN_017.dwg

PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	AKANE APPLE	MALUS DOMESTICA 'AKANE'	1.5" CAL	AS SHOWN
	1	COMMON FIG	FICUS CARICA	1.5" CAL	AS SHOWN
	3	LILAC SUNDAY LILAC	SYRINGA × CHINENSIS 'LILAC SUNDAY'	5 GAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	3	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	2	FLOWERING QUINCE	CHAENOMELES SPECIOSA	3 GAL	AS SHOWN
	7	MOCK ORANGE	PHILADELPHUS LEWISII	3 GAL	3'-0", O.C.
	6	JAPANESE BARBERRY	BERBERIS THUNBERGII	3 GAL	4'-0", O.C.
	11	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	3 GAL	3'-0", O.C.
	12	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	4	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	3 GAL	3'-0", O.C.
	17	JAPANESE SPIRAEA	SPIRAEA JAPONICA	3 GAL	3'-0", O.C.
	10	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	8	CAROL MACKIE DAPHNE	DAPHNE X BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

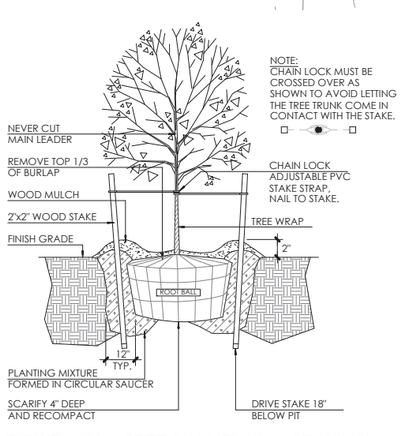
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	10	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	21	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	4" POT	2'-0", O.C., TRI.
	29	SEA PINK	ARMERIA MARITIMA	4" POT	1'-6", O.C., TRI.
	10	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	1 GAL	2'-6", O.C., TRI.
	13	CANDYTUFT	IBERIS SEMPERVIRENS	4" POT	2'-0", O.C., TRI.
	2,600 SF SOD				

SEED MIXES

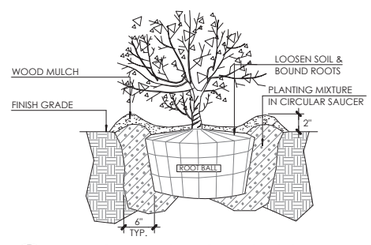
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 7,226 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

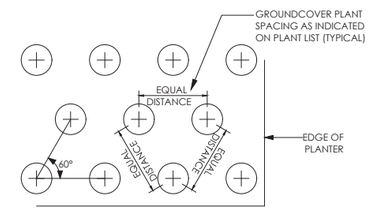
1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED
PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTERY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

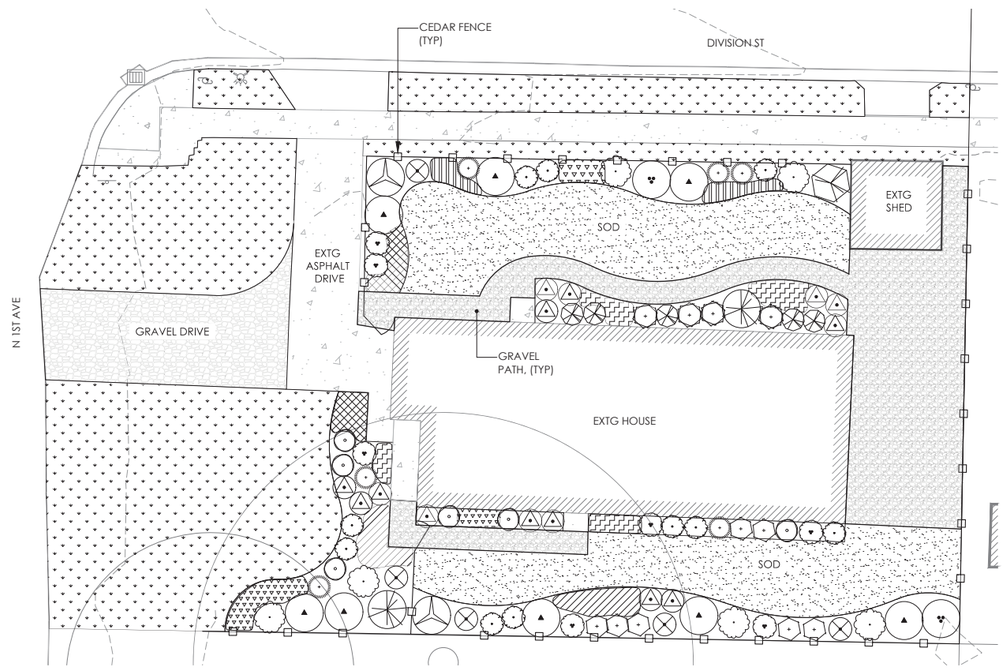
ISSUE	DATE	DESCRIPTION
---	---	---
---	06/17/2016	BID ADDENDUM NO. 2

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 018 PLANTING PLAN

SHEET
L18.0

PLOTTED ON: 2016-08-28 2:44 PM PLOTTED BY: Lindsey Crosby FILENAME: G:\JD_MFA Civil 3D\JD_PROJECTS\9003.01.39 OFF-Property\OFF Interim Action\PLANS\BID SET\Property 018\PLANTING PLAN_018.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	2	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	8	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	2	WESTERN REDBUD	CERCIS OCCIDENTALIS	3 GAL	5'-0", O.C.
	6	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	5	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE"	2 GAL	3'-0", O.C.
	10	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	7	RED FLOWERING CURRANT	RIBES SANGUINEUM	1 GAL	3'-0", O.C.
	4	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	7	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	14	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	5	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	6	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	6	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

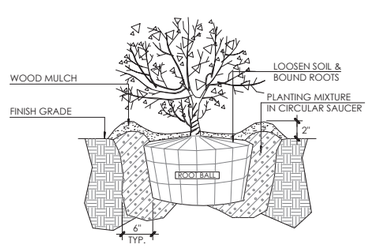
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	14	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	18	BOULDER BLUE FESCUE	FESTUCA GLAUCA 'BOULDER BLUE'	6" POT	1'-6", O.C., TRI.
	33	SEA PINK	ARMERIA MARITIMA	6" POT	1'-6", O.C., TRI.
	19	CANDYTUFT	HEUCHERA 'PLUM PUDDING'	6" POT	2'-0", O.C., TRI.
	20	CUSHION EUPHORBIA	EUPHORBIA POLYCHROMA	6" POT	2'-0", O.C., TRI.
	1,193 SF	SOD			

SEED MIXES

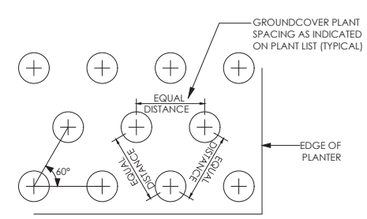
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 2,255 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF DETERMINING REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

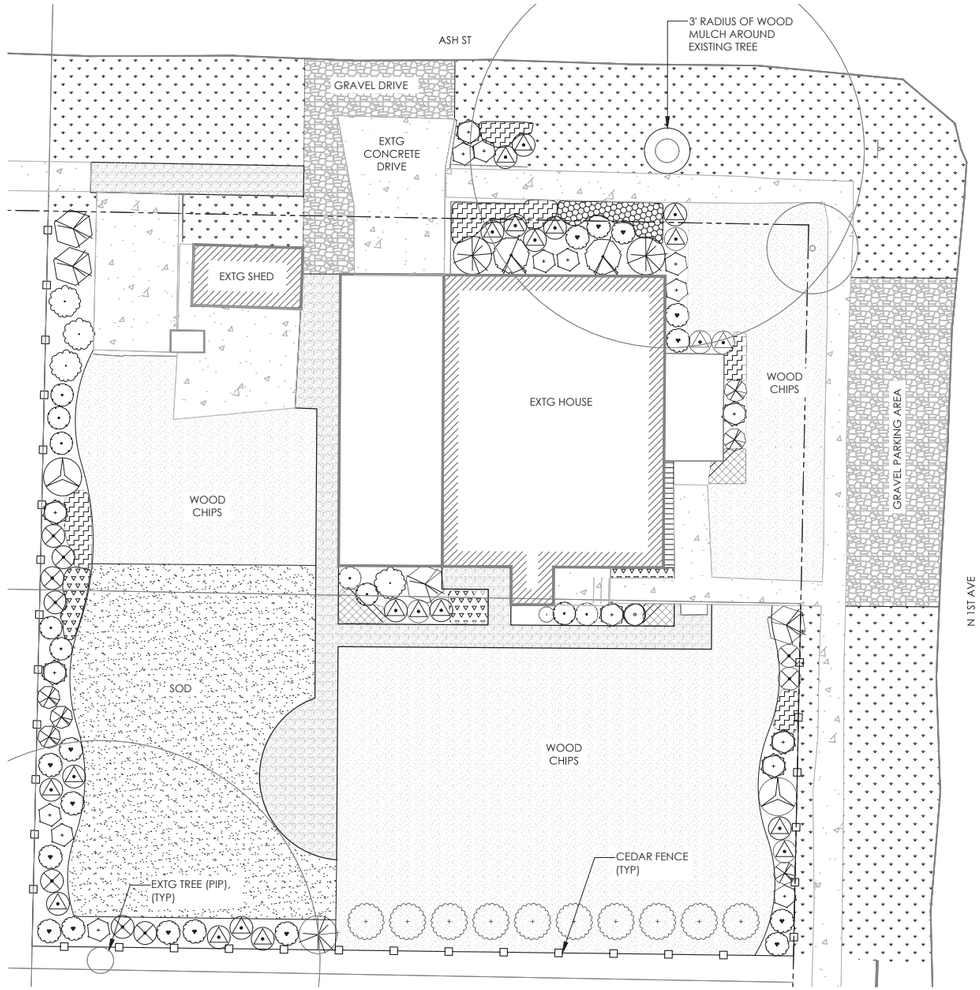
ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 019 PLANTING PLAN

SHEET
L19.0

PLOTTED ON: 2014-03-26 6:20 PM PLOTTED BY: Curtis Riley FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\Off-Interim Action\PLANS\BID SET\Property 019 PLANTING PLAN_019.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	4	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	3	WESTERN REDBUD	CERCIS OCCIDENTALIS	3 GAL	5'-0", O.C.
	4	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	9	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	7	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	16	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	21	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	10	CAUCASIAN DAPHNE	DAPHNE CAUCASIA	1 GAL	3'-0", O.C.
	9	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	6	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	1	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	2	TRANSPLANTED HYDRANGEAS			
	10	TRANSPLANTED MINIATURE FRUIT TREES			

GRASSES, PERENNIALS & GROUNDCOVERS

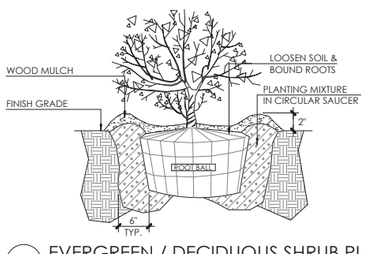
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	13	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	5	STAR JASMINE	TRACHELOSPERMUM JASMINOIDES	6" POT	2'-0", O.C., TRI.
	17	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.
	12	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	6" POT	2'-0", O.C., TRI.
	35	CANDYTUFT	IBERIS SEMPERVIRENS	6" POT	2'-0", O.C., TRI.
	1,375 SF	SOD			

SEED MIXES

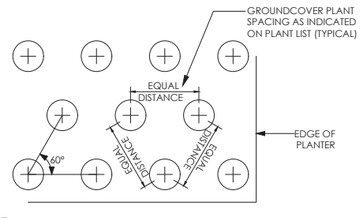
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 2,215 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER

This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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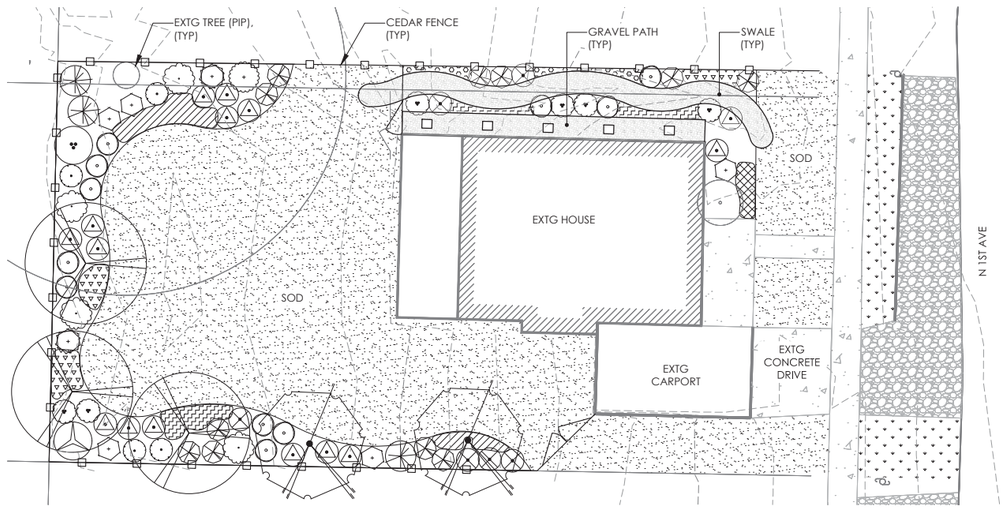
PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

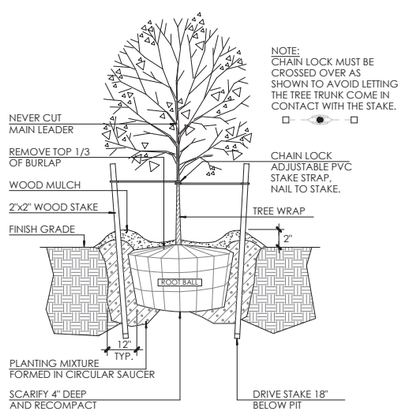
SHEET TITLE
PROPERTY 024
PLANTING PLAN

SHEET
L24.0

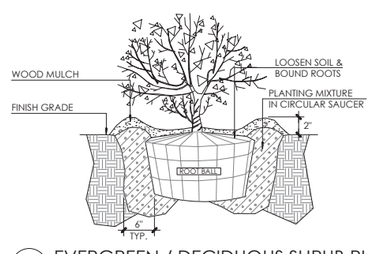
PLOTTED BY: Curtis Riley FILENAME: G:\00_MFA C\4-30\00_PROJECTS\9003.01.39 Off-Property\OPP-Interim Action\PLANS\BIDSET\Property\024\PLANTING PLAN_024.dwg
PLOTTED ON: 2016-05-26 6:22 PM



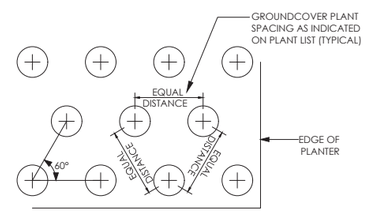
PROPOSED PLANTING PLAN



1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	3	BROOKS PLUM	PRUNUS DOMESTICA 'BROOKS'	1.5" CAL	AS SHOWN
	2	AKANE APPLE	MALUS DOMESTICA 'AKANE'	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	3	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	3'-0", O.C.
	4	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	4	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	2	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	6	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	15	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	6	CAUCASIAN DAPHNE	DAPHNE CAUCASIA	1 GAL	3'-0", O.C.
	11	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	11	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	5	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	1	TRANSPLANTED LAUREL			

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	4	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	16	CANDYTUFT	IBERIS SEMPERVIRENS	6" POT	2'-0", O.C., TRI.
	19	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.
	10	WILLOWLEAF COTONEASTER	COTONEASTER SALICIFOLIUS 'REPENS'	6" POT	2'-0", O.C., TRI.
	14	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	6" POT	2'-0", O.C., TRI.
	2,634 SF SOD				

SEED MIXES

HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 263 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01..39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 025 PLANTING PLAN

SHEET
L25.0

PLOTTED BY: Curtis Riley FILENAME: G:\JB_MFA Civil 3D\JB_PROJECTS\9003.01.39 OFF-Property\OFP-Interim Action\PLANS\BID SET\Property 025\PLANTING PLAN_025.dwg
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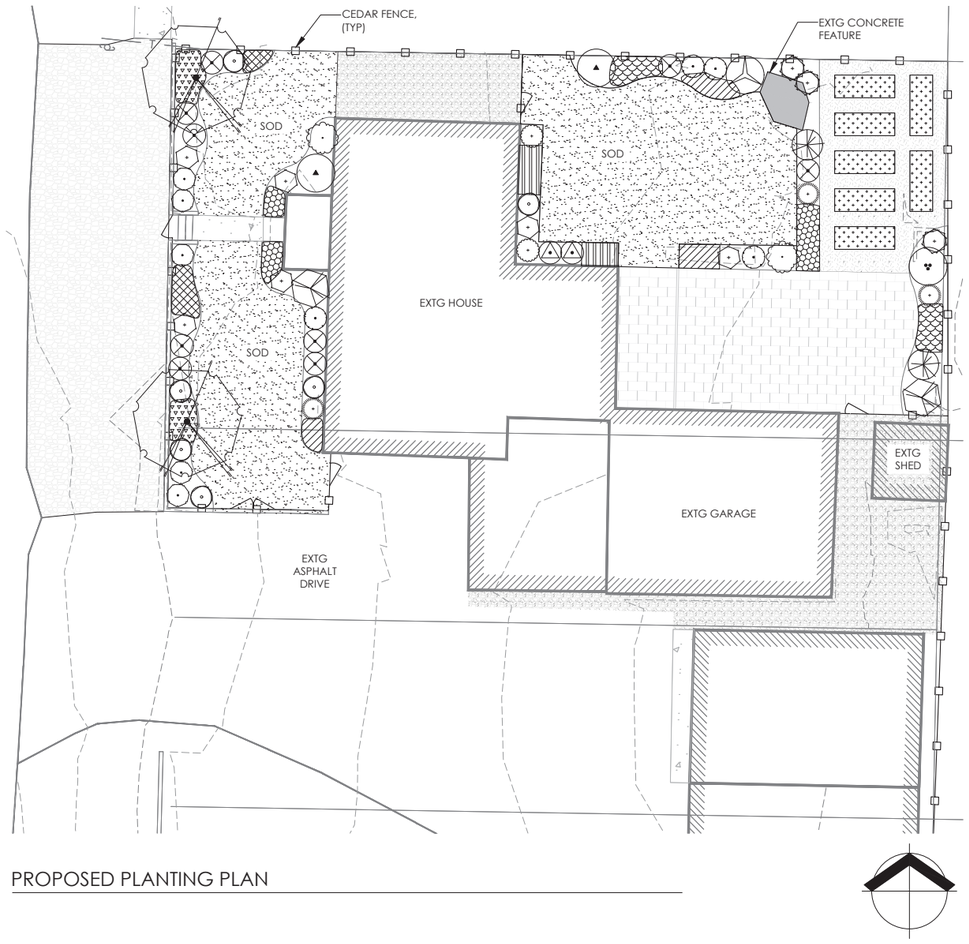


PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	JAPANESE ZELKOVA	ZELKOVA SERRATA	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	3	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	2	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	3'-0", O.C.
	2	JAPANESE BARBERRY	BERBERIS THUNBERGII	2 GAL	4'-0", O.C.
	4	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	2 GAL	3'-0", O.C.
	6	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	3	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	3	DWARF BLUE SCOTT'S PINE	PINUS SYLVESTRIS 'GLAUCA NANA'	2 GAL	3'-0", O.C.
	5	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	2	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	9	CAUCASIAN DAPHNE	DAPHNE CAUCASIA	1 GAL	3'-0", O.C.
	2	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	6	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	8	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	13	ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA	1 GAL	2'-0", O.C., TRI.
	9	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	6" POT	2'-0", O.C., TRI.
	22	SEA PINK	ARMERIA MARITIMA	6" POT	1'-6", O.C., TRI.
	11	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	1 GAL	2'-6", O.C., TRI.
	18	CANDYTUFT	IBERIS SEMPERVIRENS	6" POT	2'-0", O.C., TRI.
	1,522 SF	SOD			

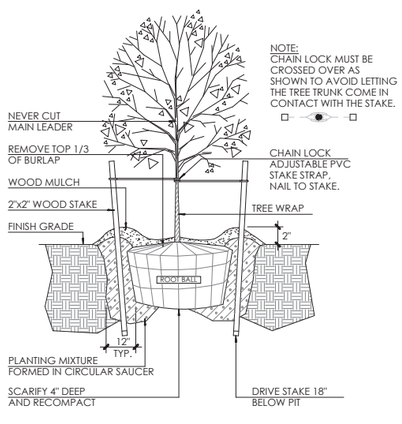
SEED MIXES

GARDEN COVER CROP
TOTAL AREA: 160 SF; APPLICATION RATE: 1 LBS PER 250 SF

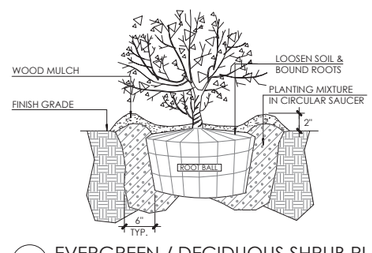
COMMON NAME	BOTANICAL NAME	%
CEREAL RYE	SECALE CEREALE	40%
AUSTRIAN PEAS	PISUM SATIVUM	25%
WINTER WHEAT	TRITICUM AESTIVUM	25%
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM)	10%

GENERAL LANDSCAPE NOTES

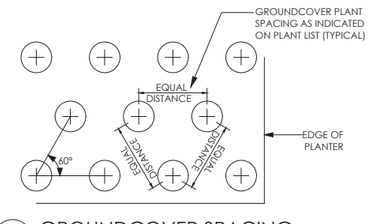
1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
2001 NW 19TH AVE, SUITE 200
PORTLAND, OR 97209
PHONE: 971.544.2139
www.maulfoster.com

Port of Ridgefield

This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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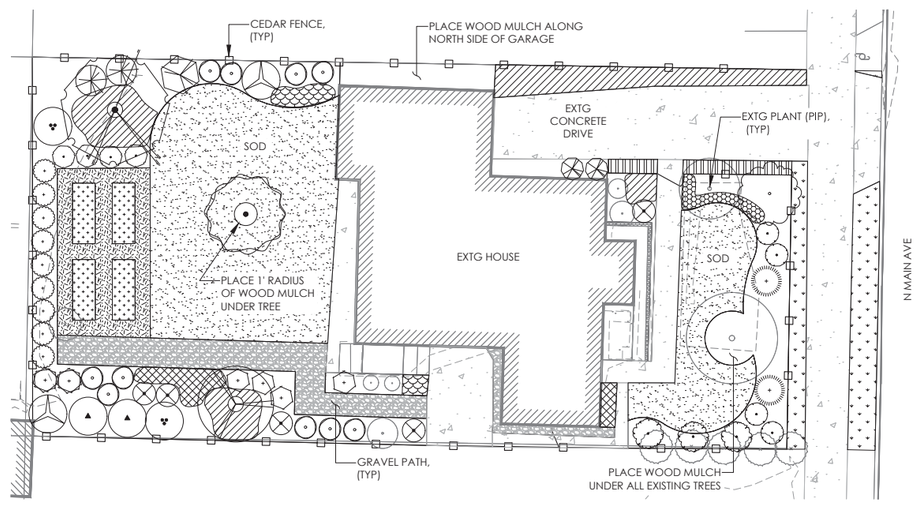
PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 036
PLANTING PLAN

SHEET
L36.0

PLOTTED ON: 2014-03-26 7:27 PM PLOTTED BY: Curtis Riley FILENAME: G:\00_MFA Civil 3D\05_PROJECTS\9003.01.39 Off-Property\Off-Interim Action\PLANS\3RD SET\Property 036 PLANTING PLAN_036.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	SWEET BING CHERRY	PRUNUS AVIUM 'BING'	1.5" CAL	AS SHOWN
	1	COMMON FIG	FICUS CARICA	6' HT	AS SHOWN
	1	TRANSPLANTED FLOWERING DOGWOOD			

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	LILAC SUNDAY LILAC	SYRINGA × CHINENSIS 'LILAC SUNDAY'	5 GAL	AS SHOWN
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	2	SHOW OFF FORSYTHIA	FORSYTHIA X INTERMEDIA 'MINDOR'	3 GAL	AS SHOWN
	2	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	2	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	3'-0", O.C.
	4	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	2	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	2 GAL	3'-0", O.C.
	4	EARLIBLUE BLUEBERRY	VACCINIUM CORYMBOSUM 'EARLIBLUE'	1 GAL	3'-0", O.C.
	5	CAUCASIAN DAPHNE	DAPHNE CAUCASIA	1 GAL	3'-0", O.C.
	2	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	9	FALL GOLD RASPBERRY	RUBUS IDAEUS VAR. STRIGOSUS 'FALL GOLD'	1 GAL	3'-0", O.C.
	10	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	4	DOUBLE KNOCK OUT ROSE	ROSA 'DOUBLE KNOCK OUT'	2 GAL	3'-0", O.C.
	3	TRANSPLANTED HYDRANGEA			
	2	TRANSPLANTED RHODODENDRON			

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	13	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	10	HIMALAYAN SWEETBOX	SARCOCOCCA HOOKERIANA VAR. HUMILIS	4" POT	2'-0", O.C., TRI.
	8	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	1 GAL	2'-6", O.C., TRI.
	65	CANDYTUFT	IBERIS SEMPERVIRENS	4" POT	2'-0", O.C., TRI.
	11	SEA PINK	ARMERIA MARITIMA	4" POT	1'-6", O.C., TRI.
	1,054 SF	SOD			

SEED MIXES

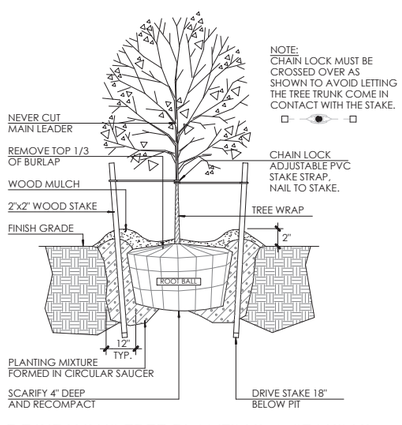
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 230 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GARDEN COVER CROP
TOTAL AREA: 96 SF; APPLICATION RATE: 1 LBS PER 250 SF

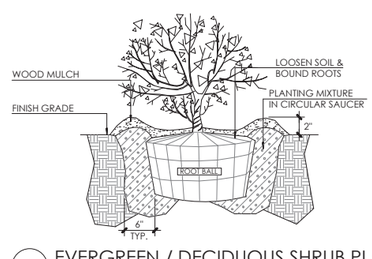
COMMON NAME	BOTANICAL NAME	%
CEREAL RYE	SECALE CEREALE	40%
AUSTRIAN PEAS	PISUM SATIVUM	25%
WINTER WHEAT	TRITICUM AESTIVUM	25%
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM)	10%

GENERAL LANDSCAPE NOTES

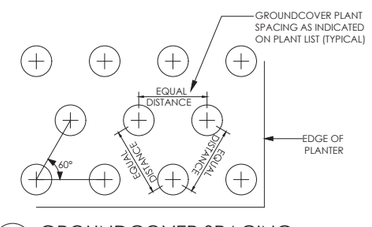
1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

10-27-2021

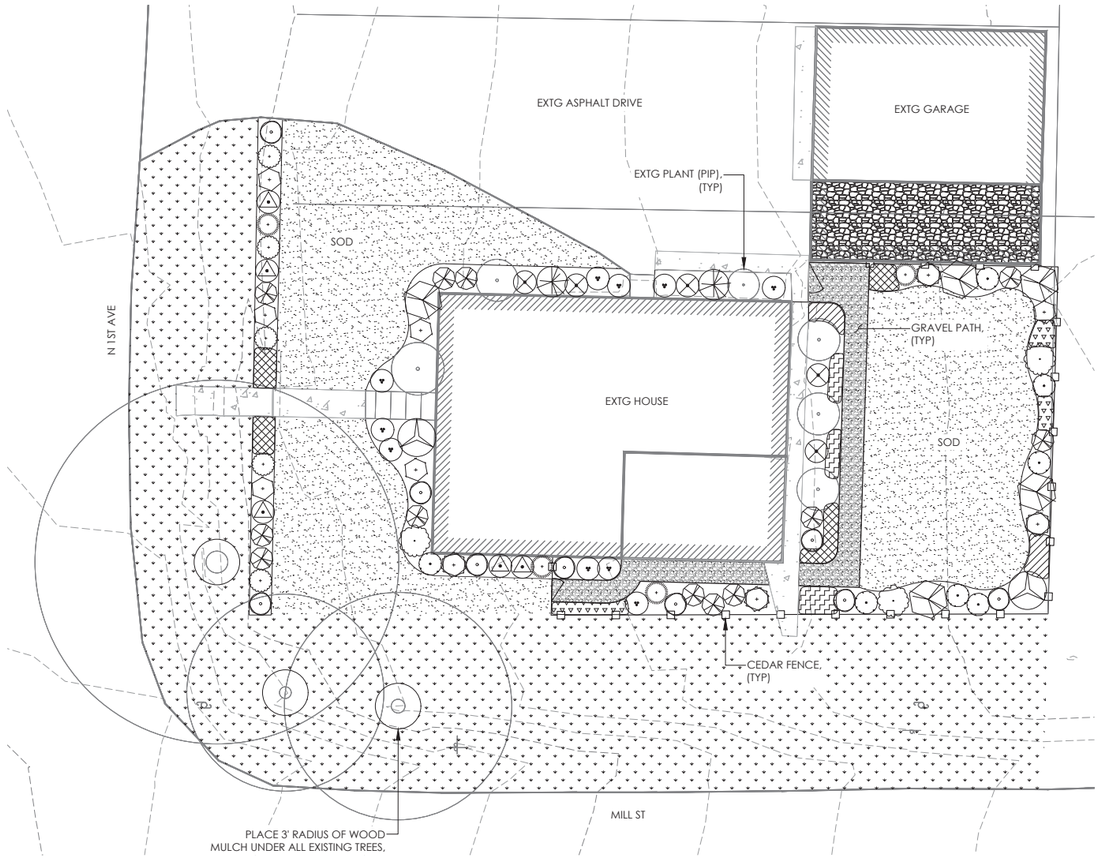
ISSUE	DATE	DESCRIPTION
####	####	####
####	####	####
####	####	####

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 037 PLANTING PLAN

SHEET
L37.0

PLOTTED ON: 2014-05-27 4:42 PM PLOTTED BY: Curtis Riley FILENAME: G:\GIS_MFA Civil 3D\GIS_PROJECTS\9003.01.39 Off-Property\OPP-Interim Action\PLANS\BID SET\Property037\PLANTING PLAN_037.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	5	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	2	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	3'-0", O.C.
	3	JAPANESE BARBERRY	BERBERIS THUNBERGII	3 GAL	4'-0", O.C.
	7	SANTA BARBARA CEANOTHUS	CEANOTHUS IMPRESSUS IMPRESSUS	3 GAL	3'-0", O.C.
	4	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	3 GAL	3'-0", O.C.
	4	DWARF BLUE SCOTT'S PINE	PINUS SYLVESTRIS 'GLAUCA NANA'	3 GAL	3'-0", O.C.
	5	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	1 GAL	3'-0", O.C.
	10	DWARF MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	1 GAL	3'-0", O.C.
	5	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	1 GAL	3'-0", O.C.
	12	JAPANESE SPIRAEA	SPIRAEA JAPONICA	1 GAL	3'-0", O.C.
	9	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	1 GAL	3'-0", O.C.
	6	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	3 GAL	3'-0", O.C.
	5	TRANSPLANTED ROSES			

GRASSES, PERENNIALS & GROUNDCOVERS

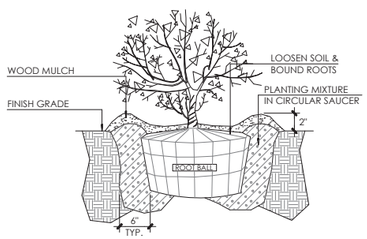
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	16	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	18	CUSHION EUPHORBIA	EUPHORBIA POLYCHROMA	6" POT	1'-6", O.C., TRI.
	9	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.
	7	CANDYTUFT	HEUCHERA 'PLUM PUDDING'	4" POT	2'-0", O.C., TRI.
	2,156	SOD			

SEED MIXES

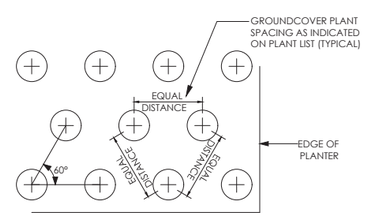
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 3,614 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM DARK FIR MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING



2 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED
PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTERY PORTION
INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

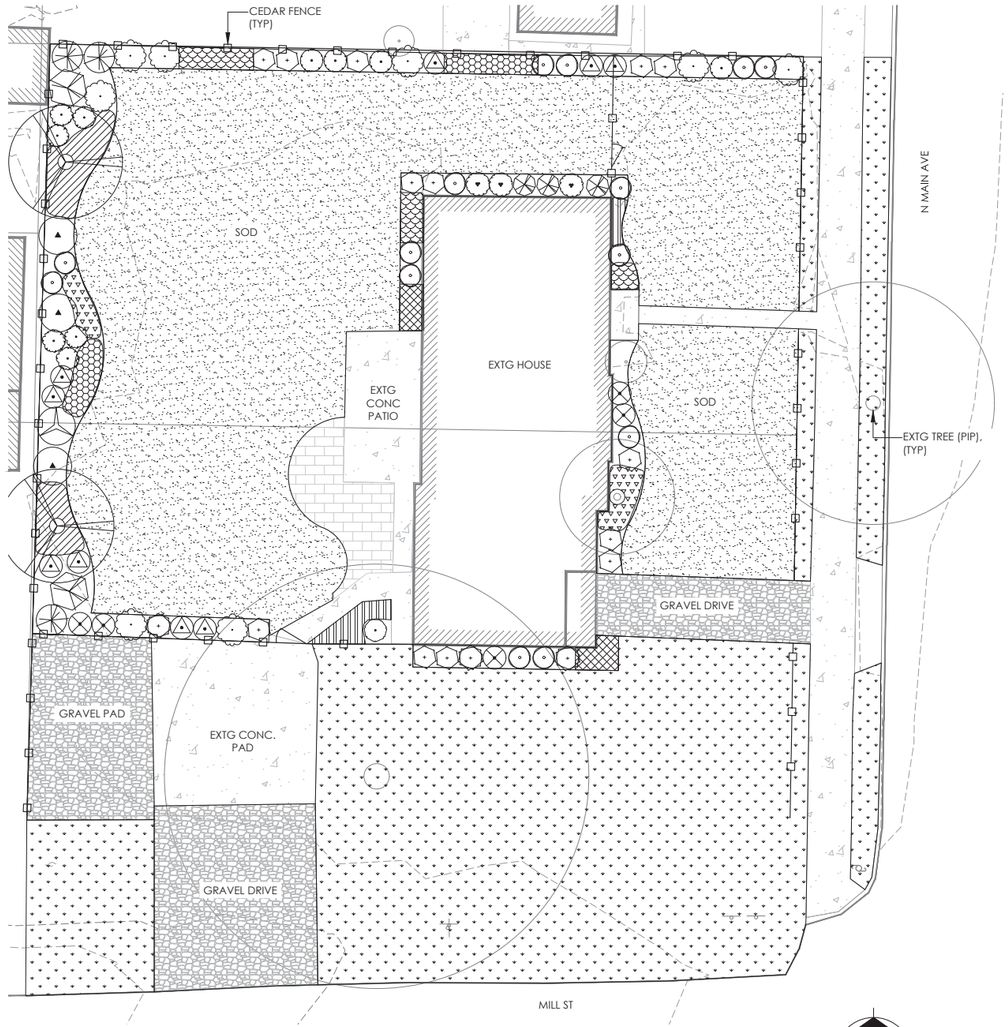
ISSUE	DATE	DESCRIPTION

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 038
PLANTING PLAN

SHEET
L38.0

PLOTTED BY: Curtis Riley FILENAME: G:\JB\JMFA Civil 3D\JB_PROJECTS\9003.01.39 Off-Property\Off-Interim Action\PLANS\BIDSET\Property038\PLANTING PLAN_038.dwg
PLOTTED ON: 2016-05-26 7:44 PM



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	JAPANESE ZELKOVA	ZELKOVA SERRATA	1.5" GAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	AS SHOWN
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	3	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	5'-0", O.C.
	3	MOCK ORANGE	PHILADELPHUS LEWISII	3 GAL	3'-0", O.C.
	8	JAPANESE BARBERRY	BERBERIS THUNBERGII	3 GAL	4'-0", O.C.
	6	RED FLOWERING CURRANT	RIBES SANGUINEUM	3 GAL	3'-0", O.C.
	13	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	3 GAL	3'-0", O.C.
	3	BLUE SPIRE ROSEMARY	ROSMARINUS OFFICINALIS 'BLUE SPIRE'	3 GAL	3'-0", O.C.
	3	SWORDFERN	POLYSTICHUM MUNITUM	3 GAL	3'-0", O.C.
	9	KELSEY DOGWOOD	CORNUS SERICEA 'KELSEYI'	3 GAL	3'-0", O.C.
	5	CAUCASIAN DAPHNE	DAPHNE CAUCASIA	3 GAL	3'-0", O.C.
	3	CAROL MACKIE DAPHNE	DAPHNE × BURKWOODII 'CAROL MACKIE'	3 GAL	3'-0", O.C.
	14	GOLF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	3 GAL	3'-0", O.C.
	1	TRANSPLANTED JAPANESE MAPLE			

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	11	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	19	BOULDER BLUE FESCUE	FESTUCA GLAUCA 'BOULDER BLUE'	6" POT	1'-6", O.C., TRI.
	10	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	1 GAL	2'-6", O.C., TRI.
	30	CANDYTUFT	HEUCHERA 'PLUM PUDDING'	6" POT	2'-0", O.C., TRI.
	34	SEA PINK	ARMERIA MARITIMA	6" POT	1'-6", O.C., TRI.
	27	CUSHION EUPHORBIA	EUPHORBIA POLYCHROMA	6" POT	1'-6", O.C., TRI.
	4,380 SF SOD				

SEED MIXES

HYDROSEED GRASS MIX; DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 3,677 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
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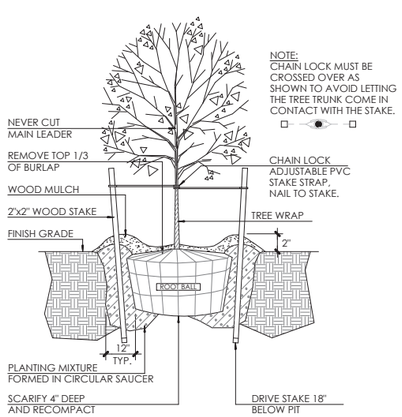
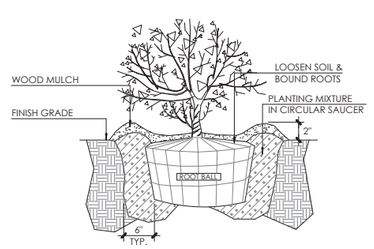
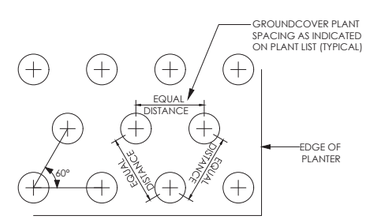


1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
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PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

JOSHUA CARSON ELLIOTT
STATE OF WASHINGTON
50320
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
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PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
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SHEET TITLE
PROPERTY 039 PLANTING PLAN

SHEET
L39.0

PLOTTED BY: Josh Elliott FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\Off-Property Action\PLANS\BIDSET\Property 039\PLANTING PLAN_039.dwg
PLOTTED ON: 2014-05-31 4:06 PM

OFF-PROPERTY PORTION INTERIM ACTION

PROPERTIES COMPLETED IN 2017

PREPARED FOR:

PORT OF RIDGEFIELD

LOCATED IN SEC. 24 T. 4 N., R. 1 W., W.M., CLARK COUNTY, RIDGEFIELD, WASHINGTON

Know what's below. Call before you dig.

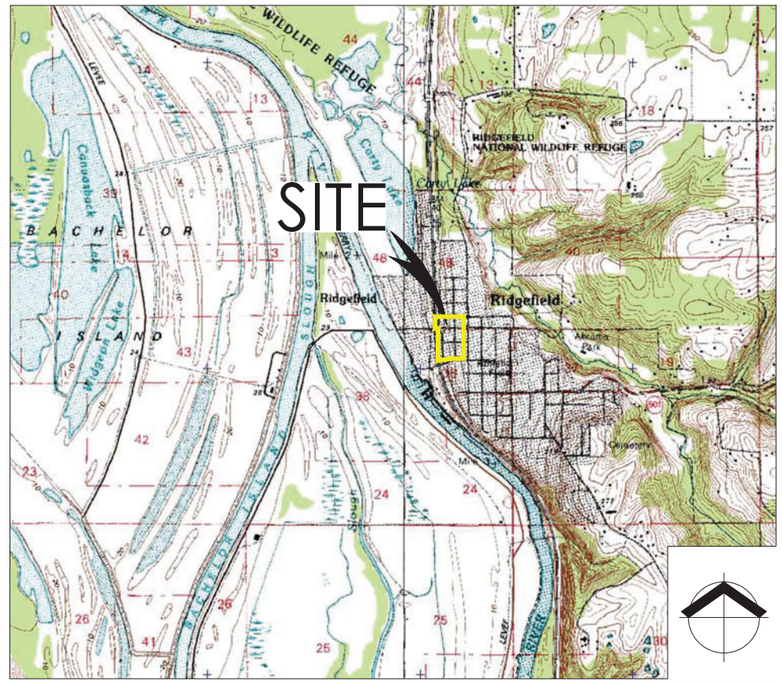
PROJECT CONTACTS

CONTRACTING AGENCY	CIVIL ENGINEER
PORT OF RIDGEFIELD 111 WEST DIVISION ST RIDGEFIELD, WASHINGTON, 98642 PHONE: (360) 887-3873 CONTACT: LAURIE OLIN, DIRECTOR OF OPERATIONS	MAUL FOSTER & ALONGI, INC. 400 E. MILL PLAIN BOULEVARD, SUITE 400 VANCOUVER, WASHINGTON 98660 PHONE: (360) 694-2691 CONTACT: LINDSEY CROSBY
SURVEYOR	**WASHINGTON DOE**
KLEIN & ASSOCIATES, INC 2517 252ND AVE, CAMAS, WASHINGTON, 98607 PHONE: (360) 687-0500 CONTACT: JAMES KLEIN	TOXICS CLEANUP PROGRAM VANCOUVER FIELD OFFICE 2108 GRAND BLVD VANCOUVER, WASHINGTON 98661 PHONE: (360) 690-4795 CONTACT: CRAIG RANKINE

PROJECT SUMMARY

PROJECT WORK:
PROJECT INCLUDES EXCAVATION AND REMOVAL OF DIOXIN CONTAMINATED SOIL FROM PRIVATE PROPERTIES AND ASSOCIATED RIGHT-OF-WAYS. DIOXIN CONTAMINATION IS A RESULT OF OPERATIONAL ACTIVITIES AT THE FORMER PACIFIC WOOD TREATING FACILITY LOCATED AT 111 WEST DIVISION STREET IN RIDGEFIELD, WASHINGTON.

SITE ADDRESS:
THE CLEANUP SITE INCLUDES 48 TAX LOTS WEST OF MAIN AVENUE AND NORTH OF MILL STREET IN RIDGEFIELD, WASHINGTON.



VICINITY MAP

NOT TO SCALE

SHEET INDEX

C0.0	COVER
C0.1	MASTER LEGEND
C0.2	OVERALL PROJECT PLAN
ESC1.0	EROSION AND SEDIMENT CONTROL SITE MAP
ESC1.1	EROSION AND SEDIMENT CONTROL DETAILS
D1.0	REMEDIATION STANDARD DETAILS
D1.1	RESTORATION STANDARD DETAILS
D1.2	RESTORATION STANDARD DETAILS
C02.1	PROPERTY 002 REMEDIATION AND RESTORATION PLAN
C03.1	PROPERTY 003 REMEDIATION AND RESTORATION PLAN
C04.1	PROPERTY 004 REMEDIATION AND RESTORATION PLAN
C20B.1	PROPERTY 020B REMEDIATION AND RESTORATION PLAN
C23.1	PROPERTY 023 REMEDIATION AND RESTORATION PLAN
C26.1-C28A	ROW 026 AND ROW 028A REMEDIATION AND RESTORATION PLAN
C28B.1	PROPERTY 028B REMEDIATION AND RESTORATION PLAN
C29A.1	PROPERTY 029A REMEDIATION AND RESTORATION PLAN
C29B.1	PROPERTY 029B AND REMEDIATION AND RESTORATION PLAN
C32.1	PROPERTY 032 REMEDIATION AND RESTORATION PLAN
C41.1	MILL STREET ROW REMEDIATION AND RESTORATION PLAN
L02.0	PROPERTY 002 PLANTING PLAN
L03.0	PROPERTY 003 PLANTING PLAN
L20B.0	PROPERTY 020B PLANTING PLAN
L23.0	PROPERTY 023 PLANTING PLAN
L28.0	PROPERTY 028B PLANTING PLAN
L29.0	PROPERTY 029 PLANTING PLAN
L32.0	PROPERTY 032PLANTING PLAN

GENERAL NOTES

1. SURVEY PERFORMED BY KLEIN & ASSOCIATES, INC. IN 2016.
2. ADDITIONAL FINAL GRADE SURVEY PERFORMED BY AKS IN 2017.
3. HORIZONTAL DATUM: WASHINGTON STATE PLANE COORDINATE SYSTEM SOUTH ZONE, NAD 83/91. ELEVATION DATUM: NAVD 88
4. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION. A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 (UTILITY NOTIFICATION CENTER) FOR LOCATION MARK-UP OF EXISTING UTILITIES.
5. ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE LATEST STANDARDS AND PRACTICES OF THE CITY OF RIDGEFIELD AND THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" PREPARED BY WSDOT/APWA.
6. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
7. ANY CHANGES TO THE DESIGN AND/OR CONSTRUCTION SHALL BE APPROVED BY THE PORT OR THE ENGINEER.
8. APPROVAL OF THESE PLANS DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION NOT SPECIFICALLY SHOWN ON THE PLANS. PLANS FOR STRUCTURES SUCH AS BRIDGES, BUILDINGS, TANKS, VAULTS, ROCKERIES, AND RETAINING WALLS MAY REQUIRE A SEPARATE REVIEW AND APPROVAL BY THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.
9. A COPY OF THESE APPROVED PLANS SHALL BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY CONSTRUCTION EASEMENTS AND PERMITS NOT PROVIDED BY THE OWNER.
11. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING AND STAKING.
12. PUBLIC AND PRIVATE DRAINAGE WAYS SHALL BE PROTECTED FROM POLLUTION. NO MATERIAL IS TO BE DISCHARGED TO OR DEPOSITED IN STORMWATER SYSTEMS IF IT MIGHT RESULT IN VIOLATION OF STATE OR FEDERAL WATER QUALITY STANDARDS.
13. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL HAVE AN APPROVED PERMIT PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN THE RIGHT-OF-WAY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES ON THE ADJACENT PUBLIC STREETS.
15. ANY PUBLIC OR PRIVATE CURB, GUTTER, SIDEWALK, OR ASPHALT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO CITY OF RIDGEFIELD STANDARDS AND PRACTICES.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WATER, SANITARY SEWER, STORMWATER, POWER, TELEPHONE, CABLE TV, GAS, IRRIGATION, AND STREET LIGHTING. THE CONTRACTOR SHALL NOTIFY RESIDENTS AND BUSINESSES 48 HOURS IN ADVANCE OF ANY WORK AFFECTING ACCESS OR SERVICE AND SHALL MINIMIZE INTERRUPTIONS TO DRIVEWAYS FOR RESIDENTS AND BUSINESSES ADJACENT TO THE PROJECT.
17. ANY DISTURBANCE OR DAMAGE TO PROPERTY NOT IDENTIFIED FOR DEMOLITION OR PROPERTY ADJACENT TO THE WORK AREA SHALL BE REPAIRED OR RESTORED TO ORIGINAL CONDITION.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELYSE HARMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
COVER
SHEET
C0.0

PLOTTED ON: 2018-04-04 12:44 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA CH2.3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\C0.0 COVER.dwg

ABBREVIATIONS

AVE	AVENUE
CIP	CAST IN PLACE
CMU	COCNRETE MASONRY UNITS
CONC	CONCRETE
CSBC	CRUSHED SURFACING BASE COURSE
DIA	DIAMETER
DWG	DRAWING
EG	EXISTING GRADE
EXTG	EXISTING
G.C.	GENERAL CONTRACTOR
GAL	GALLON
GRDN	GARDEN
GRVL	GRAVEL
J. MAPLE	JAPANESE MAPLE
N	NORTH
NTS	NOT TO SCALE
OC	ON CENTER
PIP	PROTECT IN PLACE
PSI	POUND PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RHOD	RHODODENDRON
SQ. FT.	SQUARE FEET
ST	STREET
TRI	TRIANGULAR
TYP	TYPICAL
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

GENERAL LEGEND

GAS/POWER/TELEPHONE SYMBOLS

SYMBOL EXIST.	DESCRIPTION
EM	ELECTRICAL METER
GM	GAS METER
GV	GAS VALVE
	UTILITY POLE
	UTILITY POLE ANCHOR
	LIGHT POLE

WATER SYMBOLS

SYMBOL EXIST.	DESCRIPTION
WM	WATER METER
	FIRE HYDRANT
	IRRIGATION SPRINKLER
W/V	WATER VALVE

MISCELLANEOUS SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		MONITORING WELL
		SIGN
		INLET PROTECTION PILLOW
		TREE TO BE REMOVED
		TREE TO BE TRANSPLANTED
		TREE TO REMAIN
		ROOT PROTECTION ZONE

X
C1.X

DETAIL NUMBER

DETAIL REFERENCE SHEET

TYPICAL DETAIL CALLOUT

SURVEY SYMBOLS

SYMBOL THEOR./ EXIST.	SYMBOL FOUND/ PROP.	DESCRIPTION
		MONUMENT
		CONTROL POINT

SANITARY/STORM SEWER SYMBOLS

SYMBOL EXIST.	DESCRIPTION
	SAN. SEWER CLEAN OUT
	SAN. SEWER MANHOLE
	STORM DRAIN CATCH BASIN
	STORM DRAIN MANHOLE

EXISTING GRADE MAJOR CONTOUR	20
EXISTING GRADE MINOR CONTOUR	21
EXISTING STORM DRAIN PIPE	SD_x
EXISTING WATER PIPE	W_x
EXISTING SANITARY SEWER PIPE	SS_x
EXISTING OVERHEAD POWER	P
EXISTING UNDERGROUND POWER	E_x
EXISTING UNDERGROUND TELEPHONE	T
EXISTING UNDERGROUND GAS	G
EXISTING CONCRETE SURFACING	
EXISTING GRAVEL SURFACING	
EXISTING BUILDING	
EXISTING EDGE OF ASPHALT	
EXISTING FENCE LINE	X X
EXISTING ROAD CENTERLINE	
EXISTING RIGHT-OF-WAY	
EXISTING PROPERTY LINE	PL

PROPOSED GRADE MAJOR CONTOUR (5.0' INTERVAL)	20
PROPOSED GRADE MINOR CONTOUR (1.0' INTERVAL)	21
PROPOSED SOIL REMOVAL AREA	
PROPOSED SOIL REMOVAL AREA - RESTRICTED ACCESS	
PROPOSED REPLACEMENT TOPSOIL	
PROPOSED CONCRETE SURFACING	
PROPOSED GRAVEL WALKWAY SURFACING	
PROPOSED GRAVEL DRIVEWAY/PAD SURFACING	
PROPOSED WOODCHIP SURFACING	
PROPOSED FENCE LINE	

RECORD DRAWING

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Port of Ridgefield

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/01/2017	CONSTRUCTION DOCUMENTS
A	4/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE

SHEET TITLE
MASTER LEGEND

SHEET
C0.1

PLOTTED ON: 2018-02-27 7:26 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\C0.1 MASTER LEGEND.dwg

LEGEND

- 2016 RESTORATION AREA
- 2017 RESTORATION AREA
- PROPERTY BOUNDARY
- PROJECT BOUNDARY

NOTES

SEE INDIVIDUAL CLEANUP PLAN FOR REMEDIATION AND RESTORATION AREAS

SITES

Property ID Number	Tax Lot Parcel Number	Property Address	Owner Name
002	69312000	5 MAPLE ST, RIDGEFIELD, 98642	BENDER MARK & BENDER JILL
	69310000	NA	BENDER MARK & BENDER JILL
003	69297000	7 MAPLE ST, RIDGEFIELD, 98642	RUSSELL BRADLEY & RUSSELL TANYA M
004	69292000	NA (EMPTY LOT)	FISHER BARRY
020B	69340000	411 N MAIN AVE, RIDGEFIELD, 98642	KENWORTHY STEPHEN V
023	69406000	5 ASH ST, RIDGEFIELD, 98642	MCCABE DOUGLAS
	69407000	NA	MCCABE DOUGLAS
	69402000	NA	MCCABE DOUGLAS
028A	69394000	311 N 1ST AVE, RIDGEFIELD, 98642	BENEDICT DENNIS & BENEDICT JANET
028B	69394000		
029A	69400000	305 N 1ST AVE, RIDGEFIELD, 98642	PATTY TANNINEN
029B	69398000	305 N 1ST AVE, RIDGEFIELD, 98642	PATTY TANNINEN
032	69374000	322 N 1ST AVE, RIDGEFIELD, 98642	PATRICIA THOMPSON

RECORD DRAWING

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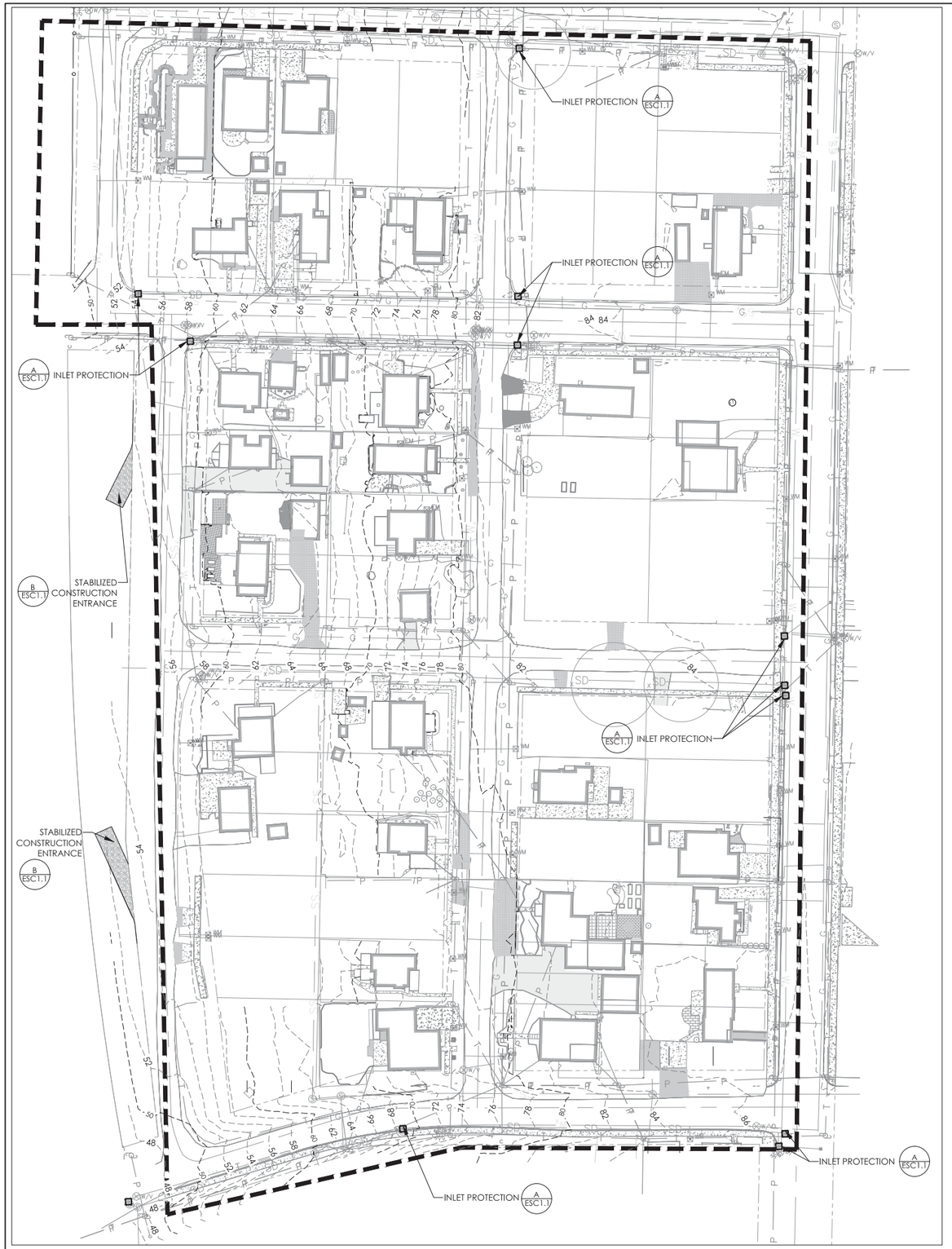
SHEET TITLE
OVERALL PROJECT PLAN

SHEET
C0.2

PLOTTED ON: 2018-03-20 6:19 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\C0.2 OVERALL PROJECT PLAN.dwg



ESC PLAN LEGEND:

- 60 — EXISTING GRADE MAJOR CONTOUR (10' INTERVAL)
- 62 — EXISTING GRADE MINOR CONTOUR (2' INTERVAL)
- PROJECT BOUNDARY
- INLET PROTECTION

WASHINGTON STATE DEPARTMENT OF ECOLOGY & CITY OF RIDGEFIELD EROSION CONTROL NOTES

STANDARD NOTES FOR EROSION CONTROL MEASURES

1. THE IMPLEMENTATION OF THESE ESC MEASURES AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
2. THE PROJECT BOUNDARY SHOWN IN THE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED REMEDIATION LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
3. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
4. THE ESC FACILITIES SHOWN IN THE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
5. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
6. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
7. AT NO TIME SHALL CATCH BASIN FILTERS BE ALLOWED TO ACCUMULATE SEDIMENT MORE THAN ONE THIRD FULL.
8. NO WORK SHALL TAKE PLACE DURING A RAIN EVENT. PLASTIC SHEETING SHALL BE USED TO COVER OPEN EXCAVATION AREAS DURING A RAIN EVENT.
9. STABILIZED CONSTRUCTION ENTRANCES OR TRACK OFF PLATES SHALL BE INSTALLED WHERE NECESSARY AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
10. CONTRACTOR SHALL INSTALL REQUIRED BMPS IN ACCORDANCE WITH ECOLOGY'S 2014 STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.

CONTAMINATED SOIL TEMPORARY ESC MEASURE NOTES

1. DUST CONTROL: IMPLEMENT AGGRESSIVE DUST CONTROL PRIOR TO CONSTRUCTION. MAINTAIN THROUGHOUT CONSTRUCTION ACTIVITY. CONTRACTOR SHALL SUPPLY ALL EQUIPMENT AND WATER FOR DUST CONTROL AND OTHERWISE. THE PORT SHALL NOT SUPPLY THE WATER, HOSES, SPRAYERS, OR SPRINKLERS FOR DUST CONTROL OR OTHERWISE.
2. CLEAN AREA PROTECTION: PROTECT CLEAN AREAS WITH PLASTIC SHEETING PRIOR TO START OF CONTAMINATED SOIL REMOVAL.
3. BOTTOM OF EXCAVATION: THE BOTTOM OF THE EXCAVATION AREA (AND SIDEWALLS) WILL BE COVERED WITH PLASTIC SHEETING DURING A RAIN EVENT AND DURING NON-WORK DAYS. THE PLASTIC SHEETING SHALL BE PLACED AND SECURED WITH WEIGHTED MEDIA FILTER BOOMS OR OTHER METHOD APPROVED BY THE ENGINEER SO THAT WIND AND RAIN WILL NOT DISLODGE THE PLASTIC SHEETING.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELISE HAMMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

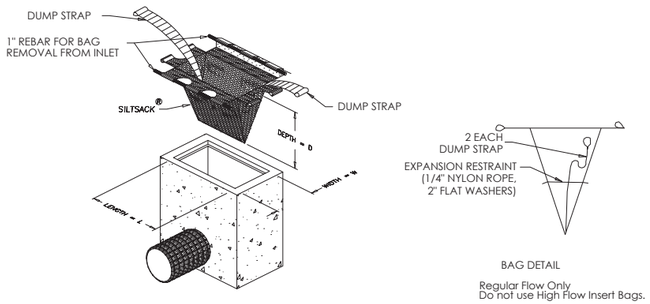
ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/01/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	IED DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
0 50' 100
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

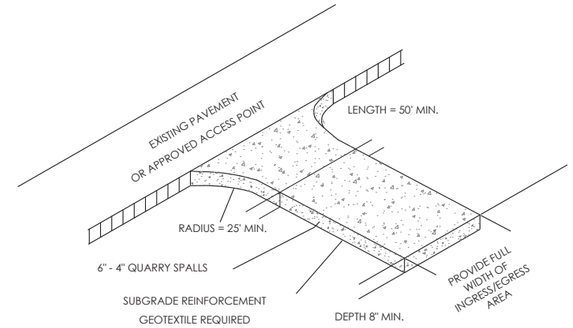
SHEET TITLE
EROSION AND SEDIMENT CONTROL PLAN

SHEET
ESC1.0

PLOTTED BY: Brooke Hammon FILENAME: G:\JB_AFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03 - RECORD DRAWINGS\Details\ESC1.0 ESC SITE MAP.dwg
PLOTTED ON: 2018-03-13 11:22 AM



A -- INLET PROTECTION DETAIL
NTS



B -- STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL
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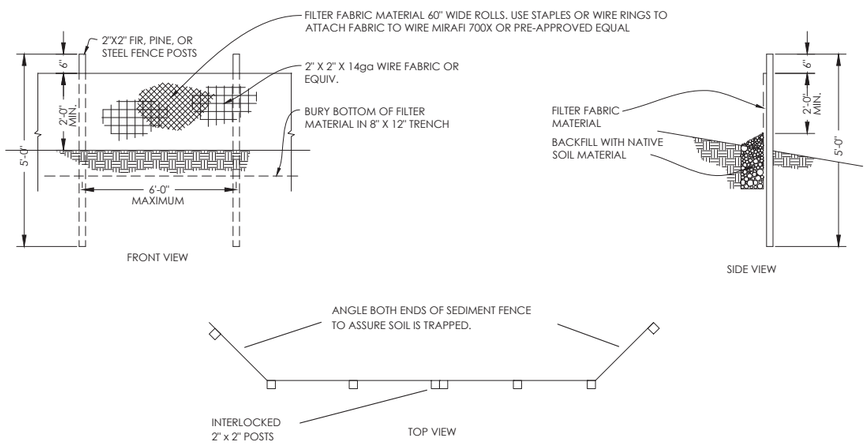

C -- SILT FENCE DETAIL
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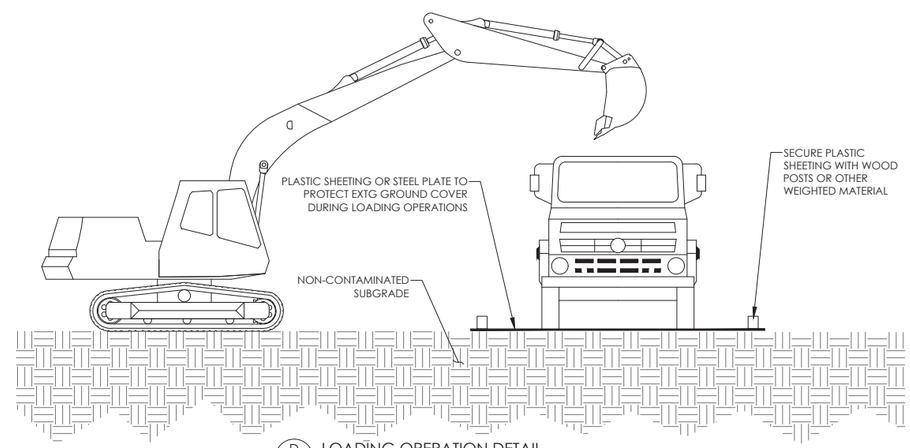
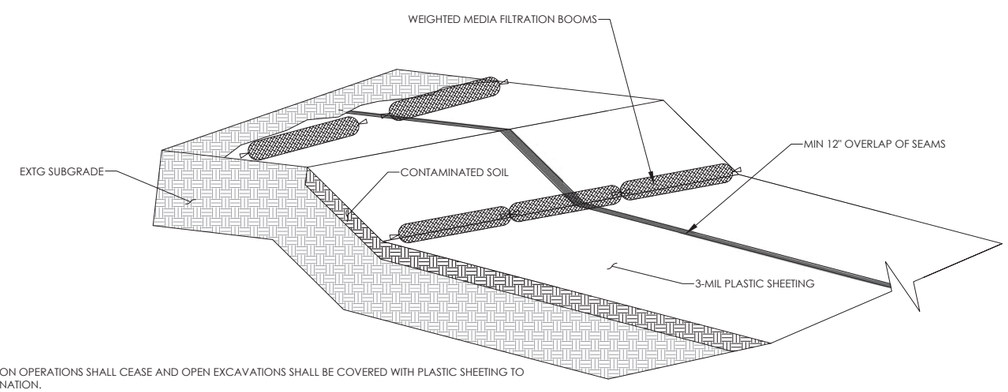


D -- LOADING OPERATION DETAIL
NTS



NOTES:

1. DURING A RAIN EVENT, EXCAVATION OPERATIONS SHALL CEASE AND OPEN EXCAVATIONS SHALL BE COVERED WITH PLASTIC SHEETING TO PREVENT STORMWATER CONTAMINATION.
2. PLACE WEIGHTED MEDIA BOOMS END TO END ALONG BASE OF EXCAVATION. PLACE WEIGHTED MEDIA FILTRATION BOOMS OR SANDBAGS ALONG TOP OF EXCAVATION TO SECURE PLASTIC SHEETING.
3. REPLACE TORN SHEETS AND REPAIR OPEN SEAMS.

E -- EXCAVATION COVER DETAIL
NTS

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELYSE HARMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/01/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	IED DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
EROSION AND SEDIMENT CONTROL DETAILS
SHEET
ESC1.1

PLOTTED BY: Brooke Harmon FILENAME: G:\JB_AFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03 - RECORD DRAWINGS\Details\ESC1.0 ESC SITE MAP.dwg
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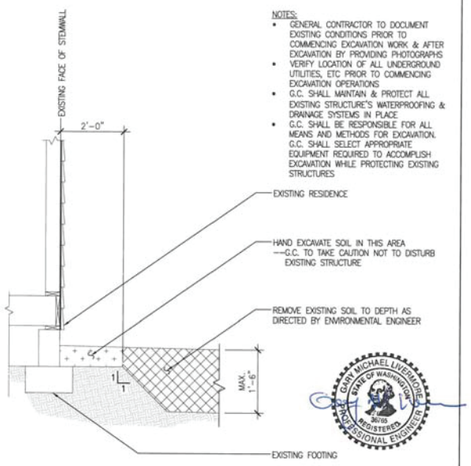


NOTES:
- GENERAL CONTRACTOR TO DOCUMENT EXISTING CONDITIONS PRIOR TO COMMENCING EXCAVATION WORK & AFTER EXCAVATION BY PROVIDING PHOTOGRAPHS
- VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, ETC PRIOR TO COMMENCING EXCAVATION OPERATIONS
- G.C. SHALL MAINTAIN & PROTECT ALL EXISTING STRUCTURE'S WATERPROOFING & DRAINAGE SYSTEMS IN PLACE
- G.C. SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS FOR EXCAVATION. G.C. SHALL SELECT APPROPRIATE EQUIPMENT REQUIRED TO ACCOMPLISH EXCAVATION WHILE PROTECTING EXISTING STRUCTURES

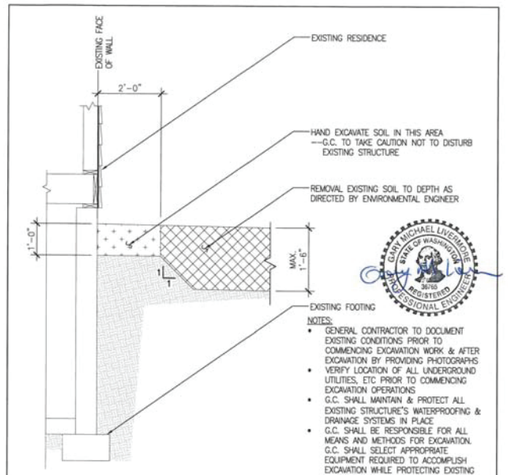
GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

1 SKS-1 EXCAVATION NEAR RESIDENTIAL FOOTING

1/2" = 1'-0"

DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
DRAWING: SKS 1

LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003



NOTES:
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- VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, ETC PRIOR TO COMMENCING EXCAVATION OPERATIONS
- G.C. SHALL MAINTAIN & PROTECT ALL EXISTING STRUCTURE'S WATERPROOFING & DRAINAGE SYSTEMS IN PLACE
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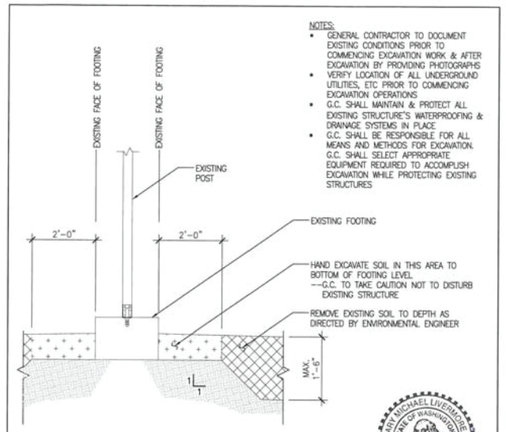
GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

2 SKS-1 EXCAVATION NEAR BASEMENT WALL

1/2" = 1'-0"

DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
DRAWING: SKS 2

LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003



NOTES:
- GENERAL CONTRACTOR TO DOCUMENT EXISTING CONDITIONS PRIOR TO COMMENCING EXCAVATION WORK & AFTER EXCAVATION BY PROVIDING PHOTOGRAPHS
- VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, ETC PRIOR TO COMMENCING EXCAVATION OPERATIONS
- G.C. SHALL MAINTAIN & PROTECT ALL EXISTING STRUCTURE'S WATERPROOFING & DRAINAGE SYSTEMS IN PLACE
- G.C. SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS FOR EXCAVATION. G.C. SHALL SELECT APPROPRIATE EQUIPMENT REQUIRED TO ACCOMPLISH EXCAVATION WHILE PROTECTING EXISTING STRUCTURES

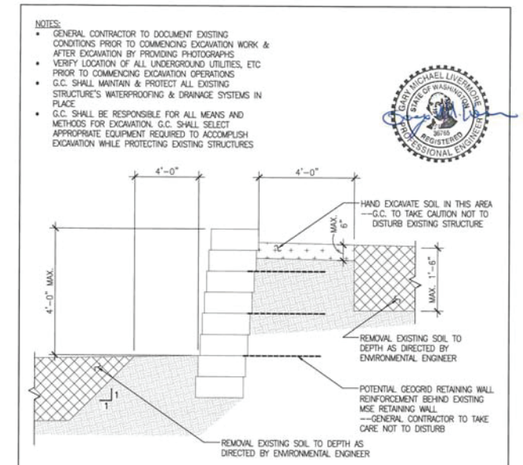
GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

3 SKS-1 EXCAVATION NEAR POST

1/2" = 1'-0"

DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
DRAWING: SKS 3

LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003



NOTES:
- GENERAL CONTRACTOR TO DOCUMENT EXISTING CONDITIONS PRIOR TO COMMENCING EXCAVATION WORK & AFTER EXCAVATION BY PROVIDING PHOTOGRAPHS
- VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, ETC PRIOR TO COMMENCING EXCAVATION OPERATIONS
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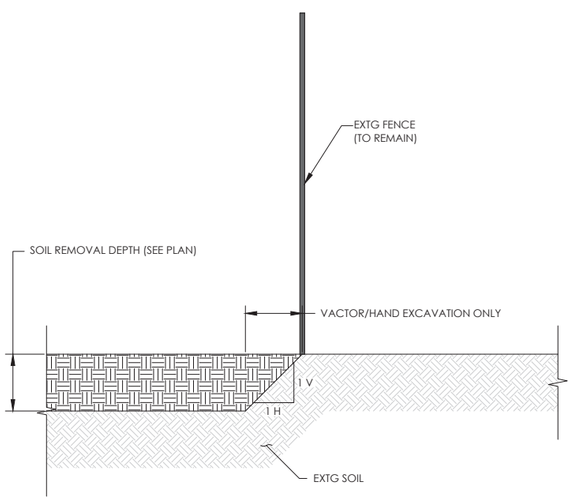
GARY MICHAEL LIVERMORE — STATE OF WASHINGTON — 36755 — REGISTERED PROFESSIONAL ENGINEER

4 SKS-1 EXCAVATION NEAR SEGMENTAL RETAINING WALL

1/2" = 1'-0"

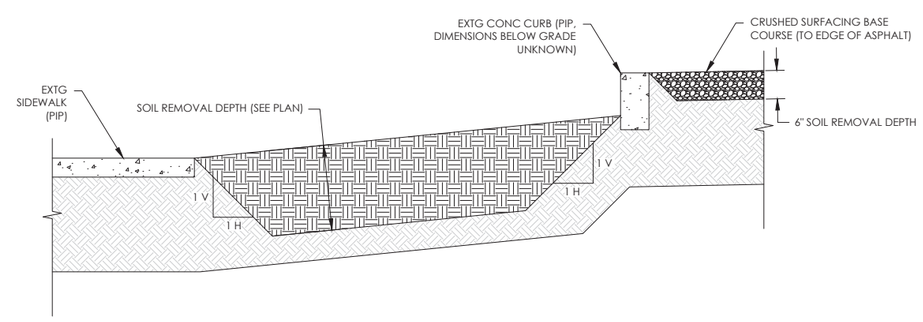
DRAWING TITLE: EXCAVATION
PROJECT: RIDGEFIELD YARD CLEANUP
MAUL FOSTER ALONGI
400 EAST MILL PLAN BLVD, SUITE 400 RIDGEFIELD, WA 98660
JOB: 216025.00 DATE: 04/04/16 SCALE: 1/2" = 1'-0"
DRAWING: SKS 4

LIVERMORE architecture & engineering, inc. industrial • commercial
140 SW Arthur Street, Suite 200 Portland, Oregon 97201 Phone: 503-892-3002 Fax: 503-892-3003



A -- EXCAVATION ADJACENT TO EXTG FENCE TO REMAIN

NOT TO SCALE



B -- EXCAVATION BETWEEN CURB & SIDEWALK DETAIL

NOT TO SCALE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELISE HARMON — STATE OF WASHINGTON — 57214 — REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

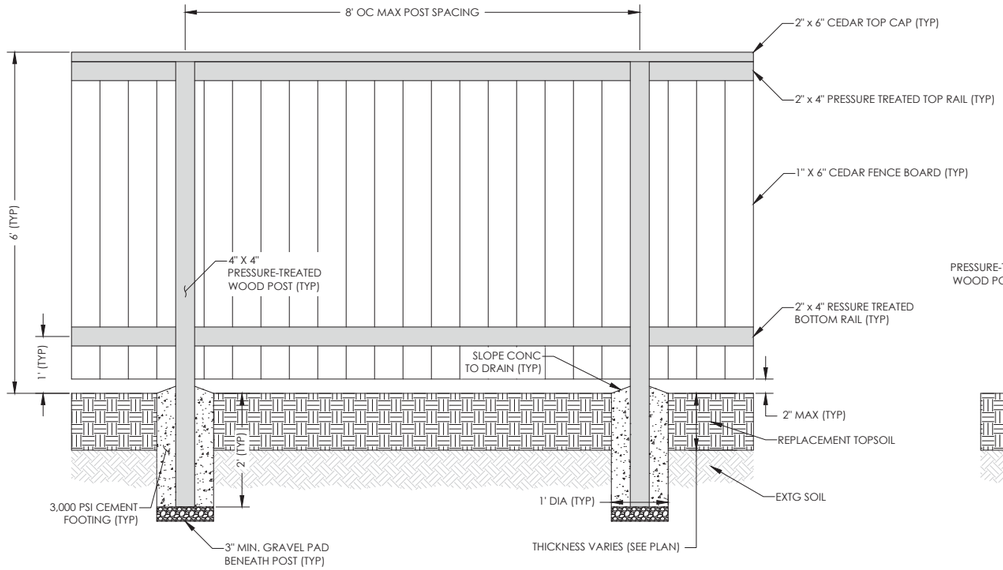
PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

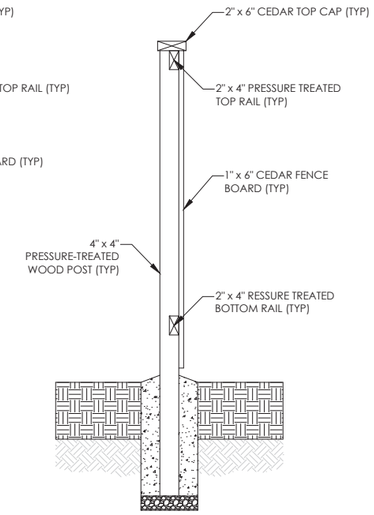
ISSUE	DATE	DESCRIPTION
1	01.02.2018	RECORD DRAWINGS
B	05.01.2017	CONSTRUCTION DOCUMENTS
A	04.17.2017	90% DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
REMEDIATION STANDARD DETAILS
SHEET
D1.0

PLOTTED ON: 2018-01-19 1:23 PM PLOTTED BY: Brooke Harmon FILENAME: G:\JB_MFA Ch4 3\9003\PROJECTS\9003.01.39 Off-Property\OPP Interim Action\RAWS\2017\D1-RECORD DRAWINGS\Details\DETAILS.dwg



ELEVATION

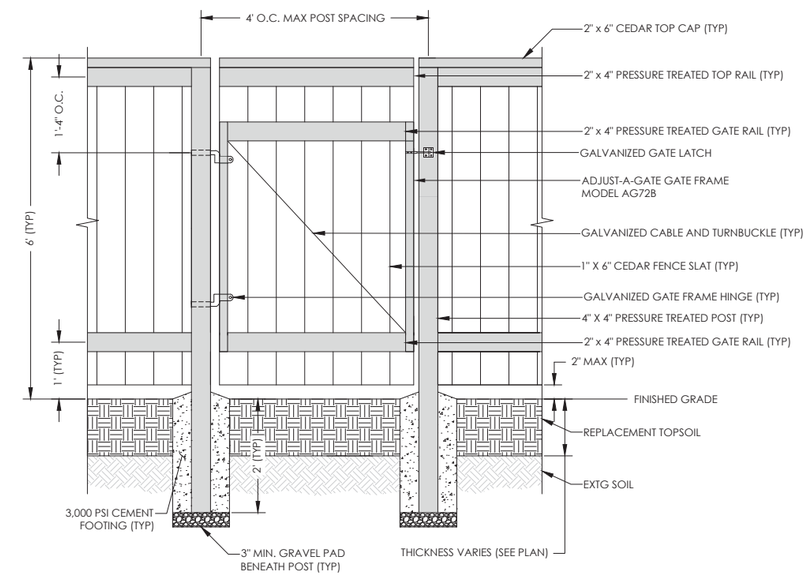


SECTION

NOTE : 2" X 4" TOP AND BOTTOM RAILS WILL NOT BE VISIBLE ON OTHER SIDE OF FENCE. CONTRACTOR TO DETERMINE PANEL DIRECTIONS.

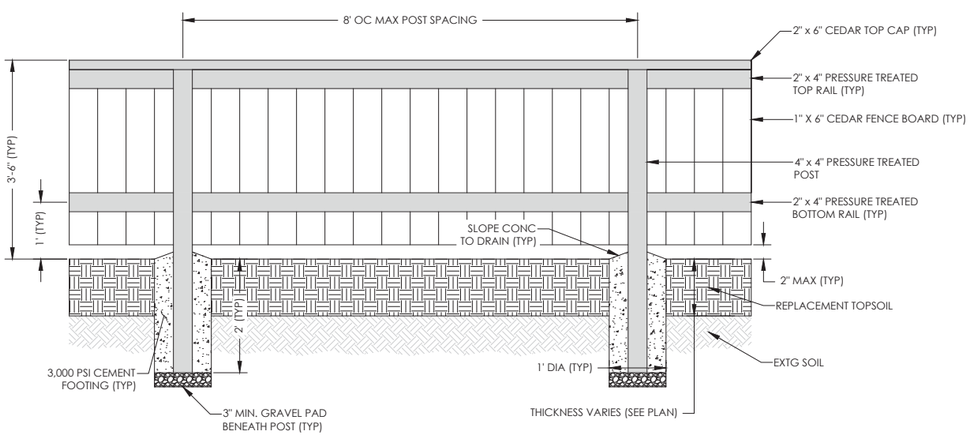
A -- 6 FOOT CEDAR FENCE DETAIL

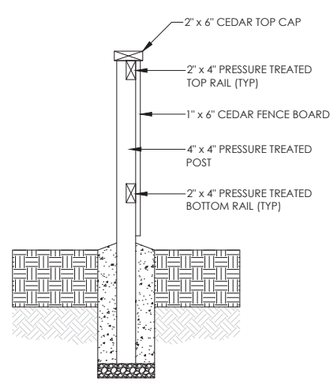
NOT TO SCALE



B -- 6' CEDAR GATE DETAIL

NOT TO SCALE





C -- 3.5 FOOT CEDAR FENCE DETAIL

NOT TO SCALE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELYSE HARMON — STATE OF WASHINGTON — 57214 — REGISTERED PROFESSIONAL ENGINEER

This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE

SHEET TITLE
RESTORATION STANDARD DETAILS

SHEET
D1.1

PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03- RECORD DRAWINGS\Details\DETAILS.dwg

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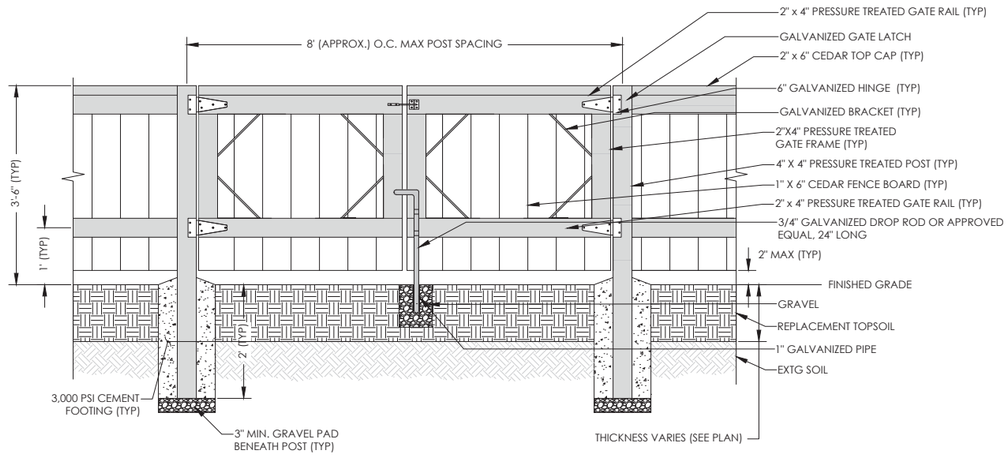

D
3.5 FOOT DOUBLE CEDAR GATE DETAIL
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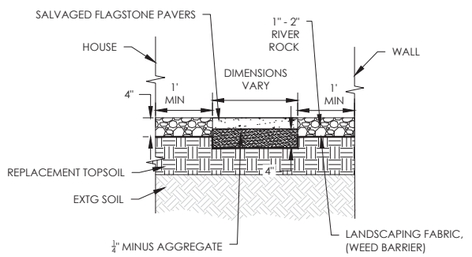
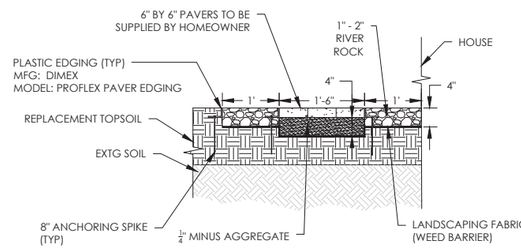


G
FLAGSTONE RIVER ROCK DETAIL
NOT TO SCALE



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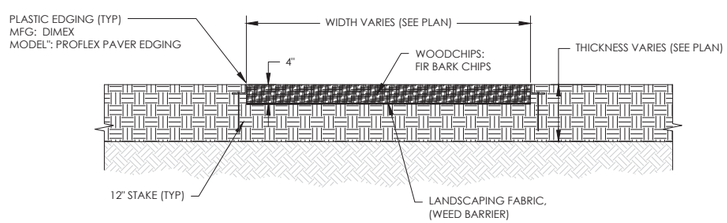
NOT TO SCALE



J
WALK ON BARK SURFACING DETAIL
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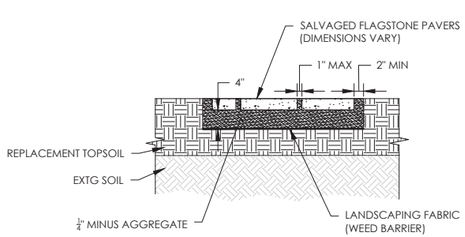
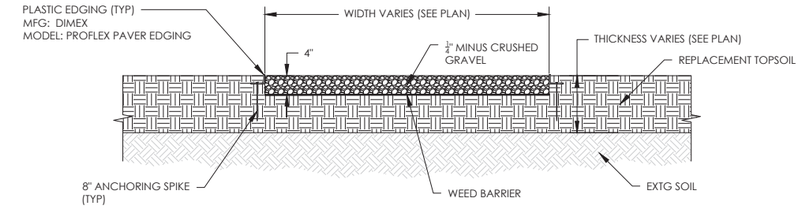


L
FLAGSTONE PAVER PATH DETAIL
NOT TO SCALE



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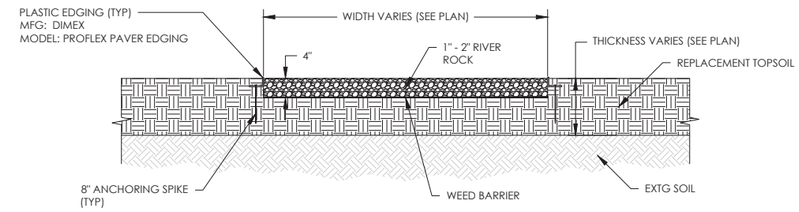
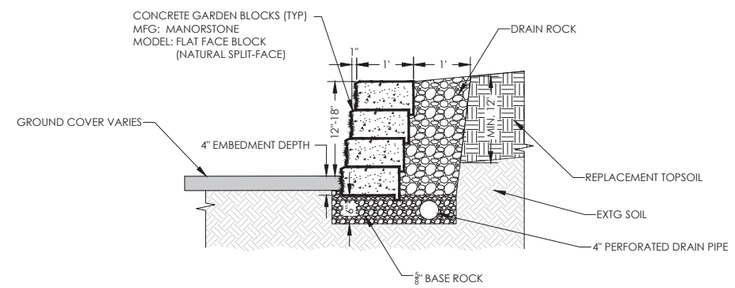
CRUSHED GRAVEL PATH DETAIL
NOT TO SCALE



F
RIVER ROCK PATH DETAIL
NOT TO SCALE



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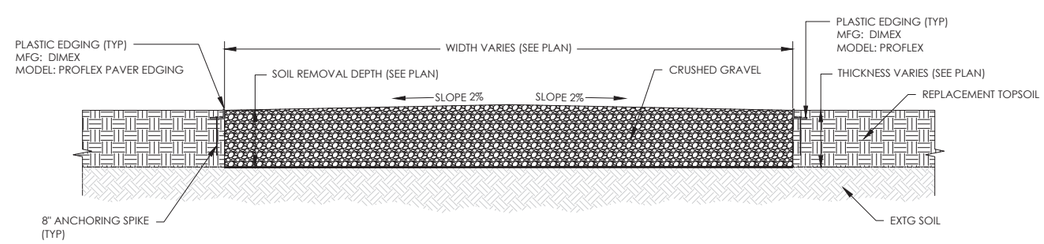
NOT TO SCALE



K
GRAVEL DRIVE/PAD DETAIL
NOT TO SCALE

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

BROOKE ELYSE HARMON
STATE OF WASHINGTON
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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
b	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	90% DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
RESTORATION STANDARD DETAILS
SHEET
D1.2

PLOTTED BY: Brooke Harmon FILENAME: G:\US_MFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03 - RECORD DRAWINGS\Details\DETAILS.dwg
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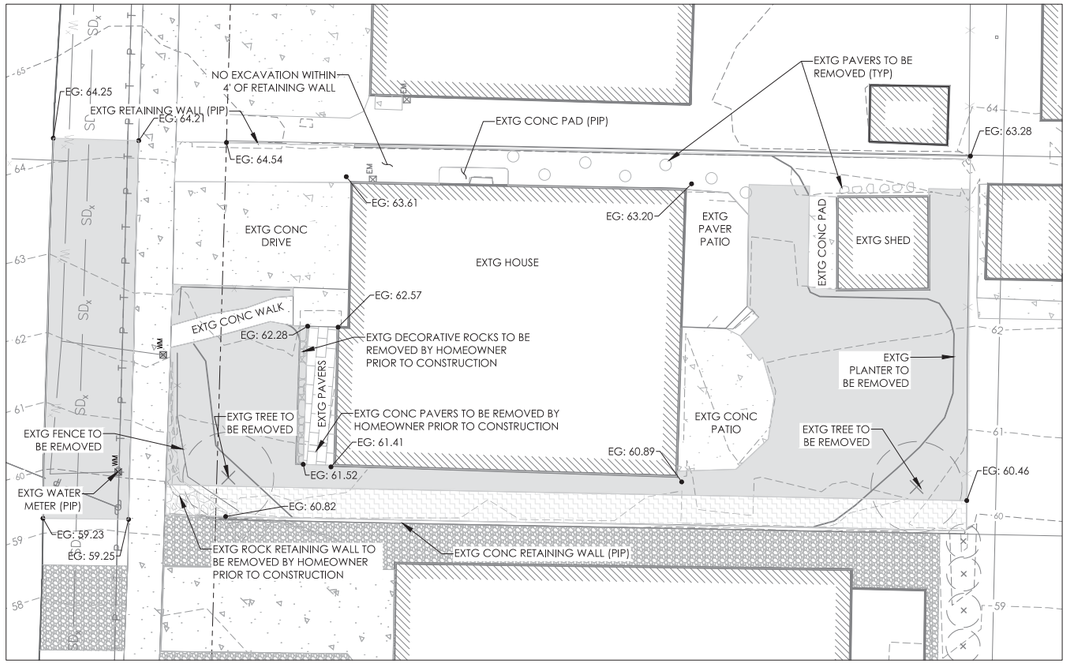

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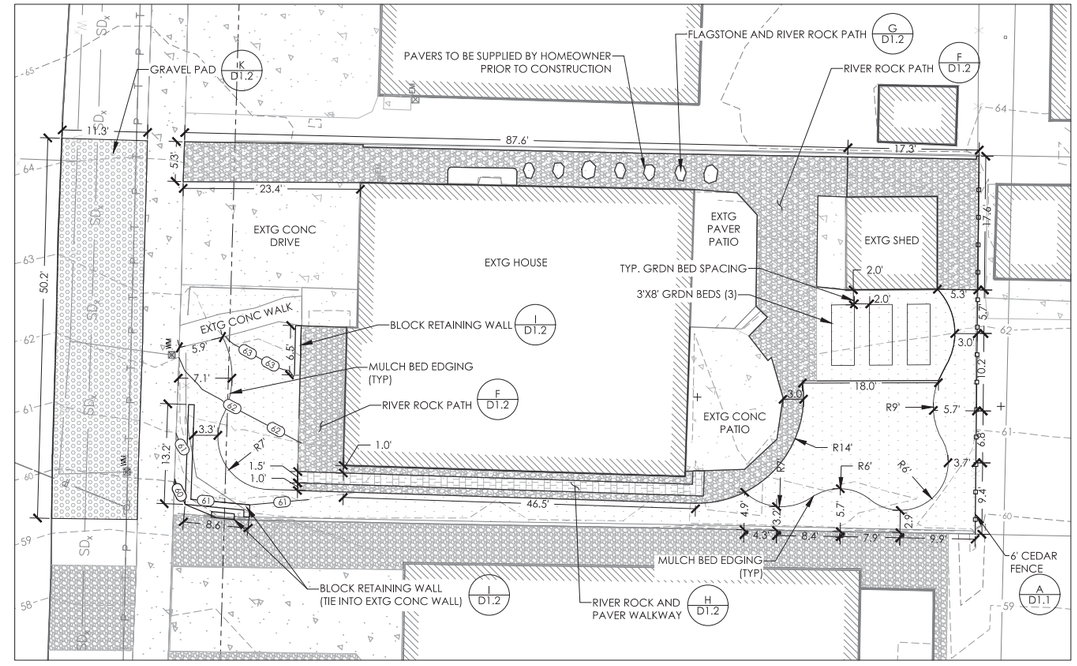

POST-RESTORATION

NOTES:
1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, SLABS, AND RETAINING WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAILS SKS-1 AND SK-4 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXTG GRADE.
3. PLASTIC EDGING WILL BE PROVIDED AROUND GARDEN BEDS, GRAVEL PATHS/PADS, AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
5. THE CONTRACTOR SHALL INSTALL WEED BARRIER UNDER ALL PLANTER BEDS.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
002	69312000	5 MAPLE ST, RIDGEFIELD, WA 98642	MARK & JILL BENDER

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	2,103	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	423	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	1,533	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	423	6
GRAVEL PAD	GRAVEL SURFACING	570	12
PAVER WALKWAY	GRAVEL PAVER BASE	63	4
RIVER ROCK PATH	RIVER ROCK SURFACING	1,010	4
ON PROPERTY	PLANTER BED	840	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 60 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 61 — EXTG MINOR CONTOUR (1' INTERVAL)
- 64 — NEW MAJOR CONTOUR (5' INTERVAL)
- 61 — NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO BE REMOVED BY CONTRACTOR
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW RIVER ROCK
- NEW GRAVEL PAD

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

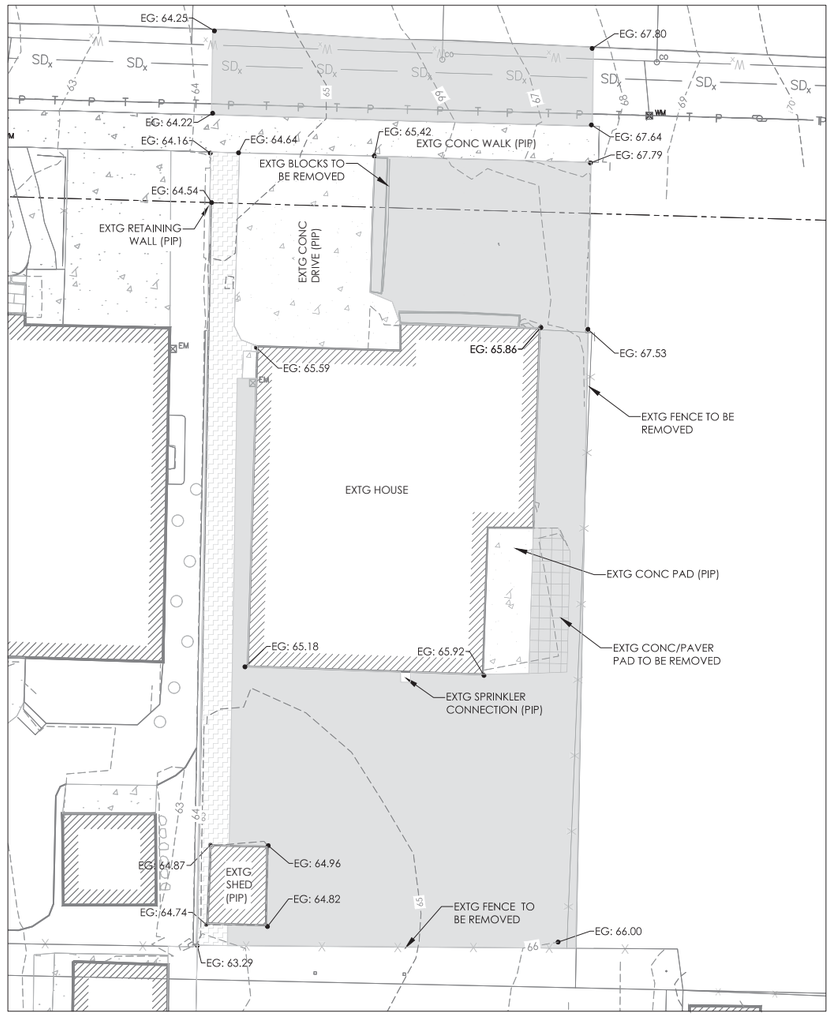
ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	IED DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

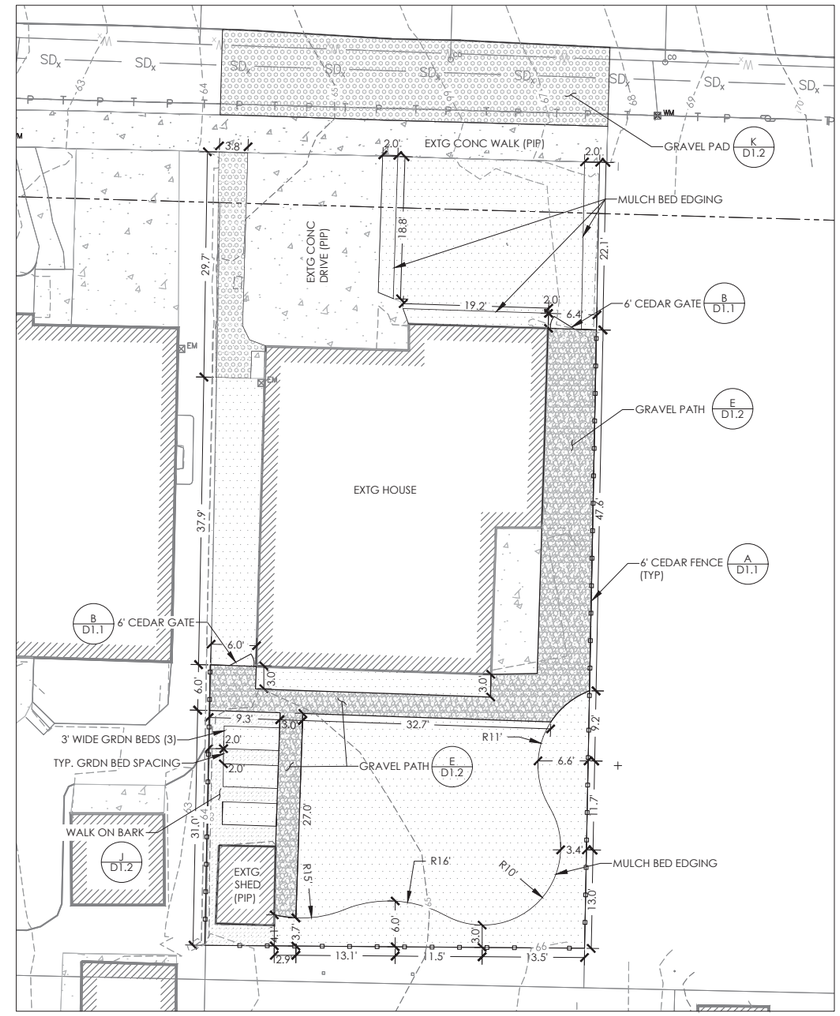
SHEET TITLE
PROPERTY 002 REMEDIATION AND RESTORATION PLAN

SHEET
C02.1

PLOTTED BY: Brooke Harmon FILENAME: G:\JD_MFA CAD 3D\JD_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\Property 002\C02.1 PROPERTY 002.dwg
PLOTTED ON: 2018-03-13 11:26 AM



PRE-REMEDIATION



POST-RESTORATION

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, SLABS, AND RETAINING WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAILS SKS-1 AND SK-4 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
3. PLASTIC EDGING WILL BE PROVIDED AROUND GARDEN BEDS, GRAVEL PATHS/PADS, AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION

PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
003	69297000	7 MAPLE ST, RIDGEFIELD, WA 98642	BRADLEY & TANYA RUSSELL

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	3,174	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	396	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	2,504	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	396	6
GRAVEL PAD	GRAVEL SURFACING	670	12
GRAVEL PATH	GRAVEL SURFACING	582	4
GARDEN	WALK ON BARK	140	4
ON PROPERTY	PLANTER BED	445	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 65 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 66 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL PAD
- NEW WALK ON BARK

RECORD DRAWING

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400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

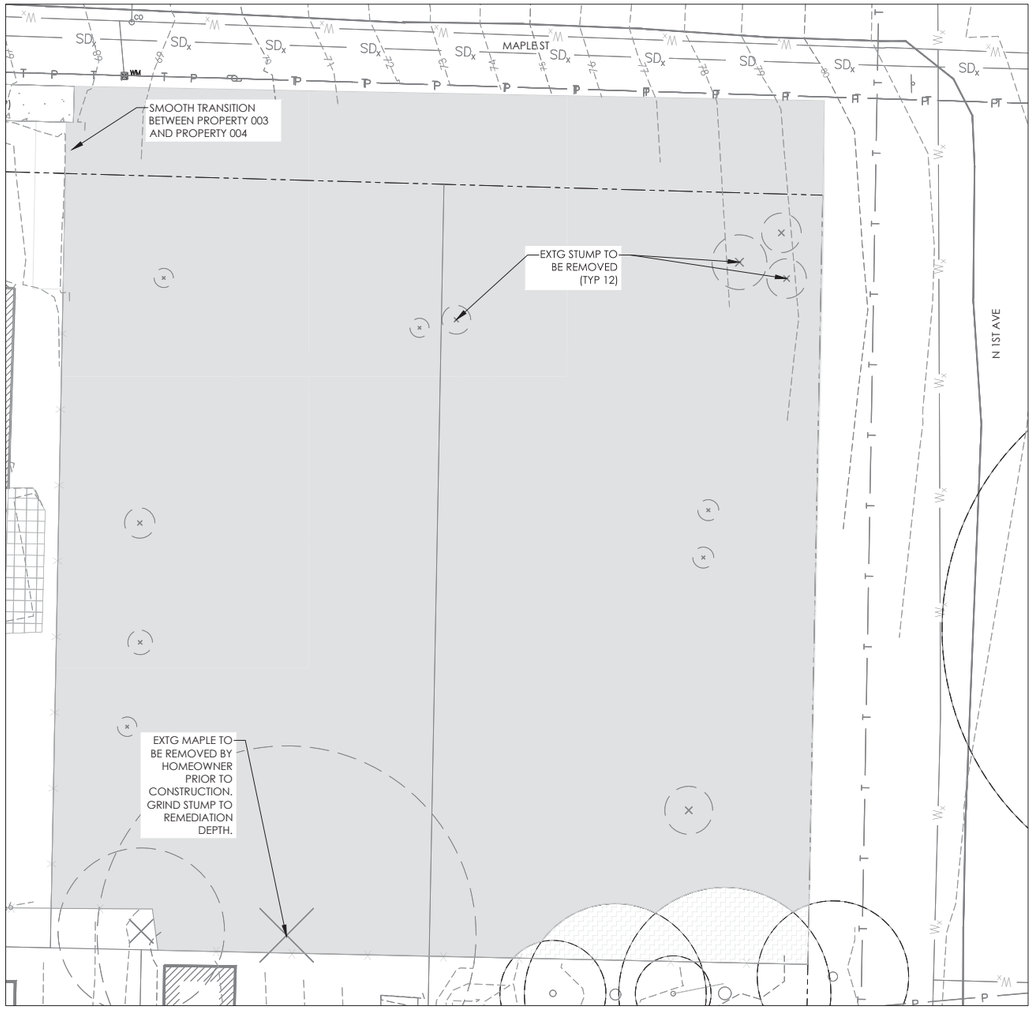
ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

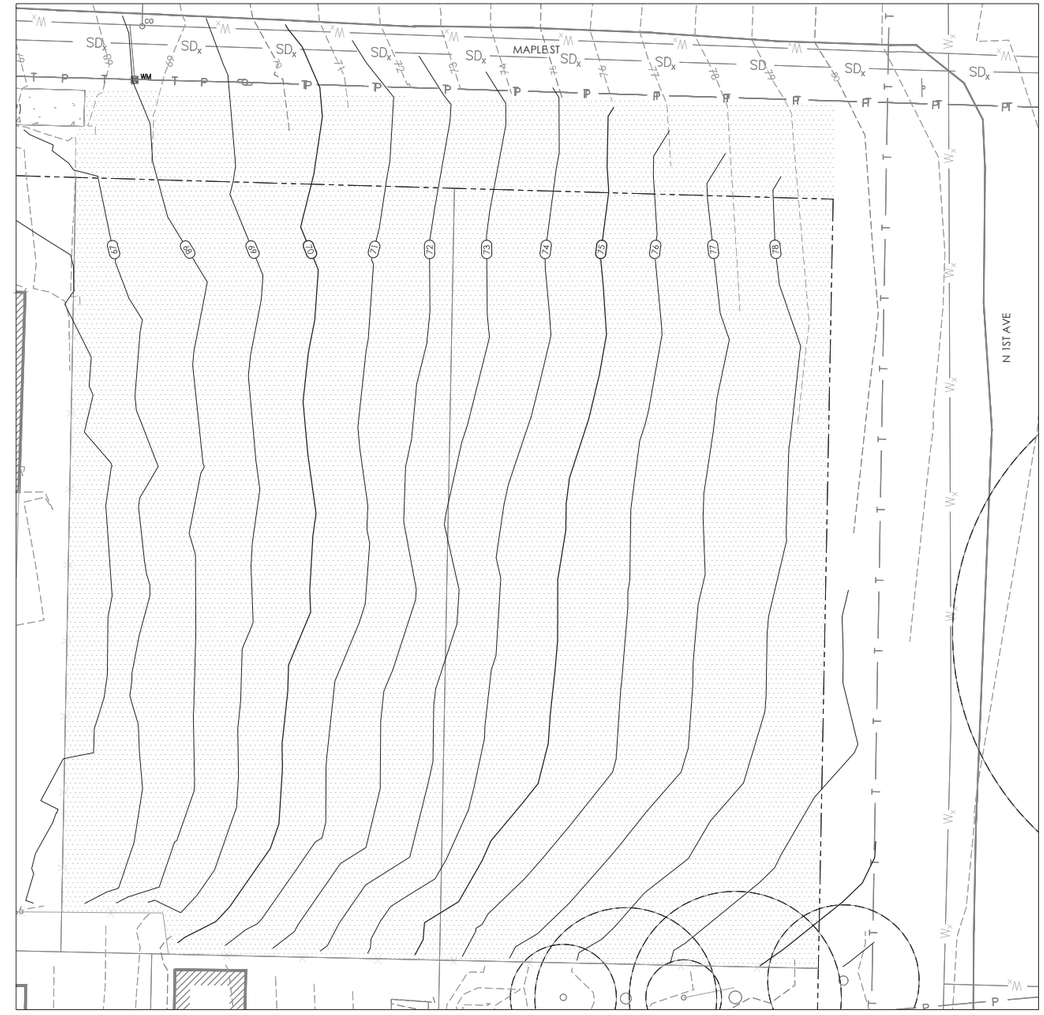
SHEET TITLE
PROPERTY 003 - REMEDIATION AND RESTORATION PLAN

SHEET
C03.1

PLOTTED ON: 2018-02-27 4:45 PM PLOTTED BY: Brooke Harmon FILENAME: G:\JB_MFA Civil 3D\JB_PROJECTS\9003.01.39 OFF-Property\OFP Interim Action\PLANS\2017\03- RECORD DRAWINGS\Property 003\C03.1PROPERTY 003.dwg



PRE-REMEDIATION



POST-RESTORATION

NOTES:
1. NO REPLACEMENT OF TOPSOIL, EXCAVATION DEPTH IS FINAL DEPTH.
2. SURVEY WITH UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC. TOPOGRAPHIC SURVEY PERFORMED BY AKS in 2017. PRE-EXISTING TOPOGRAPHIC DATA NOT INCLUDED, THOUGH EXCAVATION DEPTH WAS CONFIRMED DURING PROGRESS SURVEY.
3. TRACK-WALK EXCAVATION AREA PRIOR TO HYDROSEEDING.
4. STUMPS NOT IDENTIFIED ON PLAN TO BE REMOVED BY CONTRACTOR AS PART OF SOIL EXCAVATION.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
004	69292000	N 1ST ST & MAPLE ST, RIDGEFIELD, WA 98642	BARRY FISHER

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	11,031	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	277	6

NOTE: RESTORATION DOES NOT INCLUDE BACKFILL, ONLY HYDROSEED.

LEGEND:

- 70 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 71 — EXTG MINOR CONTOUR (1' INTERVAL)
- 70 — NEW MAJOR CONTOUR (5' INTERVAL)
- 71 — NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- STUMP TO BE REMOVED
- ROOT PROTECTION ZONE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW HYDROSEED

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 004 REMEDIATION AND RESTORATION PLAN

SHEET
C04.1

PLOTTED BY: Brooke Harmon FILENAME: G:\30_MFA Civil\3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\Property 004\CAL1\PROPERTY 004.dwg
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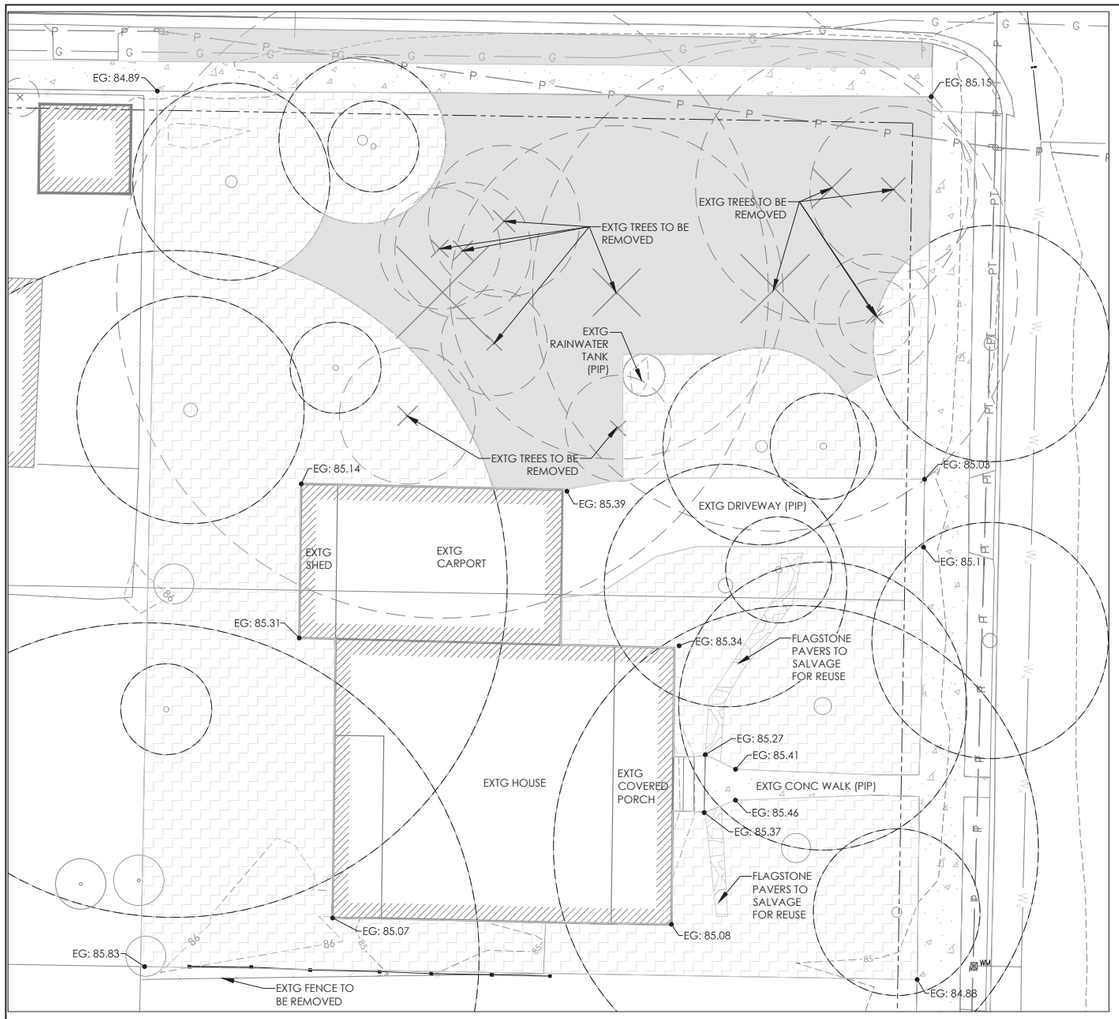
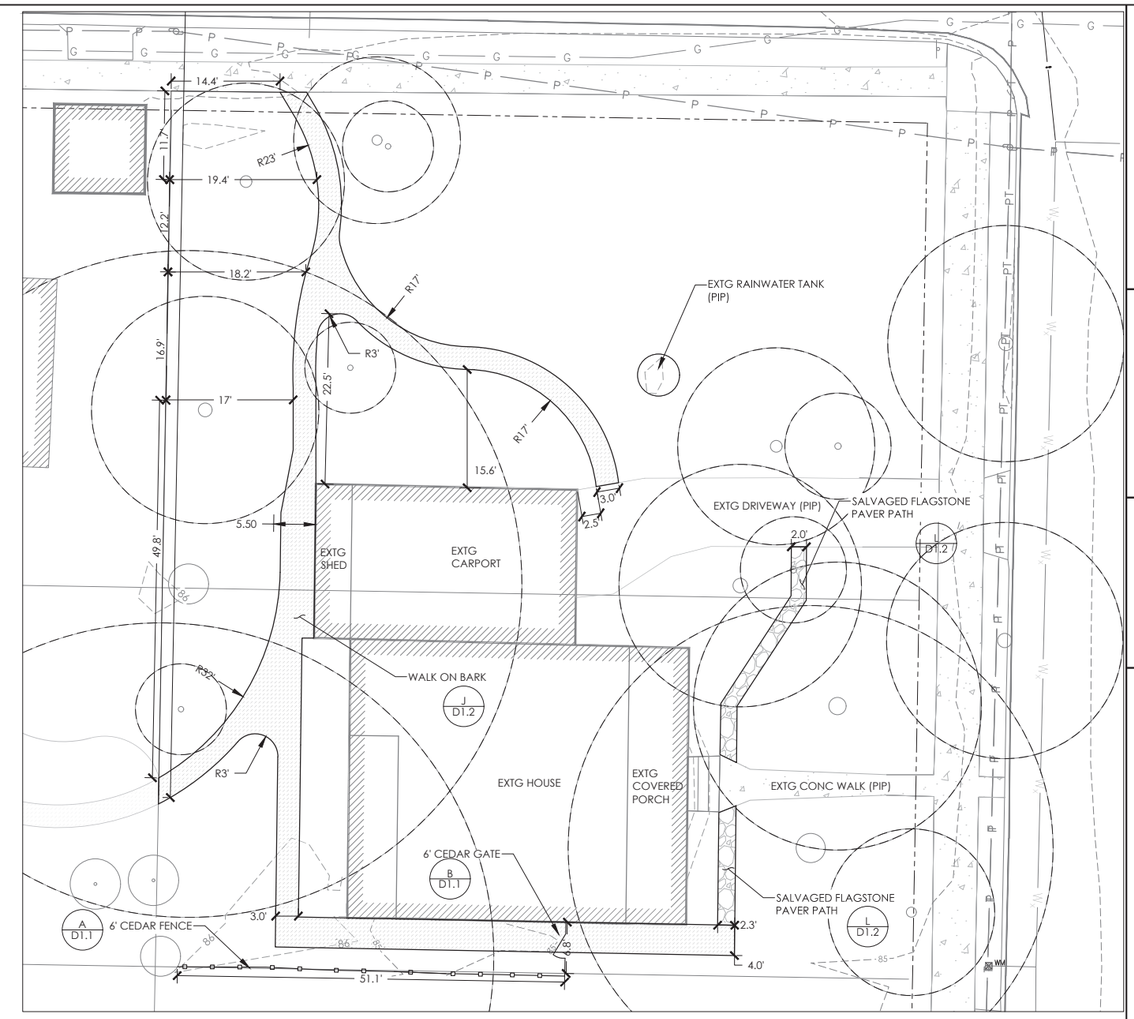


PRE-REMEDIATION



POST-RESTORATION

NOTES:

1. EXCAVATION ADJACENT TO ALL EX. BUILDING FOUNDATIONS, PAVEMENTS, BASEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAILS SKS-1 AND SKS-2 ON DWG D1.0
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE EXCEPT WHERE SHOWN OTHERWISE.
3. PLASTIC EDGING TO BE PROVIDED AROUND GRAVEL DRIVES/PATHS AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION

PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
020B	69340000	411 N MAIN AVE, RIDGEFIELD, WA 98642	STEPHEN KENWORTHY

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	3,185	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	5,542	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	3,185	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	5,542	6
GRAVEL PATH	GRAVEL SURFACING	98	4
ON PROPERTY	WALK ON BARK	874	4
ON PROPERTY	PLANTER BED	834	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 85 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 86 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW WALK ON BARK

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

BROOKE ELISE HARMON — STATE OF WASHINGTON — 57214 — REGISTERED PROFESSIONAL ENGINEER

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	IEP DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

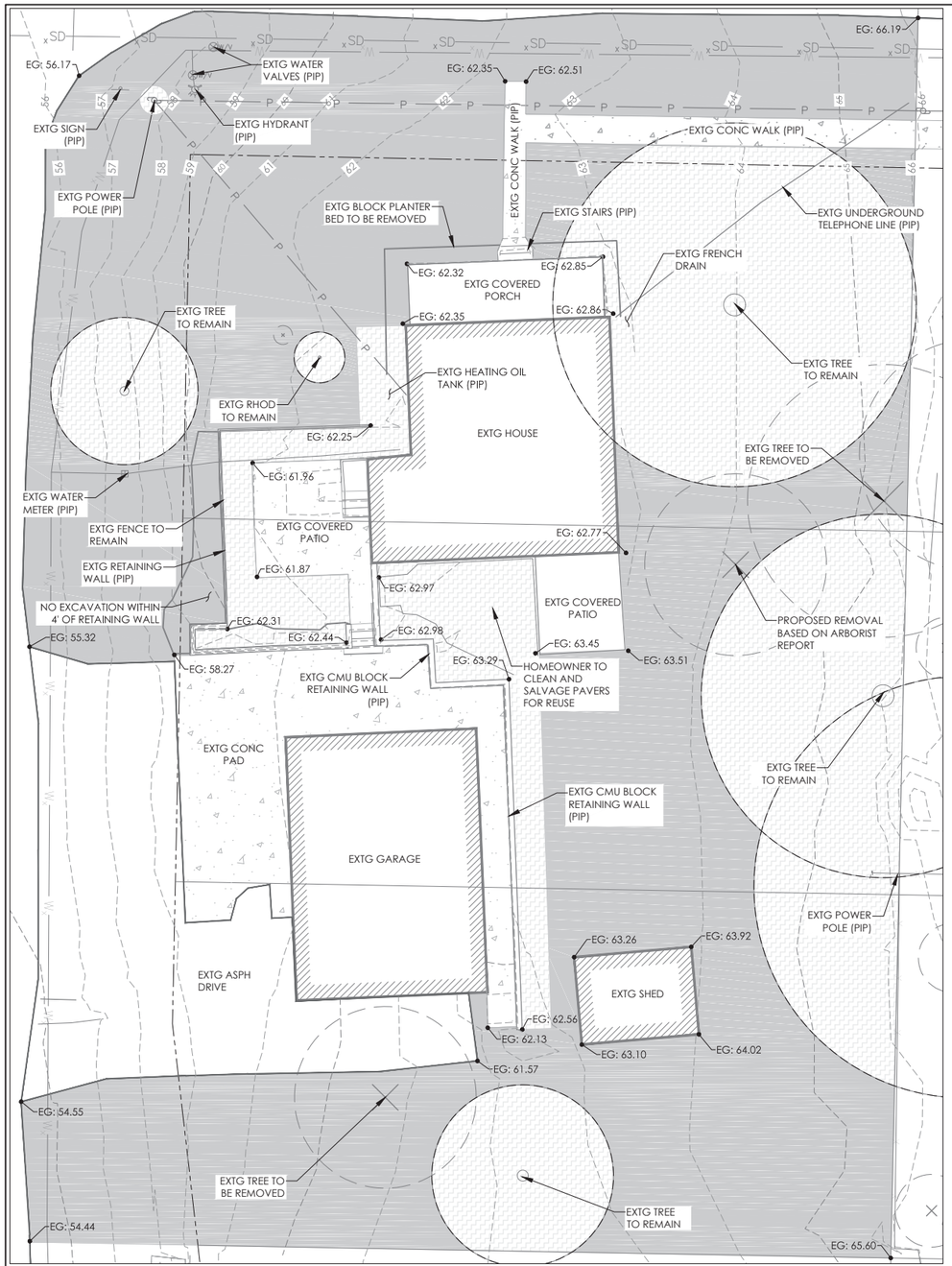
SHEET TITLE

PROPERTY 20B REMEDATION AND RESTORATION PLAN

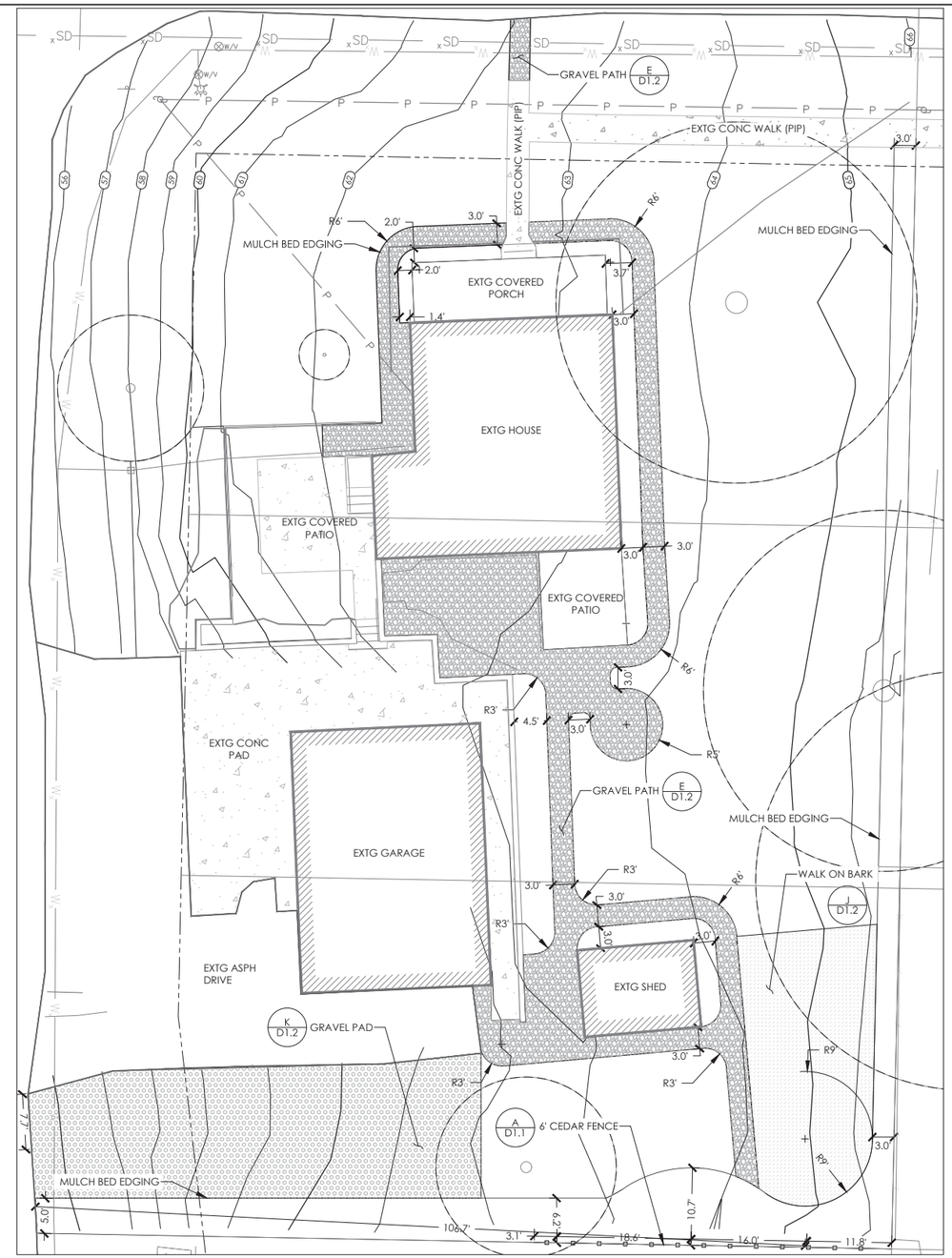
SHEET

C20B.1

PLOTTED BY: Brooke Harmon FILENAME: G:\20_MFA CAD\32\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\Property 020B\C20B.1 PROPERTY 020B.dwg
PLOTTED ON: 2018-03-13 11:26 AM



PRE-REMEDIATION



POST-RESTORATION

LEGEND:

- EXTG MAJOR CONTOUR (5' INTER)
- EXTG MINOR CONTOUR (1' INTER)
- NEW MAJOR CONTOUR (5' INTER)
- NEW MINOR CONTOUR (1' INTER)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO REMAIN IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW WALK ON BARK

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, SLABS, RETAINING WALLS, BASEMENTS AND POLES TO BE COMPLETED IN ACCORDANCE WITH DETAILS ON DWG D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. RESTORATION GRADE IS TO MATCH EXISTING GRADE EXCEPT WHERE SHOWN OTHERWISE.
3. PLASTIC EDGING TO BE PROVIDED AROUND GRAVEL DRIVES/PATHS AND AREAS OF WOODCHIPS IN ACCORDANCE WITH DETAIL ON DWG C23.2.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
5. FINAL TOPOGRAPHIC SURVEY PROVIDED BY AKS.

PROPERTY INFORMATION

PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
023	69406000, 69407000, 69402000	5 ASH ST, RIDGEFIELD, WA 98642	DOUGLAS MCCABE

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	9,134	12
RESTRICTED ACCESS	SMALL EQUIPMENT/HAND TOOLS	5,153	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	8,014	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	5,153	6
GRAVEL PATH	GRAVEL SURFACING	1,438	4
ON PROPERTY	WALK ON BARK	643	4
ON PROPERTY	PLANTER BED	1,850	2
DRIVEWAY	GRAVEL SURFACING	1,120	12

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

BROOKE ELISE HARMON
STATE OF WASHINGTON
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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE

PROPERTY 023 REMEDIATION AND RESTORATION PLAN

SHEET

C23.1

PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05-RECORD DRAWINGS\Property 023\C23.1 PROPERTY 023.dwg
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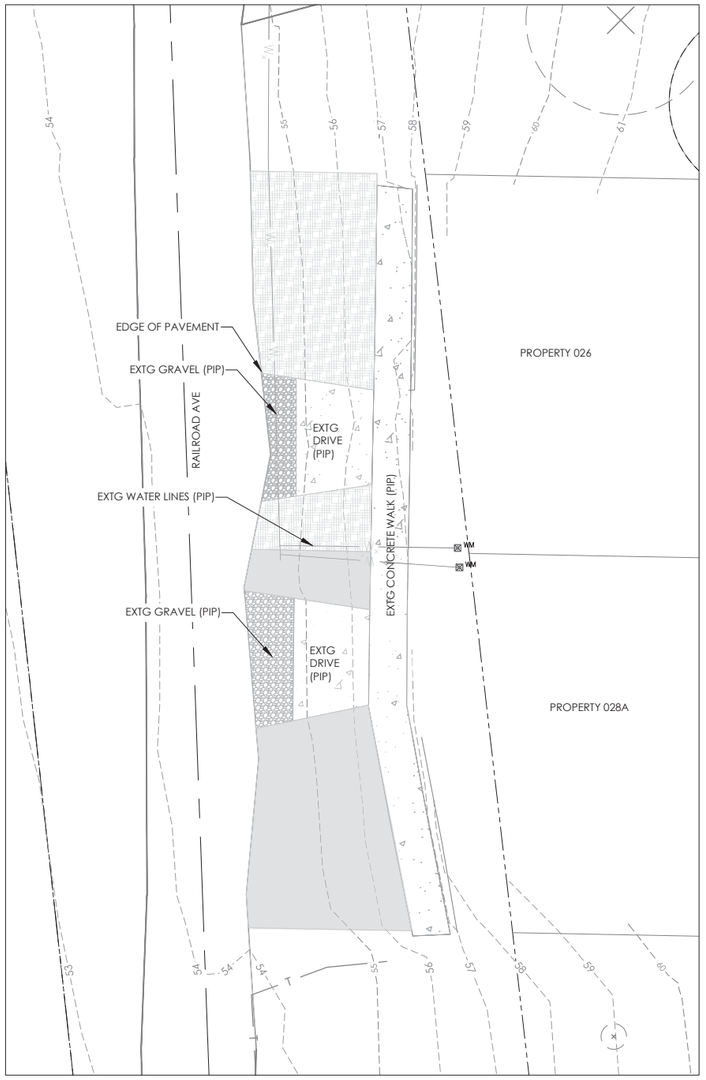
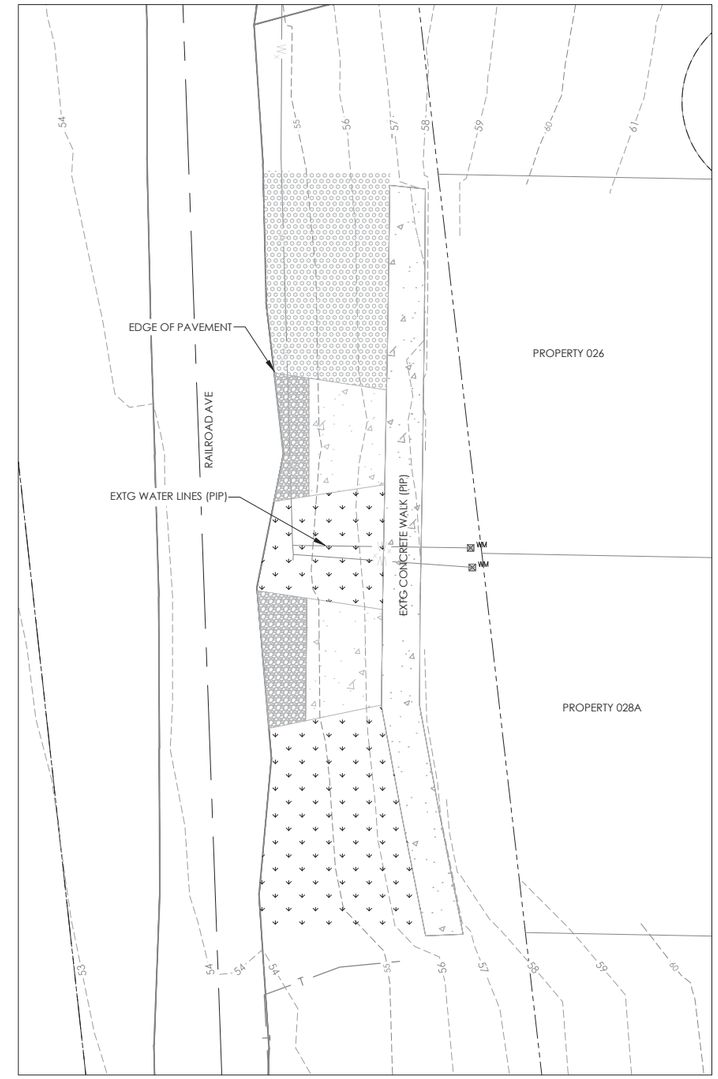


PRE-REMEDIATION



POST-RESTORATION

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
ROW 026 SOIL REMOVAL	TRADITIONAL	557	18
ROW 028A SOIL REMOVAL	TRADITIONAL	619	12

LEGEND:

- 60 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 61 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA - 12" DEPTH
- SOIL REMOVAL AREA - 18" DEPTH
- NEW TOPSOIL AND HYDROSEED MULCH
- NEW GRAVEL PAD

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

BROOKE ELYSE HARMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
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10-27-2021

OFF-PROPERTY PORTION INTERM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

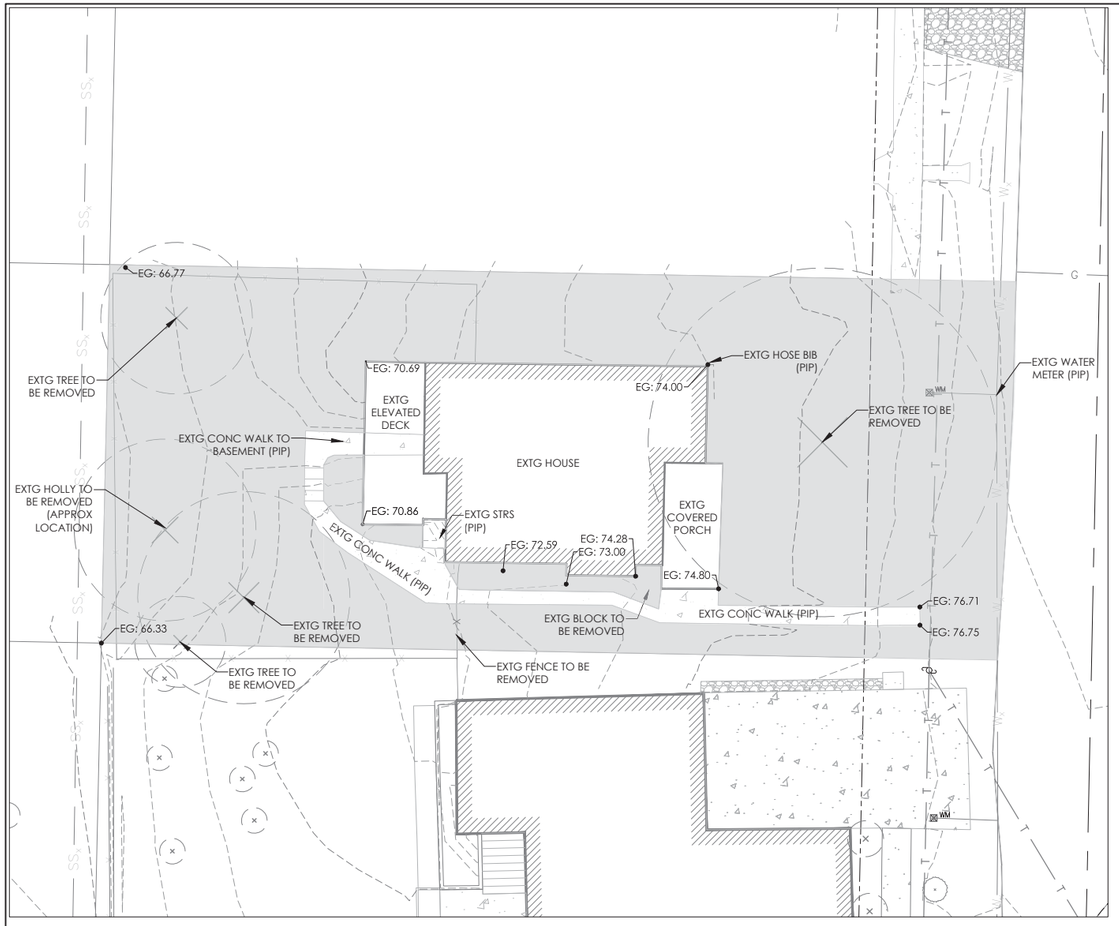
ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	5/31/2017	CONSTRUCTION DOCUMENTS
A	4/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

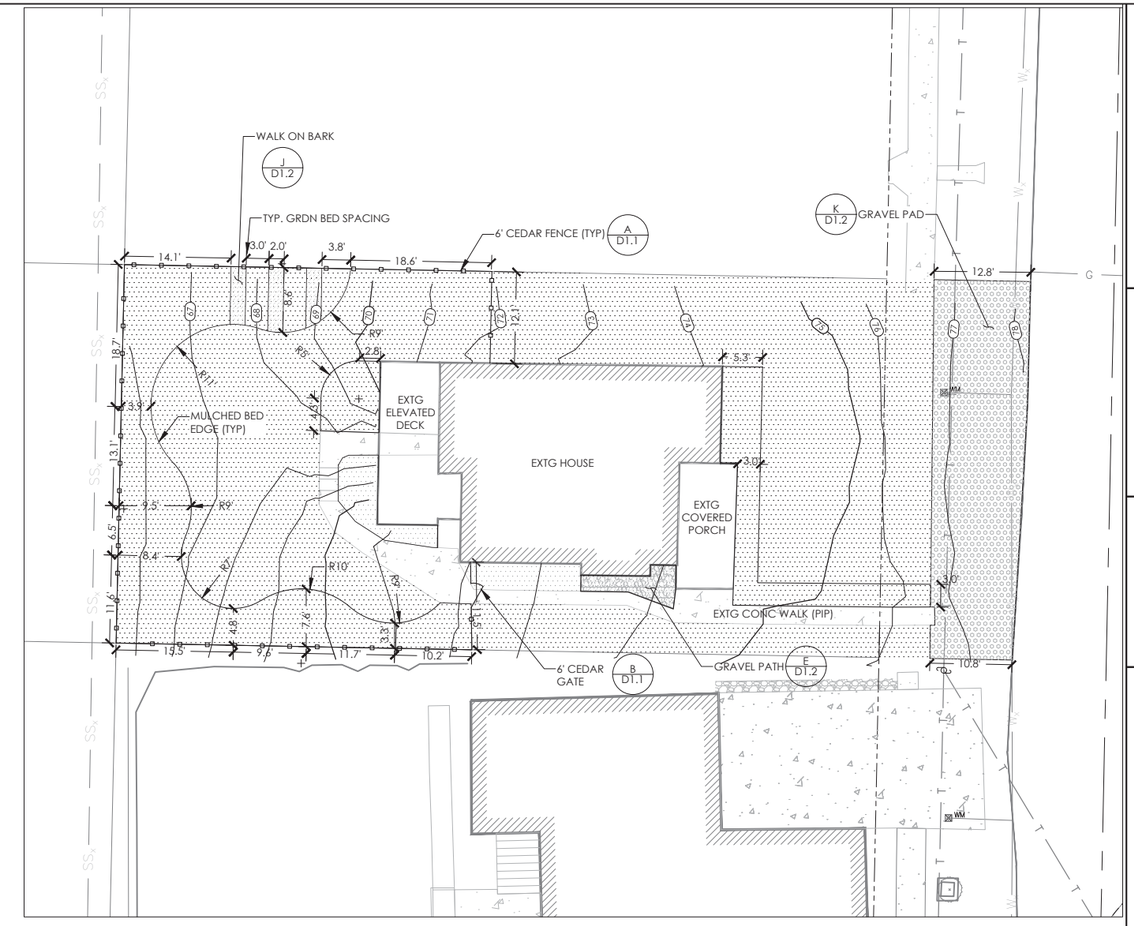
SHEET TITLE
ROW 026 & ROW 028A REMEDIATION AND RESTORATION PLAN

SHEET
C26.1-C28A.1

PLOTTED ON: 2018-03-13 10:51 AM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\C026.1 - 028A ROW.dwg



PRE-REMEDIATION



POST-RESTORATION

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS WITH BASEMENT WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-2 ON SHEET D1.0. EXCAVATION ADJACENT TO ALL EXTG POSTS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-3 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXTG GRADE.
3. PLASTIC EDGING WILL BE PROVIDED AROUND GARDEN BEDS, GRAVEL PATHS/PADS, AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
5. FINAL TOPOGRAPHIC SURVEY PROVIDED BY AKS.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
028B	69394000	311 N 1ST AVE, RIDGEFIELD, WA 98642	DENNIS & JANET BENEDICT

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	4,462	18

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	3,863	18
GRAVEL PAD	GRAVEL SURFACING	599	18
GRAVEL PATH	GRAVEL SURFACING	39	4
GARDEN	WALK ON BARK	48	4
ON PROPERTY	PLANTER BED	1,076	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 70 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 71 — EXTG MINOR CONTOUR (1' INTERVAL)
- 70 — NEW MAJOR CONTOUR (5' INTERVAL)
- 71 — NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO BE REMOVED BY CONTRACTOR
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL PAD
- NEW WALK ON BARK

RECORD DRAWING

MAUL FOSTER ALONGI
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Port of Ridgefield

BROOKE ELISE HARMON
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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	30% DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE

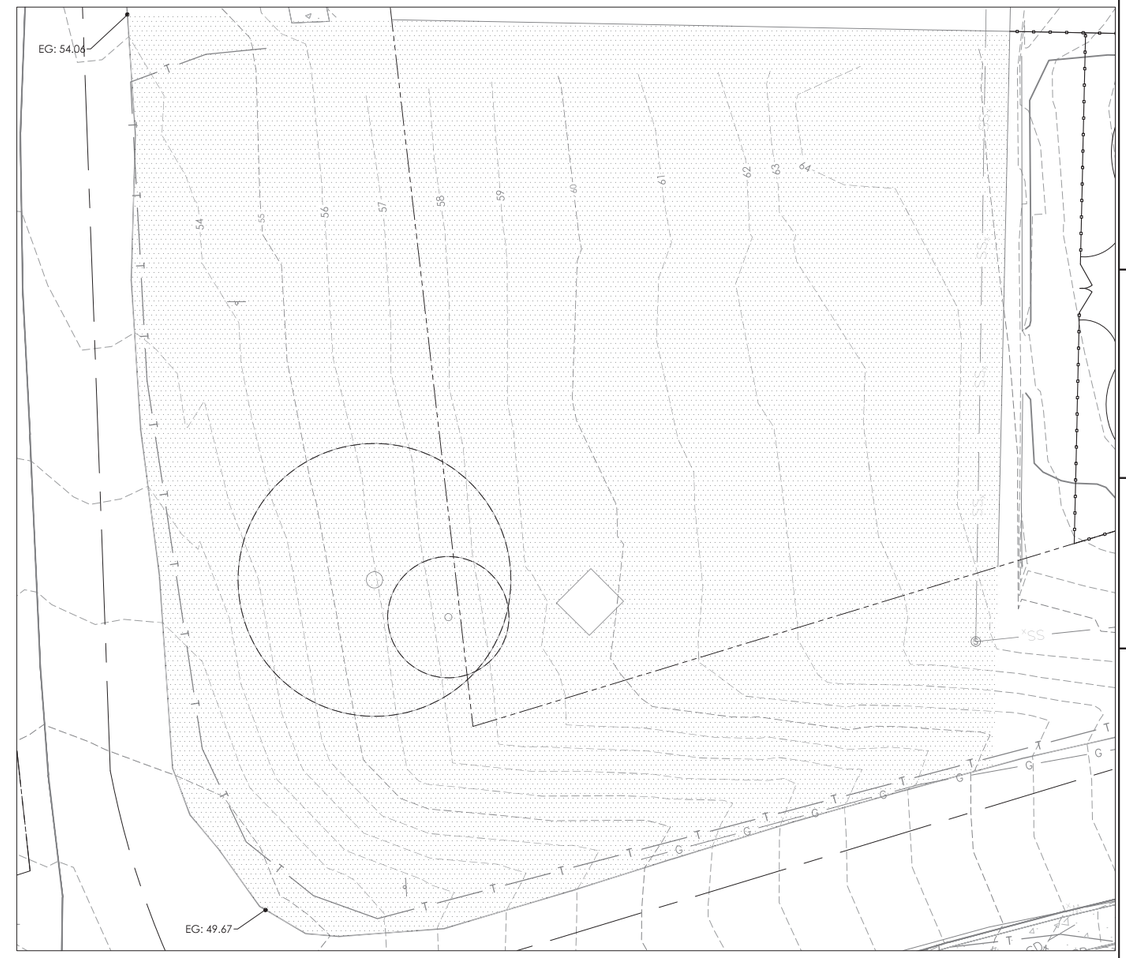
PROPERTY 028B REMEDIATION AND RESTORATION PLAN

SHEET

C28B.1

PLOTTED ON: 2018-02-28 11:51 AM PLOTTED BY: Lindsey Crosby FILENAME: G:\00_MFA CH 32\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03 - RECORD DRAWINGS\Property 028B\C28.1 PROPERTY 028B.dwg

PRE-REMEDIATION



POST-RESTORATION

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, SLABS, AND POSTS TO BE COMPLETED IN ACCORDANCE WITH DETAILS SKS-1 AND SKS-3 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXTG GRADE.
3. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
029A	69400000	305 N 1ST AVE, RIDGEFIELD, WA 98642	PATTY TANNINEN

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	11,433	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	1,023	6

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	11,433	18
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	1,023	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 60 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 61 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO PROTECT IN PLACE
- PLANT TO BE REMOVED BY CONTRACTOR
- ROOT PROTECTION ZONE
- EXTG CONC
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
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Port of Ridgefield

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
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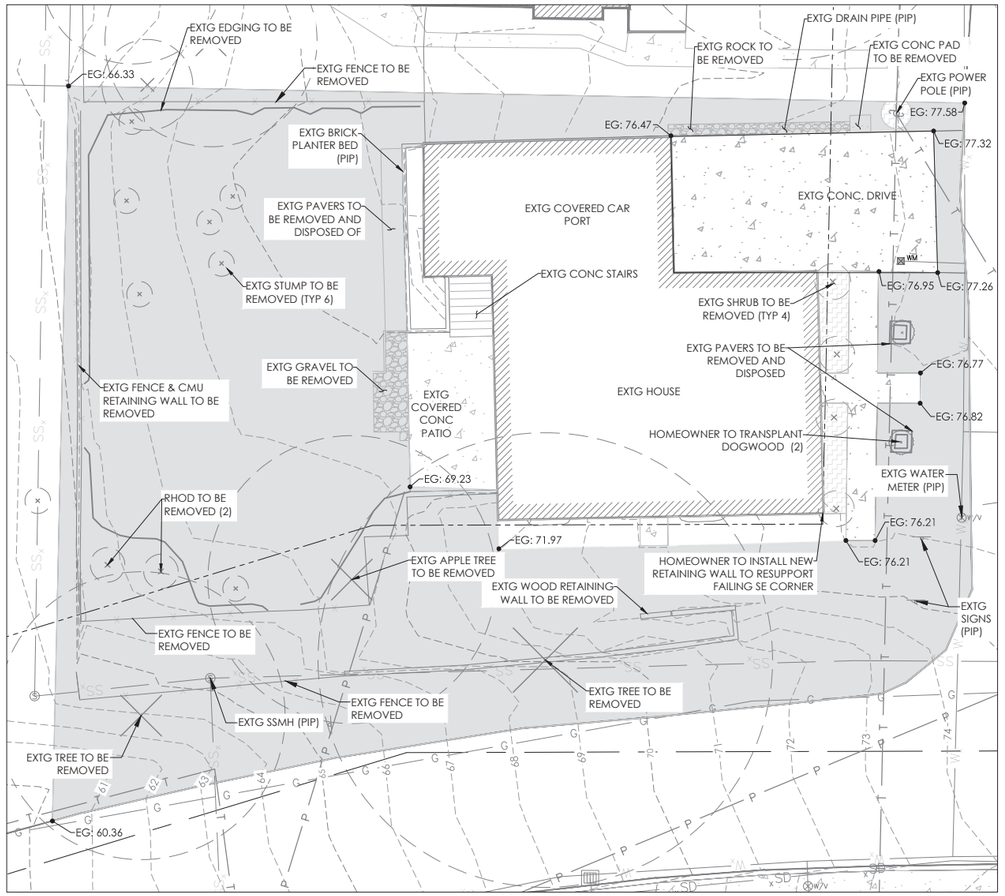
PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 029A REMEDIATION AND RESTORATION PLAN

SHEET
C29A.1

PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03- RECORD DRAWINGS\Property 029\C29-1 PROPERTY 029A.dwg
PLOTTED ON: 2018-02-27 7:20 PM



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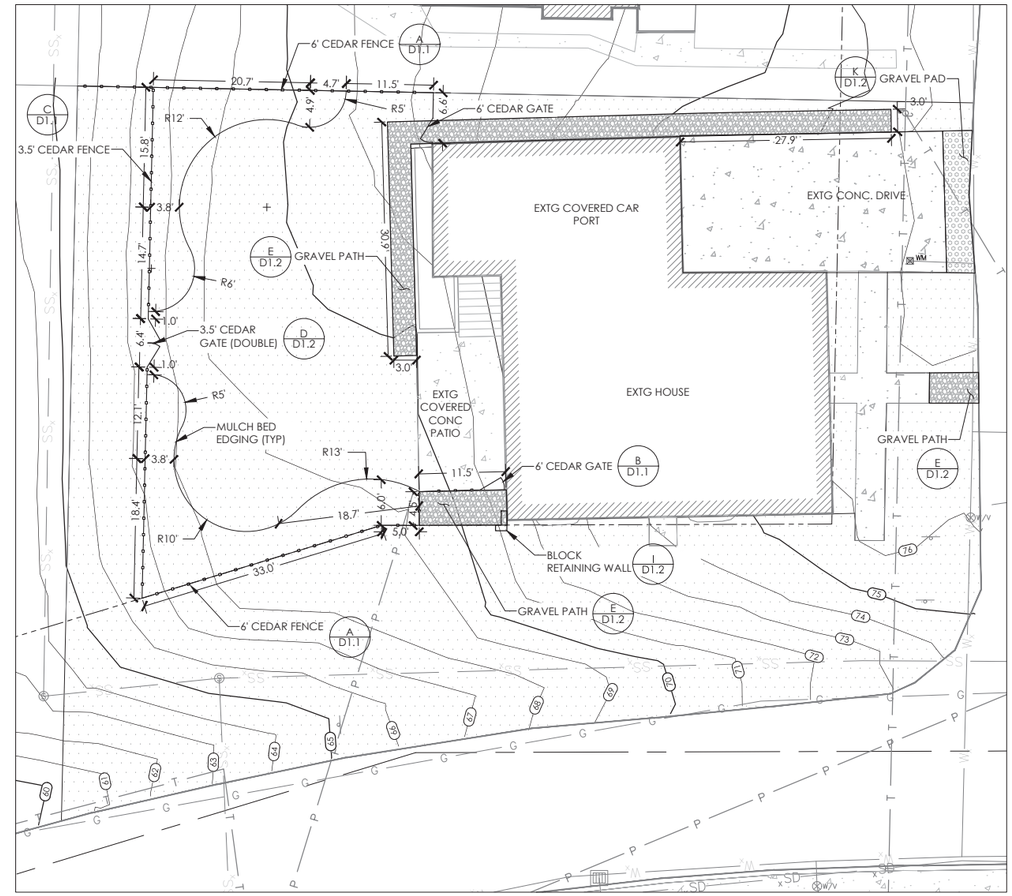

POST-RESTORATION

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON DWG D1.0. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS WITH BASEMENT WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-2 ON DWG D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXTG GRADE.
3. PLASTIC EDGING TO BE PROVIDED ALONG PATHS, AROUND WOODCHIP AREAS, AND AROUND GARDEN BEDS
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
5. FINAL TOPOGRAPHIC SURVEY PROVIDED BY AKS.

PROPERTY INFORMATION

PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
029B	69398000	4 W DIVISION ST, RIDGEFIELD, WA 98642	PATTY TANNINEN

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	6,716	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	101	6

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	6,649	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	101	6
GRAVEL PAD	GRAVEL SURFACING	67	12
GRAVEL PATH	GRAVEL SURFACING	361	4
ON PROPERTY	PLANTER BED	671	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- EXTG MAJOR CONTOUR (5' INTERVAL)
- EXTG MINOR CONTOUR (1' INTERVAL)
- NEW MAJOR CONTOUR (5' INTERVAL)
- NEW MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO BE TRANSPLANTED BY HOMEOWNER
- PLANT TO BE REMOVED BY CONTRACTOR
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL PAD

RECORD DRAWING

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400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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Port of Ridgefield

BROOKE ELISE HARMON, STATE OF WASHINGTON, 57214, REGISTERED PROFESSIONAL ENGINEER

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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

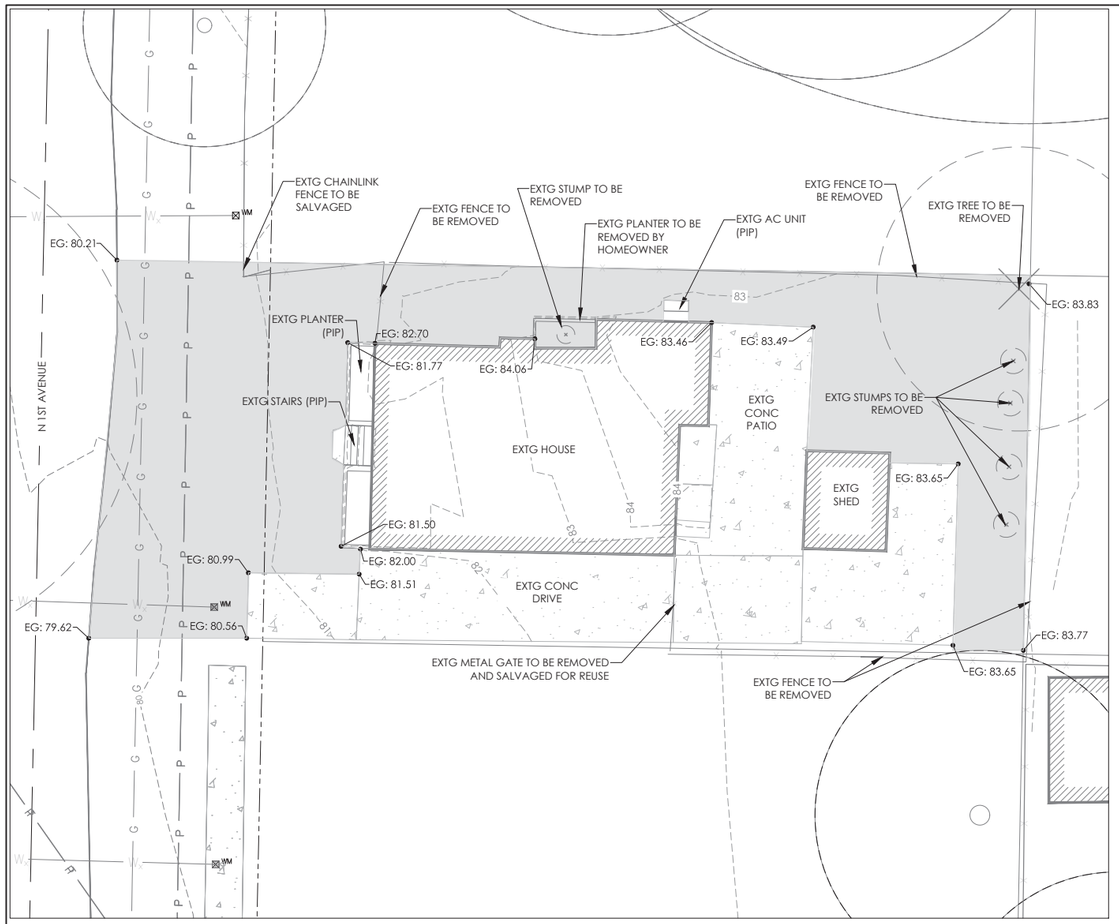
ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE 0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

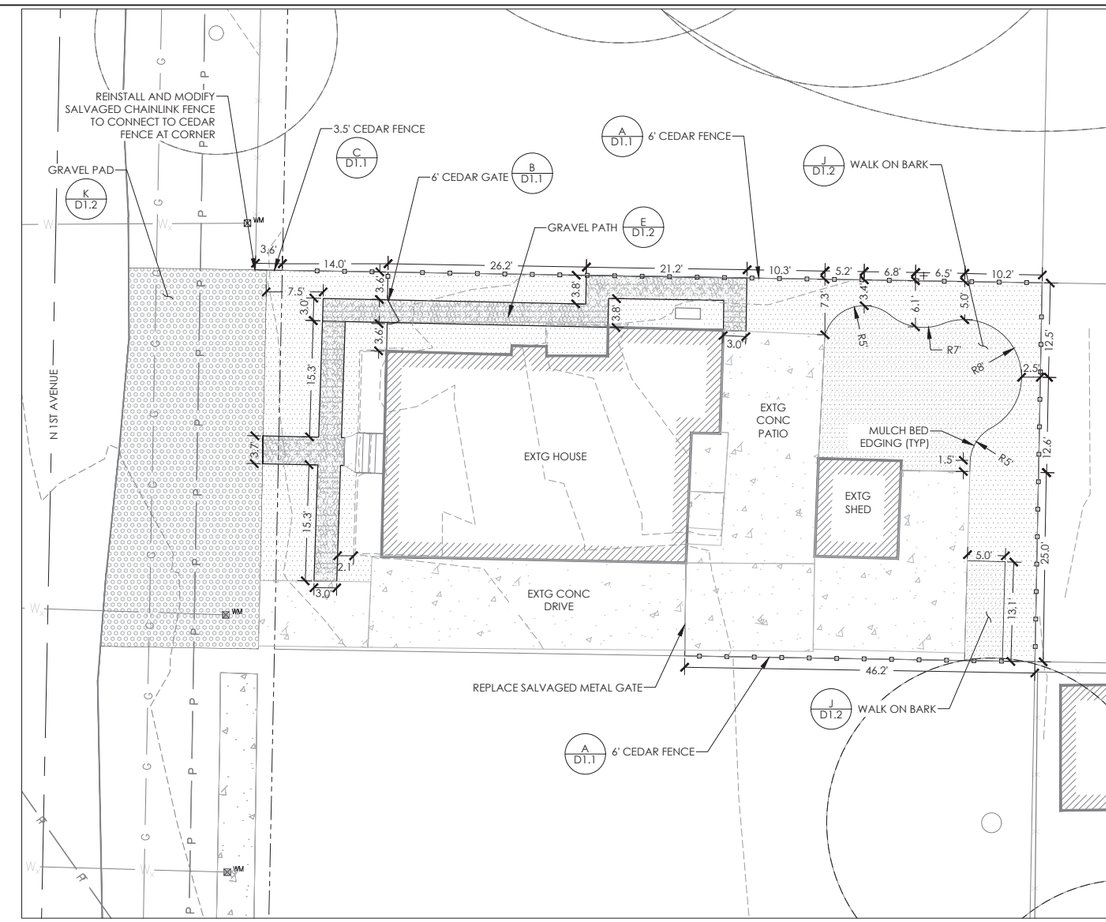
SHEET TITLE
PROPERTY 029B REMEDATION AND RESTORATION PLAN

SHEET
C29B.1

PLOTTED ON: 2018-03-13 11:08 AM PLOTTED BY: Brooke Harmon FILENAME: G:\20_MFA CM\37\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\Property 029\C29 | PROPERTY 029B.dwg



PRE-REMEDIATION



POST-RESTORATION

NOTES:

1. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS, PAVEMENTS, AND SLABS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-1 ON SHEET D1.0. EXCAVATION ADJACENT TO ALL EXTG BUILDING FOUNDATIONS WITH BASEMENT WALLS TO BE COMPLETED IN ACCORDANCE WITH DETAIL SKS-2 ON SHEET D1.0.
2. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXTG GRADE.
3. PLASTIC EDGING WILL BE PROVIDED AROUND GARDEN BEDS, GRAVEL PATHS/PADS, AND AREAS OF WOODCHIPS.
4. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.

PROPERTY INFORMATION			
PROPERTY NUMBER	TAX PARCEL NUMBER	ADDRESS	OWNER
032	69374000	322 N 1ST AVE, RIDGEFIELD, WA 98642	PATRICIA THOMPSON

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	2,924	12

RESTORATION QUANTITIES			
REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	1,964	12
GRAVEL PAD	GRAVEL SURFACING	960	12
GRAVEL PATH	GRAVEL SURFACING	323	4
ON PROPERTY	WALK ON BARK	525	4
ON PROPERTY	PLANTER BED	1,116	2

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 80 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 81 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- EXTG FENCE
- NEW FENCE
- PLANT TO PROTECT IN PLACE
- ROOT PROTECTION ZONE
- EXTG CONC
- EXTG GRAVEL
- SOIL REMOVAL AREA
- NEW TOPSOIL
- NEW GRAVEL PATH
- NEW GRAVEL PAD
- NEW WOODCHIPS

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
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Port of Ridgefield

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OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

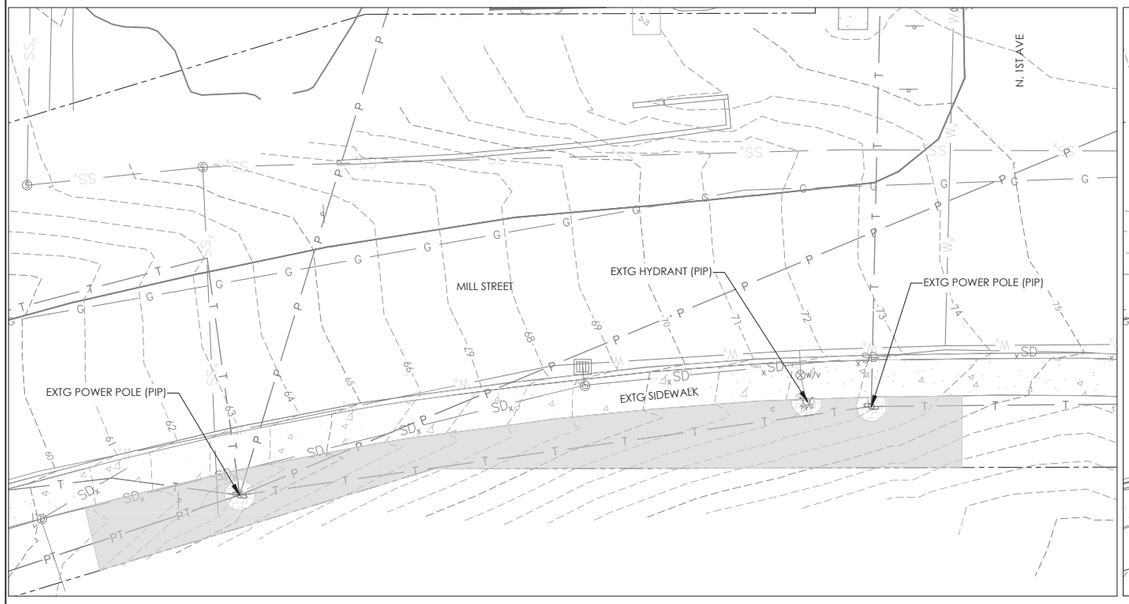
ISSUE	DATE	DESCRIPTION
1	01/02/2018	RECORD DRAWINGS
B	05/31/2017	CONSTRUCTION DOCUMENTS
A	04/19/2017	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: B. HARMON
DRAWN: B. HARMON
CHECKED: J. ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

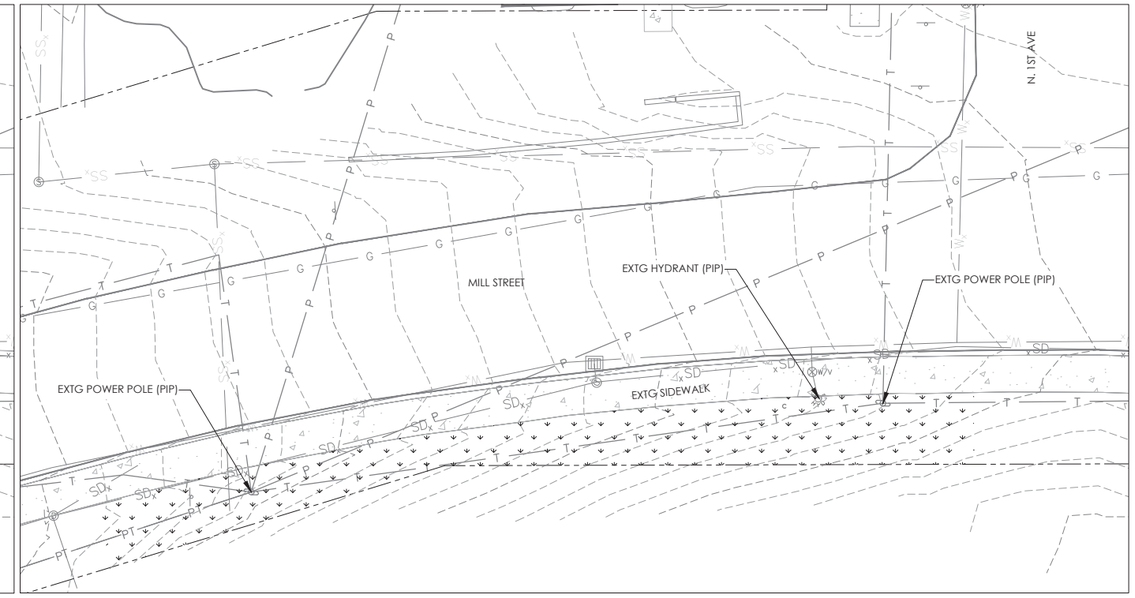
SHEET TITLE
PROPERTY 032 REMEDIATION AND RESTORATION PLAN

SHEET
C32.1

PLOTTED ON: 2018-02-27 8:20 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017-03 - RECORD DRAWINGS\Property 032\C32.1 PROPERTY 032.dwg



PRE-REMEDIATION



POST-RESTORATION

NOTES:

1. REPLACEMENT TOPSOIL DEPTH TO MATCH REMEDIATION DEPTH AS SHOWN IN TABLE THIS SHEET. EXCEPT WHERE DEPICTED OTHERWISE, RESTORATION GRADE IS TO MATCH EXISTING GRADE.
2. TOPOGRAPHIC SURVEY, INCLUDING UTILITY LOCATIONS, LOT LINES AND RIGHT-OF-WAYS PROVIDED BY KLEIN & ASSOCIATES, INC.
3. ONLY EXTG CONDITIONS ARE SHOWN FOR ADJACENT PROPERTIES AND ROWs TO RECEIVE CLEANUP. REFER TO INDIVIDUAL CLEANUP PLANS FOR RESTORATION OF THESE AREAS.

REMEDIAL EXCAVATION QUANTITIES

REMEDIAL AREA	EXCAVATION METHOD	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TRADITIONAL	834	12
RESTRICTED ACCESS	VACTOR/HAND TOOLS	30	6

NOTE: RESTORATION AREAS EQUAL TO REMEDIAL AREAS UNLESS OTHERWISE SPECIFIED.

RESTORATION QUANTITIES

REMEDIAL AREA	RESTORATION	AREA (SQ. FT.)	DEPTH (INCHES)
SOIL REMOVAL	TOPSOIL	834	12
SOIL REMOVAL - RESTRICTED ACCESS	TOPSOIL	30	6
SOIL REMOVAL	HYDROSEED	864	-

LEGEND:

- 70 — EXTG MAJOR CONTOUR (5' INTERVAL)
- 71 — EXTG MINOR CONTOUR (1' INTERVAL)
- RIGHT OF WAY LINE
- LOT LINE
- SOIL REMOVAL AREA
- SOIL REMOVAL AREA - RESTRICTED ACCESS
- NEW TOPSOIL AND HYDROSEED MULCH

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
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RIDGEFIELD, WASHINGTON

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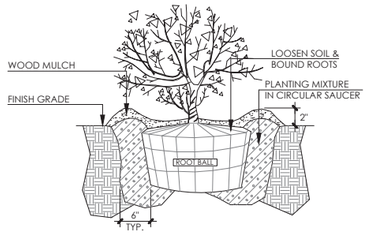
PROJECT: 9003.01.39
DESIGNED: L. CROSBY
DRAWN: L. CROSBY
CHECKED: J. ELLIOTT

SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

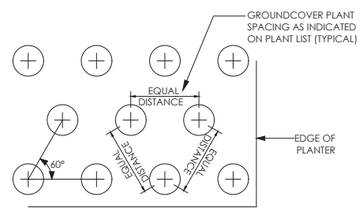
SHEET TITLE
MILL STREET ROW REMEDIATION AND RESTORATION PLAN

SHEET
C41.1

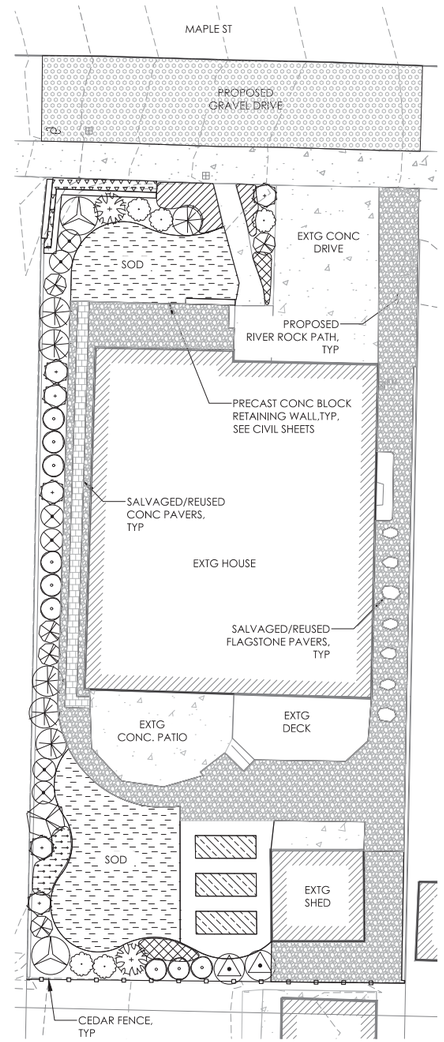
PLOTTED BY: Brooke Harmon FILENAME: G:\3D_MFA Civil 3D\3D_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\C5 - RECORD DRAWINGS\C41.1-MILL ROW.dwg
PLOTTED ON: 2018-02-27 7:26 PM



1 EVERGREEN / DECIDUOUS SHRUB PLANTING
NTS



2 GROUNDCOVER SPACING
NTS



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	5'-0", O.C.
	2	NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	3 GAL	4'-0", O.C.
	6	VARIEGATED FALSE HOLLY	OSMANTHUS HETEROPHYLLUS 'GOSHIKI'	3 GAL	4'-0", O.C.
	2	VICTORIA CEANOTHUS	CEANOTHUS THYRSIFLORUS 'VICTORIA'	3 GAL	4'-0", O.C.
	5	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	6	TUSCAN BLUE ROSEMARY	ROSMARINUS OFFICINALIS 'TUSCAN BLUE'	2 GAL	3'-0", O.C.
	5	SUNDANCE MEXICAN ORANGE	CHOISYA TERNATA 'SUNDANCE'	2 GAL	3'-0", O.C.
	6	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	2 GAL	3'-0", O.C.
	9	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	2 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	6	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	9	ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA 'HIDCOTE'	6" POT	2'-0", O.C., TRI.
	7	SLENDER DUETZIA	DEUTZIA GRACILIS 'NIKKO'	6" POT	2'-0", O.C., TRI.
	5	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.

SOD & SEED MIXES

SOD: TALL FESCUE BLEND
TOTAL AREA: 515 SF

GARDEN COVER CROP
TOTAL AREA: 72 SF; APPLICATION RATE: 1 LBS PER 250 SF

COMMON NAME	BOTANICAL NAME	%
CEREAL RYE	SECALE CEREALE	40%
AUSTRIAN PEAS	PISUM SATIVUM	25%
WINTER WHEAT	TRITICUM AESTIVUM	25%
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM)	10%

GENERAL LANDSCAPE NOTES

1. WEED BARRIER SHALL BE INSTALLED IN ALL LANDSCAPE AREAS.
2. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
3. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM HEMLOCK MULCH.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELISE HAMMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

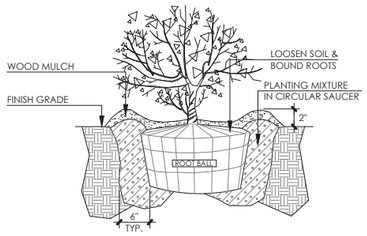
ISSUE	DATE	DESCRIPTION
1	01/02/18	RECORD DRAWINGS
B	05/31/17	CONSTRUCTION DOCUMENTS
A	04/17/17	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

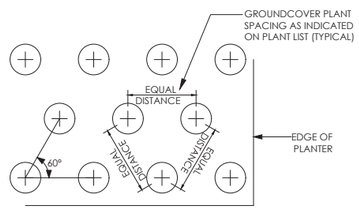
SHEET TITLE
PROPERTY 002 PLANTING PLAN

SHEET
L02.0

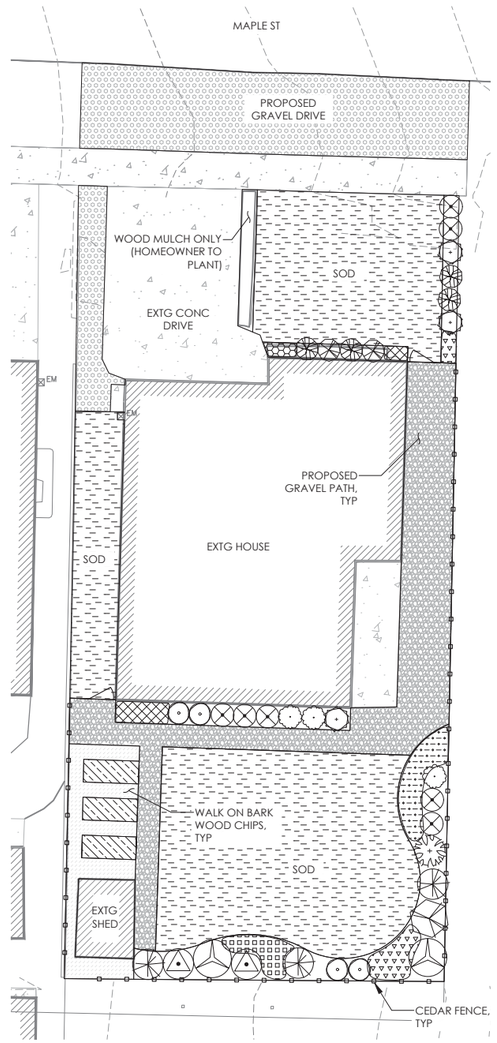
PLOTTED ON: 2018-01-08 12:23 PM PLOTTED BY: Brooke Hammon FILENAME: G:\JB_AFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\Property 002\PLANTING PLAN_002.dwg



1 EVERGREEN / DECIDUOUS SHRUB PLANTING
NTS



2 GROUNDCOVER SPACING
NTS



PLAN

PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	5'-0", O.C.
	1	NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	3 GAL	4'-0", O.C.
	3	VARIEGATED FALSE HOLLY	OSMANTHUS HETEROPHYLLUS 'GOSHIKI'	3 GAL	4'-0", O.C.
	2	VICTORIA CEANOTHUS	CEANOTHUS THYRSIFLORUS 'VICTORIA'	3 GAL	4'-0", O.C.
	2	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	3	TUSCAN BLUE ROSEMARY	ROSMARINUS OFFICINALIS 'TUSCAN BLUE'	2 GAL	3'-0", O.C.
	3	SUNDANCE MEXICAN ORANGE	CHOISYA TERNATA 'SUNDANCE'	2 GAL	3'-0", O.C.
	4	GOLD MOUND SPIRAEA	SPIRAEA JAPONICA 'GOLDMOUND'	2 GAL	3'-0", O.C.
	7	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	2 GAL	3'-0", O.C.
	4	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	2 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	6	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.
	5	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	2	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	6" POT	2'-6", O.C., TRI.
	6	SLENDER DUETZIA	DEUTZIA GRACILIS 'NIKKO'	6" POT	2'-0", O.C., TRI.
	4	EVERILLO SEDGE	CAREX OSHIMENSIS 'EVERILLO'	6" POT	2'-0", O.C., TRI.

SOD & SEED MIXES

SOD: TALL FESCUE BLEND
TOTAL AREA: 1,588 SF

GARDEN COVER CROP
TOTAL AREA: 65 SF; APPLICATION RATE: 1 LBS PER 250 SF

COMMON NAME	BOTANICAL NAME	%
CEREAL RYE	SECALE CEREALE	40%
AUSTRIAN PEAS	PISUM SATIVUM	25%
WINTER WHEAT	TRITICUM AESTIVUM	25%
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM)	10%

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM HEMLOCK MULCH.

RECORD DRAWING

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Port of Ridgefield

BROOKE ELISE HARMON
STATE OF WASHINGTON
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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

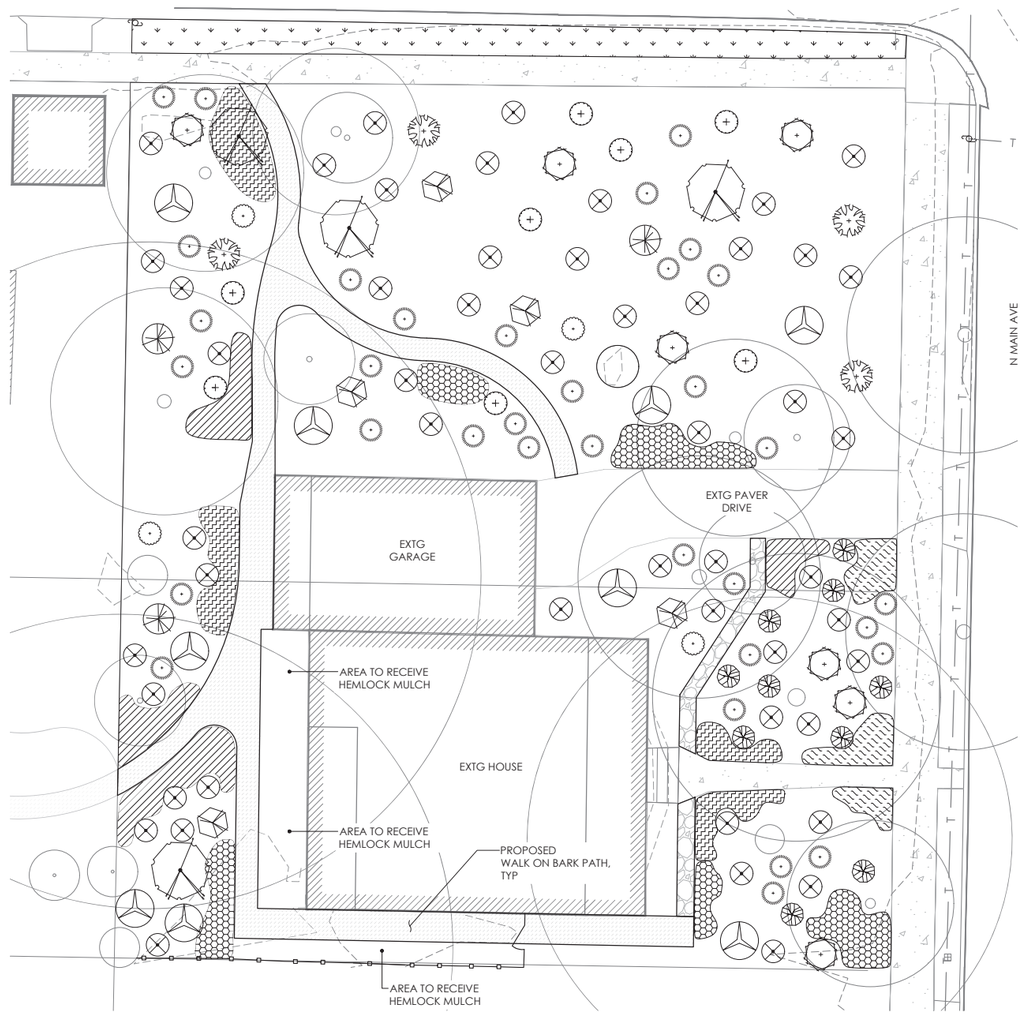
ISSUE	DATE	DESCRIPTION
1	01/02/18	RECORD DRAWINGS
B	05/31/17	CONSTRUCTION DOCUMENTS
A	04/17/17	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 003 PLANTING PLAN

SHEET
L03.0

PLOTTED ON: 2018-01-08 12:24 PM PLOTTED BY: Brooke Harmon FILENAME: G:\JB\JMFA Civil 3D\JB_PROJECTS\9003.01.39 Off-Property\OFP Interim Action\PLANS\2017\03 - RECORD DRAWINGS\Property 003\PLANTING PLAN_003.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	4	VINE MAPLE	ACER CIRCINATUM	5 GAL	AS SHOWN
	9	RED HUCKLEBERRY	VACCINIUM PARVIFOLIUM	3 GAL	AS SHOWN
	3	BLIZZARD MOCK ORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	3 GAL	4'-0", O.C.
	4	TWINBERRY	LONICERA INVOLUCRATA	3 GAL	4'-0", O.C.
	7	RED FLOWERING CURRANT	RIBES SANGUINEUM	3 GAL	4'-0", O.C.
	5	EVERGREEN HUCKLEBERRY	VACCINIUM OVATUM	3 GAL	4'-0", O.C.
	52	SWORDFERN	POLYSTICHUM MUNITUM	1 GAL	3'-0", O.C.
	10	BRACKEN FERN	ARUNCUS DIOICUS	1 GAL	3'-0", O.C.
	8	GOAT'S BEARD	PTERIDIUM AQUILINUM	1 GAL	3'-0", O.C.
	4	SNOWBERRY	SYMPHORICARPOS ALBUS	1 GAL	3'-0", O.C.
	34	DULL OREGON GRAPE	MAHONIA NERVOSA	1 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

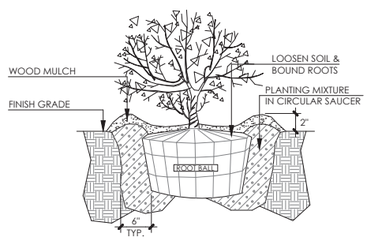
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	45	OREGON OXALIS	OXALIS OREGANA	4" POT	2'-0", O.C., TRI.
	55	FALSE LILY OF THE VALLEY	MAIANTHEMUM DILATATUM	4" POT	1'-6", O.C., TRI.
	39	CREEPING OREGON GRAPE	MAHONIA REPENS	4" POT	2'-6", O.C., TRI.
	44	SALAL	GAULTHERIA SHALLON	4" POT	2'-6", O.C., TRI.

SEED MIXES

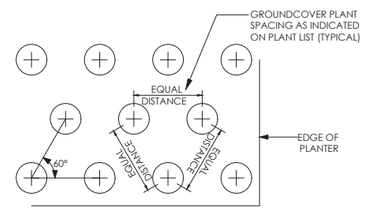
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 410 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUOUS SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM HEMLOCK MULCH.



1 EVERGREEN / DECIDUOUS SHRUB PLANTING
NTS



2 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELYSE HARMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WASHINGTON

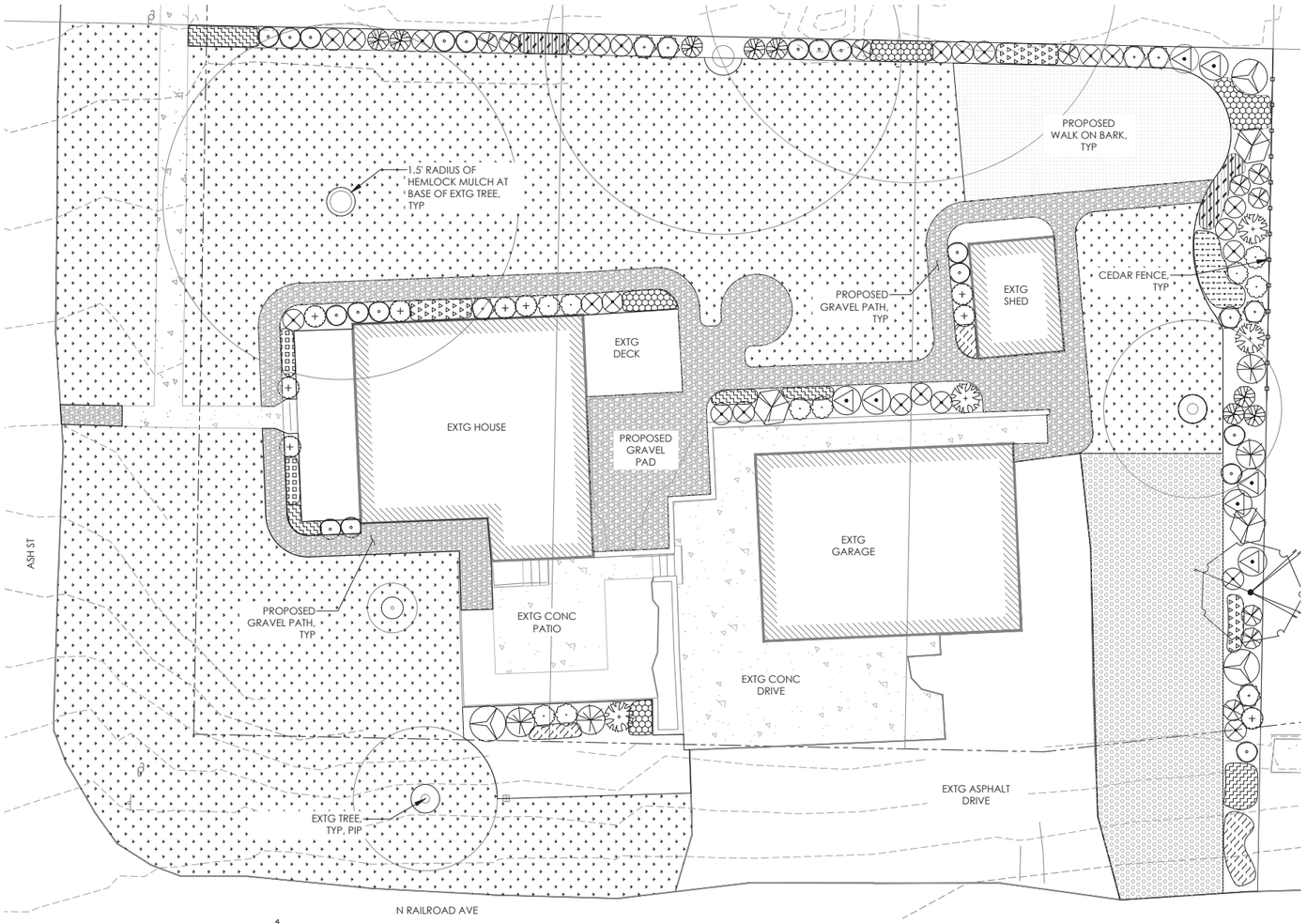
ISSUE	DATE	DESCRIPTION
1	01/02/18	RECORD DRAWINGS
B	05/31/17	CONSTRUCTION DOCUMENTS
A	05/10/17	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 020B PLANTING PLAN

SHEET
L20B.0

PLOTTED ON: 2018-01-08 12:14 PM PLOTTED BY: Brooke Harmon FILENAME: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\05 - RECORD DRAWINGS\Property 020B\PLANTING PLAN_020B.dwg



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	SILVERLEAF OAK	QUERCUS HYPOLEUCOIDES	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	3	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	3	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	5'-0", O.C.
	4	NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	3 GAL	4'-0", O.C.
	4	VARIEGATED FALSE HOLLY	OSMANTHUS HETEROPHYLLUS 'GOSHIKI'	3 GAL	4'-0", O.C.
	7	VICTORIA CEANOTHUS	CEANOTHUS THYRSIFLORUS 'VICTORIA'	3 GAL	4'-0", O.C.
	10	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	8	TUSCAN BLUE ROSEMARY	ROSMARINUS OFFICINALIS 'TUSCAN BLUE'	2 GAL	3'-0", O.C.
	9	SUNDANCE MEXICAN ORANGE	CHOISYA TERNATA 'SUNDANCE'	2 GAL	3'-0", O.C.
	8	GOLD MOUND SPIRAEA	SPIRAEA JAPONICA 'GOLDMOUND'	2 GAL	3'-0", O.C.
	24	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	2 GAL	3'-0", O.C.
	18	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	2 GAL	3'-0", O.C.
	9	SUMMER ICE DAPHNE	DAPHNE × TRANSATLANTICA 'SUMMER ICE'	2 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

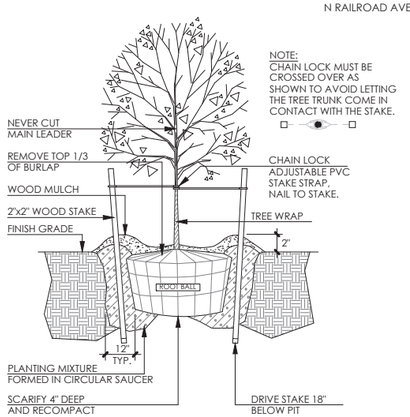
SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	19	BOULDER BLUE FESCUE	FESTUCA GLAUCA 'BOULDER BLUE'	6" POT	2'-0", O.C., TRI.
	11	ORANGE NEW ZEALAND SEDGE	CAREX TESTACEA	6" POT	2'-0", O.C., TRI.
	12	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	6" POT	2'-6", O.C., TRI.
	11	SLENDER DUETZIA	DEUTZIA GRACILIS 'NIKKO'	6" POT	2'-0", O.C., TRI.
	13	WHEELER'S DWARF JAPANESE MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	6" POT	2'-0", O.C., TRI.
	6	EVERILLO SEDGE	CAREX OSHIMENSIS 'EVERILLO'	6" POT	2'-0", O.C., TRI.
	6	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.

SEED MIXES

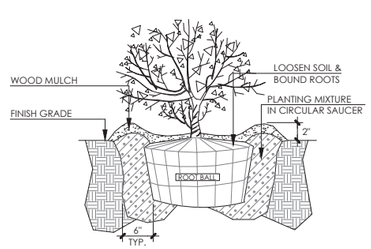
HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 10,112 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

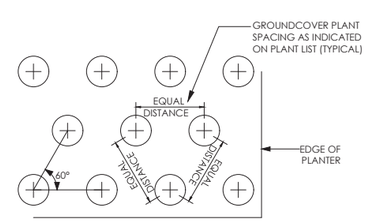
1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING, TO PROVIDE A SMOOTH AND CONTINUOUS SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM HEMLOCK MULCH.



1 DECIDUOUS TREE PLANTING & STAKING
NTS



2 EVERGREEN / DECIDUOUS SHRUB PLANTING
NTS



3 GROUNDCOVER SPACING
NTS PLAN

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELISE HARMON
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10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

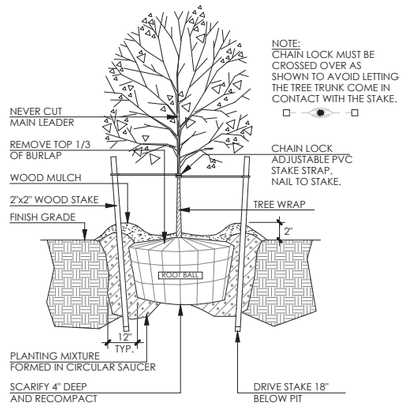
ISSUE	DATE	DESCRIPTION
1	01/02/18	RECORD DRAWINGS
B	03/31/17	CONSTRUCTION DOCUMENTS
A	04/07/17	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

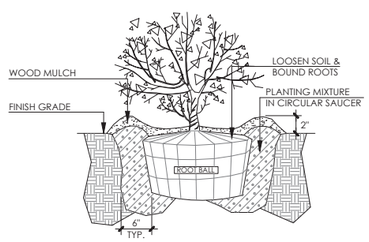
SHEET TITLE
PROPERTY 023 PLANTING PLAN

SHEET
L23.0

PLOTTED ON: 2018-03-13 11:31 AM PLOTTED BY: Brooke Harmon FILENAME: G:\JB_MFA CAD 10\00_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03- RECORD DRAWINGS\Property 023\PLANTING PLAN_023.dwg



1 DECIDUOUS TREE PLANTING & STAKING
NTS



2 EVERGREEN / DECIDUOUS SHRUB PLANTING
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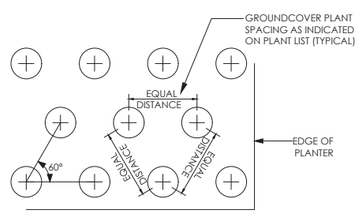
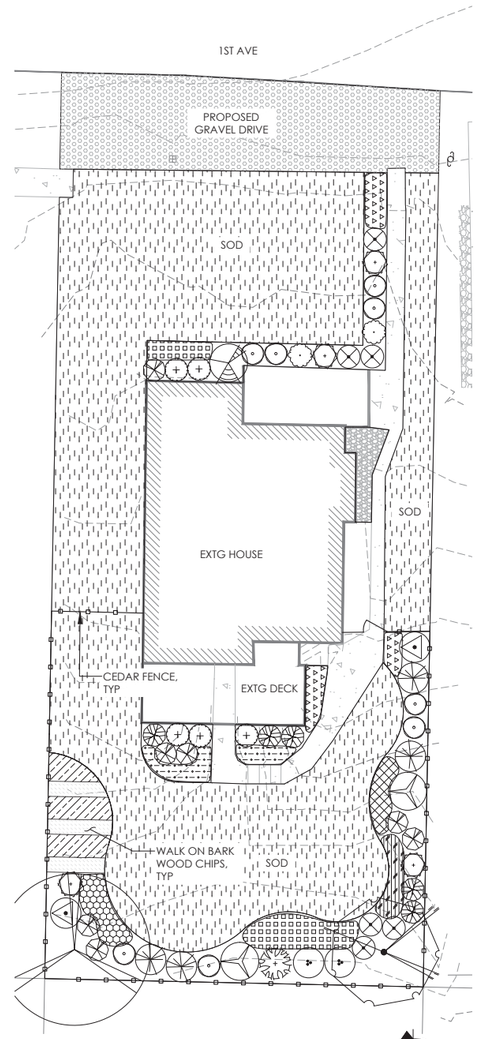


3 GROUNDCOVER SPACING
NTS



PROPOSED PLANTING PLAN

PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	AUTUMN APPLAUSE ASH	FRAXINUS AMERICANA 'AUTUMN APPLAUSE'	1.5" CAL	AS SHOWN
	1	SILVERLEAF OAK	QUERCUS HYPOLEUCOIDES	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	2	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	BONANZA CAMELLIA	CAMELLIA SASANQUA 'BONANZA'	3 GAL	5'-0", O.C.
	2	DWARF MUGO PINE	PINUS MUGO VAR. PUMILIO	3 GAL	4'-0", O.C.
	1	NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	3 GAL	4'-0", O.C.
	4	VARIEGATED FALSE HOLLY	OSMANTHUS HETEROPHYLLUS 'GOSHIKI'	3 GAL	4'-0", O.C.
	2	VICTORIA CEANOTHUS	CEANOTHUS THYRSIFLORUS 'VICTORIA'	3 GAL	4'-0", O.C.
	7	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	4	TUSCAN BLUE ROSEMARY	ROSMARINUS OFFICINALIS 'TUSCAN BLUE'	2 GAL	3'-0", O.C.
	2	SUNDANCE MEXICAN ORANGE	CHOISYA TERNATA 'SUNDANCE'	2 GAL	3'-0", O.C.
	5	GOLD MOUND SPIRAEA	SPIRAEA JAPONICA 'GOLDMOUND'	2 GAL	3'-0", O.C.
	6	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	2 GAL	3'-0", O.C.
	8	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	2 GAL	3'-0", O.C.
	5	SUMMER ICE DAPHNE	DAPHNE × TRANSATLANTICA 'SUMMER ICE'	2 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	4	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	4	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	6" POT	2'-6", O.C., TRI.
	9	SLENDER DUETZIA	DEUTZIA GRACILIS 'NIKKO'	6" POT	2'-0", O.C., TRI.
	5	WHEELER'S DWARF JAPANESE MOCK ORANGE	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	6" POT	2'-0", O.C., TRI.
	11	EVERILLO SEDGE	CAREX OSHIMENSIS 'EVERILLO'	6" POT	2'-0", O.C., TRI.
	9	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.

SOD & SEED MIXES

SOD: TALL FESCUE BLEND
TOTAL AREA: 2,690 SF

GARDEN COVER CROP
TOTAL AREA: 70 SF; APPLICATION RATE: 1 LBS PER 250 SF

COMMON NAME	BOTANICAL NAME	%
CEREAL RYE	SECALE CEREALE	40%
AUSTRIAN PEAS	PISUM SATIVUM	25%
WINTER WHEAT	TRITICUM AESTIVUM	25%
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM)	10%

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUOUS SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM HEMLOCK MULCH.

RECORD DRAWING

MAUL FOSTER ALONGI
400 EAST MILL PLAIN BLVD, SUITE 400
VANCOUVER, WA 98660
PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELISE HAMMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

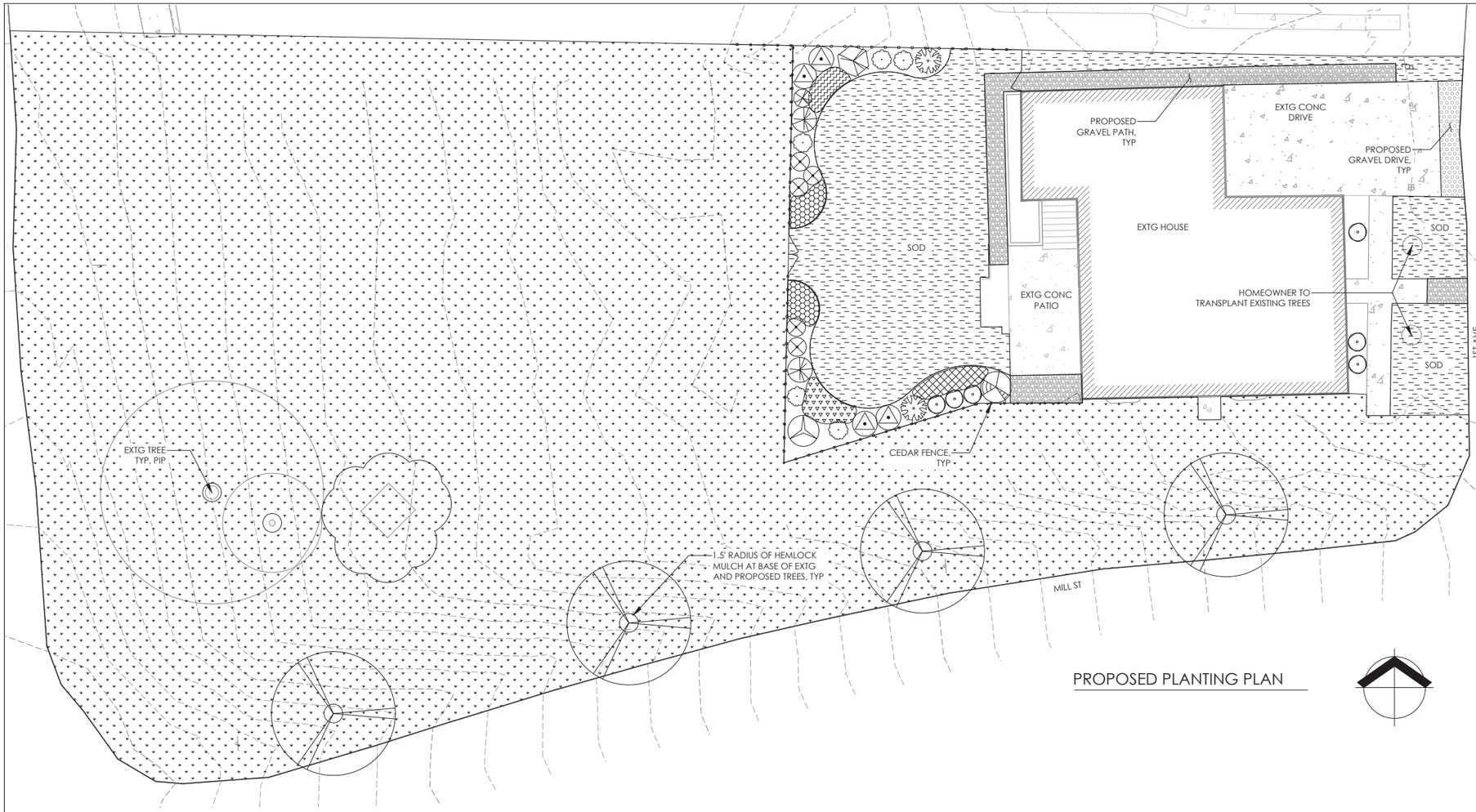
ISSUE	DATE	DESCRIPTION
1	01/02/18	RECORD DRAWINGS
B	05/31/17	CONSTRUCTION DOCUMENTS
A	04/17/17	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

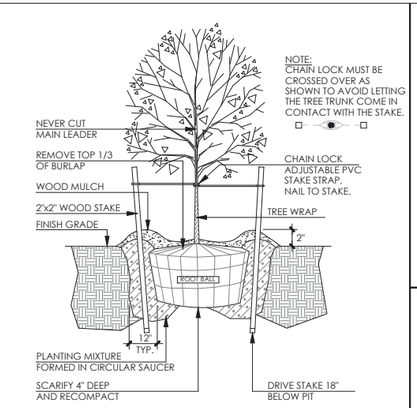
SHEET TITLE
PROPERTY 028 PLANTING PLAN

SHEET
L28.0

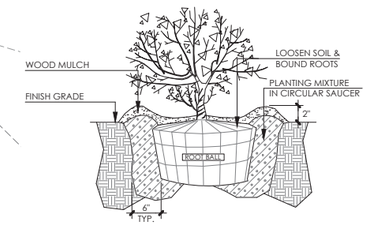
PLOTTED ON: 2018-01-08 11:04 AM PLOTTED BY: Brooke Hammon FILENAME: G:\05_AFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03 - RECORD DRAWINGS\Property 028\LYA\INTRO PLAN_028B.dwg



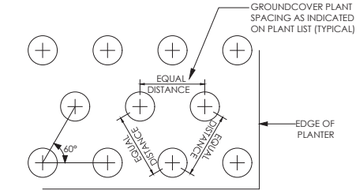
PROPOSED PLANTING PLAN



1 DECIDUOUS TREE PLANTING & STAKING



2 EVERGREEN / DECIDUOUS SHRUB PLANTING



3 GROUNDCOVER SPACING
NTS PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	4	AUTUMN APPLAUSE ASH	FRAXINUS AMERICANA 'AUTUMN APPLAUSE'	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	1	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	5'-0", O.C.
	1	BONANZA CAMELLIA	CAMELLIA SASANQUA 'BONANZA'	3 GAL	5'-0", O.C.
	2	NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	3 GAL	4'-0", O.C.
	2	VARIEGATED FALSE HOLLY	OSMANTHUS HETEROPHYLLUS 'GOSHIKI'	3 GAL	4'-0", O.C.
	4	VICTORIA CEANOTHUS	CEANOTHUS THYRSIFLORUS 'VICTORIA'	3 GAL	4'-0", O.C.
	1	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.

SHRUBS (CONTINUED)

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	5	SUNDANCE MEXICAN ORANGE	CHOISYA TERNATA 'SUNDANCE'	2 GAL	3'-0", O.C.
	5	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	2 GAL	3'-0", O.C.
	6	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	2 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	5	BOULDER BLUE FESCUE	FESTUCA GLAUCA 'BOULDER BLUE'	6" POT	2'-0", O.C., TRI.
	7	BRILLIANT STONECROP	SEDUM SPECTABILE 'BRILLIANT'	6" POT	2'-0", O.C., TRI.
	8	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	6" POT	2'-6", O.C., TRI.
	6	SLENDER DUETZIA	DEUTZIA GRACILIS 'NIKKO'	6" POT	2'-0", O.C., TRI.

SOD & SEED MIXES

SOD: TALL FESCUE BLEND
TOTAL AREA: 2,045 SF

HYDROSEED GRASS MIX: DIAMOND GREEN TURF MIX - SUNMARK SEEDS
TOTAL AREA: 16,295 SF; APPLICATION RATE: 8 LBS. PER 1,000 SF

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUOUS SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
2. ALL NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM DEPTH OF 2 INCHES OF MEDIUM HEMLOCK MULCH.

RECORD DRAWING

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PHONE: 360.694.2691
www.maulfoster.com

Port of Ridgefield

BROOKE ELYSE HARMON
STATE OF WASHINGTON
57214
REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

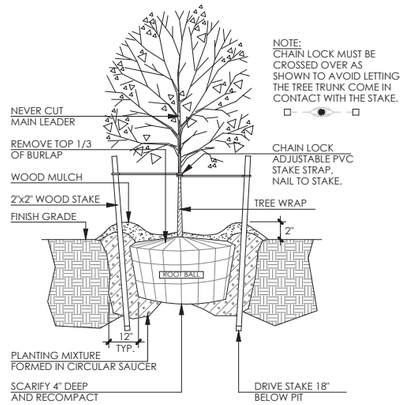
ISSUE	DATE	DESCRIPTION
A	04/18/17	BID DOCUMENTS
B	05/31/17	CONSTRUCTION DOCUMENTS
1	01/02/18	RECORD DRAWINGS

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20'
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

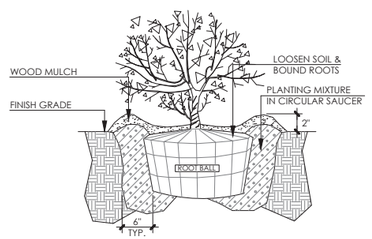
SHEET TITLE
PROPERTY 029 PLANTING PLAN

SHEET
L29.0

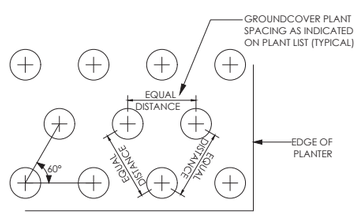
PLOTTED ON: 2018-01-08 11:03 AM PLOTTED BY: Brooke Harmon FILENAME: G:\JB_AFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017-05 - RECORD DRAWINGS\Property 029\PLANTING PLAN_029.dwg



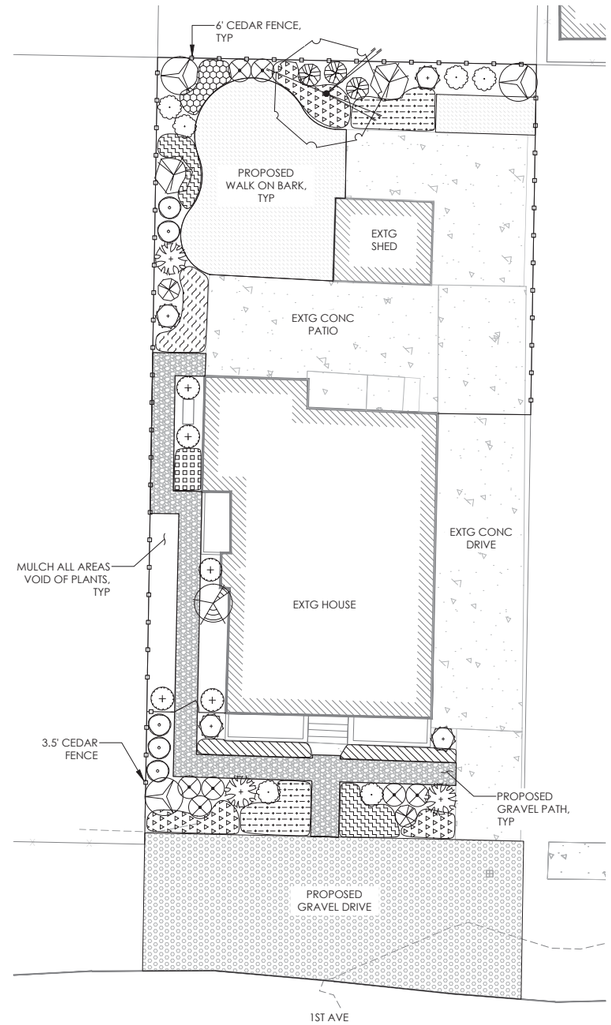
1 DECIDUOUS TREE PLANTING & STAKING
NTS



2 EVERGREEN / DECIDUOUS SHRUB PLANTING
NTS



3 GROUNDCOVER SPACING
NTS



PROPOSED PLANTING PLAN

PLANT MATERIAL SCHEDULE

TREES

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	1	SILVERLEAF OAK	QUERCUS HYPOLEUCOIDES	1.5" CAL	AS SHOWN

SHRUBS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	3	GRACE SMOKE TREE	COTINUS X 'GRACE'	3 GAL	AS SHOWN
	2	HAIRY MANZANITA	ARCTOSTAPHYLOS COLUMBIANA	3 GAL	5'-0", O.C.
	1	BONANZA CAMELLIA	CAMELLIA SASANQUA 'BONANZA'	3 GAL	5'-0", O.C.
	3	NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	3 GAL	4'-0", O.C.
	2	EUPHORBIA	EUPHORBIA CHARACIAS 'WULFENII'	2 GAL	3'-0", O.C.
	4	TUSCAN BLUE ROSEMARY	ROSMARINUS OFFICINALIS 'TUSCAN BLUE'	2 GAL	3'-0", O.C.
	6	SUNDANCE MEXICAN ORANGE	CHOISYA TERNATA 'SUNDANCE'	2 GAL	3'-0", O.C.
	3	GOLD MOUND SPIRAEA	SPIRAEA JAPONICA 'GOLDMOUND'	2 GAL	3'-0", O.C.
	7	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	2 GAL	3'-0", O.C.
	5	GULF STREAM HEAVENLY BAMBOO	NANDINA DOMESTICA 'GULF STREAM'	2 GAL	3'-0", O.C.
	5	SUMMER ICE DAPHNE	DAPHNE × TRANSATLANTICA 'SUMMER ICE'	2 GAL	3'-0", O.C.

GRASSES, PERENNIALS & GROUNDCOVERS

SYM	QTY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
	10	BOULDER BLUE FESCUE	FESTUCA GLAUCA 'BOULDER BLUE'	6" POT	2'-0", O.C., TRI.
	6	ORANGE NEW ZEALAND SEDGE	CAREX TESTACEA	6" POT	2'-0", O.C., TRI.
	14	ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA 'HIDCOTE'	6" POT	2'-0", O.C., TRI.
	4	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	6" POT	2'-6", O.C., TRI.
	11	SLENDER DUETZIA	DEUTZIA GRACILIS 'NIKKO'	6" POT	2'-0", O.C., TRI.
	12	MEDITERRANEAN PINK HEATH	ERICA X DARLEYENSIS 'MEDITERRANEAN PINK'	6" POT	2'-0", O.C., TRI.

GENERAL LANDSCAPE NOTES

1. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING OR PLACING SOD, TO PROVIDE A SMOOTH AND CONTINUOUS SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS).
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RECORD DRAWING

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Port of Ridgefield

BROOKE ELISE HAMMON
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REGISTERED PROFESSIONAL ENGINEER
This digital seal certifies the signatory and document content.

10-27-2021

OFF-PROPERTY PORTION INTERIM ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

ISSUE	DATE	DESCRIPTION
1	01/02/18	RECORD DRAWINGS
B	03/31/17	CONSTRUCTION DOCUMENTS
A	04/17/17	BID DOCUMENTS

PROJECT: 9003.01.39
DESIGNED: C.RILEY
DRAWN: C.RILEY
CHECKED: J.ELLIOTT
SCALE
0 10' 20
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE
PROPERTY 032 PLANTING PLAN

SHEET
L32.0

PLOTTED ON: 2018-01-08 11:02 AM PLOTTED BY: Brooke Hammon FILENAME: G:\05_AFA Civil 3D\02_PROJECTS\9003.01.39 Off-Property\OPP Interim Action\PLANS\2017\03 - RECORD DRAWINGS\Property 032\PLANTING PLAN_032.dwg

APPENDIX A

STRUCTURAL PRE-CONSTRUCTION EVALUATION FORMS

LIVERMORE
ARCHITECTURE &
ENGINEERING, INC.

Field Report

Project Name:	Ridgefield Yards		
Project #:	217020.00		
Date:	5/18/17	Weather:	Sunny
Arrival Time:	11:15AM	Temperature:	75 degrees
Departure Time:	12:00 Noon		
Location:	40 N Maple Street, Ridgefield, Washington		
By:	Gary Livermore, LAE		
Distribution:	Lindsey Crosby, MFA		

Work Reviewed

Site #2

A visual review of existing foundation and site retaining walls for the Site #02 residence (40 N Maple Street) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls and retaining walls that were visible at the time of the review.

The residence is a single story wood frame structure with concrete stem walls at the perimeter. Concrete retaining walls run almost the full length of the east and west sides of the property.

A wood-frame deck and concrete patio are located at the south side of the residence. A wood-frame storage/shop building is located south of the deck/patio and the residence. Concrete perimeter walls were not visible at this structure.

Observations

The following was noted related to the condition of existing residence and foundations:

- At the north/south running concrete wall west of the building entry, cracks occur (Photo 2.1).
- At the north wall of the residence, a crack occurs approximately mid-length of the wall (Photo 2.2).
- At the west wall of the residence, a crack occurs approximately 8'-0" from the north end of the wall (Photo 2.3).
- At the west wall of the residence, a crack occurs approximately 16'-0" from the north end of the wall (Photo 2.4).
- At the west wall of the residence, a crack occurs approximately 10'-0" from the south end of the wall (Photo 2.5).
- At the south wall of the residence, a vertical joint occurs approximately mid-length of the visible portion of the stem wall. This joint has a slight gap (Photo 2.8).
- At the south wall of the residence, a crack occurs at the east end of the visible portion of the wall (Photo 2.9).
- At the concrete patio on the south side of the residence (west end) separation occurs between the edge wall and the concrete slab on grade (Photos 2.6, 2.7 and 2.11). Cracking also occurs in the perimeter of the edge wall at the east end (Photo 2.10).
- At the east wall of the residence, a crack occurs at the north end of the concrete landing mid-length of the wall (Photo 2.17).
- At the concrete retaining west wall along the east property line of the residence, numerous cracks occur along the length of the wall. Twelve (12) cracks were fairly noticeable and these typically occur at an approximately 5'-0" on center spacing along the wall length (Photos 2.19-2.30). There may be other smaller cracks that are less visible.
- At the driveway on the north side of the residence, a north/south crack occurs in the south-most slab panel (Photo 2.31). Additional cracking occurs in the north-most panel (Photos 2.32 and 2.33).
- At the concrete walkway west of the driveway, cracks occur across the width of the driveway in two of the concrete panels (Photos 2.34 and 2.35).

Action Required

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

SITE 2 PHOTOS

2.1 Wall cracking at front entry hall

2.2 Cracking at north wall

2.3 Cracking at west wall, north end

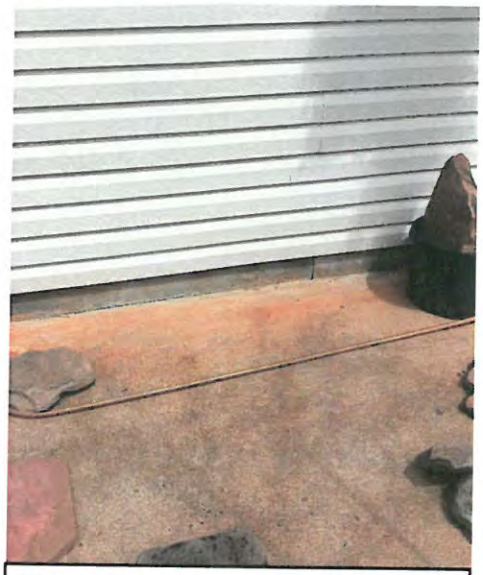
2.4 Cracking at west wall, middle

2.5 Cracking at west wall, south end

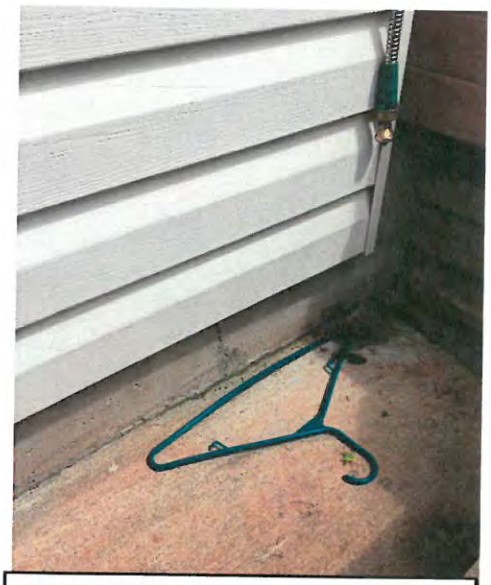
2.6 Concrete patio slab at southwest corner of residence

SITE 2 PHOTOS

2.7 Concrete patio slab separation



2.8 Wall joint at south wall



2.9 Crack at south wall

2.10 Cracks at edge of concrete patio

2.11 Edge of concrete patio

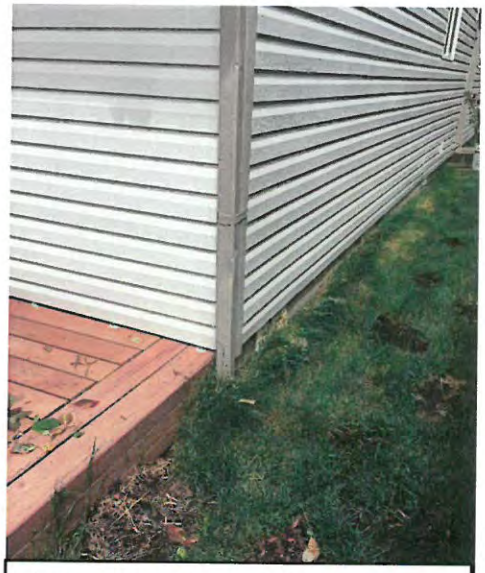
2.12 Wood deck

SITE 2 PHOTOS

2.13 Wood deck

2.14 Concrete landing at storage building

2.15 Concrete landing at storage building



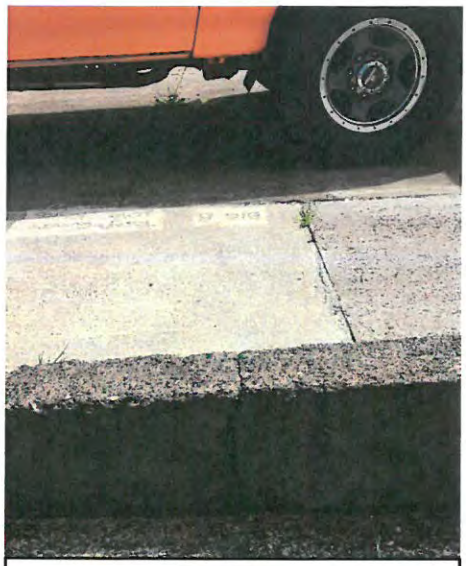
2.16 Wood deck, east end

2.17 Crack at east wall

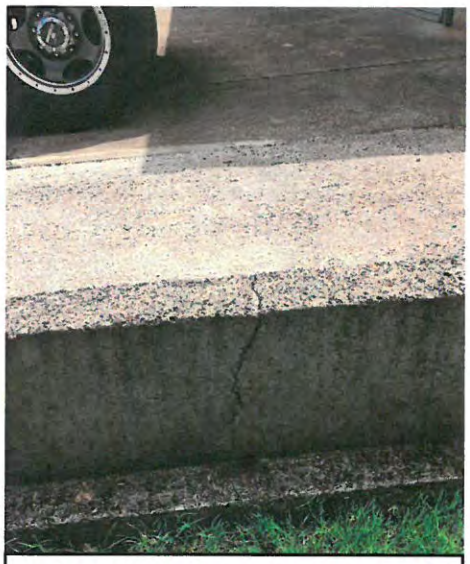
2.18 East retaining wall, north end

SITE 2 PHOTOS

2.19 Crack at east retaining wall



2.20 Crack at east retaining wall



2.21 Crack at east retaining wall

2.22 Crack at east retaining wall

2.23 Crack at east retaining wall

2.24 Crack at east retaining wall

SITE 2 PHOTOS

2.25 Crack at east retaining wall

2.26 Crack at east retaining wall

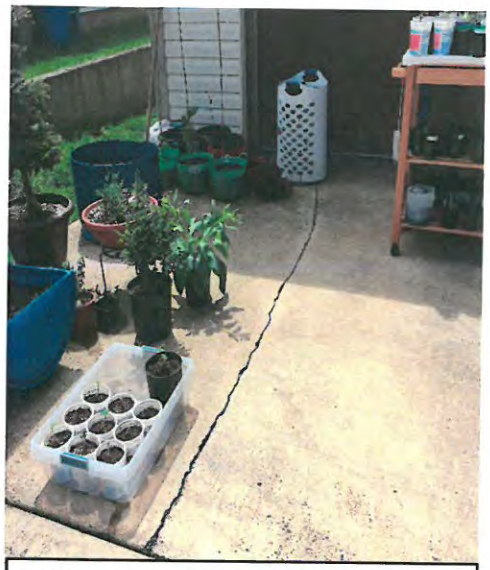
2.27 Crack at east retaining wall

2.28 Crack at east retaining wall

2.29 Crack at east retaining wall

2.30 Crack at east retaining wall

SITE 2 PHOTOS



2.31 Crack at driveway, south end

2.32 Cracks at driveway, north end

2.33 Crack at driveway, northwest

2.34 Crack at walkway, south end

2.35 Crack at walkway, north end

2.36 North side of residence

SITE 2 PHOTOS

2.37 West side of west retaining wall

LIVERMORE
ARCHITECTURE &
ENGINEERING, INC.

Field Report

Project Name:	Ridgefield Yards		
Project #:	217020.00		
Date:	5/25/17	Weather:	Sunny
Arrival Time:	11:45 AM	Temperature:	75 degrees
Departure Time:	12:15 PM		
Location:	7 N Maple Street, Ridgefield, Washington		
By:	Gary Livermore, LAE		
Distribution:	Lindsey Crosby, MFA		

Work Reviewed

Site #3

A visual review of the existing foundation and site retaining walls for the Site #3 residence (7 N Maple Street) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a single story wood frame structure with concrete stem walls at the perimeter. A concrete retaining wall extends almost the full length along the west side of the property. This retaining wall is on the adjoining property and not addressed in this report.

A small storage shed is located the south side of the residence. Concrete perimeter walls were not visible at this structure.

Observations

The following was noted related to the condition of existing residence and foundations:

- At the south wall approximately 10'-0' east of the west corner, a crack occurs (Photo 3.2).
- At the south wall under the vent that is approximately 16'-0" from the west corner, a crack occurs (Photo 3.3).
- At the west wall, a crack occurs under the vent that is approximately 22'-0" from the north end of the wall (Photo 3.9).
- At the west wall, a crack occurs approximately 10'-0" from the north end of the wall (Photo 3.10).
- At the concrete landing at the front entry on the north side of the residence, there is vertical settlement at the slab joint that runs north/south (Photo 3.12).
- At the north wall, a crack occurs approximately 8'-0" from the east end (Photo 3.13).
- At the concrete driveway on the north side of the residence, two east/west cracks occur (Photos 3.16 and 3.17).
- At the concrete driveway on the north side of the residence, a crack occurs adjacent to the retaining wall on the adjacent property to the west (Photo 3.15).

Action Required

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

SITE 3 PHOTOS

3.1 Storage shed

3.2 Crack at south wall

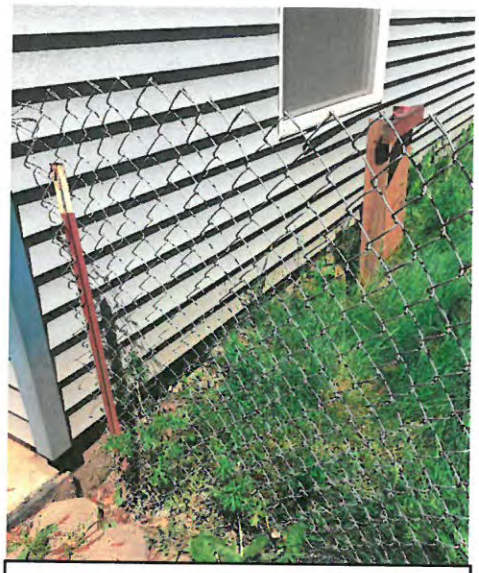
3.3 Crack under vent at south wall

3.4 Patio slab at southwest corner

3.5 Patio slab

3.6 Patio slab

SITE 3 PHOTOS



3.7 East wall

3.8 East side of residence

3.9 Crack under vent at west wall

3.10 Crack at west wall

3.11 Northwest corner of residence

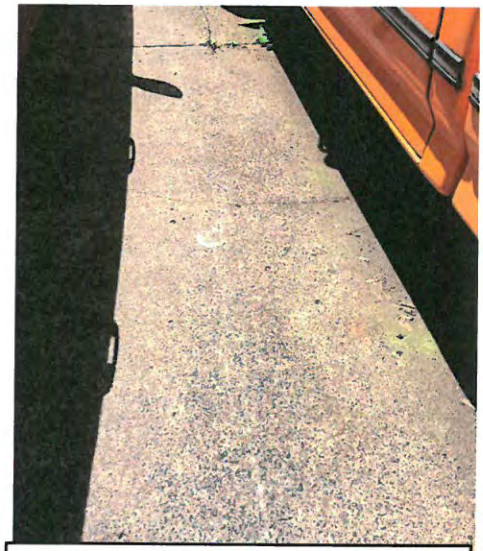
3.12 Slab settlement at entry landing

SITE 3 PHOTOS

3.13 Crack at north wall

3.14 North wall, east end

3.15 Crack at driveway slab, west side



3.16 Crack at driveway slab

3.17 Crack at driveway slab

3.18 North side of residence

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Lindsey Crosby, MFA

Date: 07/19/16
Arrival Time: 10:30 a.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:

Site #5

A visual review of existing foundation walls for the Site #5 residence (4 West Division Street) was performed prior to the start of site excavation work. Review was done from exterior of residence. Exterior visual review was limited to areas of the basement/stem walls that were visible at the time of the review.

The residence is a wood frame structure with a basement. Basement walls were not visible from the interior due to interior wall furring so no interior review was performed. A small wood-frame shed with a slab on grade floor is northeast of the residence.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the east wall, approximately 6'-0" north of the south corner, a vertical crack occurs in the basement wall (Photo 5.1).
- At the east wall, approximately 14'-0" north of the south corner, a vertical crack occurs in the basement wall (Photo 5.2).
- At the south wall, east of the porch, a minor crack occurs under the vent in the concrete wall.
- The concrete wall at the south wall, west of the porch, is not visible due to the very small distance between grade and the bottom of the wood siding (Photo 5.8).
- Some minor cracking occurs in the slab adjacent to the storage shed at the northeast corner of the site (Photos 5.16 & 5.17).

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 11:00 a.m.

Cc: Present at Site
File

SITE 5 PHOTOS

Photo 5.1: Crack at east wall

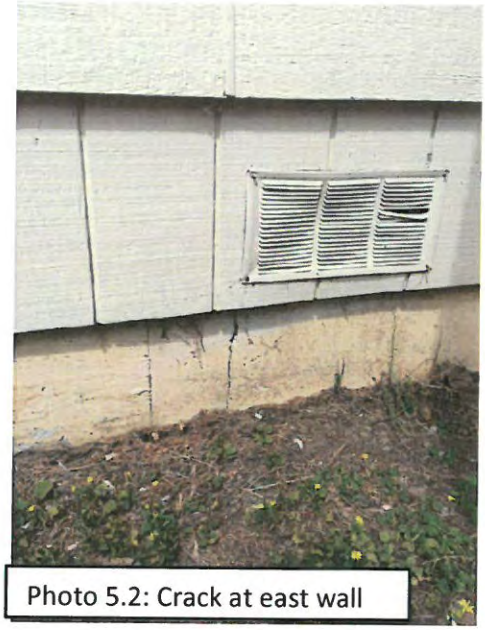


Photo 5.2: Crack at east wall

Photo 5.3: Porch at south side

Photo 5.4: East wall

Photo 5.5: Steps at east wall

Photo 5.6: Northeast corner

SITE 5 PHOTOS

Photo 5.7: North wall, east end

Photo 5.8: South wall, west end

Photo 5.9: West wall, south end

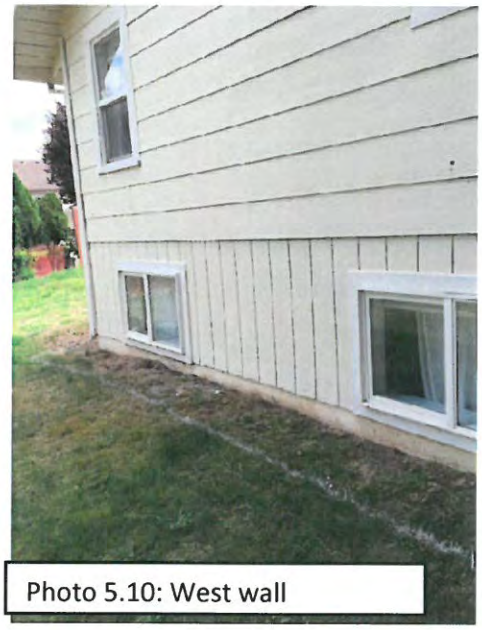


Photo 5.10: West wall

Photo 5.11: North wall, west end

Photo 5.12: North wall

SITE 5 PHOTOS

Photo 5.13: North wall

Photo 5.14: Stairs to basement, north wall

Photo 5.15: Storage shed

Photo 5.16: Slab at storage shed

Photo 5.17: Slab at storage shed

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Lindsey Crosby, MFA

Date: 07/19/16
Arrival Time: 9:30 a.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:
Site #6

A visual review of existing foundation walls for the Site #5 residence (8 West Division Street) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the basement/stem walls that were visible at the time of the review.

The residence is a wood frame structure with a small "dugout" basement (approximately 8'-0" x 12'-0") on the west side of the structure. The ground floor is wood frame with a crawl space. Perimeter stem walls are concrete.

OBSERVATIONS:
The following was noted related to the condition of existing building foundation walls:

- At the west wall under the existing open wood stairs, approximately 6'-0" north of the south corner, a vertical crack occurs in the concrete wall under the existing wall vent (Photo 6.1).
- At the south wall, approximately 3'-0" west of the east corner, a vertical crack occurs in the concrete wall (Photo 6.3).
- At the north wall, approximately 5'-0" west of the east corner, a vertical crack occurs in the concrete wall (Photo 6.4).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 10:00 a.m.

Cc: Present at Site
File

SITE 6 PHOTOS

Photo 6.1: Wall crack under stairs, west wall

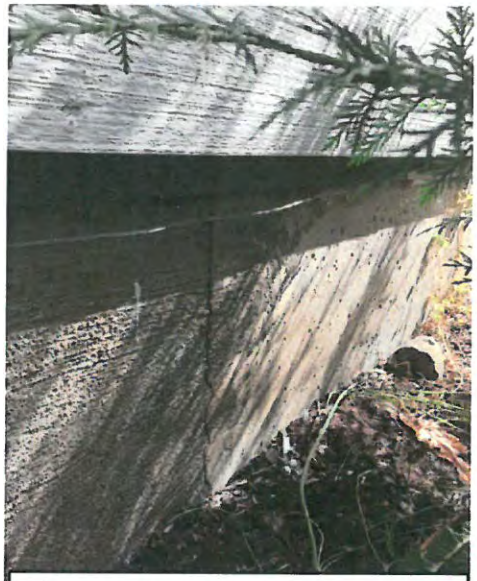


Photo 6.2: Crack at south wall, west end

Photo 6.3: Crack at south wall, east end

Photo 6.4: Crack at north wall, east end

Photo 6.5: Crack at north wall, east end

Photo 6.6: East wall

SITE 6 PHOTOS

Photo 6.7: Crack at east wall, north end

Photo 6.8: North wall of garage, east end

Photo 6.9: North wall of garage

Photo 6.10: West side of garage, north end

Photo 6.11: West side of garage

Photo 6.12: South side of garage

SITE 6 PHOTOS

Photo 6.13: South side of garage

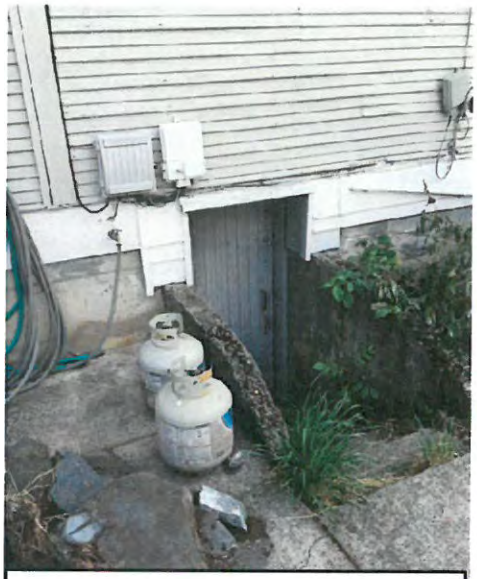


Photo 6.14: Steps to basement

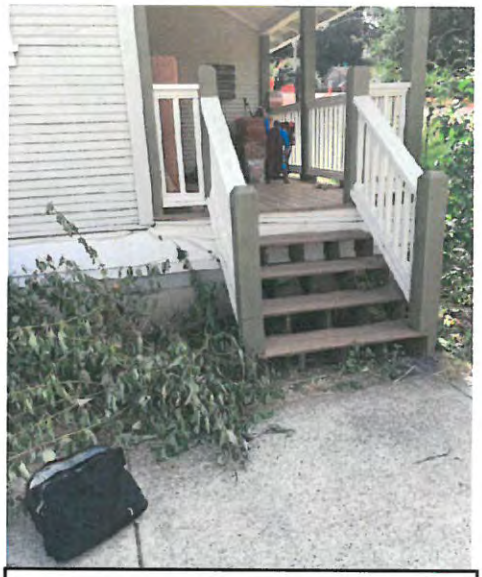


Photo 6.15: Stairs to porch, southwest corner

Photo 6.16: Bump out at south wall

Photo 6.17: South wall

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Lindsey Crosby, MFA

Date: 07/19/16
Arrival Time: 10:00 a.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:

Site #7

A visual review of existing foundation walls for the Site #7 residence (14 West Division Street) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with a small "dugout" basement on the west side of the structure. The ground floor is wood frame with a crawl space. Perimeter stem walls are CMU. A wood frame structure has been added at the west side of the residence (likely sometime after the construction of the original residence). This structure is supported by wood posts that bear on precast concrete "deck piers." Also, a small wood frame storage structure is located near the east property line.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the west wall, approximately 8'0" north of the north edge of the porch, a vertical crack occurs in the CMU stem wall (Photo 7.1).
- At the south wall, approximately 4'0" east of the west corner, a vertical crack occurs in the CMU wall under the wall vent (Photo 7.2).
- The existing storage structure at the east property line is in poor condition (Photos 7.9-7.11).
- Pier footings at the wood frame structure located on the west side of the main residence have shifted and rotated (Photos 7.15-7.18). As a result, the west wall of this structure has shifted to the west and rotated out.

INFORMATION OR ACTION REQUIRED:

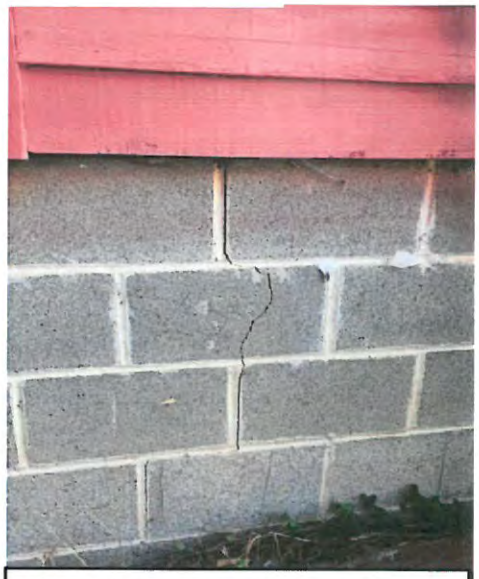
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 10:30 a.m.

Cc: Present at Site
File

SITE 7 PHOTOS



7.1 Crack in stem wall, west wall

7.2 Crack in stem wall, under vent – south wall

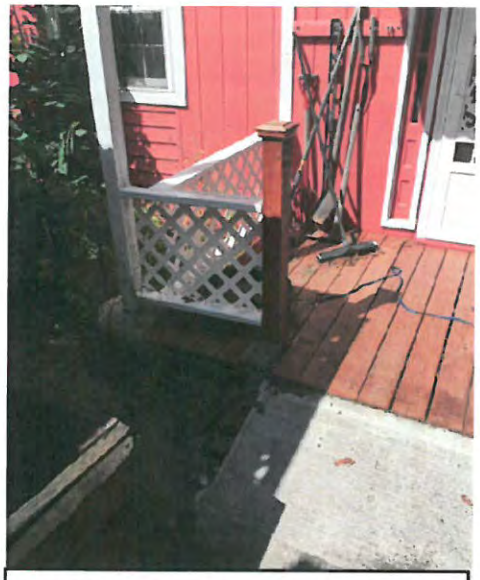
7.3 Southwest corner at porch

7.4 West wall

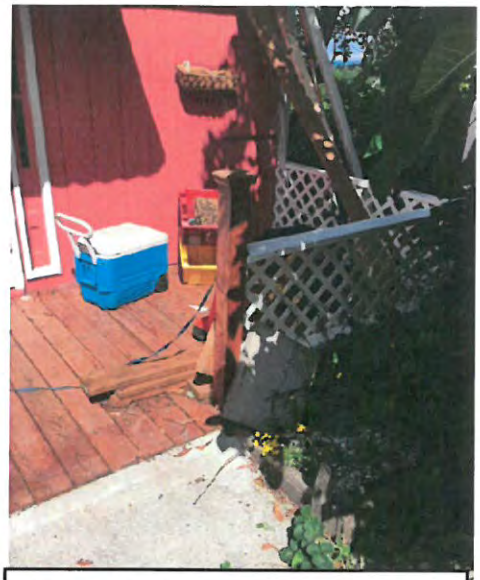
7.5 South wall at porch

7.6 Southeast corner

SITE 7 PHOTOS

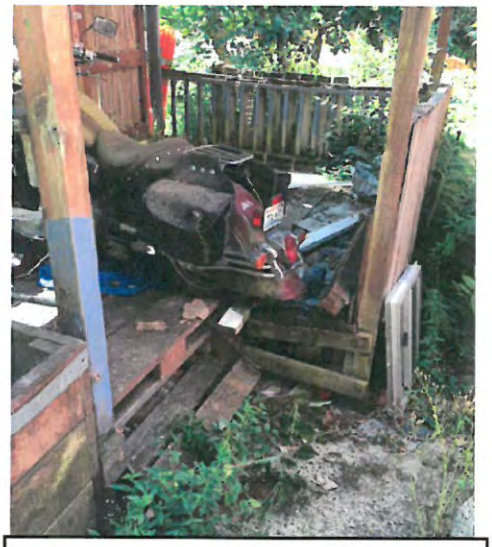


7.7 East porch



7.8 East porch

7.9 Structure on east property line – east side



7.10 Structure on east property line – west side

7.9 Structure on east property line

7.12 North end of east porch

SITE 7 PHOTOS

7.13 North wall

7.14 Stair at north wall – west end

7.15 West wall of wood structure

7.16 West wall of wood structure

7.17 West wall of wood structure

7.18 West wall of wood structure

SITE 7 PHOTOS

7.19 Site retaining wall – north end

7.20 Site retaining wall – south end

7.21 Site retaining wall – west side

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 07/25/16
Arrival Time: 9:00 a.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:

Site #12

A visual review of existing foundation walls for the Site #12 residence (503 & 505 North Main Avenue) was performed prior to the start of site excavation work. Review was done from exterior of residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with concrete stem walls. The ground floor is wood frame with a crawl space. A small pre-engineered metal storage cover is located on the west side of the site. The cover has concrete strip footings on the sides.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the north end of the west wall, an approximately 10'-0" long section of the stem wall has spalling of the plaster coating (Photos 12.5-12.7).
- Above the concrete landing located at the recessed porch on the west wall, a vertical crack occurs in the stem wall (Photo 12.10).
- At the south wall, "bumpout" portion of the wall, a vertical crack occurs under in the stem wall (Photo 12.11).
- At the east end of the "bumpout" portion of the south wall, plaster spalling occurs on the corner (Photo 12.2).
- At the south end of the east wall, a vertical crack occurs in the stem wall (Photo 12.13).
- At the concrete landing for the main stair on the east wall, cracking occurs in the slab (Photo 12.15).
- At the east wall hairline cracking and spalling of the plaster coating occurs. This is happens at both the south end and north end of the wall (Photo 12.17).
- At the east wall, between the two porches, a vertical crack occurs in the stem wall (Photo 12.18).
- At the main porch at the east side of the residence, the concrete stairs slope down to the north due to possible settlement (Photo 12.14).
- At the northeast corner of the residence, a vertical crack occurs on the corner (Photo 12.19). A similar condition occurs at the northwest corner of the residence.

- Full length of the north wall hairline cracking occurs in the plaster on the stem wall (Photo 12.20).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 9:30 a.m.

Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 12 PHOTOS

12.1 Footing at stoppage cover

12.2 West side

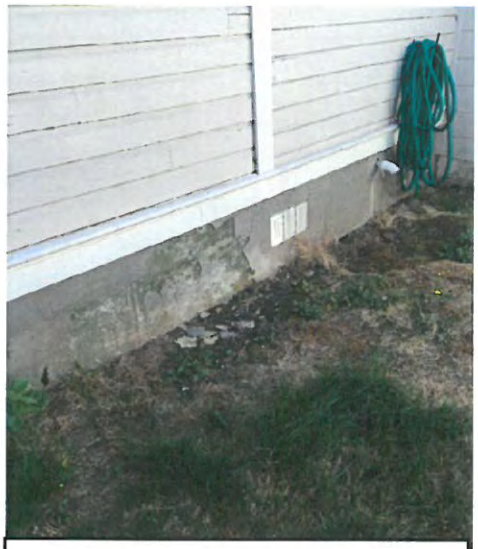
12.3 Storage cover and west side of residence

12.4 Northwest corner

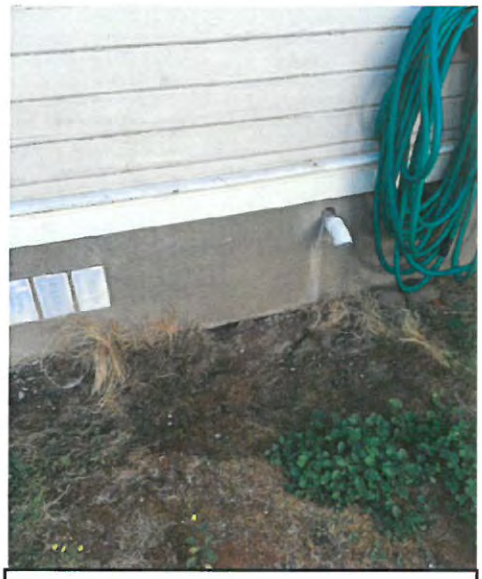
12.5 Spalling of plaster at west wall, north end

12.6 Spalling of plaster at west wall, north end

SITE 12 PHOTOS



12.7 Spalling of plaster at west wall, north end



12.8 West wall

12.9 Shed at west wall

12.10 Wall crack above west wall landing

12.11 Crack at south wall

12.12 Chipping of plaster at south wall, east end

SITE 12 PHOTOS

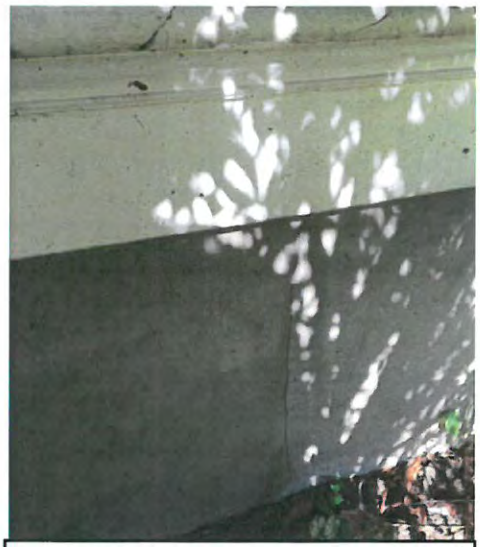
12.13 Crack at east wall, south end

12.14 Main porch at east wall

12.15 Slab crack at east main porch

12.16 Southeast corner

12.17 Chipping of plaster at east wall, north end



12.18 Crack at east wall, between porches

SITE 12 PHOTOS

12.19 Northeast corner wall crack

12.20 Wall plaster cracking – north wall, east end

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 07/25/16
Arrival Time: 10:00 a.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:

Site #13

A visual review of existing foundation and basement walls for the Site #13 residence (5 West Division Street) was performed prior to the start of site excavation work. Review was done from the exterior of the residence with the exception of an interior review of the basement wall on the south side of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with a partial basement on the south side of the structure. Perimeter basement and stem walls are concrete.
A freestanding garage is located on the east side of the residence. The garage is a wood frame structure with concrete perimeter stem walls and footings and no floor slab.
Located at the northeast corner of the site are wood frame storage sheds and a greenhouse. The northmost storage shed appears to be constructed with wood in direct contact with the ground, with a great deal of rot at the base and with walls tilting at an angle.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- The south basement wall is in danger of collapse. There is a large horizontal crack in the wall and it has bowed in significantly. The owner is aware of the condition and understands that it poses a structural threat to the building structure. Any excavation work in this area should be undertaken carefully and the wall should not be subjected to any additional surcharge as it is in danger of collapse (Photos 13.1-13.3 and 13.18-13.20).
- Related to the structural problems with the south basement wall, a large vertical crack occurs in the west wall at the southwest corner of the residence (Photo 13.4).
- The wood stairs at the north side of the residence are in poor condition and have settled significantly (Photos 13.7-13.9).
- At the west wall of the garage, approximately 5'-0" from the north end, a crack occurs in the stem wall (Photo 13.11).
- At the south wall of the garage, approximately 5'-0" from the west end, a crack occurs in the footing (Photo 13.14).

- At the concrete patio slab east of the residence, a crack occurs in the slab (Photo 13.15).
- At the storage shed in the northeast corner of the site, the framing is in direct contact with the earth and the structure is damaged by rot (Photos 13.27-13.28). The north wall of the open structure slopes out at the base (Photo 13.29).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 10:30 a.m.

Cc: Present at Site
File

SITE 13 PHOTOS

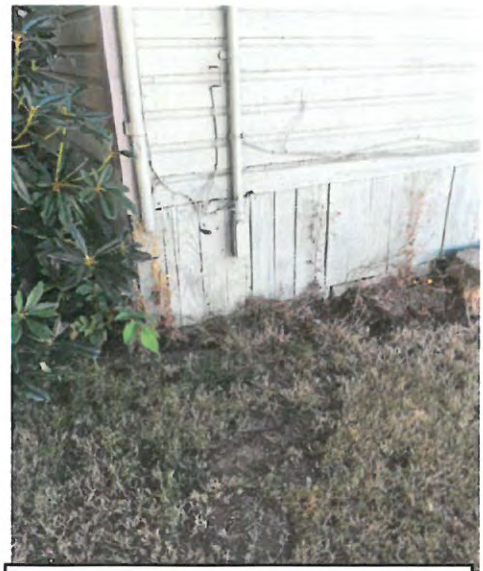
13.1 Damaged basement wall – interior view

13.2 Damaged basement wall – interior view

13.3 Damaged basement wall – interior view

13.4 Crack at southwest corner

13.5 West wall of residence



13.6 West wall of residence

SITE 13 PHOTOS

13.7 Stair at north wall

13.8 Stair at north wall

13.9 Stair at north wall

13.10 North wall

13.11 West wall of garage

13.12 North side of garage

SITE 13 PHOTOS

13.13 East wall of garage – interior view

13.14 South wall footing of garage

13.15 Crack in slab at patio area

13.16 Southeast corner of residence

13.17 Wood storage shed at south wall

13.18 Damaged south basement wall

SITE 13 PHOTOS

13.19 Damaged south basement wall

13.20 Damaged south basement wall

13.21 South basement wall

13.22 South basement wall

13.23 Patio area, east of residence

13.24 Greenhouse at east side of site

SITE 13 PHOTOS

13.25 Greenhouse at east side of site

13.26 Greenhouse at east side of site

13.27 Storage shed at northeast corner of site

13.28 Open shed at northeast corner of site

13.29 Open shed at northeast corner of site

13.30 Ramp on east side of garage

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 08/01/16
Arrival Time: 1:00 p.m.

Weather: Cloudy
Temperature: 75 degrees

WORK REVIEWED:
Site #14

A visual review of existing foundation and basement walls for the Site #14 residence (413 North 1st Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. An interior review of basement walls was attempted but these walls are not visible because of interior furring/finish walls. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with a full basement and a wood frame balcony on the west side of the structure. The balcony is supported by wood posts that bear on footings below grade. Perimeter basement and stem walls are concrete. A freestanding storage building is located on the west side of the residence. The storage building is a wood frame structure with a concrete slab floor on grade and footings.

The owner of the residence indicated that they have been having ongoing water intrusion problems in the basement (east wall at north corner of the basement). This wall is not visible from either the interior or exterior. Improvements to eliminate this problem are not part of the scope of this project.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation/basement walls:

- At windows in the basement north wall, diagonal cracks occur at the bottom of two windows (Photos 14.12 and 14.13).
- At the northmost window in the basement west wall, a diagonal crack occurs at the bottom of the windows (Photo 14.1).
- At the second window from the north end in the basement west wall, a vertical crack occurs at the bottom of the window (Photo 14.2).
- At the southmost window in the basement west wall, a diagonal crack occurs at the bottom of the window.
- At the window in the basement south wall, a diagonal crack occurs at the bottom of the window (Photo 14.17).

- At the basement west wall, approximately 8'-0" from the east end, a vertical crack occurs in the basement wall (Photo 14.18).
- At the concrete slab at the entry sidewalk, cracks occur (Photos 14.21 and 14.24).
- At the storage shed in the northwest corner of the site, a large crack occurs in the concrete slab (Photos 14.8-14.10).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 1:30 a.m.

Cc: Present at Site
File

SITE 14 PHOTOS

14.1 Crack at window, west wall at north end

14.2 Vertical crack at window, west wall

14.3 Crack at window, west wall at south end

14.4 Wood post at west deck

14.5 West wall, north end

14.6 Deck at west wall

SITE 14 PHOTOS

14.7 Deck at west wall

14.8 Slab crack at interior of storage shed

14.9 Slab crack at interior of storage shed

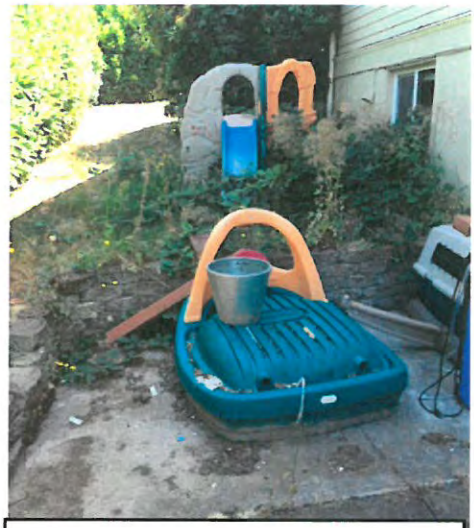
14.10 Door at storage shed, east wall

14.11 East side of storage shed

14.12 Crack at window, north wall

SITE 14 PHOTOS

14.13 Crack at window, north wall



14.14 Slab at north side of residence

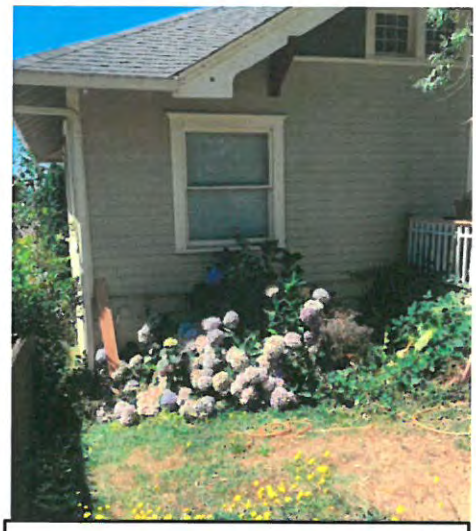
14.15 Exterior slab, north side

14.16 Exterior slab, north side

14.17 Crack at south wall window

14.18 Vertical crack at south wall

SITE 14 PHOTOS



14.19 East wall, south end

14.20 Front of residence, east side

14.21 Front sidewalk, steps to entry porch

14.22 North wall

14.23 Northeast corner of residence

14.24 Slab crack at gate

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek., MFA

Date: 07/25/16
Arrival Time: 10:30 a.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:

Site #15

A visual review of existing foundation walls for the Site #15 residence (410 Railroad Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a crawl space. Perimeter stem walls are CMU. The main entry porch on the west side of the residence is supported by wood posts on precast concrete footings.
A freestanding garage is located on the east side of the residence, at the southeast corner of the site. The garage is a wood frame structure with concrete perimeter stem walls and footings.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- No cracking was observed in stem walls.

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

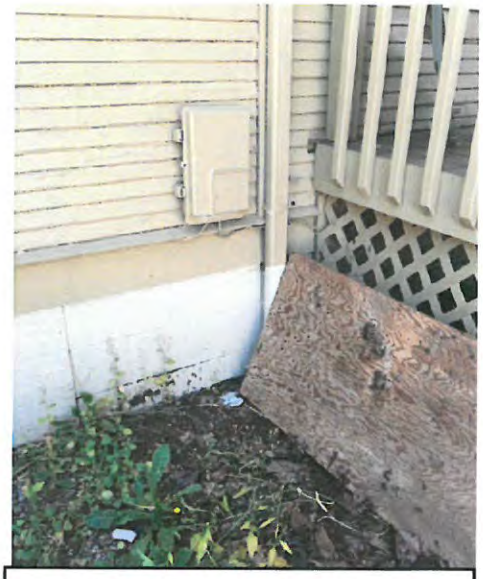
REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 11:00 a.m.

Cc: Present at Site
File

SITE 15 PHOTOS

15.1 West wall, north end



15.2 West wall, north of porch

15.3 Northwest corner of main porch

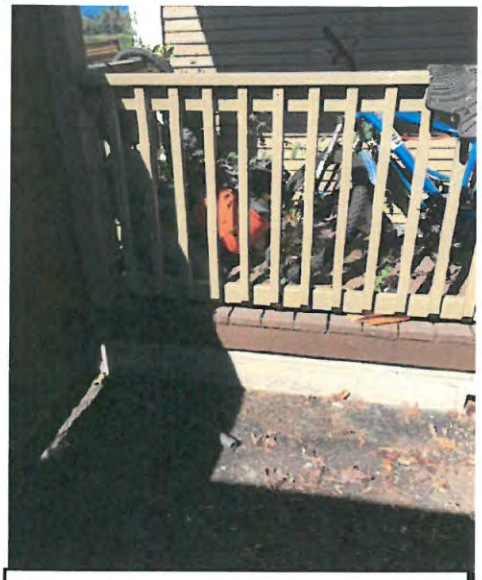
15.4 Landing of main porch

15.5 Southwest corner of porch

15.6 South wall, west end

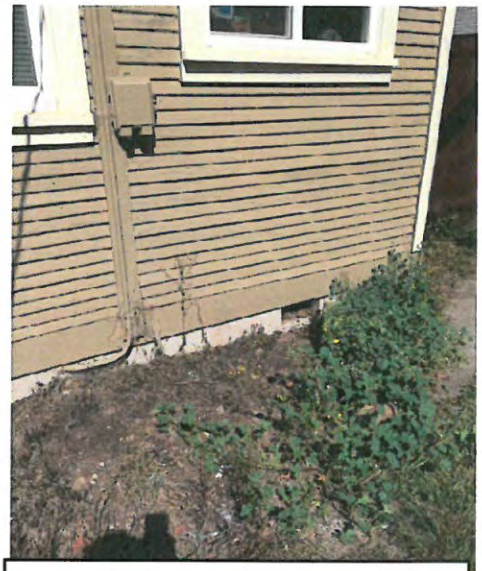
SITE 15 PHOTOS

15.7 Chimney at south wall



15.8 East wall, south end of porch

15.9 Landing at east wall porch



15.10 East wall, north end

15.11 East wall, north end of porch

15.12 North wall, east end

SITE 15 PHOTOS

15.13 North wall alcove, west end

15.14 North wall, west end

15.15 North wall alcove, east end

15.16 North wall

15.17 Garage west wall, north end

15.18 Garage west wall, north end

SITE 15 PHOTOS

15.19 Garage north wall

15.20 Garage west wall at door

15.21 Garage west wall at south end

15.22 Garage west wall at south end

15.23 South wall of residence, west end

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 08/05/16
Arrival Time: 11:00 a.m.

Weather: Cloudy
Temperature: 80 degrees

WORK REVIEWED:

Site #16

A visual review of existing foundation and basement walls for the Site #16 residence (409 North 1st Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with a basement. Perimeter basement and stem walls are concrete. A freestanding storage building is located on the northwest corner of the site. The storage building is a wood frame structure.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation/basement walls:

- Approximately 18" from the south end of the west wall, a crack occurs in the concrete wall and footing (Photos 16.5).
- At the south wall approximately 5'-0" from the east end of the wall, a vertical crack occurs at the location of embedded wood in the wall (Photo 16.17).
- At the south wall approximately 6'-0" east of the east edge of the patio, a vertical crack occurs in the wall (Photo 16.18).
- At the patio slab on the south side of the residence, shrinkage cracking occurs throughout the slab. One larger crack runs north/south at the west end of the slab (Photo 16.3).

INFORMATION OR ACTION REQUIRED:

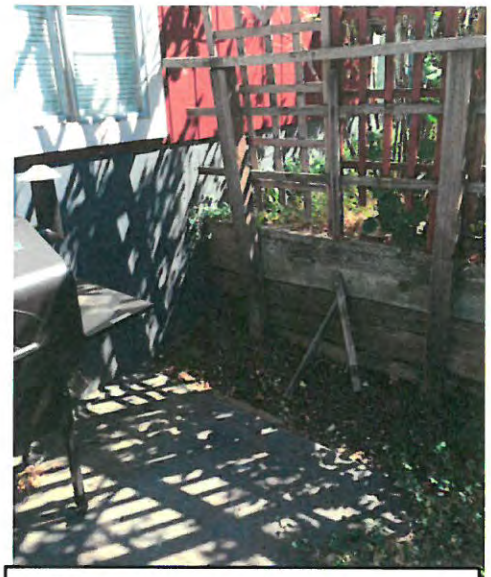
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 11:30 a.m.
Cc: Present at Site
File

SITE 16 PHOTOS

16.1 Steps at south patio



16.2 East edge of south patio

16.3 South wall, west end

16.4 Patio at south wall, west end

16.5 Crack through wall and footing, west wall

16.6 Storage shed at northwest corner

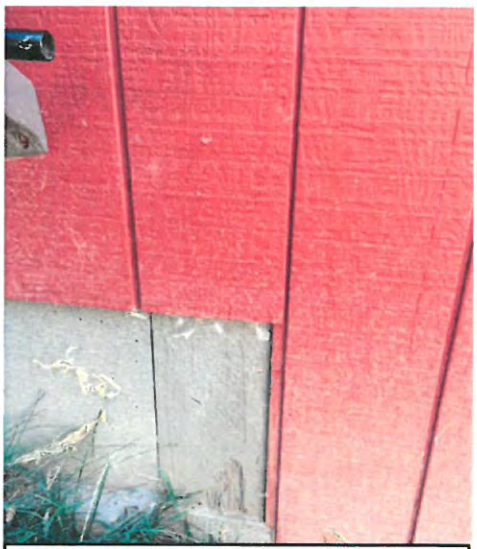
SITE 16 PHOTOS

16.7 West wall, north end

16.8 West wall

16.9 North wall

16.10 North wall, west end



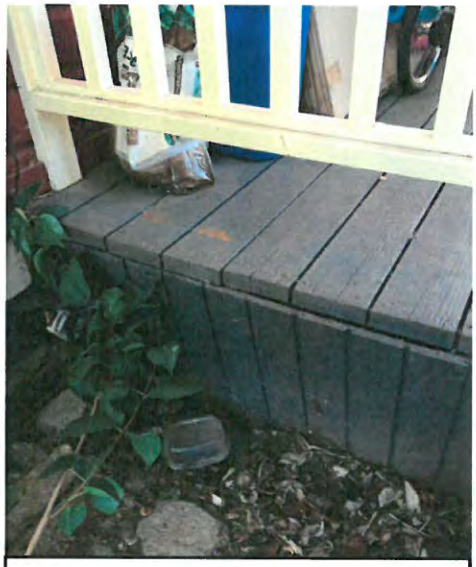
16.11 North wall, transition of concrete stem wall

16.12 North end of entry porch

SITE 16 PHOTOS

16.13 Northeast corner of entry porch

16.14 Entry porch, east side of residence



16.15 South end of porch

16.16 Step in lawn, south of residence

16.17 Crack in wall at embedded wood, south wall at east end

16.18 Crack at south wall, stem wall

SITE 16 PHOTOS

16.19 South wall

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek., MFA

Date: 08/09/16
Arrival Time: 12:30 p.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:

Site #17

A visual review of existing foundation and basement walls for the Site #17 residence (6 Ash Street) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

A separate review of the basement walls from the interior of the residence was performed by Colleen Nichols on 8/15/16. The majority of the basement walls are covered by interior furring walls. No cracks were observed in the exposed walls.

The residence is a wood frame structure with wood floor framing and a basement. Perimeter basement walls are concrete construction at the main south portion of the residence and CMU at the north end of the structure. The main entry porch on the south side of the residence is supported by wood posts.

A freestanding open shop/garage structure is located on the east side of the residence, at the northeast corner of the site. The garage is a wood frame structure.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the northwest corner of the residence, a separation occurs between the CMU wall running north/south and the CMU wall running east/west (Photo 17.3).
- At the east wall a vertical crack occurs in the basement wall at the approximate location of the transition between concrete and CMU (Photo 17.7).
- Spalling occurs in the concrete wall at the east wall (Photos 17.8 and 17.10) and at the west wall (Photo 17.1).

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect; Colleen Nichols, P.E.

Departure Time: 1:00 p.m.
Cc: Present at Site
File

SITE 17 PHOTOS

17.1 Concrete spalling at west wall, south end

17.2 Chimney at west wall

17.3 Separation between blocks at northwest corner of residence

17.4 Concrete steps at north wall

17.5 Northwest corner of residence

17.6 South side of shop

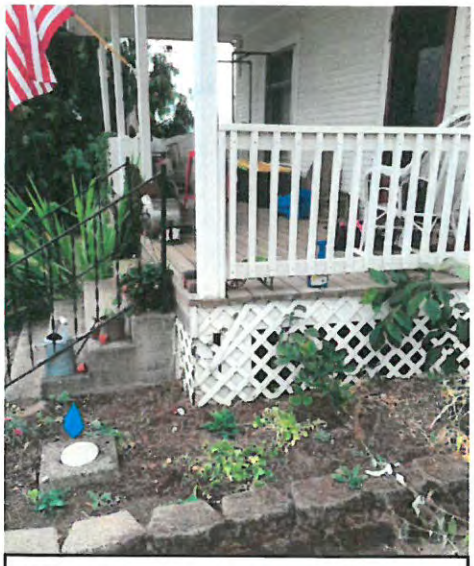
SITE 17 PHOTOS

17.7 Wall crack at east wall

17.8 Concrete spalling at east wall

17.9 East wall

17.10 East wall, south end



17.11 East side of front porch

17.12 Southeast corner of residence

SITE 17 PHOTOS

17.13 Steps at front porch, south wall

17.14 Southwest corner of front porch

17.15 West side of shop

17.16 Wood post at west side of shop

17.17 Edge of slab at south side of shop

17.18 CMU retaining wall at south end of shop

SITE 17 PHOTOS

17.19 Southeast wood post at shop

17.20 Interior of shop

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek., MFA

Date: 08/09/16
Arrival Time: 10:30 a.m.

Weather: Sunny
Temperature: 75 degrees

WORK REVIEWED:

Site #18

A visual review of existing foundation and basement walls for the Site #18 residence (405 N First Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a basement. Perimeter basement walls are concrete construction at the front porch side of the residence and CMU at the west end (daylight basement side) of the structure. A wood frame deck at the main floor level on the west side of the residence is wood frame and supported by wood posts. The floor of the entry porch on the east side of the residence is concrete slab over CMU stem wall.

A freestanding open garage structure is located on the south side of the residence, at the southeast corner of the site. The garage is a wood frame structure. A CMU retaining wall is located on the east side of the garage adjacent (approximately 12" away) to the building. A wood retaining wall is on the north side of the garage.

OBSERVATIONS:

The following was noted related to the condition of existing residence and garage foundations:

- At the entry driveway at the east side of the residence, there is cracking and settlement throughout the existing slab on grade (Photos 18.17-18.19).
- At the east side of the garage, the existing CMU retaining wall is in poor condition and tilts inward toward the garage (Photos 18.24 and 18.25).
- At the south end of the garage there are cracks in the existing slab (Photo 18.30).

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 11:00 a.m.

Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 18 PHOTOS

18.1 Wood stairs at southwest corner

18.2 Dugout under southwest corner

18.3 Dugout under southwest corner

18.4 Screen at dugout

18.5 Wood posts at wood deck, west side

18.6 Wood basement wall, west side under deck

SITE 18 PHOTOS

18.7 North end of west basement wall

18.8 West side of residence

18.9 Deck at west side

18.10 Northwest corner at basement

18.11 North basement wall, west end

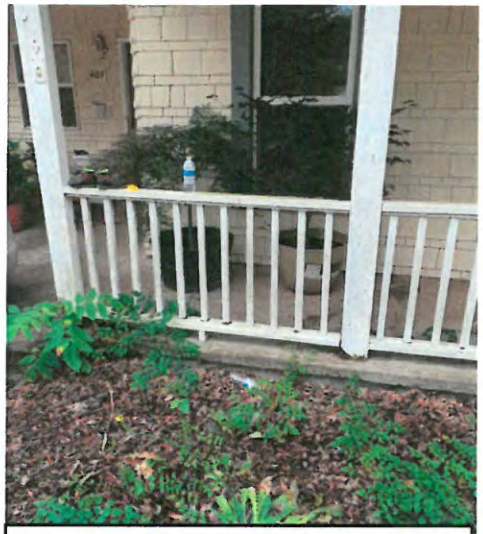
18.12 North basement wall, east end

SITE 18 PHOTOS

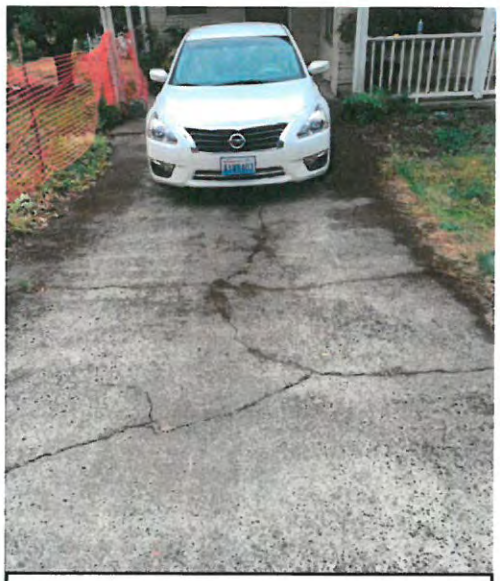
18.13 North end of entry porch

18.14 North end of entry porch

18.15 East side of residence



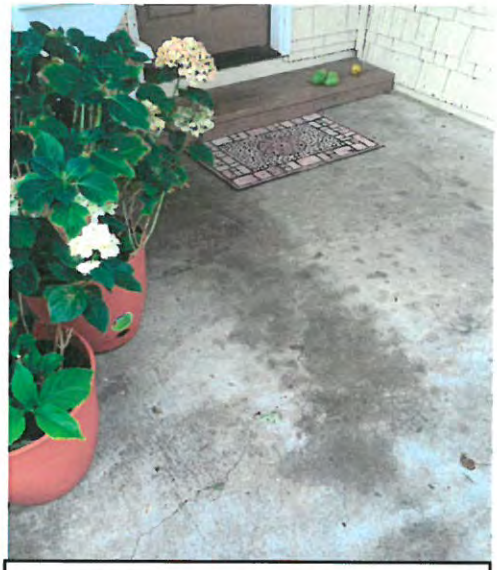
18.16 Railing at entry porch



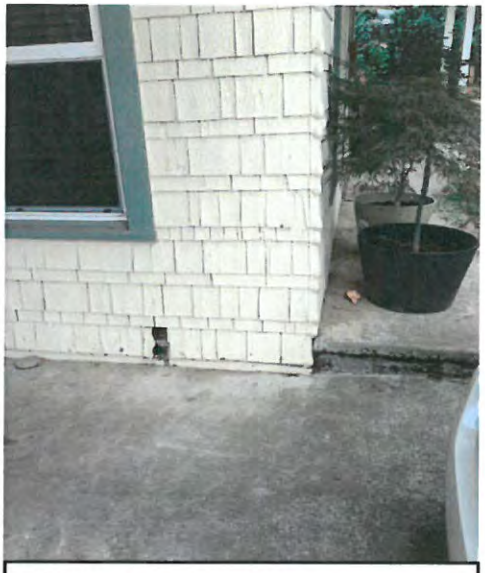
18.17 Cracks at entry driveway

18.18 Slab settlement at entry driveway

SITE 18 PHOTOS



18.19 Slab crack at entry



18.20 Slab at entry porch

18.21 CMU stem wall at entry porch

18.22 CMU wall at south side

18.23 South side of residence

18.24 CMU retaining wall at east side of garage

SITE 18 PHOTOS

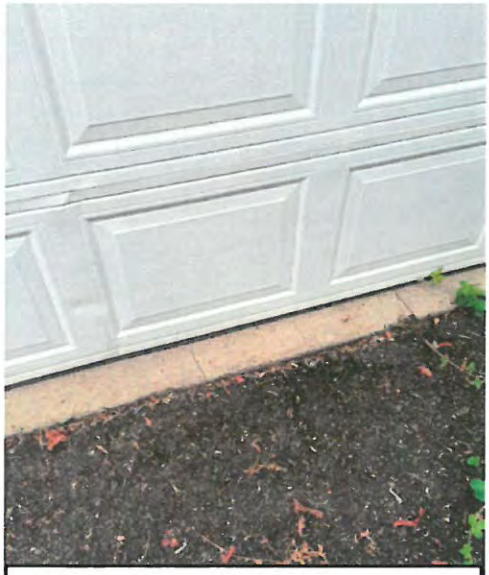
18.25 CMU retaining wall at east side of garage

18.26 Wood retaining wall at north side of garage

18.27 Concrete stem wall at west wall of garage, south end

18.28 Southeast corner of garage

18.29 South side of garage



18.30 Slab cracking at garage

SITE 18 PHOTOS

18.31 North side of garage

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 08/22/16
Arrival Time: 12:30 p.m.

Weather: Cloudy
Temperature: 80 degrees

WORK REVIEWED:

Site #19

A visual review of existing foundation walls for the Site #19 residence (412 North 1st Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure. The ground floor appears to be wood frame with a crawl space. The garage floor appears to be concrete slab on grade.. Perimeter stem walls are concrete. A freestanding storage building is located on the northwest corner of the site. The storage building is a wood frame structure and appears to have wood framing in direct contact with earth.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation/basement walls:

- At the south wall concrete spalling occurs full length of the stem wall (Photos 19.1-19.5).
- At the east wall approximately 12'-0" from the south end of the wall, a vertical crack occurs in the wall (Photo 19.6).
- At the north wall approximately 16'-0", 22'-0", 26'-0"and 34'-0" west of the east edge of the residence, vertical cracks occurs in the wall (Photos 19.7-19.10).
- At the north wall west of the concrete landing, spalling occurs in the stem wall (Photo 19.11).
- At the concrete slab on grade at the garage door, a crack occurs in the garage slab (Photo 19.12).
- At the driveway, slab cracks occur throughout (Photos 19.14, 19.15 and 19.20).

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 1:00 p.m.

Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 19 PHOTOS

19.1 Concrete spalling, south wall, west end

19.2 Concrete spalling at south wall

19.3 Landing at south wall

19.4 Concrete spalling at south wall

19.5 Concrete spalling at south wall

19.6 Crack at east wall

SITE 19 PHOTOS

19.7 Crack at north wall

19.8 Crack at north wall

19.9 Crack at north wall

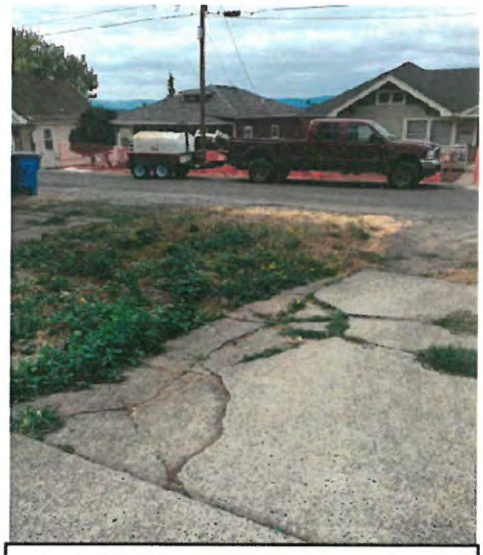
19.10 Crack at north wall

19.11 Concrete spalling at north wall

19.12 Slab crack at garage door

SITE 19 PHOTOS

19.13 Door landing slab at entry

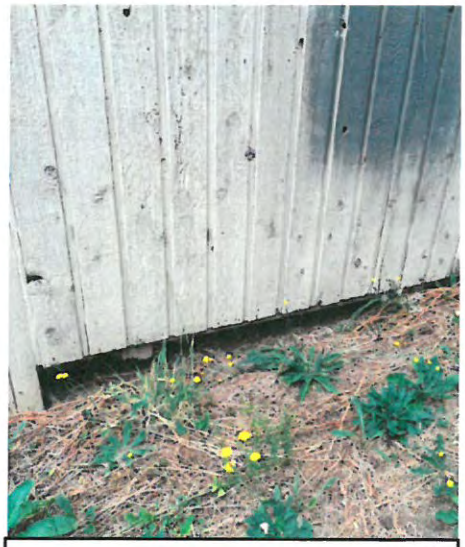


19.14 Driveway slab cracking

19.15 Driveway slab cracking

19.16 Landing at north wall

19.17 Storage structure southwest corner



19.18 Storage structure, south wall

SITE 19 PHOTOS

19.19 Storage structure, west side

19.20 West side of residence

LIVERMORE
ARCHITECTURE &
ENGINEERING, INC.

Field Report

Project Name:	Ridgefield Yards		
Project #:	217020.00		
Date:	5/18/17	Weather:	Sunny
Arrival Time:	10:30AM	Temperature:	75 degrees
Departure Time:	11:15PM		
Location:	469 N Main Avenue, Ridgefield, Washington		
By:	Gary Livermore, LAE		
Distribution:	Lindsey Crosby, MFA		

Work Reviewed

Site #20B

A visual review of existing foundation and basement walls for the Site #20B residence (469 N Main Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence and interior of the basement. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a small partial basement on the west side. Wood siding extends to grade around perimeter of the residence, so typically perimeter stem walls are not visible. The one exception to this condition is where a small section of wall is exposed at the basement access opening on the south side of the residence.

A wood-frame carport is located on the north side of the residence. This carport is attached to the residence on the south side. West of this carport is a small lean-to structure that is supported by wood posts on concrete block footings. A freestanding woodshed structure is located west of the carport.

The basement appears to be constructed of concrete walls and a concrete slab on grade. It is accessed from the interior of the residence.

Observations

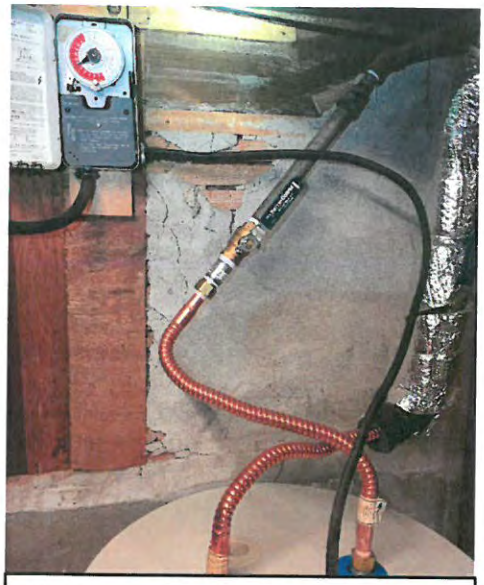
The following was noted related to the condition of existing residence and foundations:

- At the east wall of the basement, cracking occurs in plaster that has been applied to wood framing above the concrete basement walls. This appears to be a non-structural issue. (Photo 20.1).
- At the east wall of the basement, under the wood stairs to the basement, a hairline crack occurs in the wall (Photo 20.4).
- The exposed concrete under the basement access opening at the south wall is spalling and in very poor condition (20.11).
- The footings for the lean-to structure at the west side of the carport appear to be concrete block resting on grade (this structure appears to be an add-on to the original building structure). Care must be taken when working around these footings. (Photo 20.14).
- Cracks occur throughout the carport slab. There is a section of slab that has deteriorated to a point where sections of the slab are missing. (Photos 20.15, 20.16, 20.18, 20.19, 20.20, 20.21, 20.28 and 20.29).

Action Required

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

SITE 20 PHOTOS



20.1 Plaster cracking at basement wall

20.2 East basement wall

20.3 West basement wall

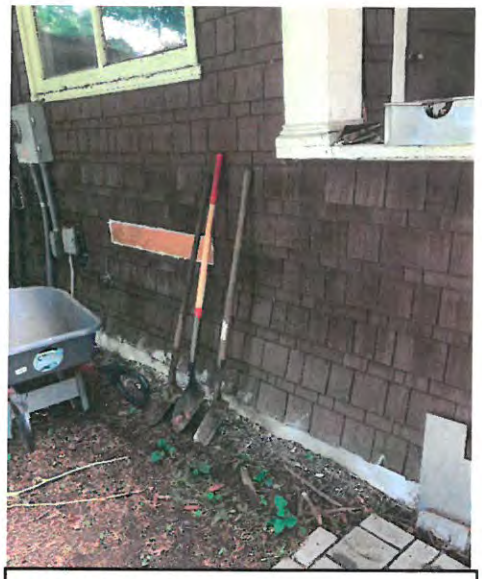
20.4 Hairline crack at east basement wall - under stairs

20.5 Area west of carport

20.6 Area west of carport

SITE 20 PHOTOS

20.7 Freestanding "woodshed" structure



20.8 West wall of residence

20.9 West wall of residence

20.10 Southwest corner

20.11 Basement access at south wall

20.12 South wall

SITE 20 PHOTOS

20.13 Lean-to at west side of carport

20.14 Lean-to columns at west side of carport

20.15 Slab crack at west end of carport

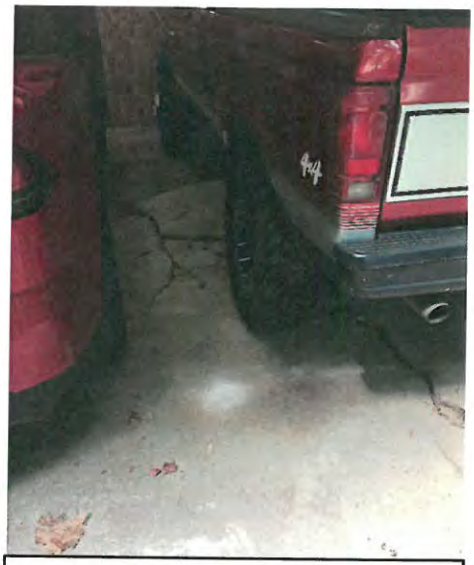
20.16 Slab crack at carport

20.17 North wall of residence, west end

20.18 North wall of residence

SITE 20 PHOTOS

20.19 Slab crack at carport



20.20 Slab deterioration at carport

20.21 Slab crack at east edge of carport

20.22 North side of carport

20.23 Northeast corner of residence

20.24 Driveway to carport

SITE 20 PHOTOS

20.25 Stairs to main porch

20.26 Sidewall to main porch, east side

20.27 Southeast corner of residence

20.28 Slab deterioration at carport

20.29 Slab crack at west edge of carport

20.30 East side of residence

LIVERMORE
ARCHITECTURE &
ENGINEERING, INC.

Field Report

Project Name:	Ridgefield Yards		
Project #:	217020.00		
Date:	5/25/17	Weather:	Sunny
Arrival Time:	11:00AM	Temperature:	70 degrees
Arrival Time:	11:45AM		
Location:	327 N Railroad Avenue, Ridgefield, Washington		
By:	Gary Livermore, LAE		
Distribution:	Lindsey Crosby, MFA		

Work Reviewed

Site #23B

A visual review of existing foundation and basement walls for the Site #23B residences (327 N Railroad Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residences and from the interior of the basement. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

There are two residences on site. The main residence is a wood frame structure with wood floor framing and a partially finished basement. Perimeter walls and basement walls are a mix of concrete and CMU/brick construction.

The secondary residence appears to be a converted garage structure. This residence is wood frame with a concrete slab on grade floor. The secondary residence is at a lower elevation (approximately 5'-0" than the main floor of the main residence. A CMU retaining wall occurs on the north and east sides of this residence to facilitate the grade differential. A small wood structure storage shed is located east of this secondary residence.

Observations

The following was noted related to the condition of existing residence and foundations:

- At the main residence basement two main cracks occur in the concrete floor slab. (Photos 23.5 and 23.6).
- At the concrete stairs on the west side of the main residence, the stairs have separated from the face of the building wall (Photo 23.8).
- At the west wall of the main residence, south of the stairs, cracks occur in the CMU (Photo 23.9).
- At the southwest corner of the main residence, a gap occurs between the building wall and the adjacent site wall (Photo 23.10).
- At the south wall of the main residence, a crack occurs approximately 8'-0" from the start of the concrete portion of the wall (Photo 23.12).
- At the south wall of the main residence, approximately at mid-length of the wall, spalling occurs (Photo 23.13)
- At the south wall of the main residence, a crack occurs approximately 20'-0" from the start of the concrete portion of the wall (Photo 23.14).
- At the east end of the south wall of the main residence, a horizontal crack occurs (Photo 23.16).
- At the concrete sidewalk north of the north side of the main residence (parallel to the north wall), a crack occurs (Photos 23.21).

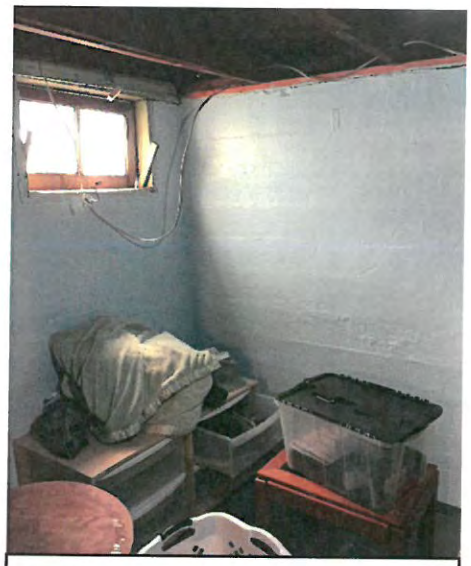
- At the west end of the north wall of the main residence, cracking occurs at the CMU wall (Photo 23.25). Horizontal cracking also occurs at the top of the east and west walls.
- Where the concrete stair and landing abuts the west end of the north wall of the main residence, a gap occurs between the landing and the wall (Photo 23.26).
- At the concrete patio slab west of the main residence, cracking occurs throughout the slab on grade (Photos 23.27-23.30).
- At the concrete slab on grade west of the secondary residence, cracking occurs throughout the slab (Photos 23.32-23.35).
- At the concrete slab and ramp on the east side of the secondary residence, cracking occurs in the slab on grade (Photos 23.37-23.42).
- At the CMU retaining wall on the east side of the slab that is east of the secondary residence, some shifting has occurred in the blocks of the wall. It appears that this wall may not be reinforced and grouted (Photo 23.39).
- At the CMU retaining wall on the north side of the secondary residence, a horizontal crack (and some shifting of blocks) has occurred near the bottom of the wall (Photos 23.43 and 23.45).
- At the outside corner at the CMU retaining wall north of the secondary residence, major cracking has occurred at the corner of the wall (Photo 23.44).
- At the concrete stairs that connect the two residences, cracking occurs near the bottom of the stairs (Photos 23.45 and 23.46).
- At the CMU retaining wall north of the secondary residence (west of the stairs between the two residences), major damage occurs at the wall (Photo 23.47 and 23.59).
- At the concrete slab on grade north of the secondary residence, cracking occurs throughout the slab on grade (Photos 23.48-23.53).
- At the west end of the CMU retaining wall that is north of the secondary residence, cracking and shifting of blocks occurs at the base of the wall (Photos 23.54-23.55).
- At the storage shed at the east side of the site, cracking occurs at the slab at the entry door on the west side (Photo 23.57).

Action Required

- Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

SITE 23B PHOTOS

23.1 Basement wall

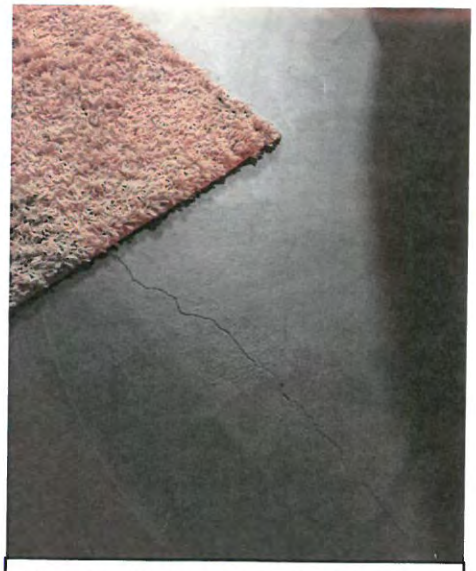


23.2 Basement wall

23.3 Basement wall

23.4 Chimney wall at basement

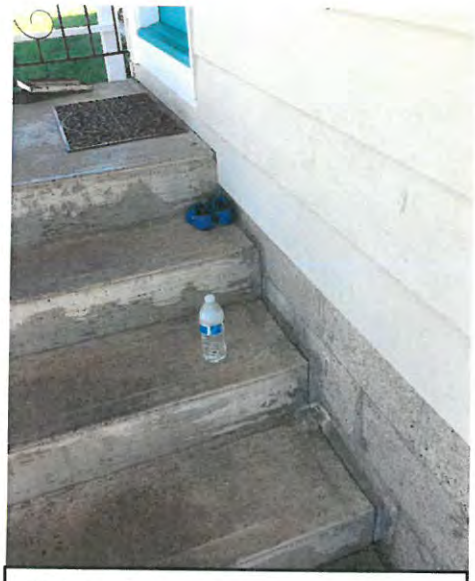
23.5 Crack at basement floor slab



23.6 Crack at basement floor slab

SITE 23B PHOTOS

23.7 Concrete stair and landing at main residence west wall



23.8 Crack at main residence stair

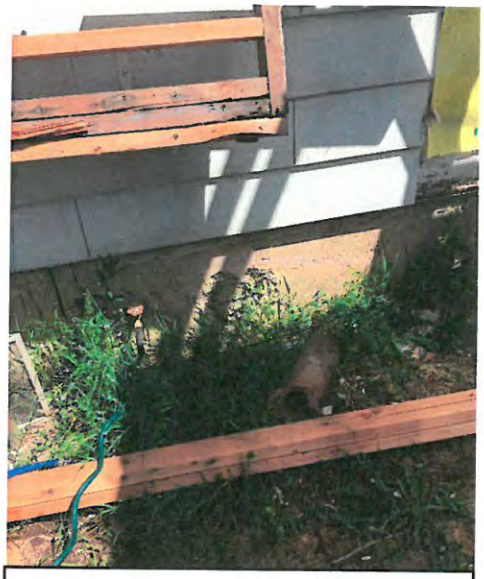
23.9 Cracks at CMU at west wall

23.10 Gap between southwest corner and site wall

23.11 Transition from CMU to concrete at south wall

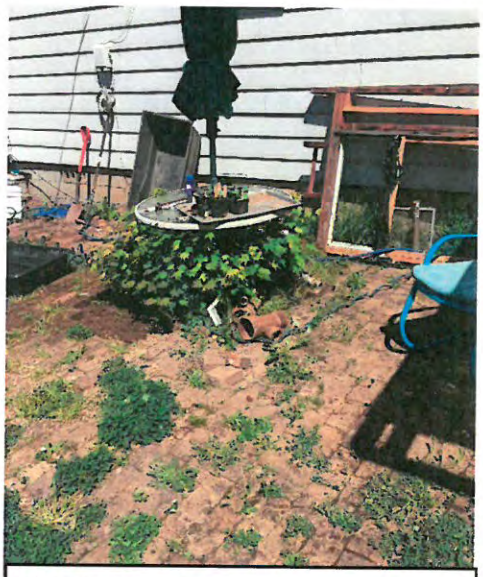
23.12 Crack at south wall

SITE 23B PHOTOS

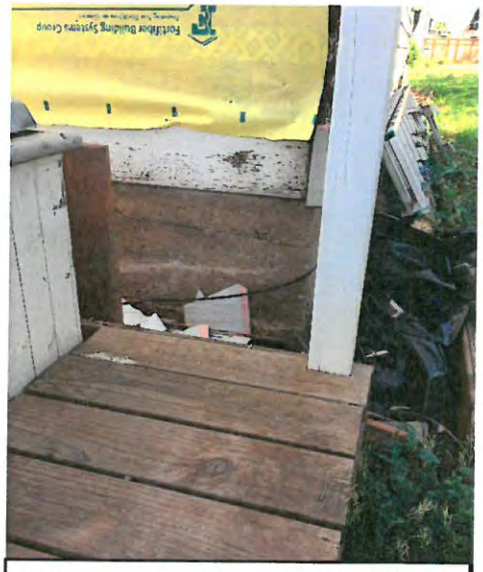


23.13 Spalling at south wall

23.14 Crack at south wall



23.15 South wall



23.16 Horizontal joint at south wall

23.17 East wall

23.18 East side of wood porch

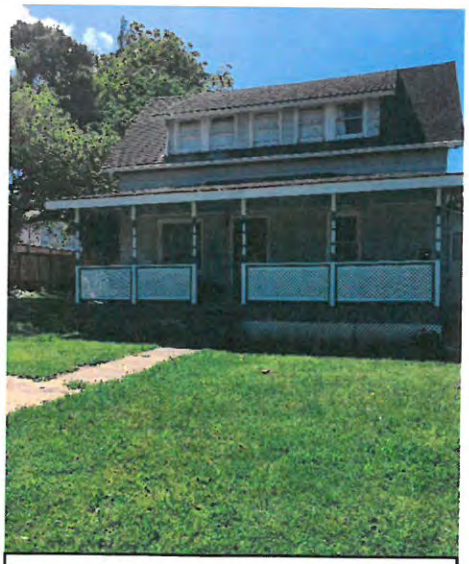
SITE 23B PHOTOS

23.19 East side of wood porch

23.20 Stairs at porch on north side

23.21 Crack at sidewalk north of main residence

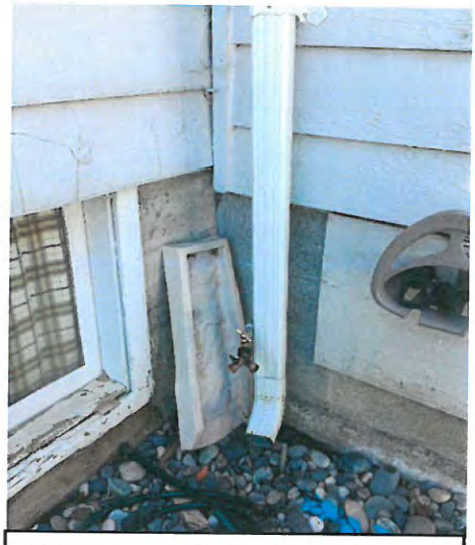
23.22 Sidewalk north of main residence



23.23 North side of main residence

23.24 West side of porch at main residence

SITE 23B PHOTOS



23.25 Crack at CMU at north wall, west end

23.26 Gap between stair and wall

23.27 Cracking at slab west of main residence

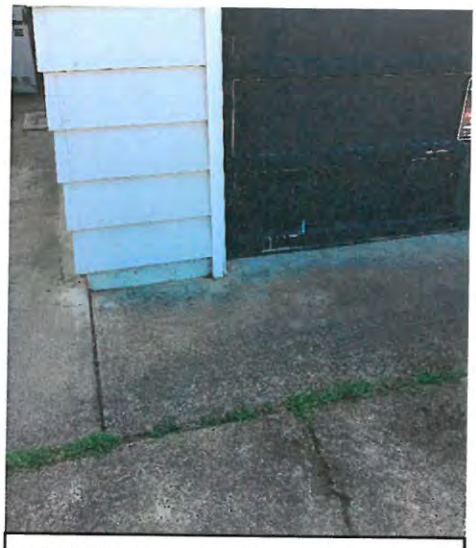
23.28 Cracking at slab west of main residence

23.29 Cracking at slab west of main residence

23.30 Cracking at slab west of main residence

SITE 23B PHOTOS

23.31 Stair landing southwest of main residence



23.32 Cracking at slab west of secondary residence

23.33 Cracking at slab west of secondary residence

23.34 Cracking at slab west of secondary residence

23.35 Cracking at slab west of secondary residence

23.36 Southwest corner of secondary residence

SITE 23B PHOTOS

23.37 Slab cracking at ramp east of secondary residence

23.38 Slab cracking at ramp east of secondary residence

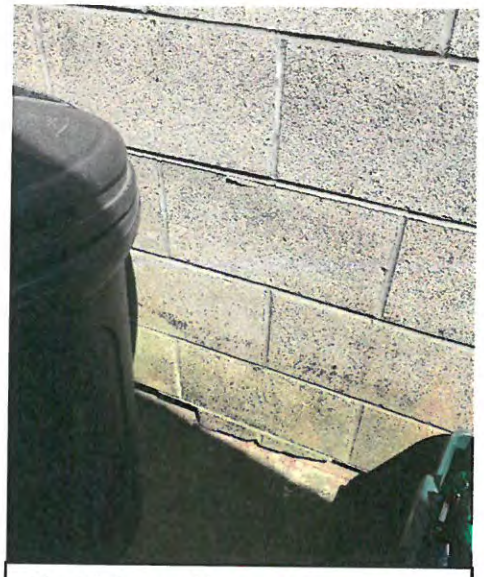
23.39 Shifting at blocks in wall

23.40 Cracking at slab east of secondary residence

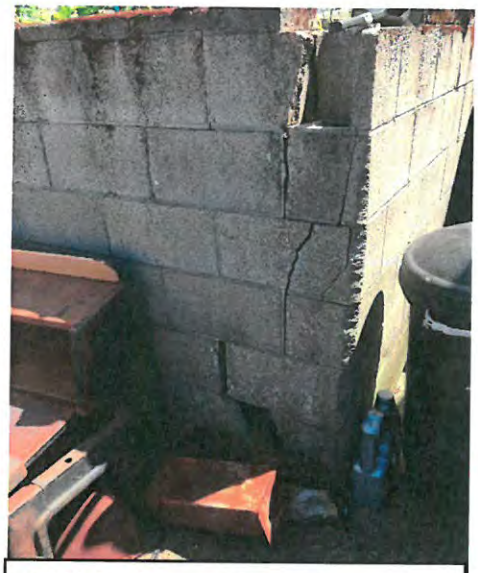
23.41 Cracking at slab east of secondary residence

23.42 Cracking at slab east of secondary residence

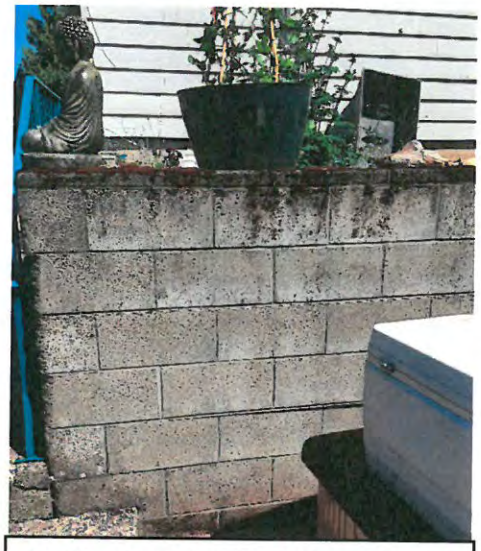
SITE 23B PHOTOS



23.43 Joint cracking at CMU wall

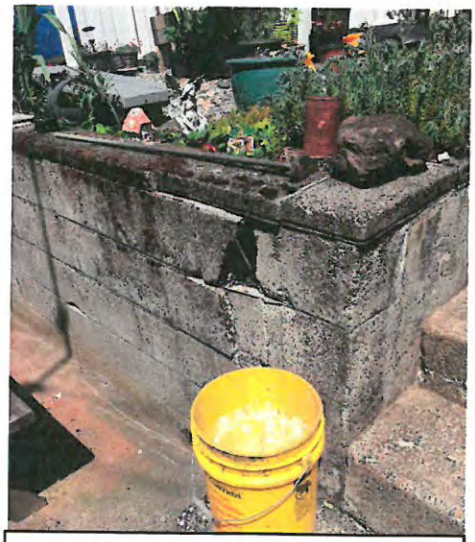


23.44 Cracking at CMU wall at corner



23.45 Cracking at stairs, shifting of wall at joint

23.46 Cracking at stairs



23.47 Damage at CMU wall west of stairs

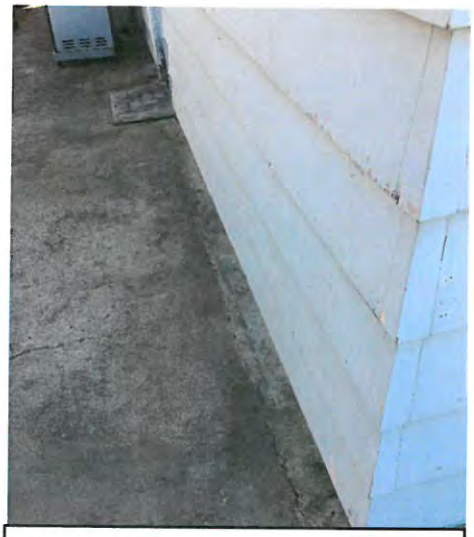
23.48 Cracking at slab north of secondary residence

SITE 23B PHOTOS

23.49 Cracking at slab north of secondary residence

23.50 Cracking at slab north of secondary residence

23.51 Cracking at slab north of secondary residence



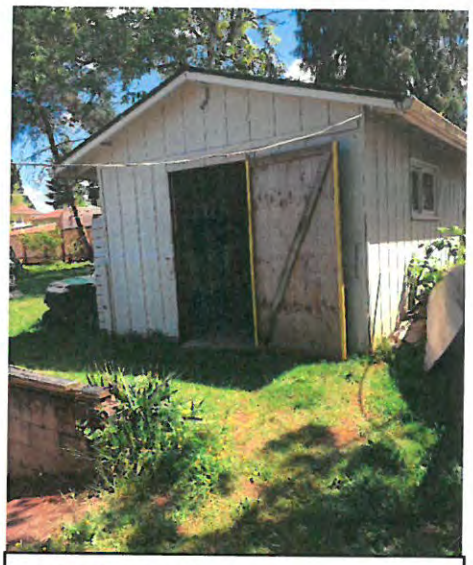
23.52 Cracking at slab north of secondary residence

23.53 Cracking at slab

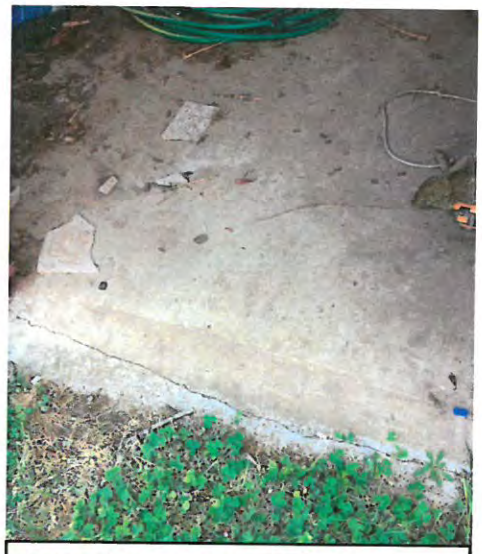
23.54 Wall crack at west end

SITE 23B PHOTOS

23.55 Wall cracking at west end

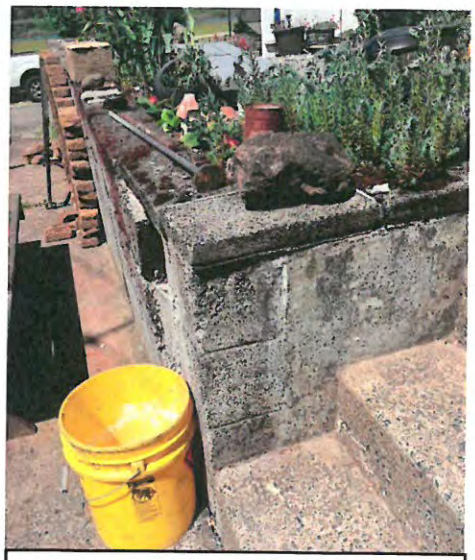


23.56 Storage shed



23.57 Slab cracking at west side of storage shed

23.58 Site wall



23.59 Site wall west of stairs

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 09/14/16
Arrival Time: 11:00 a.m.

Weather: Sunny
Temperature: 80 degrees

WORK REVIEWED:

Site #24

A visual review of existing foundation and basement walls for the Site #24 residence (327 N First Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence and in the interior of the unfinished partial basement on the west side of the residence. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a partial basement on the west side. Perimeter stem walls and basement walls are brick masonry construction with a stucco finish in some instances.

OBSERVATIONS:

The following was noted related to the condition of existing residence and foundations:

- No cracks were noted at perimeter walls from the exterior.
- At the basement east wall it was noted that there is a great deal of peeling of paint (Photo 24.1). It is my understanding that water intrusion through this wall is an ongoing issue.
- At the basement floor slab, water appears to be coming through cracks in the floor (24.2). This may also be related to the water issues with the residence.
- At the interior of the basement west wall, a vertical crack occurs under the window (Photo 24.3).

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 11:30 a.m.

Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 24 PHOTOS

24.1 Paint deterioration at basement, east wall

24.2 Slab crack at basement floor

24.3 Wall crack at interior of basement, west wall

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek., MFA

Date: 08/29/16
Arrival Time: 10:30 a.m.

Weather: Sunny
Temperature: 70 degrees

WORK REVIEWED:

Site #25

A visual review of existing foundation and basement walls for the Site #25 residence (319 N First Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a partial basement on the west side. Perimeter basement walls are a mix of concrete and CMU construction. Walls are CMU at the carport on the south side of the residence.

A building addition on the west side of the residence is partially completed. Footings, stem walls and slabs are in place at this time.

OBSERVATIONS:

The following was noted related to the condition of existing residence and foundations:

- At the north wall approximately 8'-0" from the east end, two vertical cracks occur (Photo 25.1).
- At the west wall approximately 16'-0" from the west end, a vertical crack occurs (Photo 25.2).
- Below the east edge of the window opening in the north wall a crack occurs (25.3).
- At the southwest corner a vertical crack occurs just off the corner (Photo 25.9).
- At the south wall near the west end, several cracks occur at the top of the CMU wall (Photo 25.10).
- At the window at the west end of the south wall, a crack occurs below the east corner of the window (Photo 25.11).
- At the window at the east end of the south wall, a crack occurs below the west corner of the window (Photo 25.12).
- At the west wall of the carport (north end), cracking and shifting between blocks occurs (Photo 25.13).
- At the west wall of the carport (south end), cracking and shifting between blocks occurs (Photo 25.14).
- At the south wall of the carport, a large vertical crack occurs in the CMU (Photo 25.15).
- At the south wall of the carport adjacent to the large vertical crack, horizontal cracking occurs in the wall (Photo 25.16).
- At the south wall of the carport east of the large vertical crack, a vertical crack occurs (Photo 25.17).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

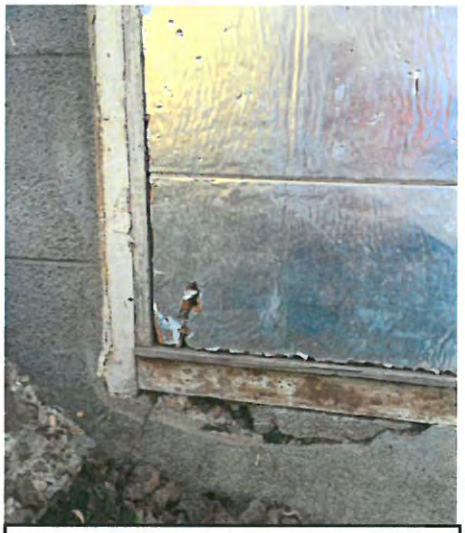
Departure Time: 11:00 a.m.

Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 25 PHOTOS

25.1 Cracks at north wall

25.2 Cracks at north wall



25.3 Crack below corner of window at north wall

25.4 New addition slab at west wall

25.5 Slab at new addition under construction

25.6 West wall at new slab

SITE 25 PHOTOS

25.7 West wall, south end

25.8 Southwest corner

25.9 Crack at southwest corner

25.10 Cracks at south wall, west end

25.11 Crack below window at south wall

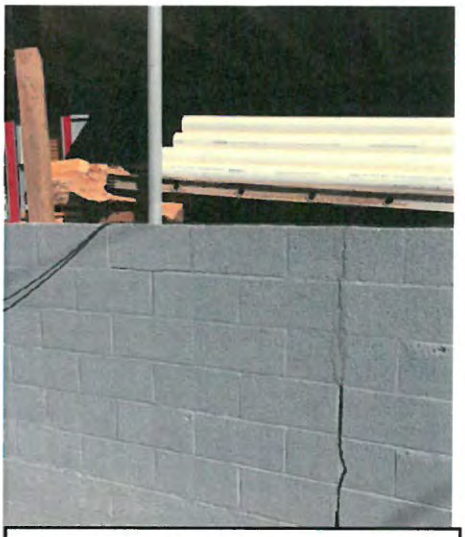
25.12 Crack below window at south wall

SITE 25 PHOTOS

25.13 Cracks and shifting in 8 locks at west of carport

25.14 Cracks and shifting in blocks at west wall of carport

25.15 Vertical crack in CMU wall, west side of carport



25.16 Vertical and horizontal cracks at south wall of carport

25.17 Crack at CMU wall, south wall of carport

25.18 East side of residence

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Field Report

Project Name:	Ridgefield Yards		
Project #:	217020.00		
Date:	3/28/17	Weather:	Cloudy
Arrival Time:	10:30AM	Temperature:	55 degrees
Arrival Time:	11:30AM		
Location:	308 N First Avenue, Ridgefield, Washington		
By:	Gary Livermore, LAE		
Distribution:	Lindsey Crosby, MFA		

Work Reviewed

Site #28B

A visual review of existing foundation and basement walls for the Site #28B residence (308 N First Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence and from the interior of the basement. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a full unfinished basement. The basement is divided into 3 main rooms. Perimeter walls and basement walls are a mix of concrete and CMU/brick construction.

Observations

The following was noted related to the condition of existing residence and foundations:

- At the south basement wall (east room), the wall tilts in approximately 3-4" and has a horizontal crack at the top (Photos 28.1. 28.2 and 28.3).
- At the south basement west (east room) cracking occurs in the face of the wall (Photos 28.4, 28.5 and 28.8).
- At the east basement wall (east room), cracking occurs at the south end of the wall (Photo 28.6).
- At the east basement wall (east room), cracking occurs at the middle portion of the wall (Photo 28.7).
- At the east basement wall (east room), cracking occurs at the north end of the wall (Photo 28.10).
- At the north basement wall (east room), horizontal cracking occurs at the top of the wall full length of the wall (Photos 28.11, 28.12, 28.13, 28.14, 28.15 and 28.16).
- At the north basement wall (east room), a vertical crack occurs at the west end (Photos 28.17 and 28.18).
- At the basement (east room), cracking occurs in the concrete slab on grade (Photos 28.9, 28.19 and 28.20).
- At the basement west wall (northwest room), horizontal and vertical cracking occurs (Photo 28.21). Horizontal cracking also occurs at the top of the east and west walls.
- At the interior basement wall (east wall of the southwest room), a horizontal crack occurs south of the door at the wall (Photo 28.24).
- At the interior basement wall (east wall of the southwest room), a vertical crack occurs at the north end of the wall opening (Photo 28.23).
- At the interior basement wall (east wall of the southwest room), a horizontal crack occurs adjacent to the wall opening (Photo 28.23).
- At the south basement wall (northwest room), cracking occurs below the wall opening (Photo 28.25).
- At the west basement wall (southwest room) a vertical crack occurs below the infilled wall opening (Photo 28.26).
- At the south basement wall (southwest room), a vertical crack occurs at the corner (Photo 28.29).

- At the concrete slab on grade in the basement southwest room cracking occurs (Photos 28.27 and 28.28).
- At the concrete wall on the southwest corner of the residence, spalling occurs on the face of the wall (Photo 28.35).
- At the north wall of the residence cracking occurs east of the fence (Photo 28.39).

Action Required

- Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

SITE 28 PHOTOS

28.1 Basement south wall

28.2 Crack at top of basement south wall

28.3 Crack at top of basement south wall

28.4 Cracks at basement south wall

28.5 Cracks at basement south wall, east end

28.6 Cracks at east wall, south end

SITE 28 PHOTOS

28.7 Cracks at basement east wall

28.8 Cracks at basement south wall

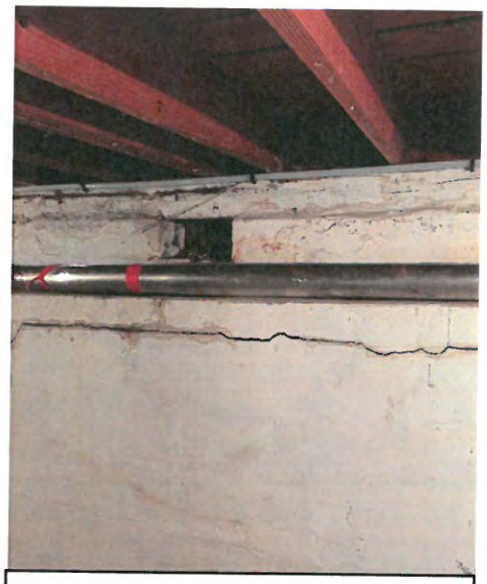
28.9 Crack at basement slab

28.10 Crack at basement east wall

28.11 Cracks at basement north wall

28.12 Crack at basement north wall

SITE 28 PHOTOS



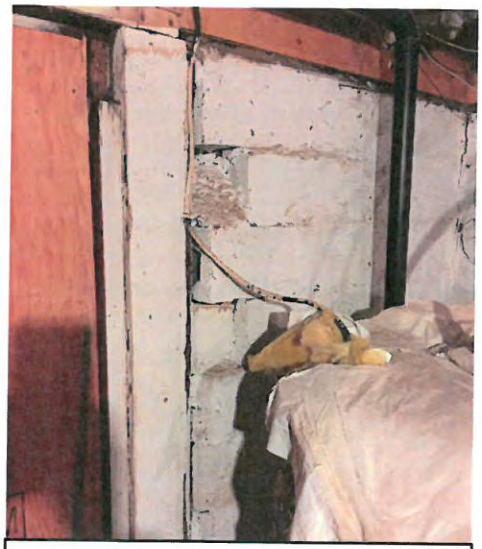
28.13 Crack at basement north wall

28.14 Crack at basement north wall

28.15 Crack at basement north wall

28.16 Crack at basement north wall

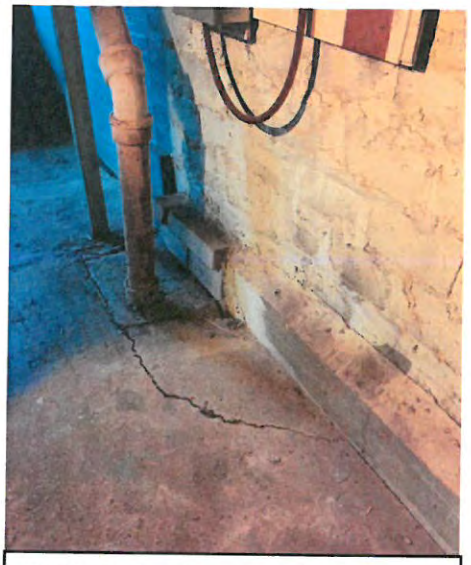
28.17 Cracks at basement north wall, west end



28.18 Crack at basement interior wall (north to south)

SITE 28 PHOTOS

28.19 Crack at basement floor



28.20 Crack at basement floor

28.21 Cracks at basement west wall, north end

28.22 Crack at basement interior wall

28.23 Crack at basement interior wall

28.24 Crack at basement interior wall

SITE 28 PHOTOS

28.25 Cracks at basement interior wall, north end

28.26 Crack at basement interior wall

28.27 Crack at basement floor slab

28.28 Crack at basement floor slab

28.29

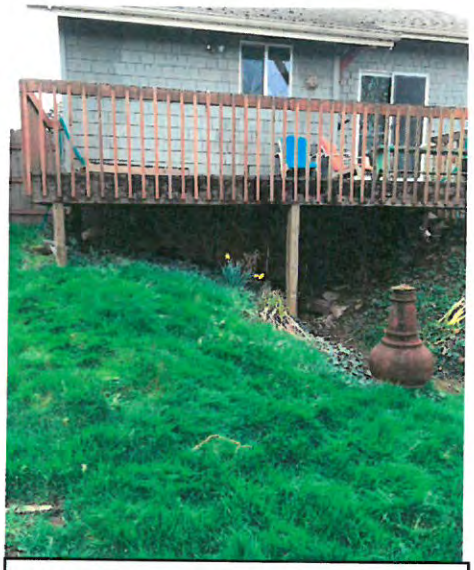
28.30 South basement wall, west end

SITE 28 PHOTOS

28.31 West basement wall at door

28.32 West end of north wall

28.33 Exterior of basement, west wall



28.34 Deck at west side

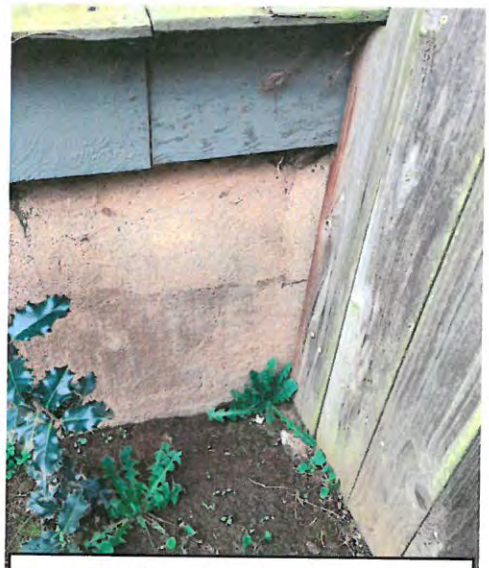
28.35 Concrete spalling at west wall, south end

28.36 South wall

SITE 28 PHOTOS

28.37 South wall, east end

28.38 Front porch



28.39 Hairline crack at north wall

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Field Report

Project Name:	Ridgefield Yards		
Project #:	217020.00		
Date:	3/28/17	Weather:	Cloudy
Arrival Time:	11:30AM	Temperature:	55 degrees
Departure Time:	12:30PM		
Location:	305 N First Avenue, Ridgefield, Washington		
By:	Gary Livermore, LAE		
Distribution:	Lindsey Crosby, MFA		

Work Reviewed

Site #29B

A visual review of existing foundation and basement walls for the Site #29B residence (305 N First Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence and interior of the basement. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a small partial basement on the west side. Perimeter foundation and basement walls are a mix of concrete and CMU construction.

Observations

The following was noted related to the condition of existing residence and foundations:

- At the south wall, approximately mid-length of the wall, a vertical crack occurs where the wall steps out slightly (Photo 29.1).
- At the south wall window, a hairline crack occurs off the bottom corner (Photo 29.2).
- At the south wall vent, a crack occurs off the bottom of the vent (29.3).
- At the step in the wall at the west end of the south wall, a crack occurs at the corner of the step (Photo 2p.4).
- At the concrete sidewalk at the east end of the residence, a crack occurs (Photos 29.5 and 29.6).
- At north edge of the driveway, where the driveway transitions to the carport, a crack occurs in the stem wall (Photo 29.9).
- At the north wall of the carport, a crack occurs where a beam bears at the wall (Photo 29.10).
- At the west end of the north wall of the carport, hairline cracking occurs (Photo 29.11).
- At the concrete slab of the carport, cracking occurs (Photos 29.13 and 29.14).
- At the concrete slab of the balcony (west of the carport) cracking occurs (Photos 29.15 and 29.16).
- At the concrete stairs at the west side of the residence, cracking occurs in the steps (Photos 29.18 and 29.27).
- At west basement wall, a vertical crack occurs below the north edge of the infilled opening (Photo 29.19).
- At the concrete wall below the west edge of the balcony, a horizontal crack occurs at the north end of the wall (Photo 29.20).
- At the low brick planter at the west side of the residence, cracking occurs at two main locations (Photos 29.21, 29.22 and 29.23).
- At the concrete wall below the west edge of the balcony, cracking occurs at the corner at the south end of the wall (Photo 29.26).
- The partial basement has a dirt floor with visqueen cover. Walls are of poor quality concrete and there is a crack at the east wall under a beam bearing.

Action Required

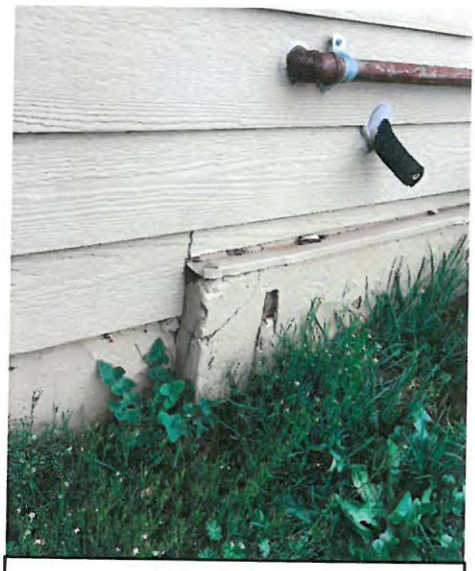
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

SITE 29 PHOTOS

29.1 Crack at wall transition at south wall

29.2 Hairline crack at window at south wall

29.3 Crack at vent at south wall



29.4 Crack at bumpout at south wall

29.5 Crack at sidewalk

29.6 Crack at sidewalk

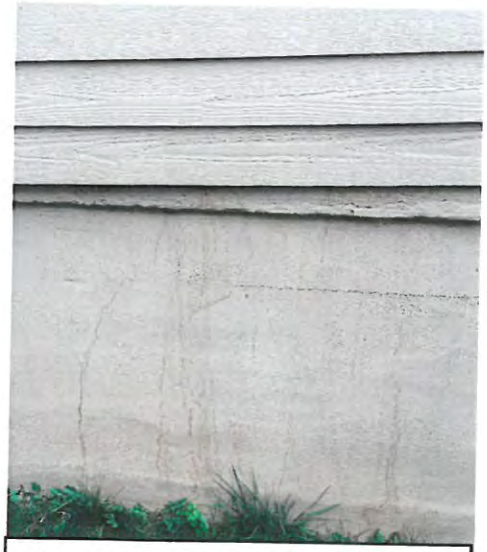
SITE 29 PHOTOS

29.7 Slab at driveway, north side

29.8 Driveway at north side

29.9 Crack at stem wall, north side of driveway

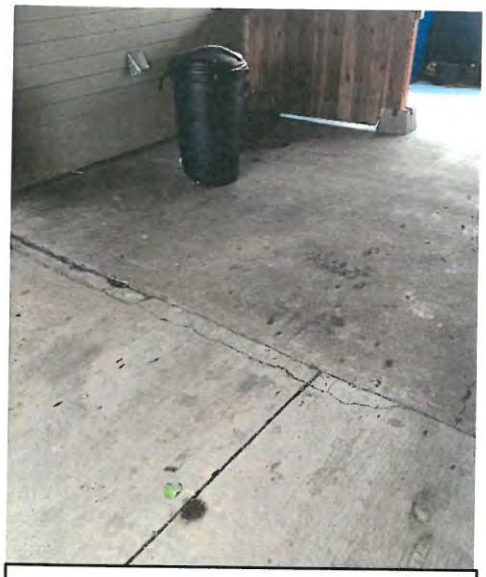
29.10 Crack at wall at north wall of carport



29.11 Crack at north wall of carport

29.12 Slab at carport

SITE 29 PHOTOS



29.13 Cracks at carport slab

29.14 Cracks at carport slab

29.15 Cracks in balcony slab

29.16 Crack at balcony slab

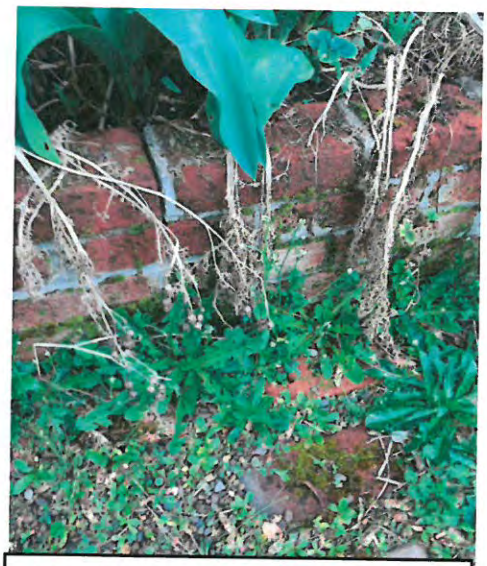
29.17 Deck at west wall of residence

29.18 Cracks in stairs at west side of residence

SITE 29 PHOTOS

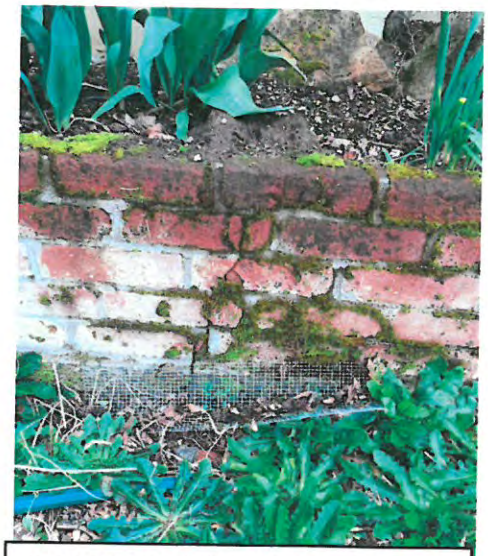
29.19 Cracks at edge of infilled opening at lower west wall

29.20 Crack at west wall, north corner



29.21 Crack at brick planter

29.22 Crack at brick planter



29.23 Crack at brick planter

29.24 Brick planter at west side

SITE 29 PHOTOS

29.25 Wood deck at west side

29.26 Crack at west wall corner

29.27 Crack at stairs

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Field Report

Project Name:	Ridgefield Yards		
Project #:	217020.00		
Date:	5/25/17	Weather:	Sunny
Arrival Time:	12:30PM	Temperature:	75 degrees
Departure Time:	1:15PM		
Location:	320 N 1st Avenue, Ridgefield, Washington		
By:	Gary Livermore, LAE		
Distribution:	Lindsey Crosby, MFA		

Work Reviewed

Site #32

A visual review of existing foundation and basement walls for the Site #32 residence (320 N 1st Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence and interior of the basement. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a small partial basement on the east side. A brick veneer occurs at the base of the residence, so typically perimeter stem walls are not visible. The basement appears to be constructed of concrete walls and a concrete slab on grade. A plaster coating has been added to the face of the walls of the basement. The basement slab has been cut and replaced around the perimeter to allow installation of a new drainage system under the floor.

A wood-frame shop and a prefabricated car cover are located on the east side of the residence.

Observations

The following was noted related to the condition of existing residence and foundations:

- At the north wall of the residence, cracking occurs in the brick veneer just east of the wood fence. (Photo 32.5).
- At the north wall mid-length between the fence and the chimney, a horizontal crack occurs in the wall (Photo 32.6).
- At the north wall just west of the chimney, a stair-step crack occurs in the wall (Photo 32.7).
- At the east end of the north wall, a crack occurs at the base of the wall (Photo 32.9).
- Approximately mid-length of the east wall of the residence, horizontal cracks occur (Photo 32.12).
- At the south end of the east-most wall, an offset occurs at the brick veneer at the corner (Photos 32.13 and 32.15).
- At the east end of the south wall, an offset occurs at the brick veneer at the corner (Photo 32.16).
- At the south wall between the two windows, a crack occurs at the base of the wall (Photo 32.17).
- Near the west end of the south wall, a vertical crack occurs (Photo 32.19).
- At the west end of the south wall (at the transition to planter), a crack occurs (Photo 32.20).
- At the west end of the planter at the south wall (near the corner), a crack occurs (Photo 32.21).
- At the north end of the planter at the west wall (near the corner), a crack occurs (Photo 32.23).
- At the west end of the planter at the north wall (near the corner), a crack occurs (Photo 32.24).
- At the driveway on the south side of the residence, cracks occur in the slab on grade (Photos 32.26 and 32.27).
- At the patio slab on the east side of the residence, cracks occur in the slab on grade (Photos 32.28 and 32.29).
- At the concrete pad east of the shop and car cover, a crack occurs in the slab on grade (Photos 32.30 and 32.32).

Action Required

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

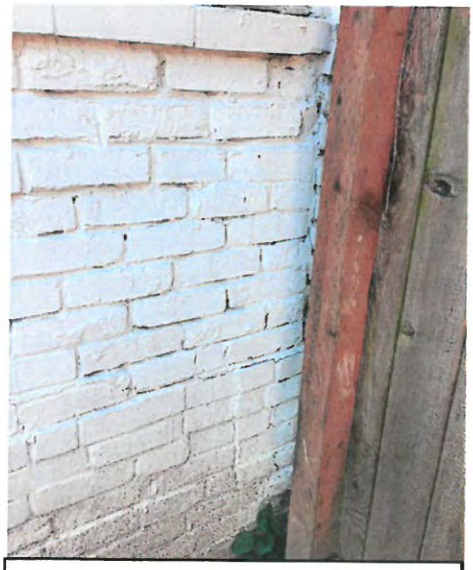
SITE 32 PHOTOS

32.1 Southwest corner at basement

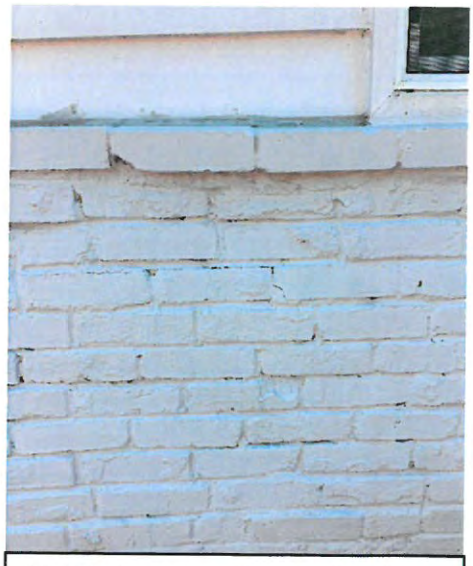
32.2 Basement slab

32.3 Basement slab

32.4 Stairs at basement

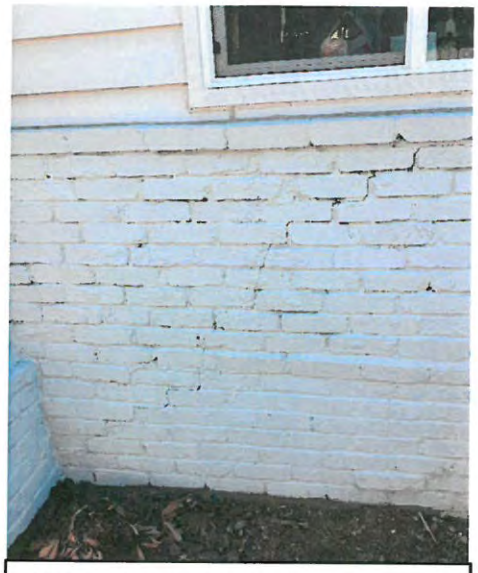


32.5 Cracks at north wall



32.6 Horizontal crack at north wall

SITE 32 PHOTOS



32.7 Cracks at north wall

32.8 Chimney at north wall

32.9 Crack at base of north wall

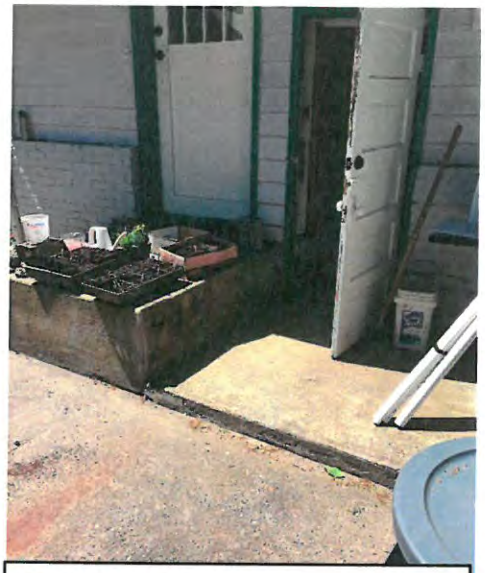
32.10 Northeast corner

32.11 East wall, north end

32.12 Horizontal cracks at east wall

SITE 32 PHOTOS

32.13 Brick offset at east wall



32.14 Door to basement

32.15 Brick offset at east wall

32.16 Brick offset at south wall, east end

32.17 Crack at base of south wall

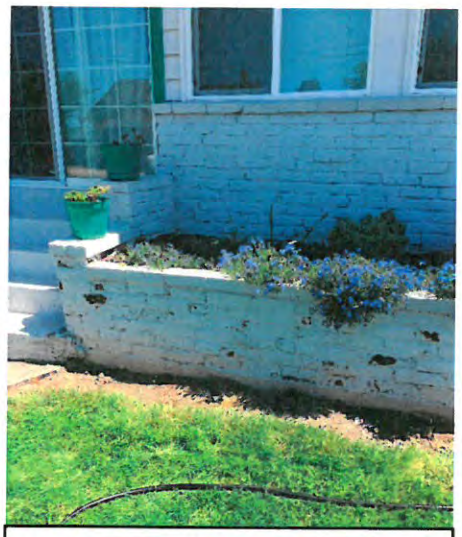
32.18 Electrical conduit at veneer

SITE 32 PHOTOS

32.19 Vertical crack at south wall

32.20 Crack at planter at south wall, west end

32.21 Crack at planter at south wall, west corner



32.22 Planter at west wall, south end

32.23 Cracks at planter at west wall, north end

32.24 Cracks at planter, north end

SITE 32 PHOTOS

32.25 West side of residence

32.26 Cracks at driveway, south side of residence

32.27 Cracks at driveway, south side

32.28 Cracks at patio slab, east side

32.29 Cracks at patio slab, east side

32.30 Crack at slab at shop

SITE 32 PHOTOS

32.31 Crack at slab at shop

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 09/14/16
Arrival Time: 11:30 a.m.

Weather: Sunny
Temperature: 80 degrees

WORK REVIEWED:

Site #35

A visual review of existing foundation walls for the Site #35 residence (313 North Main Avenue) was performed prior to the start of site excavation work. Review was done from exterior of residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with concrete stem walls. The ground floor is wood frame with a crawl space.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the north wall approximately 4" east of the chimney, a vertical crack occurs in the stem wall (Photo 35.1).
- At the north wall approximately 1'=0" west of the chimney, a vertical crack occurs in the stem wall (Photo 35.2).
- At the north wall, a vertical crack occurs under both of the vents in the wall (Photos 35.3 and 35.4).
- At the west end of the north wall, a partial vertical crack occurs in the stem wall (Photo 35.5).
- At the concrete patio and the northwest corner of the residence, cracking and settlement occurs in the slab on grade (Photos 35.6 and 35.7).
- At the west wall approximately 6'-0" from the north edge of the patio, a vertical crack occurs in the stem wall (Photo 35.9).
- At the west wall, approximately 2'-0" from the south edge if the patio, a vertical crack occurs in the stem wall (Photo 35.10).
- At the west wall approximately 8'-0" from the south edge of the patio, a vertical crack occurs in the stem wall (Photo 35.11).
- At the south wall a vertical crack occurs under all three of the stem wall vents (Photos 35.12, 35.13 and 35.14).
- At the south wall just east of the gas meter, a partial vertical crack occurs in the stem wall (Photo 35.15).

- At the south wall approximately 8'-0" from the east end of the wall a vertical crack occurs in the stem wall (Photo 35.16).
- At the east wall just north of the entry slab, a crack occurs in the stem wall (Photo 35.17).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 12:00 noon

Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 35 PHOTOS

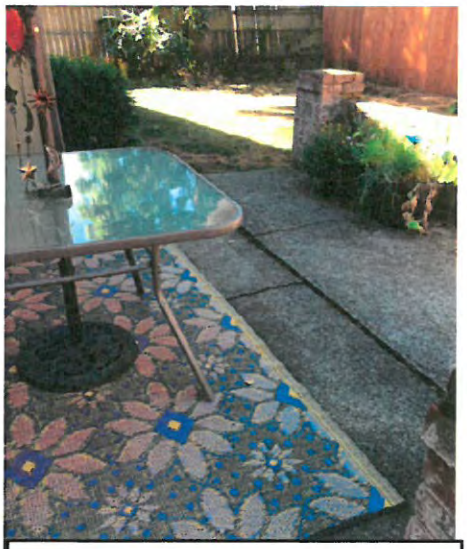
35.1 Crack in stem wall at north wall (east of chimney)

35.2 Crack in stem wall at north wall (west of chimney)

35.3 Crack under vent (north wall)

35.4 Crack under vent (north wall)

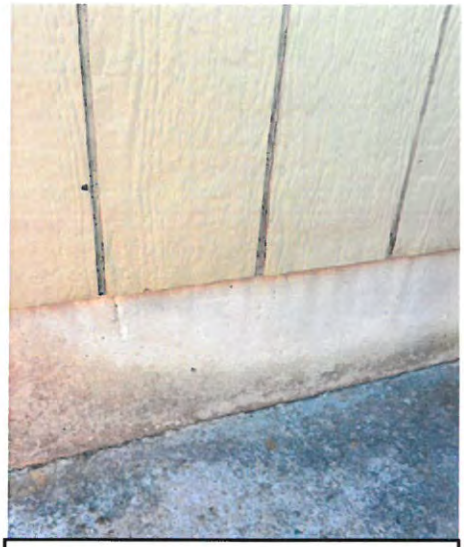
35.5 Partial crack at north wall



35.6 Cracking and settlement at patio

SITE 35 PHOTOS

35.7 Cracking and settlement at patio



35.8 Stem wall crack at west wall

35.9 Crack in stem wall at west wall

35.10 Crack in stem wall at west wall

35.11 Crack in stem wall at west wall

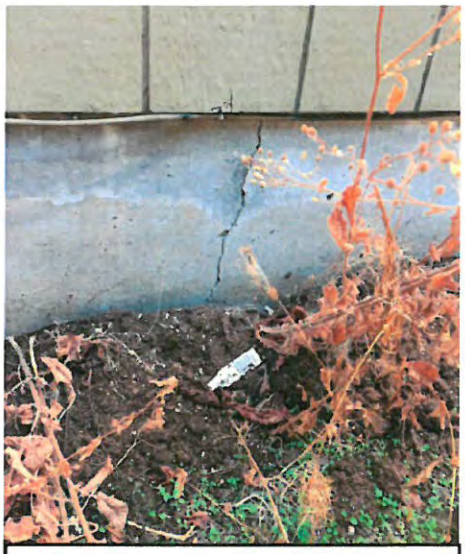
35.12 Crack under vent (south wall)

SITE 35 PHOTOS

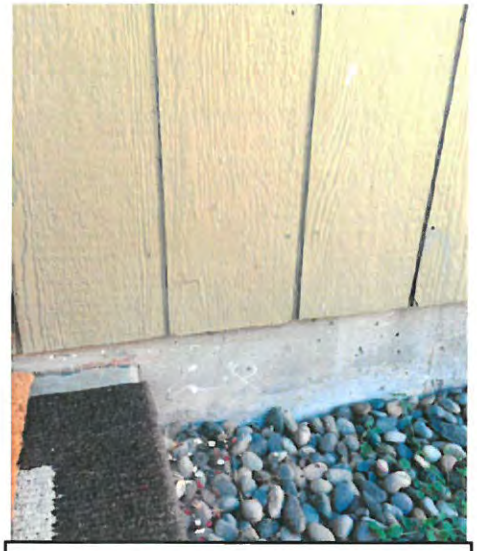
35.13 Crack under vent (south wall)

35.14 Crack under vent (south wall)

35.15 Crack in stem wall (south wall)



35.16 Crack in stem wall (south wall)



35.17 Crack in stem wall (east wall)

35.18 Entry of residence (east side)

SITE 35 PHOTOS

35.19 Garage at residence (east side)

35.20 Southeast corner of residence

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek., MFA

Date: 08/29/16
Arrival Time: 10:00 a.m.

Weather: Sunny
Temperature: 70 degrees

WORK REVIEWED:

Site #36

A visual review of existing foundation and basement walls for the Site #36 residence (314 N First Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls and basement walls that were visible at the time of the review.

The residence is a wood frame structure with wood floor framing and a small basement on the south side. Perimeter stem walls and basement walls are CMU construction. Floors at the garage and carport on the south side are concrete slab on grade.

OBSERVATIONS:

The following was noted related to the condition of existing residence and foundations:

- At the north wall approximately 10'-0" from the west end, a cracks occurs (Photo 36.2).
- At the north wall west end, horizontal cracking occurs (Photo 36.3).
- At the north wall approximately 6'-0" from the west end, a vertical crack occurs (36.4).
- At the northwest corner, horizontal cracking occurs both sides of the corner (Photos 36.5 and 36.6).
- At the west wall, a vertical crack occurs under the north vent (Photo 36.7).
- At the west wall just south of the porch, there is a stair-step crack in the wall (Photo 36.9).
- At the south end of the west wall, there is a great deal of hairline cracking and other smaller cracking in the wall (Photos 36.10-36.12).
- At the west edge of the carport slab, there is a crack (Photo 36.14). There is also a great deal of other cracking in the carport slab and garage slab.
- At the north wall of the garage a vertical occurs at the east end (Photo 36.20).
- At the north end of the east wall of the residence, it appears that settlement has occurred and there is cracking over the end approximately 10'-0" of the wall (Photos 36.21-36.23).
- At the site wall near the driveway on the east side of the site, a crack occurs at the corner (Photo 36.25).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 10:30 a.m.
Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 36 PHOTOS

36.1 North wall, east end

36.2 Small crack at north wall

36.3 Horizontal crack at north wall

36.4 Vertical crack at north wall

36.5 Horizontal crack at northwest corner

36.6 Horizontal crack at northwest corner

SITE 36 PHOTOS

36.7 Crack under vent at west wall, north end

36.8 Wood frame porch, west side

36.9 Stair step crack in west wall, south of porch

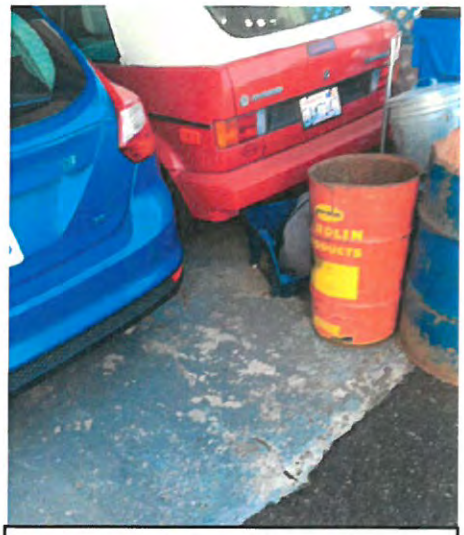
36.10 Cracking at west wall, south end

36.11 Cracking at west wall, south end

36.12 Cracking at south wall, west end

SITE 36 PHOTOS

36.13 South entry landing



36.14 Crack at west edge of carport slab

36.15 South wall of garage

36.16 South wall of carport

36.17 East wall of garage

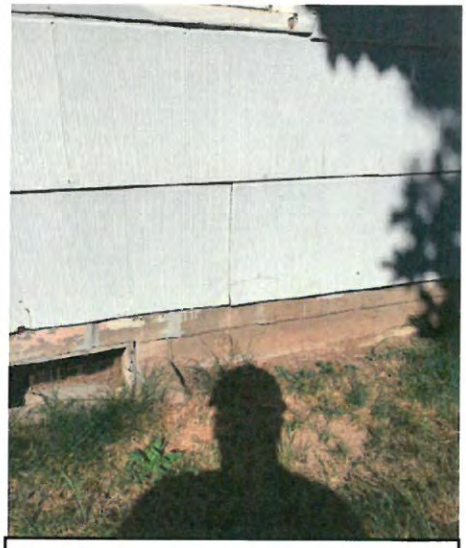
36.18 North wall of garage, south wall of residence

SITE 36 PHOTOS

36.19 East wall of residence

36.20 Crack at north wall of garage

36.21



36.22

36.23

36.24 Southwest corner of carport

SITE 36 PHOTOS

36.25 Crack at site wall

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 08/22/16
Arrival Time: 1:30 p.m.

Weather: Sunny
Temperature: 80 degrees

WORK REVIEWED:

Site #37

A visual review of existing foundation walls for the Site #37 residence (309 North Main Avenue) was performed prior to the start of site excavation work. Review was done from exterior of residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure with concrete stem walls. The ground floor is wood frame with a crawl space or concrete slab on grade.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the west wall approximately 10'-0" south of the step in the wall, a vertical crack occurs in the stem wall (Photo 37.3).
- At the east side of the residence the brick planter wall bows out noticeably (Photo 37.9).
- At the garage on the east side of the residence (north end) slab cracking occurs at the visible floor area (Photos 37.11).
- A great deal of the foundation walls are not visible due to heavy vegetation or the siding extending to grade. A large portion of the north wall is not visible due to vegetation and fencing.

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 2:00 noon

Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 37 PHOTOS

37.1 West wall, south end

37.2 West wall at slab

37.3 Crack at west wall

37.4 Concrete steps at southwest corner

37.5 South wall

37.6 South wall

SITE 37 PHOTOS

37.7 Concrete landing at front entry, east side

37.8 Front entry, east side

37.9 Planter wall, east side

37.10 Vegetation at west wall

37.11 Cracking at garage slab

37.12 Driveway slab

SITE 37 PHOTOS

37.13 Southeast corner of residence

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 08/22/16
Arrival Time: 1:00 p.m.

Weather: Cloudy
Temperature: 80 degrees

WORK REVIEWED:

Site #38

A visual review of existing foundation walls for the Site #38 residence (304 North 1st Avenue) was performed prior to the start of site excavation work. Review was done from the exterior of the residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review.

The residence is a wood frame structure. The ground floor appears to be wood frame with a crawl space or concrete slab on grade. Stem walls are CMU. A garage is located on the northeast corner of the site. The garage is a wood frame structure with a concrete slab on grade floor and concrete stem walls.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the east end of the north wall a vertical crack occurs in the wall (Photo 38.2).
- At the west end of the north wall east wall CMU blocks appear to be offset in their alignment. There does not appear to be mortar in the joints (Photo 38.4).
- At the west wall south of the entry porch a vertical crack occurs in the stem wall (Photo 38.8).
- At the southeast corner of the residence, cracking occurs throughout the concrete patio (Photos 38.12-38.15).
- South of the patio at the southeast corner of the residence, cracking occurs in the concrete sidewalk (Photo 38.16-38.18).
- At the east side of the residence, cracking occurs in the sidewalk (Photos 38.19 and 38.20).
- At the north wall of the garage, a vertical crack occurs approximately 8'-0" from the west end (Photo 38.21).
- At the concrete slab west of the garage, cracks occur in the slab (Photos 38.22-38.24).
- At the south wall of the garage, vertical cracks occur approximately 10'-0" and 18'-0" from the west end of the wall (Photos 38.25 and 38.26).
- The short CMU site wall west of the residence has tilted (Photo 38.28).

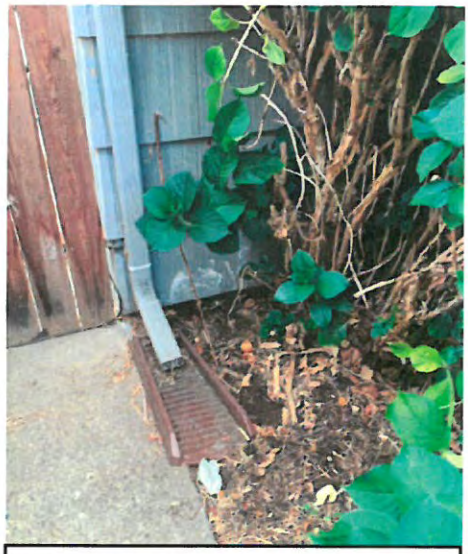
- At the concrete sidewalk to the front entry porch some separation and settlement has occurs at the steps and landings (Photos 38.30 and 38.31).

INFORMATION OR ACTION REQUIRED:
Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

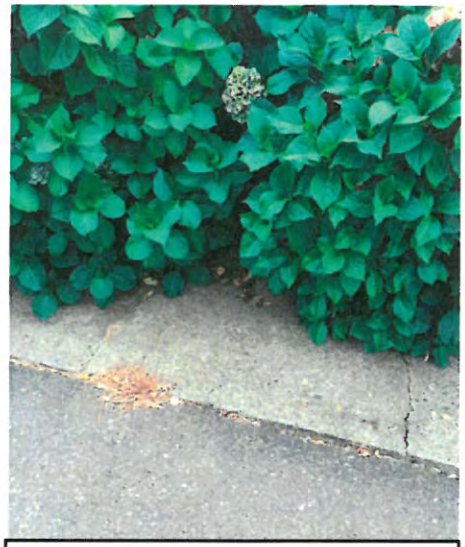
REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 1:00 p.m.
Cc: Present at Site
Lindsey Crosby, MFA
File

SITE 38 PHOTOS

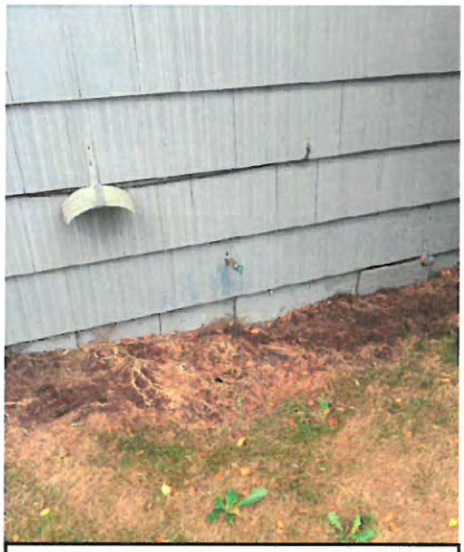


38.1 North wall, east end

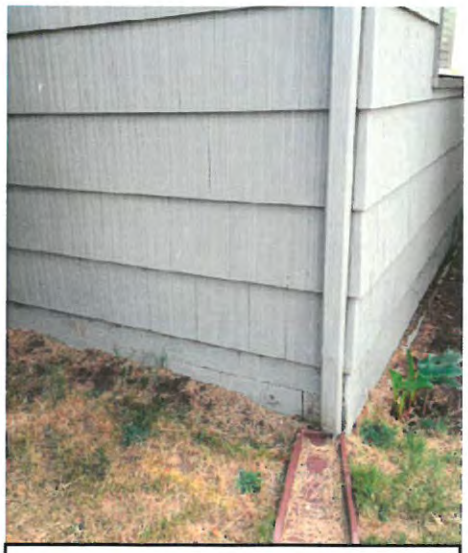


38.2 Crack at north wall

38.3 Landing at north wall



38.4 Offset blocks at north wall



38.5 Northwest corner

38.6 West wall, north of porch

SITE 38 PHOTOS

38.7 Entry porch at west side

38.8 Crack at west wall

38.9 South side of porch

38.10 Southwest corner

38.11 South wall, west end

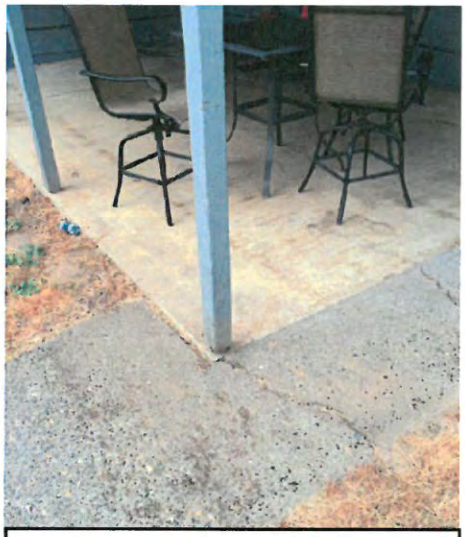
38.12 Patio at southeast corner

SITE 38 PHOTOS

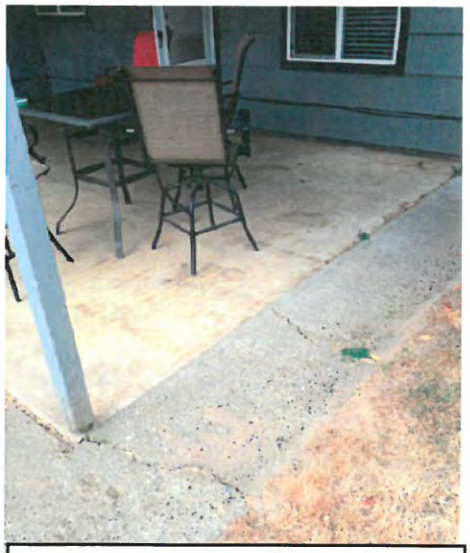
38.13 Cracks in patio slab

38.14 Cracks in patio slab

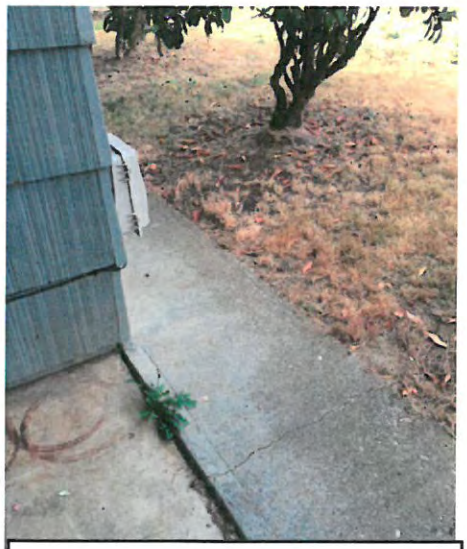
38.15 Cracks in patio slab



38.16 Cracks in sidewalk adjacent to patio

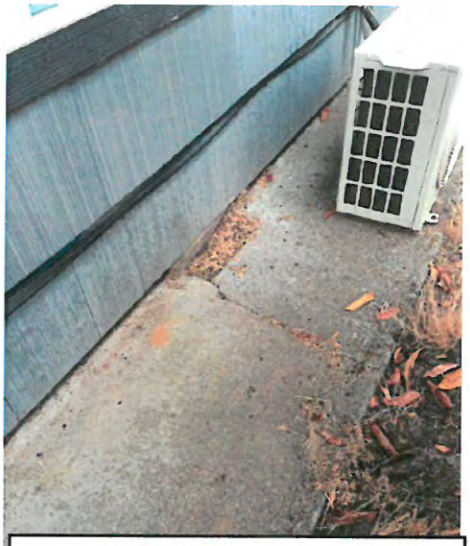


38.17 Cracks in sidewalk east of patio

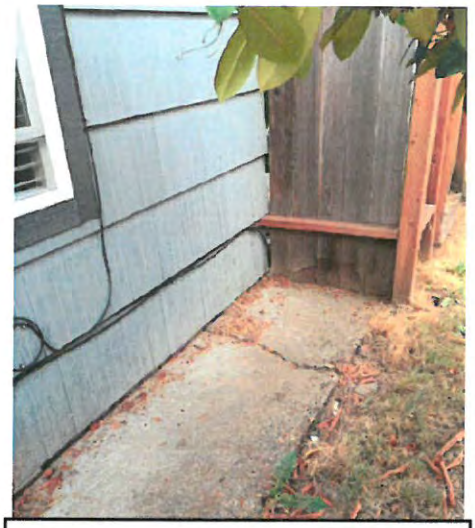


38.18 Crack in sidewalk east of patio

SITE 38 PHOTOS



38.19 Crack in sidewalk on east side



38.20 Crack in sidewalk on east side, north end

38.21 Crack at garage, north wall

38.22 Garage slab crack, west side

38.23 Garage slab crack at west side

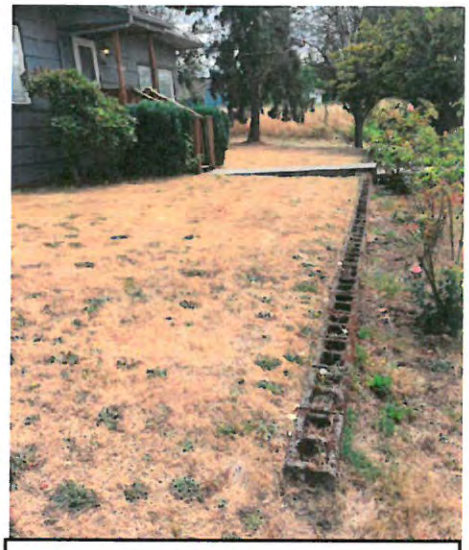
38.24 Garage slab crack at west wall

SITE 38 PHOTOS

38.25 Crack at south wall of garage

38.26 Crack at south wall of garage

38.27 West side of garage



38.28 Block site wall west of residence

38.29 Northwest corner of residence

38.30 Concrete steps west of residence

38.31 Concrete steps west of residence

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 08/29/16
Arrival Time: 9:00 a.m.

Weather: Sunny
Temperature: 70 degrees

WORK REVIEWED:

Site #39

A visual review of existing foundation walls for the Site #39 residence (305 North Main Avenue) was performed prior to the start of site excavation work. Review was done from exterior of residence. Exterior visual review was limited to areas of the stem walls that were visible at the time of the review. Because the exterior wall siding typically extends to grade at the residence, the only stem wall visible for review was on the north side of the residence. Approximately 6" of stem wall was visible on the north side.

The residence is a wood frame structure with concrete stem walls. The ground floor appears to be concrete slab on grade.

OBSERVATIONS:

The following was noted related to the condition of existing building foundation walls:

- At the north wall, the finish on the stem wall is rough but no cracks were visible (Photo 39.12).

INFORMATION OR ACTION REQUIRED:

Existing foundations will be reviewed again following the completion of excavation work and site rough grading.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 9:30 noon

Cc: Present at Site
Lindsey Crosby, MFA
File

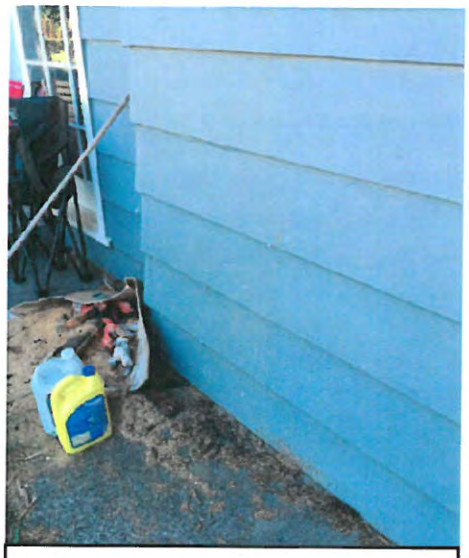
SITE 39 PHOTOS

39.1 West wall, north end

39.2 West wall

39.3 West wall, north end

39.4 Step at entry door at west wall



39.5 West wall, south end

39.6 Southeast corner

SITE 39 PHOTOS

39.7 Southeast corner

39.8 Entry door at east side

39.9 East wall

39.10 Main entry at east wall

39.11 North wall, east end

39.12 North wall

SITE 39 PHOTOS

39.13 North wall, west end

39.14 Northeast corner

APPENDIX B

STRUCTURAL POST-CONSTRUCTION EVALUATION FORMS

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 08/22/16
Arrival Time: 2:00 p.m.

Weather: Cloudy
Temperature: 80 degrees

WORK REVIEWED:

Sites #5, 6, 7, 12, 13 and 15
Visual reviews of existing foundation walls for the sites listed above was performed as a follow-up to the reviews accomplished prior to the start of site excavation work. Reviews were performed to determine if any noticeable changes have occurred in the existing foundations as a result of the excavation earlier activities.

Reviews were typically done from the exterior of residences and were limited to stem walls and footings. Reviews are limited to areas of the stem/basement walls that were visible at the time of the visit. Items that appear to have changed from the earlier review are noted below.

OBSERVATIONS:

Site #5:
- No changes were noted.

Site #6
- No changes were noted.

Site #7
- The storage shed at the east property line has been removed.
- No other changes were noted.

Site #12
- No changes were noted.

Site #13
- The wood stairs on the north side of the residence have been removed.
- The storage shed at the northeast corner of the site has been removed.
- No other changes were noted.

Site #15
- No changes were noted.

INFORMATION OR ACTION REQUIRED:
No action required.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 3:30 p.m.

Cc: Present at Site
Lindsey Crosby, MFA
File

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 216025.01

PRESENT AT SITE: Gary Livermore, LAE
Andy Vidourek, MFA

Date: 10/31/16
Arrival Time: 9:45 a.m.

Weather: Cloudy
Temperature: 60 degrees

WORK REVIEWED:

Sites #14, 16, 17, 18, 19, 24, 25, 35, 36, 37, 38 and 39
Visual reviews of existing foundation walls for the sites listed above was performed as a follow-up to the reviews accomplished prior to the start of site excavation work. Reviews were performed to determine if any noticeable changes have occurred in the existing foundations as a result of the excavation earlier activities.

Reviews were typically done from the exterior of residences and were limited to stem walls and footings. Reviews are limited to areas of the stem/basement walls that were visible at the time of the visit. Items that appear to have changed from the earlier review are noted below.

OBSERVATIONS:

Site #14:
- No changes were noted.

Site #16
- A crack occurs at the north end of the west foundation. This foundation was not visible on the previous visit and appears to be a pre-existing condition.
- No other changes were noted.

Site #17
- No changes were noted.

Site #18
- The wood retaining wall at the north side of the existing garage has been removed. It has been replaced with a segmental block retaining wall that is slightly further back from the face of the garage and does not directly abut the existing CMU retaining wall on the east side of the garage. Also a portion of the existing CMU wall at south end of the existing CMU wall appears to have been removed. The owner of the residence was present on site during the visit and requested that the replacement wall at the north end be relocated to provide the bracing that the wood retaining wall had previously provided. She also requested that the south end of the existing CMU wall be repaired to provide similar bracing. The existing east CMU wall appears to be in a similar condition as it was before excavation work. It is in very poor condition and it appears that the abutting walls will provide limited bracing beyond the very ends of the wall.
- No other changes were noted.

Site #19

- No changes were noted.

Site #24

- No changes were noted.

Site #25

- Framing is substantially complete on the addition that is underway on the west side of the residence. On the earlier pre-excavation review, construction was limited to concrete footings, stem walls and slab. As a result it was not possible to review the condition of the west wall of the original residence.
- No other changes were noted.

Site #35

- No changes were noted.

Site #36

- No changes were noted.

Site #37

- No changes were noted.

Site #38

- The short block site retaining wall on the west side of the residence has been removed.
- No other changes were noted.

Site #39

- No changes were noted.

INFORMATION OR ACTION REQUIRED:
The request of the Residence #18 regarding the replacement abutting retaining walls at the north and south ends of the existing wall east of the garage should be addressed.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 12:00 noon

Cc: Present at Site
Lindsey Crosby, MFA
File

LIVERMORE
ARCHITECTURE &
ENGINEERING, INC.

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 217020.00

PRESENT AT SITE: Gary Livermore, LAE
Lindsey Crosby, MFA

Date: 07/20/17
Arrival Time: 9:00 a.m.

Weather: Sunny
Temperature: 70 degrees

WORK REVIEWED:

Sites #02, 03, 23B and 32
Visual reviews of existing foundation walls for the sites listed above was performed as a follow-up to the reviews accomplished prior to the start of site excavation work. Reviews were performed to determine if any noticeable changes have occurred in the existing foundations as a result of the excavation earlier activities.

Reviews were typically done from the exterior of residences, were limited to areas of the stem/basement walls that were visible at the time of the visit. Residences 23B and 32 have basements and access was provided to review basement walls from the interior of the residences. Items that appear to have changed from the earlier review are noted below.

OBSERVATIONS:

Site #02

- No changes were noted.

Site #03

- Cracks occur at the east end of the concrete sidewalk north of the residence. These cracks were not visible on the previous visit and appear to be new. This sidewalk appears to be in the public right-of-way.
- No other changes were noted.

Site #23B

- No changes were noted.

Site #32

- No changes were noted.

INFORMATION OR ACTION REQUIRED:
The request of the owner of Residence #03 the cracking at the sidewalk should be addressed.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 11:00 a.m.

Cc: Present at Site
File

LIVERMORE
ARCHITECTURE &
ENGINEERING, INC.

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 217020.00

PRESENT AT SITE: Gary Livermore, LAE

Date: 09/27/17
Arrival Time: 8:30 a.m.

Weather: Sunny
Temperature: 60 degrees

WORK REVIEWED:

Sites #20 and 29B
Visual reviews of existing foundation walls for the sites listed above was performed as a follow-up to the reviews accomplished prior to the start of site excavation work. Reviews were performed to determine if any noticeable changes have occurred in the existing foundations as a result of the excavation earlier activities.

Reviews were typically done from the exterior of residences and were limited to areas of the stem/basement walls that were visible at the time of the visit. Residences 20 and 29B have basements and access was provided to review basement walls from the interior of the residences. Items that appear to have changed from the earlier review are noted below.

OBSERVATIONS:

Site #20

- No changes were noted.

Site #29B

- No changes were noted.

INFORMATION OR ACTION REQUIRED:
None.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 9:30 a.m.

Cc: Lindsey Crosby, MFA
File

LIVERMORE
ARCHITECTURE &
ENGINEERING, INC.

FIELD REPORT

PROJECT NAME: Ridgefield Yards
PROJECT NUMBER: 217020.00

PRESENT AT SITE: Gary Livermore, LAE

Date: 10/17/17
Arrival Time: 10:00 a.m.

Weather: Cloudy
Temperature: 55 degrees

WORK REVIEWED:

Site #28B
Visual review of existing foundation walls for the site listed above was performed as a follow-up to the review accomplished prior to the start of site excavation work. Review was performed to determine if any noticeable changes have occurred in the existing foundations as a result of the excavation earlier activities.

Review was done from the exterior of the residence and was limited to areas of the stem/basement walls that were visible at the time of the visit. Residence 28B has a basement and access was provided to review the basement walls from the interior of the residence. Items that appear to have changed from the earlier review are noted below.

OBSERVATIONS:

Site #28B

- No changes were noted.

INFORMATION OR ACTION REQUIRED:
None.

REPORT BY: Gary M. Livermore, P.E., Architect

Departure Time: 10:30 a.m.

Cc: Lindsey Crosby, MFA
File

APPENDIX C

SAMPLE DAILY CONSTRUCTION REPORT

CONSTRUCTION DAILY REPORT
Off-Property Interim Remedial Action

Daily Report Number:	OPP-083016-BEH	MAUL FOSTER ALONG
Date:	8/30/2016	
Weather:	AM: Sunny	400 E. Mill Plain Boulevard, Ste. 400
	PM: Sunny	Vancouver, WA 98660
Temperature:	Min: 55 °F	360-694-2691
	Max: 75 °F	
24hr Precipitation:	None	**Dust Conditions:** Light
Completed by:	Brooke Harmon	**Number of Contractor Employees**
Contractor:	AEC	Supervisory: 1; Operators: 3; Laborers: 5

Work Performed Today

Location	Sub Location	Description of Work	Time Started	Time Ended
Property 006	West	Landscaping	8:00	17:00
Property 013	All	Landscaping	8:00	17:00
Property 014	All	Landscaping	8:00	17:00
Property 016	All	Landscaping	8:00	12:00
Property 017	All	Excavation and Handling	8:00	17:00
Property 019	All	Excavation and Handling	8:00	14:00
Property 036	All	Clearing and Grubbing	8:00	17:00

CQA Officers on site: BH and JE

Additional Remarks:

B. Harmon onsite from 07:30 to 17:30. L. Crosby and C. Riley onsite from 08:45 to 11:45 for homeowner meetings and weekly meeting. J. Elliott onsite from 9:45 to 17:30. P. Weischer on site from 09:45 to 11:45 for weekly progress meeting and site visit. L. Crosby, J. Krueger, and C. Riley on site for 9:00 meeting with 039 homeowner. C. Riley met with 020A and finalized planting plan. L. Olin and C. Riley met with 007 to finalize planting plan. Fence and landscaping finished on 006. Homeowner of 006 planted her own plants near stone wall, west of house. Pavers moved from backyard of 036. Dry well found west of house at 017, excavator broke lid into well. J. Krueger and J. Elliott spoke with homeowner of 017 about dry well.

Inspections and Tests

Inspection/Test Type	Location	Form No.

Additional Remarks:

None

Subcontractors Onsite

Company Name:	Work Area	Employees
Paul Brothers	Multiple Properties	7

Additional Remarks:

CONSTRUCTION DAILY REPORT
Off-Property Interim Remedial Action

Daily Report Number:	OPP-083016-BEH		
Date:	8/30/2016	**Completed by:**	

Visitors

Time	Name(s)	Agency/Company	Remarks
9:45	C. Rankine	Ecology	Weekly Progress Meeting
9:45	L. Olin	POR	Weekly Progress Meeting
10:00	D. Walker	AEC	Weekly Progress Meeting

Additional Remarks:
None

Verbal Communications with Contractor

Time	Name(s)	Remarks	Action Item?
14:15	B. Harmon, J. Elliott	Told J. Krueger to order another concrete lid for dry well. Also instructed J. Krueger to containerize liquid contents for offsite disposal.	No

Additional Remarks

Construction Issues Tracking

Location	Description	Resolution	Action Item?
14	Homeowner unhappy with placement of fence along Division Street. He thinks the fence should be placed 9 feet from the curb instead of 12 feet. He said he will find documentation of this.	Homeowner has 24 hours to produce documentation, or the fence will be placed at 12 feet from the curb, as per the plan.	No
16	Homeowner wants fence and gate on south side of the house to be moved east to the first set of stairs.	J. Elliott and J. Krueger agree to move gate and fence.	No

Additional Remarks:

CQA Officer Signature	Date	Project Manager Review
Brooke Harmon	8/30/2016	JCE

CONSTRUCTION DAILY REPORT
Off-Property Interim Remedial Action

Daily Report Number:	OPP-083016-BEH		
Date:	8/30/2016	**Completed by:**	Brooke Harmon

Photos

Photo 1: Finished fencing and landscaping at Property 007.

Photo 2: Dry well found on Property 017.

APPENDIX D

FILL MATERIAL ANALYTICAL DATA

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, July 22, 2016

Lindsey Crosby
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / 9003.01.39 Task 02

Enclosed are the results of analyses for work order A6G0259, which was received by the laboratory on 7/7/2016 at 9:22:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Topsoil 3	A6G0259-01	Soil	07/06/16 08:25	07/07/16 09:22
Topsoil 4	A6G0259-02	Soil	07/06/16 08:32	07/07/16 09:22

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01)			**Matrix: Soil**		**Batch: 6070267**			
Diesel	ND	11.3	25.0	mg/kg dry	1	07/11/16 21:29	NWTPH-Dx	
Oil	**163**	22.6	50.0	"	"	"	"	F-03
Surrogate: o-Terphenyl (Surr)			*Recovery: 109 %*	*Limits: 50-150 %*	"	"	"	
Topsoil 4 (A6G0259-02)			**Matrix: Soil**		**Batch: 6070267**			
Diesel	ND	11.3	25.0	mg/kg dry	1	07/11/16 21:50	NWTPH-Dx	
Oil	**146**	22.7	50.0	"	"	"	"	F-03
Surrogate: o-Terphenyl (Surr)			*Recovery: 102 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01)			**Matrix: Soil**		**Batch: 6070280**			C-07
Aroclor 1016	ND	0.775	1.54	ug/kg dry	1	07/12/16 18:54	EPA 8082A	
Aroclor 1221	ND	1.54	1.54	"	"	"	"	
Aroclor 1232	ND	1.62	1.62	"	"	"	"	R-02
Aroclor 1242	ND	0.775	1.54	"	"	"	"	
Aroclor 1248	ND	1.54	1.54	"	"	"	"	
Aroclor 1254	ND	1.54	1.54	"	"	"	"	
Aroclor 1260	ND	0.775	1.54	"	"	"	"	
Aroclor 1262	ND	0.775	1.54	"	"	"	"	
Aroclor 1268	ND	0.775	1.54	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 106 %*	*Limits: 44-120 %*	"	"	"	
Topsoil 4 (A6G0259-02)			**Matrix: Soil**		**Batch: 6070280**			C-07
Aroclor 1016	ND	0.818	1.62	ug/kg dry	1	07/12/16 20:08	EPA 8082A	
Aroclor 1221	ND	0.818	1.62	"	"	"	"	
Aroclor 1232	ND	1.62	1.62	"	"	"	"	
Aroclor 1242	ND	0.818	1.62	"	"	"	"	
Aroclor 1248	ND	1.62	1.62	"	"	"	"	
Aroclor 1254	ND	1.62	1.62	"	"	"	"	
Aroclor 1260	ND	0.818	1.62	"	"	"	"	
Aroclor 1262	ND	0.818	1.62	"	"	"	"	
Aroclor 1268	ND	0.818	1.62	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 95 %*	*Limits: 44-120 %*	"	"	"	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01RE1)			**Matrix: Soil**		**Batch: 6070282**			
Aldrin	ND	1.08	2.17	ug/kg dry	1	07/13/16 16:47	EPA 8081B	
alpha-BHC	ND	1.08	2.17	"	"	"	"	
beta-BHC	ND	1.08	2.17	"	"	"	"	
delta-BHC	ND	1.08	2.17	"	"	"	"	
gamma-BHC (Lindane)	ND	1.08	2.17	"	"	"	"	
cis-Chlordane	ND	1.08	2.17	"	"	"	"	
trans-Chlordane	ND	1.08	2.17	"	"	"	"	
4,4'-DDD	ND	1.08	2.17	"	"	"	"	
4,4'-DDE	**2.43**	1.08	2.17	"	"	"	"	
4,4'-DDT	ND	1.08	2.17	"	"	"	"	
Dieldrin	**1.75**	1.08	2.17	"	"	"	"	J
Endosulfan I	ND	1.08	2.17	"	"	"	"	
Endosulfan II	ND	1.08	2.17	"	"	"	"	
Endosulfan sulfate	ND	1.08	2.17	"	"	"	"	
Endrin	ND	1.08	2.17	"	"	"	"	
Endrin Aldehyde	ND	1.08	2.17	"	"	"	"	
Endrin ketone	ND	1.08	2.17	"	"	"	"	
Heptachlor	ND	1.08	2.17	"	"	"	"	
Heptachlor epoxide	ND	1.08	2.17	"	"	"	"	
Methoxychlor	ND	3.25	6.51	"	"	"	"	
Chlordane (Technical)	ND	32.5	65.1	"	"	"	"	
Toxaphene (Total)	ND	32.5	65.1	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 69 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*93 %*	*Limits: 65-151 %*	"	"	"	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 4 (A6G0259-02RE1)			**Matrix: Soil**		**Batch: 6070282**			
Aldrin	ND	1.19	2.37	ug/kg dry	1	07/13/16 17:04	EPA 8081B	
alpha-BHC	ND	1.19	2.37	"	"	"	"	
beta-BHC	ND	1.19	2.37	"	"	"	"	
delta-BHC	ND	1.19	2.37	"	"	"	"	
gamma-BHC (Lindane)	ND	1.19	2.37	"	"	"	"	
cis-Chlordane	ND	1.19	2.37	"	"	"	"	
trans-Chlordane	ND	1.19	2.37	"	"	"	"	
4,4'-DDD	ND	1.19	2.37	"	"	"	"	
4,4'-DDE	**1.64**	1.19	2.37	"	"	"	"	J
4,4'-DDT	ND	1.19	2.37	"	"	"	"	
Dieldrin	ND	1.19	2.37	"	"	"	"	
Endosulfan I	ND	1.19	2.37	"	"	"	"	
Endosulfan II	ND	1.19	2.37	"	"	"	"	
Endosulfan sulfate	ND	1.19	2.37	"	"	"	"	
Endrin	ND	1.19	2.37	"	"	"	"	
Endrin Aldehyde	ND	1.19	2.37	"	"	"	"	
Endrin ketone	ND	1.19	2.37	"	"	"	"	
Heptachlor	ND	1.19	2.37	"	"	"	"	
Heptachlor epoxide	ND	1.19	2.37	"	"	"	"	
Methoxychlor	ND	3.56	7.11	"	"	"	"	
Chlordane (Technical)	ND	35.6	71.1	"	"	"	"	
Toxaphene (Total)	ND	35.6	71.1	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 81 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*90 %*	*Limits: 65-151 %*	"	"	"	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01RE1)			**Matrix: Soil**		**Batch: 6070281**			
Acenaphthene	**8.41**	5.94	11.9	ug/kg dry	4	07/12/16 18:02	EPA 8270D	J
Acenaphthylene	ND	5.94	11.9	"	"	"	"	
Anthracene	ND	5.94	11.9	"	"	"	"	
Benz(a)anthracene	**8.48**	5.94	11.9	"	"	"	"	J
Benzo(a)pyrene	**11.1**	8.94	17.9	"	"	"	"	J
Benzo(b)fluoranthene	**14.5**	8.94	17.9	"	"	"	"	J
Benzo(k)fluoranthene	ND	8.94	17.9	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.94	11.9	"	"	"	"	
Chrysene	**9.53**	5.94	11.9	"	"	"	"	J
Dibenz(a,h)anthracene	ND	5.94	11.9	"	"	"	"	
Fluoranthene	**34.1**	5.94	11.9	"	"	"	"	
Fluorene	**7.68**	5.94	11.9	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	5.94	11.9	"	"	"	"	
1-Methylnaphthalene	ND	11.9	23.8	"	"	"	"	
2-Methylnaphthalene	ND	11.9	23.8	"	"	"	"	
Naphthalene	ND	11.9	23.8	"	"	"	"	
Phenanthrene	**41.1**	5.94	11.9	"	"	"	"	
Pyrene	**27.7**	5.94	11.9	"	"	"	"	
Carbazole	ND	8.94	17.9	"	"	"	"	
Dibenzofuran	**6.03**	5.94	11.9	"	"	"	"	J
4-Chloro-3-methylphenol	ND	59.4	119	"	"	"	"	
2-Chlorophenol	ND	29.8	59.4	"	"	"	"	
2,4-Dichlorophenol	ND	29.8	59.4	"	"	"	"	
2,4-Dimethylphenol	ND	29.8	59.4	"	"	"	"	
2,4-Dinitrophenol	ND	149	298	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	149	298	"	"	"	"	
2-Methylphenol	ND	14.9	29.8	"	"	"	"	
3+4-Methylphenol(s)	**31.2**	14.9	29.8	"	"	"	"	Q-42
2-Nitrophenol	ND	59.4	119	"	"	"	"	
4-Nitrophenol	ND	59.4	119	"	"	"	"	
Pentachlorophenol (PCP)	ND	59.4	119	"	"	"	"	
Phenol	**15.3**	11.9	23.8	"	"	"	"	J
2,3,4,6-Tetrachlorophenol	ND	29.8	59.4	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	29.8	59.4	"	"	"	"	
2,4,5-Trichlorophenol	ND	29.8	59.4	"	"	"	"	
2,4,6-Trichlorophenol	ND	29.8	59.4	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	89.4	179	"	"	"	"	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01RE1)			**Matrix: Soil**		**Batch: 6070281**			
Butyl benzyl phthalate	**69.3**	59.4	119	ug/kg dry	4	"	EPA 8270D	J
Diethylphthalate	ND	59.4	119	"	"	"	"	
Dimethylphthalate	ND	59.4	119	"	"	"	"	
Di-n-butylphthalate	ND	59.4	119	"	"	"	"	
Di-n-octyl phthalate	ND	59.4	119	"	"	"	"	
N-Nitrosodimethylamine	ND	14.9	29.8	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	14.9	29.8	"	"	"	"	
N-Nitrosodiphenylamine	ND	14.9	29.8	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	14.9	29.8	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	14.9	29.8	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	14.9	29.8	"	"	"	"	
Hexachlorobenzene	ND	5.94	11.9	"	"	"	"	
Hexachlorobutadiene	ND	14.9	29.8	"	"	"	"	
Hexachlorocyclopentadiene	ND	29.8	59.4	"	"	"	"	
Hexachloroethane	ND	14.9	29.8	"	"	"	"	
2-Chloronaphthalene	ND	5.94	11.9	"	"	"	"	
1,2-Dichlorobenzene	ND	14.9	29.8	"	"	"	"	
1,3-Dichlorobenzene	ND	14.9	29.8	"	"	"	"	
1,4-Dichlorobenzene	ND	14.9	29.8	"	"	"	"	
1,2,4-Trichlorobenzene	ND	14.9	29.8	"	"	"	"	
4-Bromophenyl phenyl ether	ND	14.9	29.8	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	14.9	29.8	"	"	"	"	
Aniline	ND	29.8	59.4	"	"	"	"	
4-Chloroaniline	ND	14.9	29.8	"	"	"	"	
2-Nitroaniline	ND	119	238	"	"	"	"	
3-Nitroaniline	ND	119	238	"	"	"	"	
4-Nitroaniline	ND	119	238	"	"	"	"	
Nitrobenzene	ND	59.4	119	"	"	"	"	
2,4-Dinitrotoluene	ND	59.4	119	"	"	"	"	
2,6-Dinitrotoluene	ND	59.4	119	"	"	"	"	
Benzoic acid	ND	1490	1490	"	"	"	"	Q-30
Benzyl alcohol	ND	29.8	59.4	"	"	"	"	
Isophorone	ND	14.9	29.8	"	"	"	"	
Azobenzene (1,2-DPH)	ND	14.9	29.8	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	149	298	"	"	"	"	
3,3'-Dichlorobenzidine	ND	298	596	"	"	"	"	
1,2-Dinitrobenzene	ND	149	298	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01RE1)			**Matrix: Soil**		**Batch: 6070281**			
1,3-Dinitrobenzene	ND	149	298	ug/kg dry	4	"	EPA 8270D	
1,4-Dinitrobenzene	ND	149	298	"	"	"	"	
Pyridine	ND	29.8	59.4	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 63 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*77 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*71 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*97 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*64 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*123 %*	*Limits: 39-132 %*	"	"	"	*Q-41*
Topsoil 4 (A6G0259-02)			**Matrix: Soil**		**Batch: 6070281**			
Acenaphthene	**9.29**	6.29	12.6	ug/kg dry	4	07/12/16 19:19	EPA 8270D	J
Acenaphthylene	ND	6.29	12.6	"	"	"	"	
Anthracene	**6.92**	6.29	12.6	"	"	"	"	J
Benz(a)anthracene	**8.69**	6.29	12.6	"	"	"	"	J
Benzo(a)pyrene	**13.0**	9.47	18.9	"	"	"	"	J
Benzo(b)fluoranthene	**18.0**	9.47	18.9	"	"	"	"	J
Benzo(k)fluoranthene	ND	9.47	18.9	"	"	"	"	
Benzo(g,h,i)perylene	ND	6.29	12.6	"	"	"	"	
Chrysene	**12.7**	6.29	12.6	"	"	"	"	
Dibenz(a,h)anthracene	ND	6.29	12.6	"	"	"	"	
Fluoranthene	**35.7**	6.29	12.6	"	"	"	"	
Fluorene	**9.27**	6.29	12.6	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	6.29	12.6	"	"	"	"	
1-Methylnaphthalene	ND	12.6	25.2	"	"	"	"	
2-Methylnaphthalene	ND	12.6	25.2	"	"	"	"	
Naphthalene	ND	12.6	25.2	"	"	"	"	
Phenanthrene	**45.3**	6.29	12.6	"	"	"	"	
Pyrene	**27.3**	6.29	12.6	"	"	"	"	
Carbazole	ND	9.47	18.9	"	"	"	"	
Dibenzofuran	**7.19**	6.29	12.6	"	"	"	"	J
4-Chloro-3-methylphenol	ND	62.9	126	"	"	"	"	
2-Chlorophenol	ND	31.6	62.9	"	"	"	"	
2,4-Dichlorophenol	ND	31.6	62.9	"	"	"	"	
2,4-Dimethylphenol	ND	31.6	62.9	"	"	"	"	
2,4-Dinitrophenol	ND	158	316	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	158	316	"	"	"	"	
2-Methylphenol	ND	15.8	31.6	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 4 (A6G0259-02)			**Matrix: Soil**		**Batch: 6070281**			
3+4-Methylphenol(s)	**116**	15.8	31.6	ug/kg dry	4	"	EPA 8270D	
2-Nitrophenol	ND	62.9	126	"	"	"	"	
4-Nitrophenol	ND	62.9	126	"	"	"	"	
Pentachlorophenol (PCP)	ND	62.9	126	"	"	"	"	
Phenol	**35.7**	12.6	25.2	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	31.6	62.9	"	"	"	"	Q-42
2,3,5,6-Tetrachlorophenol	ND	31.6	62.9	"	"	"	"	Q-42
2,4,5-Trichlorophenol	ND	31.6	62.9	"	"	"	"	Q-42
2,4,6-Trichlorophenol	ND	31.6	62.9	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	94.7	189	"	"	"	"	
Butyl benzyl phthalate	**75.8**	62.9	126	"	"	"	"	J
Diethylphthalate	ND	62.9	126	"	"	"	"	
Dimethylphthalate	ND	62.9	126	"	"	"	"	
Di-n-butylphthalate	ND	62.9	126	"	"	"	"	
Di-n-octyl phthalate	ND	62.9	126	"	"	"	"	
N-Nitrosodimethylamine	ND	15.8	31.6	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	15.8	31.6	"	"	"	"	
N-Nitrosodiphenylamine	ND	15.8	31.6	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	15.8	31.6	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	15.8	31.6	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	15.8	31.6	"	"	"	"	
Hexachlorobenzene	ND	6.29	12.6	"	"	"	"	
Hexachlorobutadiene	ND	15.8	31.6	"	"	"	"	
Hexachlorocyclopentadiene	ND	31.6	62.9	"	"	"	"	
Hexachloroethane	ND	15.8	31.6	"	"	"	"	
2-Chloronaphthalene	ND	6.29	12.6	"	"	"	"	
1,2-Dichlorobenzene	ND	15.8	31.6	"	"	"	"	
1,3-Dichlorobenzene	ND	15.8	31.6	"	"	"	"	
1,4-Dichlorobenzene	ND	15.8	31.6	"	"	"	"	
1,2,4-Trichlorobenzene	ND	15.8	31.6	"	"	"	"	
4-Bromophenyl phenyl ether	ND	15.8	31.6	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	15.8	31.6	"	"	"	"	
Aniline	ND	62.9	62.9	"	"	"	"	
4-Chloroaniline	ND	15.8	31.6	"	"	"	"	
2-Nitroaniline	ND	126	252	"	"	"	"	
3-Nitroaniline	ND	126	252	"	"	"	"	
4-Nitroaniline	ND	126	252	"	"	"	"	

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Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 4 (A6G0259-02)			**Matrix: Soil**		**Batch: 6070281**			
Nitrobenzene	ND	62.9	126	ug/kg dry	4	"	EPA 8270D	
2,4-Dinitrotoluene	ND	62.9	126	"	"	"	"	
2,6-Dinitrotoluene	ND	62.9	126	"	"	"	"	
Benzoic acid	ND	1580	1580	"	"	"	"	Q-30
Benzyl alcohol	ND	31.6	62.9	"	"	"	"	
Isophorone	ND	15.8	31.6	"	"	"	"	
Azobenzene (1,2-DPH)	ND	15.8	31.6	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	158	316	"	"	"	"	
3,3'-Dichlorobenzidine	ND	316	631	"	"	"	"	Q-42
1,2-Dinitrobenzene	ND	158	316	"	"	"	"	
1,3-Dinitrobenzene	ND	158	316	"	"	"	"	
1,4-Dinitrobenzene	ND	158	316	"	"	"	"	
Pyridine	ND	31.6	62.9	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 68 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*76 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*75 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*97 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*63 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*130 %*	*Limits: 39-132 %*	"	"	"	*Q-41*

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01)			**Matrix: Soil**					
Batch: 6070334								
Arsenic	**3.97**	0.607	1.21	mg/kg dry	10	07/15/16 22:21	EPA 6020A	
Cadmium	**0.146**	0.121	0.243	"	"	"	"	J
Chromium	**20.2**	0.607	1.21	"	"	"	"	
Copper	**25.4**	0.607	1.21	"	"	"	"	
Lead	**7.33**	0.121	0.243	"	"	"	"	
Mercury	ND	0.0485	0.0970	"	"	"	"	
Nickel	**24.2**	0.607	1.21	"	"	"	"	
Selenium	ND	0.607	1.21	"	"	"	"	
Silver	ND	0.121	0.243	"	"	"	"	
Zinc	**46.4**	2.43	4.85	"	"	"	"	
Topsoil 4 (A6G0259-02)			**Matrix: Soil**					
Batch: 6070334								
Arsenic	**3.48**	0.623	1.25	mg/kg dry	10	07/15/16 22:24	EPA 6020A	
Cadmium	**0.125**	0.125	0.249	"	"	"	"	J
Chromium	**17.3**	0.623	1.25	"	"	"	"	
Copper	**22.7**	0.623	1.25	"	"	"	"	
Lead	**8.74**	0.125	0.249	"	"	"	"	
Mercury	ND	0.0498	0.0997	"	"	"	"	
Nickel	**21.5**	0.623	1.25	"	"	"	"	
Selenium	ND	0.623	1.25	"	"	"	"	
Silver	ND	0.125	0.249	"	"	"	"	
Zinc	**48.4**	2.49	4.98	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Topsoil 3 (A6G0259-01)			**Matrix: Soil**		**Batch: 6070224**			
% Solids	**86.2**	1.00	1.00	% by Weight	1	07/11/16 08:15	EPA 8000C	
Topsoil 4 (A6G0259-02)			**Matrix: Soil**		**Batch: 6070224**			
% Solids	**81.2**	1.00	1.00	% by Weight	1	07/11/16 08:15	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070267 - EPA 3546 (Fuels)							**Soil**					
Blank (6070267-BLK1)					Prepared: 07/11/16 13:42		Analyzed: 07/11/16 21:37					
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6070267-BS1)					Prepared: 07/11/16 13:42		Analyzed: 07/11/16 21:57					
NWTPH-Dx												
Diesel	119	10.0	25.0	mg/kg wet	1	125	---	95	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 110 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6070267-DUP1)					Prepared: 07/11/16 13:42		Analyzed: 07/11/16 22:57					
QC Source Sample: Other (A6F0986-03)												
NWTPH-Dx												
Diesel	ND	11.6	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**618**	23.1	50.0	"	"	---	561	---	---	10	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6070267-DUP2)					Prepared: 07/11/16 13:42		Analyzed: 07/12/16 02:18					
QC Source Sample: Other (A6G0317-03)												
NWTPH-Dx												
Diesel	**117**	12.7	25.4	mg/kg dry	1	---	138	---	---	16	30%	F-11
Oil	ND	25.4	50.8	"	"	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 106 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070280 - EPA 3546							**Soil**					
Blank (6070280-BLK1)					Prepared: 07/12/16 07:09		Analyzed: 07/12/16 18:17					C-07
EPA 8082A												
Aroclor 1016	ND	0.648	1.29	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1262	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1268	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 114 %*	*Limits: 44-120 %*			*Dilution: 1x*					
LCS (6070280-BS1)					Prepared: 07/12/16 07:09		Analyzed: 07/12/16 18:35					C-07
EPA 8082A												
Aroclor 1016	58.9	0.670	1.33	ug/kg wet	1	83.3	---	71	47-134%	---	---	
Aroclor 1260	85.8	0.670	1.33	"	"	"	---	103	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 117 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Duplicate (6070280-DUP1)					Prepared: 07/12/16 07:09		Analyzed: 07/12/16 19:31					C-07
QC Source Sample: Topsoil 3 (A6G0259-01)												
EPA 8082A												
Aroclor 1016	ND	0.774	1.54	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	0.774	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	1.67	1.67	"	"	---	ND	---	---	---	30%	R-02
Aroclor 1242	ND	0.774	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	1.54	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	1.54	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	1.54	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1262	ND	0.774	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1268	ND	0.774	1.54	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 100 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Matrix Spike (6070280-MS1)					Prepared: 07/12/16 07:09		Analyzed: 07/12/16 20:45					C-07
QC Source Sample: Topsoil 4 (A6G0259-02)												
EPA 8082A												

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070280 - EPA 3546							**Soil**					
Matrix Spike (6070280-MS1)					Prepared: 07/12/16 07:09		Analyzed: 07/12/16 20:45					C-07
QC Source Sample: Topsoil 4 (A6G0259-02)												
Aroclor 1016	60.4	0.813	1.61	ug/kg dry	1	101	ND	60	47-134%	---	---	
Aroclor 1260	85.7	0.813	1.61	"	"	"	ND	85	53-140%	---	---	

Surr: Decachlorobiphenyl (Surr) *Recovery: 101 %* *Limits: 44-120 %* *Dilution: 1x*

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070282 - EPA 3546							**Soil**					
Blank (6070282-BLK1)					Prepared: 07/12/16 07:21		Analyzed: 07/13/16 09:23					C-05
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 91 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*92 %*	*65-151 %*			*"*					
LCS (6070282-BS1)					Prepared: 07/12/16 07:21		Analyzed: 07/13/16 09:40					
EPA 8081B												
Aldrin	43.2	1.00	2.00	ug/kg wet	1	50.0	---	86	45-136%	---	---	
alpha-BHC	47.1	1.00	2.00	"	"	"	---	94	45-137%	---	---	
beta-BHC	47.6	1.00	2.00	"	"	"	---	95	50-136%	---	---	
delta-BHC	54.8	1.00	2.00	"	"	"	---	110	47-139%	---	---	
gamma-BHC (Lindane)	46.6	1.00	2.00	"	"	"	---	93	49-135%	---	---	
cis-Chlordane	45.6	1.00	2.00	"	"	"	---	91	54-133%	---	---	
trans-Chlordane	46.6	1.00	2.00	"	"	"	---	93	53-135%	---	---	
4,4'-DDD	52.6	1.00	2.00	"	"	"	---	105	56-139%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070282 - EPA 3546							**Soil**					
LCS (6070282-BS1)					Prepared: 07/12/16 07:21		Analyzed: 07/13/16 09:40					
4,4'-DDE	48.2	1.00	2.00	ug/kg wet	"	"	---	96	56-134%	---	---	
4,4'-DDT	58.5	1.00	2.00	"	"	"	---	117	50-141%	---	---	
Dieldrin	48.6	1.00	2.00	"	"	"	---	97	56-136%	---	---	
Endosulfan I	47.4	1.00	2.00	"	"	"	---	95	52-132%	---	---	
Endosulfan II	54.3	1.00	2.00	"	"	"	---	109	53-134%	---	---	
Endosulfan sulfate	61.6	1.00	2.00	"	"	"	---	123	55-136%	---	---	Q-41
Endrin	51.7	1.00	2.00	"	"	"	---	103	56-140%	---	---	
Endrin Aldehyde	54.0	1.00	2.00	"	"	"	---	108	35-137%	---	---	
Endrin ketone	64.2	1.00	2.00	"	"	"	---	128	55-136%	---	---	Q-41
Heptachlor	47.3	1.00	2.00	"	"	"	---	95	47-136%	---	---	
Heptachlor epoxide	41.6	1.00	2.00	"	"	"	---	83	52-136%	---	---	
Methoxychlor	60.0	3.00	6.00	"	"	"	---	120	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 81 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*98 %*		*65-151 %*		*"*					
Duplicate (6070282-DUP1)					Prepared: 07/12/16 07:21		Analyzed: 07/13/16 10:50					C-05
QC Source Sample: Other (A6G0072-04RE1)												
EPA 8081B												
Aldrin	ND	1.26	2.52	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
4,4'-DDE	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
4,4'-DDT	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Dieldrin	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Endosulfan I	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Endrin	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Endrin ketone	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070282 - EPA 3546							**Soil**					
Duplicate (6070282-DUP1)					Prepared: 07/12/16 07:21		Analyzed: 07/13/16 10:50					C-05
QC Source Sample: Other (A6G0072-04RE1)												
Heptachlor	ND	1.26	2.52	ug/kg dry	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	1.26	2.52	"	"	---	ND	---	---	---	30%	
Methoxychlor	ND	3.78	7.56	"	"	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	37.8	75.6	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	37.8	75.6	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*81 %*	*65-151 %*			*"*					
Matrix Spike (6070282-MS1)					Prepared: 07/12/16 07:21		Analyzed: 07/13/16 10:15					
QC Source Sample: Other (A6G0296-01RE1)												
EPA 8081B												
Aldrin	50.1	1.27	2.54	ug/kg dry	1	63.5	1.30	77	45-136%	---	---	
alpha-BHC	56.4	1.27	2.54	"	"	"	1.31	87	45-137%	---	---	
beta-BHC	55.9	1.27	2.54	"	"	"	2.42	84	50-136%	---	---	
delta-BHC	69.3	1.27	2.54	"	"	"	3.23	104	47-139%	---	---	
gamma-BHC (Lindane)	55.0	1.27	2.54	"	"	"	2.11	83	49-135%	---	---	
cis-Chlordane	54.8	1.27	2.54	"	"	"	2.15	83	54-133%	---	---	
trans-Chlordane	54.2	1.27	2.54	"	"	"	1.93	82	53-135%	---	---	
4,4'-DDD	67.9	1.27	2.54	"	"	"	3.27	102	56-139%	---	---	
4,4'-DDE	63.7	1.27	2.54	"	"	"	5.99	91	56-134%	---	---	
4,4'-DDT	75.6	1.27	2.54	"	"	"	6.10	110	50-141%	---	---	
Dieldrin	58.7	1.27	2.54	"	"	"	2.10	89	56-136%	---	---	
Endosulfan I	54.5	1.27	2.54	"	"	"	1.41	84	52-132%	---	---	
Endosulfan II	63.4	1.27	2.54	"	"	"	2.28	96	53-134%	---	---	
Endosulfan sulfate	73.2	1.27	2.54	"	"	"	4.90	108	55-136%	---	---	Q-41
Endrin	65.6	1.27	2.54	"	"	"	2.33	100	56-140%	---	---	
Endrin Aldehyde	56.3	1.27	2.54	"	"	"	1.44	86	35-137%	---	---	
Endrin ketone	76.7	1.27	2.54	"	"	"	4.47	114	55-136%	---	---	Q-41
Heptachlor	58.2	1.27	2.54	"	"	"	1.50	89	47-136%	---	---	
Heptachlor epoxide	45.6	1.27	2.54	"	"	"	1.51	70	52-136%	---	---	
Methoxychlor	81.2	3.81	7.61	"	"	"	8.67	114	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 80 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*88 %*	*65-151 %*			*"*					

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Blank (6070281-BLK1)					Prepared: 07/12/16 07:12 Analyzed: 07/12/16 12:32							
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Blank (6070281-BLK1)					Prepared: 07/12/16 07:12 Analyzed: 07/12/16 12:32							
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	312	312	"	"	---	---	---	---	---	---	Q-30
Benzyl alcohol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Blank (6070281-BLK1)					Prepared: 07/12/16 07:12 Analyzed: 07/12/16 12:32							
Isophorone	ND	3.12	6.25	ug/kg wet	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	62.5	125	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 75 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*84 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*79 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*99 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*74 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*82 %*		*39-132 %*		*"*					*Q-41*
LCS (6070281-BS1)					Prepared: 07/12/16 07:12 Analyzed: 07/12/16 13:11							
EPA 8270D												
Acenaphthene	500	1.33	2.67	ug/kg wet	1	533	---	94	40-122%	---	---	
Acenaphthylene	529	1.33	2.67	"	"	"	---	99	32-132%	---	---	
Anthracene	543	1.33	2.67	"	"	"	---	102	47-123%	---	---	
Benz(a)anthracene	541	1.33	2.67	"	"	"	---	101	49-126%	---	---	
Benzo(a)pyrene	548	2.00	4.00	"	"	"	---	103	45-129%	---	---	
Benzo(b)fluoranthene	544	2.00	4.00	"	"	"	---	102	45-132%	---	---	
Benzo(k)fluoranthene	546	2.00	4.00	"	"	"	---	102	47-132%	---	---	
Benzo(g,h,i)perylene	566	1.33	2.67	"	"	"	---	106	43-134%	---	---	
Chrysene	538	1.33	2.67	"	"	"	---	101	50-124%	---	---	
Dibenz(a,h)anthracene	564	1.33	2.67	"	"	"	---	106	45-134%	---	---	
Fluoranthene	551	1.33	2.67	"	"	"	---	103	50-127%	---	---	
Fluorene	523	1.33	2.67	"	"	"	---	98	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	536	1.33	2.67	"	"	"	---	100	45-133%	---	---	
1-Methylnaphthalene	505	2.67	5.33	"	"	"	---	95	40-120%	---	---	
2-Methylnaphthalene	508	2.67	5.33	"	"	"	---	95	38-122%	---	---	
Naphthalene	481	2.67	5.33	"	"	"	---	90	35-123%	---	---	
Phenanthrene	513	1.33	2.67	"	"	"	---	96	50-121%	---	---	
Pyrene	545	1.33	2.67	"	"	"	---	102	47-127%	---	---	
Carbazole	554	2.00	4.00	"	"	"	---	104	50-122%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
LCS (6070281-BS1)					Prepared: 07/12/16 07:12		Analyzed: 07/12/16 13:11					
Dibenzofuran	534	1.33	2.67	ug/kg wet	"	"	---	100	44-120%	---	---	
4-Chloro-3-methylphenol	531	13.3	26.7	"	"	"	---	100	45-122%	---	---	
2-Chlorophenol	516	6.67	13.3	"	"	"	---	97	34-121%	---	---	
2,4-Dichlorophenol	542	6.67	13.3	"	"	"	---	102	40-122%	---	---	
2,4-Dimethylphenol	557	6.67	13.3	"	"	"	---	105	30-127%	---	---	
2,4-Dinitrophenol	135	33.3	66.7	"	"	"	---	25	5-137%	---	---	Q-41
4,6-Dinitro-2-methylphenol	382	33.3	66.7	"	"	"	---	72	29-132%	---	---	Q-41
2-Methylphenol	543	3.33	6.67	"	"	"	---	102	32-122%	---	---	
3+4-Methylphenol(s)	505	3.33	6.67	"	"	"	---	95	34-120%	---	---	
2-Nitrophenol	517	13.3	26.7	"	"	"	---	97	36-123%	---	---	Q-41
4-Nitrophenol	461	13.3	26.7	"	"	"	---	87	30-132%	---	---	
Pentachlorophenol (PCP)	391	13.3	26.7	"	"	"	---	73	25-133%	---	---	
Phenol	554	2.67	5.33	"	"	"	---	104	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	529	6.67	13.3	"	"	"	---	99	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	484	6.67	13.3	"	"	"	---	91	40-120%	---	---	
2,4,5-Trichlorophenol	557	6.67	13.3	"	"	"	---	104	41-124%	---	---	Q-41
2,4,6-Trichlorophenol	549	6.67	13.3	"	"	"	---	103	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	536	20.0	40.0	"	"	"	---	101	51-133%	---	---	
Butyl benzyl phthalate	520	13.3	26.7	"	"	"	---	98	48-132%	---	---	
Diethylphthalate	509	13.3	26.7	"	"	"	---	95	50-124%	---	---	
Dimethylphthalate	553	13.3	26.7	"	"	"	---	104	48-124%	---	---	
Di-n-butylphthalate	544	13.3	26.7	"	"	"	---	102	51-128%	---	---	
Di-n-octyl phthalate	527	13.3	26.7	"	"	"	---	99	44-140%	---	---	
N-Nitrosodimethylamine	416	3.33	6.67	"	"	"	---	78	23-120%	---	---	
N-Nitroso-di-n-propylamine	449	3.33	6.67	"	"	"	---	84	36-120%	---	---	
N-Nitrosodiphenylamine	579	3.33	6.67	"	"	"	---	108	38-127%	---	---	
Bis(2-Chloroethoxy) methane	479	3.33	6.67	"	"	"	---	90	36-121%	---	---	
Bis(2-Chloroethyl) ether	440	3.33	6.67	"	"	"	---	82	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	405	3.33	6.67	"	"	"	---	76	33-131%	---	---	
Hexachlorobenzene	596	1.33	2.67	"	"	"	---	112	44-122%	---	---	
Hexachlorobutadiene	521	3.33	6.67	"	"	"	---	98	32-123%	---	---	
Hexachlorocyclopentadiene	550	6.67	13.3	"	"	"	---	103	5-140%	---	---	
Hexachloroethane	460	3.33	6.67	"	"	"	---	86	28-120%	---	---	
2-Chloronaphthalene	541	1.33	2.67	"	"	"	---	101	41-120%	---	---	
1,2-Dichlorobenzene	470	3.33	6.67	"	"	"	---	88	33-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
LCS (6070281-BS1)					Prepared: 07/12/16 07:12		Analyzed: 07/12/16 13:11					
1,3-Dichlorobenzene	463	3.33	6.67	ug/kg wet	"	"	---	87	30-120%	---	---	
1,4-Dichlorobenzene	460	3.33	6.67	"	"	"	---	86	31-120%	---	---	
1,2,4-Trichlorobenzene	514	3.33	6.67	"	"	"	---	96	34-120%	---	---	
4-Bromophenyl phenyl ether	609	3.33	6.67	"	"	"	---	114	46-124%	---	---	
4-Chlorophenyl phenyl ether	559	3.33	6.67	"	"	"	---	105	45-121%	---	---	
Aniline	400	6.67	13.3	"	"	"	---	75	7-120%	---	---	
4-Chloroaniline	274	3.33	6.67	"	"	"	---	51	16-120%	---	---	
2-Nitroaniline	531	26.7	53.3	"	"	"	---	100	44-127%	---	---	
3-Nitroaniline	437	26.7	53.3	"	"	"	---	82	33-120%	---	---	
4-Nitroaniline	520	26.7	53.3	"	"	"	---	97	35-120%	---	---	
Nitrobenzene	459	13.3	26.7	"	"	"	---	86	34-122%	---	---	
2,4-Dinitrotoluene	524	13.3	26.7	"	"	"	---	98	48-126%	---	---	
2,6-Dinitrotoluene	553	13.3	26.7	"	"	"	---	104	46-124%	---	---	
Benzoic acid	ND	333	333	"	"	1070	---		5-140%	---	---	Q-30, Q-31
Benzyl alcohol	495	6.67	13.3	"	"	533	---	93	29-122%	---	---	
Isophorone	486	3.33	6.67	"	"	"	---	91	30-122%	---	---	
Azobenzene (1,2-DPH)	462	3.33	6.67	"	"	"	---	87	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	539	33.3	66.7	"	"	"	---	101	60-121%	---	---	
3,3'-Dichlorobenzidine	1640	66.7	133	"	"	1070	---	153	22-121%	---	---	Q-29, Q-41
1,2-Dinitrobenzene	573	33.3	66.7	"	"	533	---	108	44-120%	---	---	
1,3-Dinitrobenzene	549	33.3	66.7	"	"	"	---	103	42-127%	---	---	
1,4-Dinitrobenzene	546	33.3	66.7	"	"	"	---	102	37-132%	---	---	
Pyridine	369	6.67	13.3	"	"	"	---	69	5-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 78 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*89 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*85 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*96 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*78 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*108 %*	*39-132 %*			*"*					*Q-41*
Duplicate (6070281-DUP1)					Prepared: 07/12/16 07:12		Analyzed: 07/12/16 18:41					
QC Source Sample: Topsoil 3 (A6G0259-01RE1)												
EPA 8270D												
Acenaphthene	**10.1**	5.99	12.0	ug/kg dry	4	---	8.41	---	---	19	30%	J
Acenaphthylene	ND	5.99	12.0	"	"	---	ND	---	---	---	30%	
Anthracene	**7.66**	5.99	12.0	"	"	---	ND	---	---		30%	J

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Duplicate (6070281-DUP1)					Prepared: 07/12/16 07:12		Analyzed: 07/12/16 18:41					
QC Source Sample: Topsoil 3 (A6G0259-01RE1)												
Benz(a)anthracene	**10.1**	5.99	12.0	ug/kg dry	"	---	8.48	---	---	17	30%	J
Benzo(a)pyrene	**12.3**	9.01	18.0	"	"	---	11.1	---	---	10	30%	J
Benzo(b)fluoranthene	**17.4**	9.01	18.0	"	"	---	14.5	---	---	19	30%	J
Benzo(k)fluoranthene	ND	9.01	18.0	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	5.99	12.0	"	"	---	ND	---	---	---	30%	
Chrysene	**12.4**	5.99	12.0	"	"	---	9.53	---	---	26	30%	
Dibenz(a,h)anthracene	ND	5.99	12.0	"	"	---	ND	---	---	---	30%	
Fluoranthene	**44.9**	5.99	12.0	"	"	---	34.1	---	---	27	30%	
Fluorene	**10.7**	5.99	12.0	"	"	---	7.68	---	---	33	30%	Q-05, J
Indeno(1,2,3-cd)pyrene	ND	5.99	12.0	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	12.0	24.0	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	12.0	24.0	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	12.0	24.0	"	"	---	ND	---	---	---	30%	
Phenanthrene	**54.3**	5.99	12.0	"	"	---	41.1	---	---	28	30%	
Pyrene	**36.5**	5.99	12.0	"	"	---	27.7	---	---	27	30%	
Carbazole	ND	9.01	18.0	"	"	---	ND	---	---	---	30%	
Dibenzofuran	**7.74**	5.99	12.0	"	"	---	6.03	---	---	25	30%	J
4-Chloro-3-methylphenol	ND	59.9	120	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	150	300	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	150	300	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	**49.2**	15.0	30.0	"	"	---	31.2	---	---	45	30%	Q-04
2-Nitrophenol	ND	59.9	120	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	59.9	120	"	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	59.9	120	"	"	---	ND	---	---	---	30%	
Phenol	**16.5**	12.0	24.0	"	"	---	15.3	---	---	8	30%	J
2,3,4,6-Tetrachlorophenol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	90.1	180	"	"	---	ND	---	---	---	30%	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Duplicate (6070281-DUP1)					Prepared: 07/12/16 07:12 Analyzed: 07/12/16 18:41							
QC Source Sample: Topsoil 3 (A6G0259-01RE1)												
Butyl benzyl phthalate	**87.4**	59.9	120	ug/kg dry	"	---	69.3	---	---	23	30%	J
Diethylphthalate	ND	59.9	120	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	59.9	120	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	59.9	120	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	59.9	120	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	5.99	12.0	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	5.99	12.0	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
Aniline	ND	59.9	59.9	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	120	240	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	120	240	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	120	240	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	59.9	120	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	59.9	120	"	"	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	59.9	120	"	"	---	ND	---	---	---	30%	
Benzoic acid	ND	1500	1500	"	"	---	ND	---	---	---	30%	Q-30
Benzyl alcohol	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
Isophorone	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	15.0	30.0	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Duplicate (6070281-DUP1)					Prepared: 07/12/16 07:12 Analyzed: 07/12/16 18:41							
QC Source Sample: Topsoil 3 (A6G0259-01RE1)												
Bis(2-Ethylhexyl) adipate	ND	150	300	ug/kg dry	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	300	601	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	150	300	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	150	300	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	150	300	"	"	---	ND	---	---	---	30%	
Pyridine	ND	30.0	59.9	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 54 %*		*Limits: 37-122 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*69 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*63 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*96 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*53 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*127 %*		*39-132 %*		*"*					*Q-41*
Matrix Spike (6070281-MS1)					Prepared: 07/12/16 07:12 Analyzed: 07/12/16 19:58							
QC Source Sample: Topsoil 4 (A6G0259-02)												
EPA 8270D												
Acenaphthene	600	6.35	12.8	ug/kg dry	4	637	9.29	93	40-122%	---	---	
Acenaphthylene	621	6.35	12.8	"	"	"	ND	97	32-132%	---	---	
Anthracene	681	6.35	12.8	"	"	"	6.92	106	47-123%	---	---	
Benz(a)anthracene	649	6.35	12.8	"	"	"	8.69	101	49-126%	---	---	
Benzo(a)pyrene	719	9.55	19.1	"	"	"	13.0	111	45-129%	---	---	
Benzo(b)fluoranthene	710	9.55	19.1	"	"	"	18.0	109	45-132%	---	---	
Benzo(k)fluoranthene	680	9.55	19.1	"	"	"	ND	107	47-132%	---	---	
Benzo(g,h,i)perylene	659	6.35	12.8	"	"	"	ND	103	43-134%	---	---	
Chrysene	660	6.35	12.8	"	"	"	12.7	102	50-124%	---	---	
Dibenz(a,h)anthracene	671	6.35	12.8	"	"	"	ND	105	45-134%	---	---	
Fluoranthene	715	6.35	12.8	"	"	"	35.7	107	50-127%	---	---	
Fluorene	656	6.35	12.8	"	"	"	9.27	102	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	619	6.35	12.8	"	"	"	ND	97	45-133%	---	---	
1-Methylnaphthalene	560	12.8	25.5	"	"	"	ND	88	40-120%	---	---	
2-Methylnaphthalene	558	12.8	25.5	"	"	"	ND	88	38-122%	---	---	
Naphthalene	490	12.8	25.5	"	"	"	ND	77	35-123%	---	---	
Phenanthrene	679	6.35	12.8	"	"	"	45.3	99	50-121%	---	---	
Pyrene	699	6.35	12.8	"	"	"	27.3	105	47-127%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Matrix Spike (6070281-MS1)					Prepared: 07/12/16 07:12		Analyzed: 07/12/16 19:58					
QC Source Sample: Topsoil 4 (A6G0259-02)												
Carbazole	690	9.55	19.1	ug/kg dry	"	"	ND	108	50-122%	---	---	
Dibenzofuran	646	6.35	12.8	"	"	"	7.19	100	44-120%	---	---	
4-Chloro-3-methylphenol	748	63.5	128	"	"	"	ND	118	45-122%	---	---	
2-Chlorophenol	555	31.9	63.5	"	"	"	ND	87	34-121%	---	---	
2,4-Dichlorophenol	701	31.9	63.5	"	"	"	ND	110	40-122%	---	---	
2,4-Dimethylphenol	616	31.9	63.5	"	"	"	ND	97	30-127%	---	---	
2,4-Dinitrophenol	752	159	319	"	"	"	ND	118	5-137%	---	---	Q-41
4,6-Dinitro-2-methylphenol	766	159	319	"	"	"	ND	120	29-132%	---	---	Q-41
2-Methylphenol	635	15.9	31.9	"	"	"	ND	100	32-122%	---	---	
3+4-Methylphenol(s)	747	15.9	31.9	"	"	"	116	99	34-120%	---	---	
2-Nitrophenol	649	63.5	128	"	"	"	ND	102	36-123%	---	---	Q-41
4-Nitrophenol	628	63.5	128	"	"	"	ND	99	30-132%	---	---	
Pentachlorophenol (PCP)	773	63.5	128	"	"	"	ND	121	25-133%	---	---	
Phenol	644	12.8	25.5	"	"	"	35.7	95	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	809	31.9	63.5	"	"	"	ND	127	44-125%	---	---	Q-01
2,3,5,6-Tetrachlorophenol	805	31.9	63.5	"	"	"	ND	126	40-120%	---	---	Q-01
2,4,5-Trichlorophenol	823	31.9	63.5	"	"	"	ND	129	41-124%	---	---	Q-01, Q-41
2,4,6-Trichlorophenol	777	31.9	63.5	"	"	"	ND	122	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	737	95.5	191	"	"	"	ND	116	51-133%	---	---	
Butyl benzyl phthalate	755	63.5	128	"	"	"	75.8	107	48-132%	---	---	
Diethylphthalate	648	63.5	128	"	"	"	ND	102	50-124%	---	---	
Dimethylphthalate	658	63.5	128	"	"	"	ND	103	48-124%	---	---	
Di-n-butylphthalate	717	63.5	128	"	"	"	ND	113	51-128%	---	---	
Di-n-octyl phthalate	762	63.5	128	"	"	"	ND	120	44-140%	---	---	
N-Nitrosodimethylamine	342	15.9	31.9	"	"	"	ND	54	23-120%	---	---	
N-Nitroso-di-n-propylamine	510	15.9	31.9	"	"	"	ND	80	36-120%	---	---	
N-Nitrosodiphenylamine	698	15.9	31.9	"	"	"	ND	110	38-127%	---	---	
Bis(2-Chloroethoxy) methane	484	15.9	31.9	"	"	"	ND	76	36-121%	---	---	
Bis(2-Chloroethyl) ether	432	15.9	31.9	"	"	"	ND	68	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	432	15.9	31.9	"	"	"	ND	68	33-131%	---	---	
Hexachlorobenzene	702	6.35	12.8	"	"	"	ND	110	44-122%	---	---	
Hexachlorobutadiene	499	15.9	31.9	"	"	"	ND	78	32-123%	---	---	
Hexachlorocyclopentadiene	395	31.9	63.5	"	"	"	ND	62	5-140%	---	---	
Hexachloroethane	380	15.9	31.9	"	"	"	ND	60	28-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070281 - EPA 3546							**Soil**					
Matrix Spike (6070281-MS1)					Prepared: 07/12/16 07:12		Analyzed: 07/12/16 19:58					
QC Source Sample: Topsoil 4 (A6G0259-02)												
2-Chloronaphthalene	597	6.35	12.8	ug/kg dry	"	"	ND	94	41-120%	---	---	
1,2-Dichlorobenzene	439	15.9	31.9	"	"	"	ND	69	33-120%	---	---	
1,3-Dichlorobenzene	419	15.9	31.9	"	"	"	ND	66	30-120%	---	---	
1,4-Dichlorobenzene	418	15.9	31.9	"	"	"	ND	66	31-120%	---	---	
1,2,4-Trichlorobenzene	499	15.9	31.9	"	"	"	ND	78	34-120%	---	---	
4-Bromophenyl phenyl ether	721	15.9	31.9	"	"	"	ND	113	46-124%	---	---	
4-Chlorophenyl phenyl ether	662	15.9	31.9	"	"	"	ND	104	45-121%	---	---	
Aniline	335	31.9	63.5	"	"	"	40.4	46	7-120%	---	---	
4-Chloroaniline	304	15.9	31.9	"	"	"	ND	48	16-120%	---	---	
2-Nitroaniline	733	128	255	"	"	"	ND	115	44-127%	---	---	
3-Nitroaniline	314	128	255	"	"	"	ND	49	33-120%	---	---	
4-Nitroaniline	414	128	255	"	"	"	ND	65	35-120%	---	---	
Nitrobenzene	477	63.5	128	"	"	"	ND	75	34-122%	---	---	
2,4-Dinitrotoluene	661	63.5	128	"	"	"	ND	104	48-126%	---	---	
2,6-Dinitrotoluene	696	63.5	128	"	"	"	ND	109	46-124%	---	---	
Benzoic acid	1440	797	797	"	"	1270	ND	113	5-140%	---	---	Q-31
Benzyl alcohol	633	31.9	63.5	"	"	637	ND	99	29-122%	---	---	
Isophorone	521	15.9	31.9	"	"	"	ND	82	30-122%	---	---	
Azobenzene (1,2-DPH)	572	15.9	31.9	"	"	"	ND	90	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	682	159	319	"	"	"	ND	107	60-121%	---	---	
3,3'-Dichlorobenzidine	ND	319	637	"	"	1270	ND		22-121%	---	---	Q-01, Q-41
1,2-Dinitrobenzene	648	159	319	"	"	637	ND	102	44-120%	---	---	
1,3-Dinitrobenzene	679	159	319	"	"	"	ND	107	42-127%	---	---	
1,4-Dinitrobenzene	673	159	319	"	"	"	ND	106	37-132%	---	---	
Pyridine	418	31.9	63.5	"	"	"	ND	66	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 67 %*	*Limits: 37-122 %*	*Dilution: 4x*	
2-Fluorobiphenyl (Surr)	*81 %*	*44-115 %*	*"*	
Phenol-d6 (Surr)	*82 %*	*33-122 %*	*"*	
p-Terphenyl-d14 (Surr)	*99 %*	*54-127 %*	*"*	
2-Fluorophenol (Surr)	*65 %*	*35-115 %*	*"*	
2,4,6-Tribromophenol (Surr)	*135 %*	*39-132 %*	*"*	*Q-41, S-06*

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070334 - EPA 3051A							**Soil**					
Blank (6070334-BLK1)					Prepared: 07/13/16 08:01		Analyzed: 07/15/16 21:03					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6070334-BS1)					Prepared: 07/13/16 08:01		Analyzed: 07/15/16 21:05					
EPA 6020A												
Arsenic	49.6	0.500	1.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Cadmium	49.6	0.100	0.200	"	"	"	---	99	"	---	---	
Chromium	50.1	0.500	1.00	"	"	"	---	100	"	---	---	
Copper	50.4	0.500	1.00	"	"	"	---	101	"	---	---	
Lead	51.0	0.100	0.200	"	"	"	---	102	"	---	---	
Mercury	1.07	0.0400	0.0800	"	"	1.00	---	107	"	---	---	
Nickel	48.3	0.500	1.00	"	"	50.0	---	97	"	---	---	
Selenium	26.4	0.500	1.00	"	"	25.0	---	106	"	---	---	
Silver	24.9	0.100	0.200	"	"	"	---	100	"	---	---	
Zinc	51.6	2.00	4.00	"	"	50.0	---	103	"	---	---	
Duplicate (6070334-DUP1)					Prepared: 07/13/16 08:01		Analyzed: 07/15/16 21:29					
QC Source Sample: Other (A6F0987-04)												
EPA 6020A												
Arsenic	**3.29**	0.586	1.17	mg/kg dry	10	---	3.38	---	---	3	40%	
Cadmium	ND	0.117	0.234	"	"	---	0.211	---	---	***	40%	
Chromium	**15.5**	0.586	1.17	"	"	---	15.3	---	---	0.8	40%	
Copper	**9.58**	0.586	1.17	"	"	---	9.07	---	---	6	40%	
Lead	**33.1**	0.117	0.234	"	"	---	31.1	---	---	6	40%	
Mercury	ND	0.0469	0.0937	"	"	---	ND	---	---	---	40%	
Nickel	**8.71**	0.586	1.17	"	"	---	8.54	---	---	2	40%	
Selenium	ND	0.586	1.17	"	"	---	ND	---	---	---	40%	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070334 - EPA 3051A							**Soil**					
Duplicate (6070334-DUP1)					Prepared: 07/13/16 08:01		Analyzed: 07/15/16 21:29					
QC Source Sample: Other (A6F0987-04)												
Silver	ND	0.117	0.234	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**44.6**	2.34	4.69	"	"	---	43.5	---	---	3	40%	
Matrix Spike (6070334-MS1)					Prepared: 07/13/16 08:01		Analyzed: 07/15/16 21:32					
QC Source Sample: Other (A6F0987-04)												
EPA 6020A												
Arsenic	62.1	0.610	1.22	mg/kg dry	10	61.0	3.38	96	75-125%	---	---	
Cadmium	59.6	0.122	0.244	"	"	"	0.211	97	"	---	---	
Chromium	76.0	0.610	1.22	"	"	"	15.3	99	"	---	---	
Copper	67.9	0.610	1.22	"	"	"	9.07	96	"	---	---	
Lead	92.7	0.122	0.244	"	"	"	31.1	101	"	---	---	
Mercury	1.22	0.0488	0.0976	"	"	1.22	ND	100	"	---	---	
Nickel	66.3	0.610	1.22	"	"	61.0	8.54	95	"	---	---	
Selenium	30.5	0.610	1.22	"	"	30.5	ND	100	"	---	---	
Silver	29.6	0.122	0.244	"	"	"	ND	97	"	---	---	
Zinc	105	2.44	4.88	"	"	61.0	43.5	100	"	---	---	
Matrix Spike (6070334-MS2)					Prepared: 07/13/16 08:01		Analyzed: 07/15/16 22:27					
QC Source Sample: Topsoil 4 (A6G0259-02)												
EPA 6020A												
Arsenic	63.3	0.629	1.26	mg/kg dry	10	63.0	3.48	95	75-125%	---	---	
Cadmium	61.8	0.126	0.252	"	"	"	ND	98	"	---	---	
Chromium	78.8	0.629	1.26	"	"	"	17.3	98	"	---	---	
Copper	83.4	0.629	1.26	"	"	"	22.7	96	"	---	---	
Lead	68.8	0.126	0.252	"	"	"	8.74	95	"	---	---	
Mercury	1.28	0.0504	0.101	"	"	1.26	ND	102	"	---	---	
Nickel	82.1	0.629	1.26	"	"	63.0	21.5	96	"	---	---	
Selenium	32.9	0.629	1.26	"	"	31.4	ND	105	"	---	---	
Silver	30.7	0.126	0.252	"	"	"	ND	98	"	---	---	
Zinc	109	2.52	5.04	"	"	63.0	48.4	97	"	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070224 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6070224-DUP1)					Prepared: 07/08/16 13:40		Analyzed: 07/11/16 08:15					
QC Source Sample: Other (A6G0257-04)												
EPA 8000C												
% Solids	**80.1**	1.00	1.00	% by Weight	1	---	78.2	---	---	2	10%	
Duplicate (6070224-DUP2)					Prepared: 07/08/16 13:40		Analyzed: 07/11/16 08:15					
QC Source Sample: Other (A6G0266-08)												
EPA 8000C												
% Solids	**81.3**	1.00	1.00	% by Weight	1	---	81.0	---	---	0.3	10%	
Duplicate (6070224-DUP3)					Prepared: 07/08/16 13:40		Analyzed: 07/11/16 08:15					
QC Source Sample: Other (A6G0289-04)												
EPA 8000C												
% Solids	**83.2**	1.00	1.00	% by Weight	1	---	83.1	---	---	0.1	10%	
Duplicate (6070224-DUP5)					Prepared: 07/08/16 20:29		Analyzed: 07/11/16 08:15					
QC Source Sample: Other (A6G0310-01)												
EPA 8000C												
% Solids	**79.5**	1.00	1.00	% by Weight	1	---	78.6	---	---	1	10%	
Duplicate (6070224-DUP6)					Prepared: 07/08/16 20:29		Analyzed: 07/11/16 08:15					
QC Source Sample: Other (A6G0318-02)												
EPA 8000C												
% Solids	**79.6**	1.00	1.00	% by Weight	1	---	79.1	---	---	0.6	10%	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070267							
A6G0259-01	Soil	NWTPH-Dx	07/06/16 08:25	07/11/16 13:42	10.26g/5mL	10g/5mL	0.98
A6G0259-02	Soil	NWTPH-Dx	07/06/16 08:32	07/11/16 13:42	10.87g/5mL	10g/5mL	0.92

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070280							
A6G0259-01	Soil	EPA 8082A	07/06/16 08:25	07/12/16 07:09	30.07g/2mL	30g/2mL	1.00
A6G0259-02	Soil	EPA 8082A	07/06/16 08:32	07/12/16 07:09	30.25g/2mL	30g/2mL	0.99

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070282							
A6G0259-01RE1	Soil	EPA 8081B	07/06/16 08:25	07/12/16 07:21	10.69g/10mL	10g/5mL	1.87
A6G0259-02RE1	Soil	EPA 8081B	07/06/16 08:32	07/12/16 07:21	10.39g/10mL	10g/5mL	1.92

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070281							
A6G0259-01RE1	Soil	EPA 8270D	07/06/16 08:25	07/12/16 07:12	15.57g/2mL	15g/2mL	0.96
A6G0259-02	Soil	EPA 8270D	07/06/16 08:32	07/12/16 07:12	15.61g/2mL	15g/2mL	0.96

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070334							
A6G0259-01	Soil	EPA 6020A	07/06/16 08:25	07/13/16 08:01	0.478g/50mL	0.5g/50mL	1.05
A6G0259-02	Soil	EPA 6020A	07/06/16 08:32	07/13/16 08:01	0.494g/50mL	0.5g/50mL	1.01

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070224							
A6G0259-01	Soil	EPA 8000C	07/06/16 08:25	07/08/16 15:06	1N/A/1N/A	1N/A/1N/A	NA
A6G0259-02	Soil	EPA 8000C	07/06/16 08:32	07/08/16 15:06	1N/A/1N/A	1N/A/1N/A	NA

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
F-11	The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-06	Surrogate recovery is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39 Task 02	**Reported:**
Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

Blank Policy

Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Portland, OR 97209	Project Manager: Lindsey Crosby	07/22/16 15:58

APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # AG0259 COC 1 of 1

Company: MFA | Project Mgr: Lindsey Crosby | Project Name: Port of Ridgefield Top Boundary Soil Assessment | Project #/PO#: 9003.01.039 Task 02

Address: Vancouver, WA | Phone: 360-433-0223 | Fax: | Email: Lindsey Crosby <lcrosby@maulfoster.com>

Sampled by: Y. Van

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Total metals EPA 6020*	Organochlorine pesticides (EPA 8081B)	PCB Aroclors (include aroclor 1268)	PAH (EPA 8270D)	Dioxins/furans (EPA 1613B)	TPH-Dx (NWTPH-D/Dx)
Topsoil 3		7/6/2016	0830	soil	1	X	X	X	X	X	X
Topsoil 4		7/6/2016	0832	soil	1	X	X	X	X	X	X

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS: 1) Total metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Zn).
2) see attached table for specif analytes of organochlorine pesticides, SVOCs, and dioxins.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 7/6/16	Date: 7/7/16	Date:	Date:
Printed Name: Jenny Van	Printed Name: B Clement	Printed Name:	Printed Name:
Time: 1240	Time: 9:22	Time:	Time:
Company: MFA	Company: Apex	Company:	Company:

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Friday, July 22, 2016

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / OPP 9003.01.39

Enclosed are the results of analyses for work order A6G0572, which was received by the laboratory on 7/15/2016 at 11:32:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
7/13 Compost-1	A6G0572-01	Soil	07/13/16 16:30	07/15/16 11:32
7/13 Compost-2	A6G0572-02	Soil	07/13/16 16:40	07/15/16 11:32
7/15 Sandy Loam-1	A6G0572-03	Soil	07/15/16 08:55	07/15/16 11:32
7/15 Sandy Loam-2	A6G0572-04	Soil	07/15/16 09:10	07/15/16 11:32

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01)			**Matrix: Soil**		**Batch: 6070561**			
Diesel	ND	22.3	44.7	mg/kg dry	1	07/20/16 02:02	NWTPH-Dx/SG	
Oil	**477**	44.7	89.4	"	"	"	"	F-03
Surrogate: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	
7/13 Compost-2 (A6G0572-02)			**Matrix: Soil**		**Batch: 6070561**			
Diesel	ND	23.6	47.3	mg/kg dry	1	07/20/16 02:42	NWTPH-Dx/SG	
Oil	**269**	47.3	94.5	"	"	"	"	F-03
Surrogate: o-Terphenyl (Surr)			*Recovery: 80 %*	*Limits: 50-150 %*	"	"	"	
7/15 Sandy Loam-1 (A6G0572-03)			**Matrix: Soil**		**Batch: 6070561**			
Diesel	ND	13.6	27.2	mg/kg dry	1	07/20/16 03:02	NWTPH-Dx/SG	
Oil	ND	27.2	54.3	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*	"	"	"	
7/15 Sandy Loam-2 (A6G0572-04)			**Matrix: Soil**		**Batch: 6070561**			
Diesel	ND	15.1	30.3	mg/kg dry	1	07/20/16 04:42	NWTPH-Dx/SG	
Oil	**122**	30.3	60.6	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 94 %*	*Limits: 50-150 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01)			**Matrix: Soil**		**Batch: 6070555**			C-07
Aroclor 1016	ND	2.76	2.76	ug/kg dry	1	07/19/16 17:52	EPA 8082A	R-02
Aroclor 1221	ND	1.23	2.44	"	"	"	"	
Aroclor 1232	ND	6.89	6.89	"	"	"	"	R-02
Aroclor 1242	ND	3.22	3.22	"	"	"	"	R-02
Aroclor 1248	ND	3.22	3.22	"	"	"	"	R-02
Aroclor 1254	**4.52**	1.23	2.44	"	"	"	"	
Aroclor 1260	ND	3.68	3.68	"	"	"	"	R-02
Aroclor 1262	ND	2.44	2.44	"	"	"	"	
Aroclor 1268	ND	1.23	2.44	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 44-120 %*	"	"	"	
7/13 Compost-2 (A6G0572-02)			**Matrix: Soil**		**Batch: 6070555**			C-07
Aroclor 1016	ND	3.34	3.34	ug/kg dry	1	07/19/16 19:06	EPA 8082A	R-02
Aroclor 1221	ND	1.28	2.54	"	"	"	"	
Aroclor 1232	ND	8.60	8.60	"	"	"	"	R-02
Aroclor 1242	ND	4.30	4.30	"	"	"	"	R-02
Aroclor 1248	ND	4.30	4.30	"	"	"	"	R-02
Aroclor 1254	**5.54**	1.28	2.54	"	"	"	"	P-10
Aroclor 1260	ND	4.72	4.72	"	"	"	"	R-02
Aroclor 1262	ND	2.54	2.54	"	"	"	"	
Aroclor 1268	ND	1.28	2.54	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 87 %*	*Limits: 44-120 %*	"	"	"	
7/15 Sandy Loam-1 (A6G0572-03)			**Matrix: Soil**		**Batch: 6070555**			C-07
Aroclor 1016	ND	0.789	1.57	ug/kg dry	1	07/19/16 19:43	EPA 8082A	
Aroclor 1221	ND	0.789	1.57	"	"	"	"	
Aroclor 1232	ND	0.789	1.57	"	"	"	"	
Aroclor 1242	ND	0.789	1.57	"	"	"	"	
Aroclor 1248	ND	0.789	1.57	"	"	"	"	
Aroclor 1254	ND	0.789	1.57	"	"	"	"	
Aroclor 1260	ND	0.789	1.57	"	"	"	"	
Aroclor 1262	ND	0.789	1.57	"	"	"	"	
Aroclor 1268	ND	0.789	1.57	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 88 %*	*Limits: 44-120 %*	"	"	"	
7/15 Sandy Loam-2 (A6G0572-04)			**Matrix: Soil**		**Batch: 6070555**			C-07
Aroclor 1016	ND	0.823	1.63	ug/kg dry	1	07/19/16 20:20	EPA 8082A	
Aroclor 1221	ND	0.823	1.63	"	"	"	"	
Aroclor 1232	ND	1.63	1.63	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-2 (A6G0572-04)			**Matrix: Soil**	**Batch: 6070555**				C-07
Aroclor 1242	ND	0.823	1.63	ug/kg dry	1	"	EPA 8082A	
Aroclor 1248	ND	0.823	1.63	"	"	"	"	
Aroclor 1254	**0.968**	0.823	1.63	"	"	"	"	J
Aroclor 1260	**1.01**	0.823	1.63	"	"	"	"	J
Aroclor 1262	ND	0.823	1.63	"	"	"	"	
Aroclor 1268	ND	0.823	1.63	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 90 %*	*Limits: 44-120 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01RE1)			**Matrix: Soil**	**Batch: 6070569**				C-05
Aldrin	ND	6.41	6.41	ug/kg dry	1	07/20/16 12:10	EPA 8081B	R-02
alpha-BHC	ND	3.56	3.56	"	"	"	"	
beta-BHC	ND	13.5	13.5	"	"	"	"	R-02
delta-BHC	ND	9.97	9.97	"	"	"	"	R-02
gamma-BHC (Lindane)	ND	6.77	6.77	"	"	"	"	R-02
cis-Chlordane	ND	8.19	8.19	"	"	"	"	R-02
trans-Chlordane	ND	7.84	7.84	"	"	"	"	R-02
4,4'-DDD	ND	11.4	11.4	"	"	"	"	R-02
4,4'-DDE	ND	13.2	13.2	"	"	"	"	R-02
4,4'-DDT	ND	13.2	13.2	"	"	"	"	R-02
Dieldrin	ND	8.55	8.55	"	"	"	"	R-02
Endosulfan I	ND	8.91	8.91	"	"	"	"	R-02
Endosulfan II	ND	9.62	9.62	"	"	"	"	R-02
Endosulfan sulfate	ND	14.2	14.2	"	"	"	"	R-02
Endrin	ND	8.91	8.91	"	"	"	"	R-02
Endrin Aldehyde	ND	21.4	21.4	"	"	"	"	R-02
Endrin ketone	ND	14.2	14.2	"	"	"	"	R-02
Heptachlor	ND	7.12	7.12	"	"	"	"	R-02
Heptachlor epoxide	ND	7.12	7.12	"	"	"	"	R-02
Methoxychlor	ND	29.9	29.9	"	"	"	"	R-02
Chlordane (Technical)	ND	53.4	107	"	"	"	"	
Toxaphene (Total)	ND	53.4	107	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 88 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*101 %*	*Limits: 65-151 %*	"	"	"	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-2 (A6G0572-02RE1)			**Matrix: Soil**	**Batch: 6070569**				C-05
Aldrin	ND	5.96	5.96	ug/kg dry	1	07/20/16 13:20	EPA 8081B	R-02
alpha-BHC	ND	3.73	3.73	"	"	"	"	
beta-BHC	ND	11.5	11.5	"	"	"	"	R-02
delta-BHC	ND	8.94	8.94	"	"	"	"	R-02
gamma-BHC (Lindane)	ND	5.59	5.59	"	"	"	"	R-02
cis-Chlordane	ND	7.45	7.45	"	"	"	"	R-02
trans-Chlordane	ND	7.82	7.82	"	"	"	"	R-02
4,4'-DDD	ND	11.2	11.2	"	"	"	"	R-02
4,4'-DDE	ND	14.2	14.2	"	"	"	"	R-02
4,4'-DDT	ND	12.7	12.7	"	"	"	"	R-02
Dieldrin	ND	7.82	7.82	"	"	"	"	R-02
Endosulfan I	ND	7.82	7.82	"	"	"	"	R-02
Endosulfan II	ND	9.69	9.69	"	"	"	"	R-02
Endosulfan sulfate	ND	14.2	14.2	"	"	"	"	R-02
Endrin	ND	8.94	8.94	"	"	"	"	R-02
Endrin Aldehyde	ND	20.1	20.1	"	"	"	"	R-02
Endrin ketone	ND	15.6	15.6	"	"	"	"	R-02
Heptachlor	ND	5.22	5.22	"	"	"	"	R-02
Heptachlor epoxide	ND	6.33	6.33	"	"	"	"	R-02
Methoxychlor	ND	31.3	31.3	"	"	"	"	R-02
Chlordane (Technical)	ND	55.9	112	"	"	"	"	
Toxaphene (Total)	ND	55.9	112	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 89 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*103 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-1 (A6G0572-03RE1)			**Matrix: Soil**	**Batch: 6070569**				C-05
Aldrin	ND	1.10	2.20	ug/kg dry	1	07/20/16 13:55	EPA 8081B	
alpha-BHC	ND	1.10	2.20	"	"	"	"	
beta-BHC	ND	1.10	2.20	"	"	"	"	
delta-BHC	ND	1.10	2.20	"	"	"	"	
gamma-BHC (Lindane)	ND	1.10	2.20	"	"	"	"	
cis-Chlordane	ND	1.10	2.20	"	"	"	"	
trans-Chlordane	ND	1.10	2.20	"	"	"	"	
4,4'-DDD	ND	1.10	2.20	"	"	"	"	
4,4'-DDE	ND	1.10	2.20	"	"	"	"	
4,4'-DDT	ND	1.10	2.20	"	"	"	"	
Dieldrin	ND	1.10	2.20	"	"	"	"	
Endosulfan I	ND	1.10	2.20	"	"	"	"	
Endosulfan II	ND	1.10	2.20	"	"	"	"	
Endosulfan sulfate	ND	1.10	2.20	"	"	"	"	
Endrin	ND	1.10	2.20	"	"	"	"	
Endrin Aldehyde	ND	1.10	2.20	"	"	"	"	
Endrin ketone	ND	1.10	2.20	"	"	"	"	
Heptachlor	ND	1.10	2.20	"	"	"	"	
Heptachlor epoxide	ND	1.10	2.20	"	"	"	"	
Methoxychlor	ND	3.31	6.61	"	"	"	"	
Chlordane (Technical)	ND	33.1	66.1	"	"	"	"	
Toxaphene (Total)	ND	33.1	66.1	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 94 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*93 %*	*Limits: 65-151 %*	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-2 (A6G0572-04RE1)			**Matrix: Soil**	**Batch: 6070569**				C-05
Aldrin	ND	1.15	2.30	ug/kg dry	1	07/20/16 14:47	EPA 8081B	
alpha-BHC	ND	1.15	2.30	"	"	"	"	
beta-BHC	ND	1.15	2.30	"	"	"	"	
delta-BHC	ND	1.15	2.30	"	"	"	"	
gamma-BHC (Lindane)	ND	1.15	2.30	"	"	"	"	
cis-Chlordane	ND	1.15	2.30	"	"	"	"	
trans-Chlordane	ND	1.15	2.30	"	"	"	"	
4,4'-DDD	ND	1.15	2.30	"	"	"	"	
4,4'-DDE	**1.22**	1.15	2.30	"	"	"	"	J
4,4'-DDT	ND	2.30	2.30	"	"	"	"	
Dieldrin	ND	1.15	2.30	"	"	"	"	
Endosulfan I	ND	1.15	2.30	"	"	"	"	
Endosulfan II	ND	1.15	2.30	"	"	"	"	
Endosulfan sulfate	ND	1.15	2.30	"	"	"	"	
Endrin	ND	1.15	2.30	"	"	"	"	
Endrin Aldehyde	ND	1.15	2.30	"	"	"	"	
Endrin ketone	ND	1.15	2.30	"	"	"	"	
Heptachlor	ND	1.15	2.30	"	"	"	"	
Heptachlor epoxide	ND	1.15	2.30	"	"	"	"	
Methoxychlor	ND	3.45	6.91	"	"	"	"	
Chlordane (Technical)	ND	34.5	69.1	"	"	"	"	
Toxaphene (Total)	ND	34.5	69.1	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 93 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*94 %*	*Limits: 65-151 %*	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01RE1)			**Matrix: Soil**		**Batch: 6070531**			
Acenaphthene	ND	48.4	97.2	ug/kg dry	20	07/19/16 16:21	EPA 8270D	
Acenaphthylene	ND	48.4	97.2	"	"	"	"	
Anthracene	ND	48.4	97.2	"	"	"	"	
Benz(a)anthracene	**63.0**	48.4	97.2	"	"	"	"	J, Q-42
Benzo(a)pyrene	**76.6**	72.8	146	"	"	"	"	J
Benzo(b)fluoranthene	**87.3**	72.8	146	"	"	"	"	J
Benzo(k)fluoranthene	ND	72.8	146	"	"	"	"	
Benzo(g,h,i)perylene	ND	48.4	97.2	"	"	"	"	
Chrysene	**82.1**	48.4	97.2	"	"	"	"	J
Dibenz(a,h)anthracene	ND	48.4	97.2	"	"	"	"	
Fluoranthene	**190**	48.4	97.2	"	"	"	"	
Fluorene	ND	48.4	97.2	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	48.4	97.2	"	"	"	"	
1-Methylnaphthalene	ND	97.2	194	"	"	"	"	
2-Methylnaphthalene	ND	97.2	194	"	"	"	"	
Naphthalene	ND	97.2	194	"	"	"	"	
Phenanthrene	**193**	48.4	97.2	"	"	"	"	
Pyrene	**140**	48.4	97.2	"	"	"	"	
Carbazole	ND	72.8	146	"	"	"	"	
Dibenzofuran	ND	48.4	97.2	"	"	"	"	
4-Chloro-3-methylphenol	ND	484	972	"	"	"	"	
2-Chlorophenol	ND	243	484	"	"	"	"	
2,4-Dichlorophenol	ND	243	484	"	"	"	"	
2,4-Dimethylphenol	ND	243	484	"	"	"	"	
2,4-Dinitrophenol	ND	1210	2430	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1210	2430	"	"	"	"	
2-Methylphenol	ND	121	243	"	"	"	"	
3+4-Methylphenol(s)	**534**	121	243	"	"	"	"	
2-Nitrophenol	ND	484	972	"	"	"	"	
4-Nitrophenol	ND	484	972	"	"	"	"	
Pentachlorophenol (PCP)	ND	484	972	"	"	"	"	
Phenol	**400**	97.2	194	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	243	484	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	243	484	"	"	"	"	
2,4,5-Trichlorophenol	ND	243	484	"	"	"	"	
2,4,6-Trichlorophenol	ND	243	484	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	728	1460	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01RE1)			**Matrix: Soil**		**Batch: 6070531**			
Butyl benzyl phthalate	ND	484	972	ug/kg dry	20	"	EPA 8270D	
Diethylphthalate	ND	484	972	"	"	"	"	
Dimethylphthalate	ND	484	972	"	"	"	"	
Di-n-butylphthalate	ND	484	972	"	"	"	"	
Di-n-octyl phthalate	ND	484	972	"	"	"	"	
N-Nitrosodimethylamine	ND	121	243	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	121	243	"	"	"	"	
N-Nitrosodiphenylamine	ND	121	243	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	121	243	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	121	243	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	121	243	"	"	"	"	
Hexachlorobenzene	ND	48.4	97.2	"	"	"	"	
Hexachlorobutadiene	ND	121	243	"	"	"	"	
Hexachlorocyclopentadiene	ND	243	484	"	"	"	"	
Hexachloroethane	ND	121	243	"	"	"	"	
2-Chloronaphthalene	ND	48.4	97.2	"	"	"	"	
1,2-Dichlorobenzene	ND	121	243	"	"	"	"	
1,3-Dichlorobenzene	ND	121	243	"	"	"	"	
1,4-Dichlorobenzene	ND	121	243	"	"	"	"	
1,2,4-Trichlorobenzene	ND	121	243	"	"	"	"	
4-Bromophenyl phenyl ether	ND	121	243	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	121	243	"	"	"	"	
Aniline	ND	484	484	"	"	"	"	
4-Chloroaniline	ND	121	243	"	"	"	"	
2-Nitroaniline	ND	972	1940	"	"	"	"	
3-Nitroaniline	ND	972	1940	"	"	"	"	
4-Nitroaniline	ND	972	1940	"	"	"	"	
Nitrobenzene	ND	484	972	"	"	"	"	
2,4-Dinitrotoluene	ND	484	972	"	"	"	"	
2,6-Dinitrotoluene	ND	484	972	"	"	"	"	
Benzoic acid	ND	6080	12100	"	"	"	"	
Benzyl alcohol	ND	243	484	"	"	"	"	
Isophorone	ND	121	243	"	"	"	"	
Azobenzene (1,2-DPH)	ND	121	243	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	1210	2430	"	"	"	"	
3,3'-Dichlorobenzidine	ND	484	972	"	"	"	"	
1,2-Dinitrobenzene	ND	1210	2430	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01RE1)			**Matrix: Soil**		**Batch: 6070531**			
1,3-Dinitrobenzene	ND	1210	2430	ug/kg dry	20	"	EPA 8270D	
1,4-Dinitrobenzene	ND	1210	2430	"	"	"	"	
Pyridine	ND	243	484	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 99 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*82 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*84 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*100 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*64 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*142 %*	*Limits: 39-132 %*	"	"	"	*Q-41, S-06*
7/13 Compost-2 (A6G0572-02)			**Matrix: Soil**		**Batch: 6070531**			
Acenaphthene	ND	49.7	99.8	ug/kg dry	20	07/19/16 14:28	EPA 8270D	
Acenaphthylene	ND	49.7	99.8	"	"	"	"	
Anthracene	ND	49.7	99.8	"	"	"	"	
Benz(a)anthracene	**70.8**	49.7	99.8	"	"	"	"	J
Benzo(a)pyrene	ND	74.8	150	"	"	"	"	
Benzo(b)fluoranthene	ND	74.8	150	"	"	"	"	
Benzo(k)fluoranthene	ND	74.8	150	"	"	"	"	
Benzo(g,h,i)perylene	ND	99.8	99.8	"	"	"	"	
Chrysene	**85.1**	49.7	99.8	"	"	"	"	J
Dibenz(a,h)anthracene	ND	49.7	99.8	"	"	"	"	
Fluoranthene	**221**	49.7	99.8	"	"	"	"	
Fluorene	ND	49.7	99.8	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	49.7	99.8	"	"	"	"	
1-Methylnaphthalene	ND	99.8	199	"	"	"	"	
2-Methylnaphthalene	ND	99.8	199	"	"	"	"	
Naphthalene	ND	99.8	199	"	"	"	"	
Phenanthrene	**216**	49.7	99.8	"	"	"	"	
Pyrene	**178**	49.7	99.8	"	"	"	"	
Carbazole	ND	74.8	150	"	"	"	"	
Dibenzofuran	ND	49.7	99.8	"	"	"	"	
4-Chloro-3-methylphenol	ND	497	998	"	"	"	"	
2-Chlorophenol	ND	249	497	"	"	"	"	
2,4-Dichlorophenol	ND	249	497	"	"	"	"	
2,4-Dimethylphenol	ND	249	497	"	"	"	"	
2,4-Dinitrophenol	ND	1240	2490	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1240	2490	"	"	"	"	
2-Methylphenol	ND	124	249	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-2 (A6G0572-02)			**Matrix: Soil**		**Batch: 6070531**			
3+4-Methylphenol(s)	**353**	124	249	ug/kg dry	20	"	EPA 8270D	
2-Nitrophenol	ND	497	998	"	"	"	"	
4-Nitrophenol	ND	497	998	"	"	"	"	
Pentachlorophenol (PCP)	ND	497	998	"	"	"	"	
Phenol	**369**	99.8	199	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	249	497	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	249	497	"	"	"	"	
2,4,5-Trichlorophenol	ND	249	497	"	"	"	"	
2,4,6-Trichlorophenol	ND	249	497	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	748	1500	"	"	"	"	
Butyl benzyl phthalate	ND	497	998	"	"	"	"	
Diethylphthalate	ND	497	998	"	"	"	"	
Dimethylphthalate	ND	497	998	"	"	"	"	
Di-n-butylphthalate	ND	497	998	"	"	"	"	
Di-n-octyl phthalate	ND	497	998	"	"	"	"	
N-Nitrosodimethylamine	ND	124	249	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	124	249	"	"	"	"	
N-Nitrosodiphenylamine	ND	124	249	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	124	249	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	249	249	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	124	249	"	"	"	"	
Hexachlorobenzene	ND	49.7	99.8	"	"	"	"	
Hexachlorobutadiene	ND	124	249	"	"	"	"	
Hexachlorocyclopentadiene	ND	249	497	"	"	"	"	
Hexachloroethane	ND	124	249	"	"	"	"	
2-Chloronaphthalene	ND	49.7	99.8	"	"	"	"	
1,2-Dichlorobenzene	ND	124	249	"	"	"	"	
1,3-Dichlorobenzene	ND	124	249	"	"	"	"	
1,4-Dichlorobenzene	ND	124	249	"	"	"	"	
1,2,4-Trichlorobenzene	ND	124	249	"	"	"	"	
4-Bromophenyl phenyl ether	ND	124	249	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	124	249	"	"	"	"	
Aniline	ND	497	497	"	"	"	"	
4-Chloroaniline	ND	124	249	"	"	"	"	
2-Nitroaniline	ND	998	1990	"	"	"	"	
3-Nitroaniline	ND	998	1990	"	"	"	"	
4-Nitroaniline	ND	998	1990	"	"	"	"	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-2 (A6G0572-02)			**Matrix: Soil**		**Batch: 6070531**			
Nitrobenzene	ND	497	998	ug/kg dry	20	"	EPA 8270D	
2,4-Dinitrotoluene	ND	497	998	"	"	"	"	
2,6-Dinitrotoluene	ND	497	998	"	"	"	"	
Benzoic acid	ND	6240	12400	"	"	"	"	
Benzyl alcohol	ND	249	497	"	"	"	"	
Isophorone	ND	124	249	"	"	"	"	
Azobenzene (1,2-DPH)	ND	124	249	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	1240	2490	"	"	"	"	
3,3'-Dichlorobenzidine	ND	497	998	"	"	"	"	
1,2-Dinitrobenzene	ND	1240	2490	"	"	"	"	
1,3-Dinitrobenzene	ND	1240	2490	"	"	"	"	
1,4-Dinitrobenzene	ND	1240	2490	"	"	"	"	
Pyridine	ND	249	497	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 96 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*82 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*76 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*89 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*62 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*144 %*	*Limits: 39-132 %*	"	"	"	*Q-41, S-06*

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-1 (A6G0572-03RE1)			**Matrix: Soil**		**Batch: 6070531**			
Acenaphthene	ND	5.92	11.9	ug/kg dry	4	07/19/16 17:43	EPA 8270D	
Acenaphthylene	ND	5.92	11.9	"	"	"	"	
Anthracene	ND	5.92	11.9	"	"	"	"	
Benz(a)anthracene	ND	5.92	11.9	"	"	"	"	
Benzo(a)pyrene	ND	8.90	17.8	"	"	"	"	
Benzo(b)fluoranthene	ND	8.90	17.8	"	"	"	"	
Benzo(k)fluoranthene	ND	8.90	17.8	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.92	11.9	"	"	"	"	
Chrysene	ND	5.92	11.9	"	"	"	"	
Dibenz(a,h)anthracene	ND	5.92	11.9	"	"	"	"	
Fluoranthene	**9.61**	5.92	11.9	"	"	"	"	J
Fluorene	ND	5.92	11.9	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	5.92	11.9	"	"	"	"	
1-Methylnaphthalene	ND	11.9	23.7	"	"	"	"	
2-Methylnaphthalene	ND	11.9	23.7	"	"	"	"	
Naphthalene	ND	11.9	23.7	"	"	"	"	
Phenanthrene	**11.7**	5.92	11.9	"	"	"	"	J
Pyrene	**7.21**	5.92	11.9	"	"	"	"	J
Carbazole	ND	8.90	17.8	"	"	"	"	
Dibenzofuran	ND	5.92	11.9	"	"	"	"	
4-Chloro-3-methylphenol	ND	59.2	119	"	"	"	"	
2-Chlorophenol	ND	29.7	59.2	"	"	"	"	
2,4-Dichlorophenol	ND	29.7	59.2	"	"	"	"	
2,4-Dimethylphenol	ND	29.7	59.2	"	"	"	"	
2,4-Dinitrophenol	ND	148	297	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	148	297	"	"	"	"	
2-Methylphenol	ND	14.8	29.7	"	"	"	"	
3+4-Methylphenol(s)	**55.1**	14.8	29.7	"	"	"	"	
2-Nitrophenol	ND	59.2	119	"	"	"	"	
4-Nitrophenol	ND	59.2	119	"	"	"	"	
Pentachlorophenol (PCP)	ND	59.2	119	"	"	"	"	
Phenol	**14.8**	11.9	23.7	"	"	"	"	J
2,3,4,6-Tetrachlorophenol	ND	29.7	59.2	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	29.7	59.2	"	"	"	"	
2,4,5-Trichlorophenol	ND	29.7	59.2	"	"	"	"	
2,4,6-Trichlorophenol	ND	29.7	59.2	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	89.0	178	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-1 (A6G0572-03RE1)			**Matrix: Soil**		**Batch: 6070531**			
Butyl benzyl phthalate	ND	59.2	119	ug/kg dry	4	"	EPA 8270D	
Diethylphthalate	ND	59.2	119	"	"	"	"	
Dimethylphthalate	ND	59.2	119	"	"	"	"	
Di-n-butylphthalate	ND	59.2	119	"	"	"	"	
Di-n-octyl phthalate	ND	59.2	119	"	"	"	"	
N-Nitrosodimethylamine	ND	14.8	29.7	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	14.8	29.7	"	"	"	"	
N-Nitrosodiphenylamine	ND	14.8	29.7	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	14.8	29.7	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	14.8	29.7	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	14.8	29.7	"	"	"	"	
Hexachlorobenzene	ND	5.92	11.9	"	"	"	"	
Hexachlorobutadiene	ND	14.8	29.7	"	"	"	"	
Hexachlorocyclopentadiene	ND	29.7	59.2	"	"	"	"	
Hexachloroethane	ND	14.8	29.7	"	"	"	"	
2-Chloronaphthalene	ND	5.92	11.9	"	"	"	"	
1,2-Dichlorobenzene	ND	14.8	29.7	"	"	"	"	
1,3-Dichlorobenzene	ND	14.8	29.7	"	"	"	"	
1,4-Dichlorobenzene	ND	14.8	29.7	"	"	"	"	
1,2,4-Trichlorobenzene	ND	14.8	29.7	"	"	"	"	
4-Bromophenyl phenyl ether	ND	14.8	29.7	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	14.8	29.7	"	"	"	"	
Aniline	ND	59.2	59.2	"	"	"	"	
4-Chloroaniline	ND	14.8	29.7	"	"	"	"	
2-Nitroaniline	ND	119	237	"	"	"	"	
3-Nitroaniline	ND	119	237	"	"	"	"	
4-Nitroaniline	ND	119	237	"	"	"	"	
Nitrobenzene	ND	59.2	119	"	"	"	"	
2,4-Dinitrotoluene	ND	59.2	119	"	"	"	"	
2,6-Dinitrotoluene	ND	59.2	119	"	"	"	"	
Benzoic acid	ND	743	1480	"	"	"	"	
Benzyl alcohol	ND	29.7	59.2	"	"	"	"	
Isophorone	ND	14.8	29.7	"	"	"	"	
Azobenzene (1,2-DPH)	ND	14.8	29.7	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	148	297	"	"	"	"	
3,3'-Dichlorobenzidine	ND	59.2	119	"	"	"	"	
1,2-Dinitrobenzene	ND	148	297	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-1 (A6G0572-03RE1)			**Matrix: Soil**		**Batch: 6070531**			
1,3-Dinitrobenzene	ND	148	297	ug/kg dry	4	"	EPA 8270D	
1,4-Dinitrobenzene	ND	148	297	"	"	"	"	
Pyridine	ND	29.7	59.2	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 102 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*90 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*93 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*104 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*83 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*137 %*	*Limits: 39-132 %*	"	"	"	*Q-41, S-06*
7/15 Sandy Loam-2 (A6G0572-04RE1)			**Matrix: Soil**		**Batch: 6070531**			
Acenaphthene	ND	6.49	13.0	ug/kg dry	4	07/19/16 18:23	EPA 8270D	
Acenaphthylene	ND	6.49	13.0	"	"	"	"	
Anthracene	ND	6.49	13.0	"	"	"	"	
Benz(a)anthracene	**18.2**	6.49	13.0	"	"	"	"	M-02
Benzo(a)pyrene	**27.0**	9.77	19.5	"	"	"	"	
Benzo(b)fluoranthene	**36.9**	9.77	19.5	"	"	"	"	M-02
Benzo(k)fluoranthene	**11.9**	9.77	19.5	"	"	"	"	J
Benzo(g,h,i)perylene	**25.6**	6.49	13.0	"	"	"	"	
Chrysene	**27.7**	6.49	13.0	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	6.49	13.0	"	"	"	"	
Fluoranthene	**37.6**	6.49	13.0	"	"	"	"	
Fluorene	ND	6.49	13.0	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**21.3**	6.49	13.0	"	"	"	"	
1-Methylnaphthalene	ND	13.0	26.0	"	"	"	"	
2-Methylnaphthalene	ND	13.0	26.0	"	"	"	"	
Naphthalene	ND	13.0	26.0	"	"	"	"	
Phenanthrene	**22.8**	6.49	13.0	"	"	"	"	
Pyrene	**45.9**	6.49	13.0	"	"	"	"	
Carbazole	ND	9.77	19.5	"	"	"	"	
Dibenzofuran	ND	6.49	13.0	"	"	"	"	
4-Chloro-3-methylphenol	ND	64.9	130	"	"	"	"	
2-Chlorophenol	ND	32.6	64.9	"	"	"	"	
2,4-Dichlorophenol	ND	32.6	64.9	"	"	"	"	
2,4-Dimethylphenol	ND	32.6	64.9	"	"	"	"	
2,4-Dinitrophenol	ND	163	326	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	163	326	"	"	"	"	
2-Methylphenol	ND	16.3	32.6	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-2 (A6G0572-04RE1)			**Matrix: Soil**		**Batch: 6070531**			
3+4-Methylphenol(s)	**258**	16.3	32.6	ug/kg dry	4	"	EPA 8270D	
2-Nitrophenol	ND	64.9	130	"	"	"	"	
4-Nitrophenol	ND	64.9	130	"	"	"	"	
Pentachlorophenol (PCP)	ND	64.9	130	"	"	"	"	
Phenol	**44.6**	13.0	26.0	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	32.6	64.9	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	32.6	64.9	"	"	"	"	
2,4,5-Trichlorophenol	ND	32.6	64.9	"	"	"	"	
2,4,6-Trichlorophenol	ND	32.6	64.9	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	97.7	195	"	"	"	"	
Butyl benzyl phthalate	ND	64.9	130	"	"	"	"	
Diethylphthalate	ND	64.9	130	"	"	"	"	
Dimethylphthalate	ND	64.9	130	"	"	"	"	
Di-n-butylphthalate	ND	64.9	130	"	"	"	"	
Di-n-octyl phthalate	ND	64.9	130	"	"	"	"	
N-Nitrosodimethylamine	ND	16.3	32.6	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	16.3	32.6	"	"	"	"	
N-Nitrosodiphenylamine	ND	16.3	32.6	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	16.3	32.6	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	16.3	32.6	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	16.3	32.6	"	"	"	"	
Hexachlorobenzene	ND	6.49	13.0	"	"	"	"	
Hexachlorobutadiene	ND	16.3	32.6	"	"	"	"	
Hexachlorocyclopentadiene	ND	32.6	64.9	"	"	"	"	
Hexachloroethane	ND	16.3	32.6	"	"	"	"	
2-Chloronaphthalene	ND	6.49	13.0	"	"	"	"	
1,2-Dichlorobenzene	ND	16.3	32.6	"	"	"	"	
1,3-Dichlorobenzene	ND	16.3	32.6	"	"	"	"	
1,4-Dichlorobenzene	ND	16.3	32.6	"	"	"	"	
1,2,4-Trichlorobenzene	ND	16.3	32.6	"	"	"	"	
4-Bromophenyl phenyl ether	ND	16.3	32.6	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	16.3	32.6	"	"	"	"	
Aniline	ND	132	132	"	"	"	"	R-02
4-Chloroaniline	ND	16.3	32.6	"	"	"	"	
2-Nitroaniline	ND	130	260	"	"	"	"	
3-Nitroaniline	ND	130	260	"	"	"	"	
4-Nitroaniline	ND	130	260	"	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-2 (A6G0572-04RE1)			**Matrix: Soil**		**Batch: 6070531**			
Nitrobenzene	ND	64.9	130	ug/kg dry	4	"	EPA 8270D	
2,4-Dinitrotoluene	ND	64.9	130	"	"	"	"	
2,6-Dinitrotoluene	ND	64.9	130	"	"	"	"	
Benzoic acid	ND	815	1630	"	"	"	"	
Benzyl alcohol	ND	32.6	64.9	"	"	"	"	
Isophorone	ND	16.3	32.6	"	"	"	"	
Azobenzene (1,2-DPH)	ND	16.3	32.6	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	163	326	"	"	"	"	
3,3'-Dichlorobenzidine	ND	64.9	130	"	"	"	"	
1,2-Dinitrobenzene	ND	163	326	"	"	"	"	
1,3-Dinitrobenzene	ND	163	326	"	"	"	"	
1,4-Dinitrobenzene	ND	163	326	"	"	"	"	
Pyridine	ND	32.6	64.9	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 97 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*84 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*95 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*101 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*79 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*134 %*	*Limits: 39-132 %*	"	"	"	*Q-41, S-06*

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01)			**Matrix: Soil**					
Batch: 6070520								
Arsenic	**5.45**	0.949	1.90	mg/kg dry	10	07/20/16 19:19	EPA 6020A	
Cadmium	**0.399**	0.190	0.380	"	"	"	"	
Chromium	**10.6**	0.949	1.90	"	"	"	"	
Copper	**34.6**	0.949	1.90	"	"	"	"	
Lead	**18.5**	0.190	0.380	"	"	"	"	
Mercury	ND	0.0759	0.152	"	"	"	"	
Nickel	**7.50**	0.949	1.90	"	"	"	"	
Selenium	ND	0.949	1.90	"	"	"	"	
Silver	ND	0.190	0.380	"	"	"	"	
Zinc	**165**	3.80	7.59	"	"	"	"	
7/13 Compost-2 (A6G0572-02)			**Matrix: Soil**					
Batch: 6070520								
Arsenic	**5.61**	0.935	1.87	mg/kg dry	10	07/20/16 19:22	EPA 6020A	
Cadmium	**0.505**	0.187	0.374	"	"	"	"	
Chromium	**14.5**	0.935	1.87	"	"	"	"	
Copper	**46.3**	0.935	1.87	"	"	"	"	
Lead	**22.6**	0.187	0.374	"	"	"	"	
Mercury	ND	0.0748	0.150	"	"	"	"	
Nickel	**9.97**	0.935	1.87	"	"	"	"	
Selenium	ND	0.935	1.87	"	"	"	"	
Silver	ND	0.187	0.374	"	"	"	"	
Zinc	**283**	3.74	7.48	"	"	"	"	
7/15 Sandy Loam-1 (A6G0572-03)			**Matrix: Soil**					
Batch: 6070520								
Arsenic	**2.66**	0.573	1.15	mg/kg dry	10	07/20/16 19:25	EPA 6020A	
Cadmium	**0.229**	0.115	0.229	"	"	"	"	
Chromium	**16.5**	0.573	1.15	"	"	"	"	
Copper	**17.3**	0.573	1.15	"	"	"	"	
Lead	**10.3**	0.115	0.229	"	"	"	"	
Mercury	ND	0.0458	0.0917	"	"	"	"	
Nickel	**12.5**	0.573	1.15	"	"	"	"	
Selenium	**0.596**	0.573	1.15	"	"	"	"	J
Silver	ND	0.115	0.229	"	"	"	"	
Zinc	**70.1**	2.29	4.58	"	"	"	"	
7/15 Sandy Loam-2 (A6G0572-04)			**Matrix: Soil**					

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/15 Sandy Loam-2 (A6G0572-04)			**Matrix: Soil**					
Batch: 6070520								
Arsenic	**2.00**	0.642	1.28	mg/kg dry	10	07/20/16 19:28	EPA 6020A	
Cadmium	**0.218**	0.128	0.257	"	"	"	"	J
Chromium	**18.1**	0.642	1.28	"	"	"	"	
Copper	**23.1**	0.642	1.28	"	"	"	"	
Lead	**13.8**	0.128	0.257	"	"	"	"	
Mercury	ND	0.0513	0.103	"	"	"	"	
Nickel	**13.9**	0.642	1.28	"	"	"	"	
Selenium	**1.09**	0.642	1.28	"	"	"	"	J
Silver	ND	0.128	0.257	"	"	"	"	
Zinc	**70.9**	2.57	5.13	"	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7/13 Compost-1 (A6G0572-01)			**Matrix: Soil**		**Batch: 6070467**			
% Solids	**54.2**	1.00	1.00	% by Weight	1	07/18/16 09:06	EPA 8000C	
7/13 Compost-2 (A6G0572-02)			**Matrix: Soil**		**Batch: 6070467**			
% Solids	**52.2**	1.00	1.00	% by Weight	1	07/18/16 09:06	EPA 8000C	
7/15 Sandy Loam-1 (A6G0572-03)			**Matrix: Soil**		**Batch: 6070467**			
% Solids	**84.9**	1.00	1.00	% by Weight	1	07/18/16 09:06	EPA 8000C	
7/15 Sandy Loam-2 (A6G0572-04)			**Matrix: Soil**		**Batch: 6070467**			
% Solids	**81.2**	1.00	1.00	% by Weight	1	07/18/16 09:06	EPA 8000C	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070561 - EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)							**Soil**					
Blank (6070561-BLK1)					Prepared: 07/19/16 13:21		Analyzed: 07/19/16 22:03					
NWTPH-Dx/SG												
Diesel	ND	11.4	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	22.7	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6070561-BS1)					Prepared: 07/19/16 13:21		Analyzed: 07/19/16 22:22					
NWTPH-Dx/SG												
Diesel	116	12.5	25.0	mg/kg wet	1	125	---	93	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6070561-DUP1)					Prepared: 07/19/16 13:21		Analyzed: 07/19/16 23:02					
QC Source Sample: Other (A6G0433-01)												
NWTPH-Dx/SG												
Diesel	ND	12.9	25.8	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**120**	25.8	51.6	"	"	---	261	---	---	74	30%	F-03, Q-04
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6070561-DUP2)					Prepared: 07/19/16 13:21		Analyzed: 07/20/16 05:02					
QC Source Sample: 7/15 Sandy Loam-2 (A6G0572-04)												
NWTPH-Dx/SG												
Diesel	**19.3**	15.2	30.4	mg/kg dry	1	---	ND	---	---		30%	J
Oil	**42.0**	30.4	60.9	"	"	---	122	---	---	98	30%	Q-05, J
Surr: o-Terphenyl (Surr)			*Recovery: 81 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070555 - EPA 3546							**Soil**					
Blank (6070555-BLK1)					Prepared: 07/19/16 11:15		Analyzed: 07/19/16 17:15					C-07
EPA 8082A												
Aroclor 1016	ND	0.648	1.29	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1262	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1268	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 107 %*	*Limits: 44-120 %*			*Dilution: 1x*					
LCS (6070555-BS1)					Prepared: 07/19/16 11:15		Analyzed: 07/19/16 17:33					C-07
EPA 8082A												
Aroclor 1016	54.5	0.670	1.33	ug/kg wet	1	83.3	---	65	47-134%	---	---	
Aroclor 1260	79.6	0.670	1.33	"	"	"	---	95	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 104 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Duplicate (6070555-DUP1)					Prepared: 07/19/16 11:15		Analyzed: 07/19/16 18:29					C-07
QC Source Sample: 7/13 Compost-1 (A6G0572-01)												
EPA 8082A												
Aroclor 1016	ND	2.45	2.45	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	1.24	2.45	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	6.92	6.92	"	"	---	ND	---	---	---	30%	R-02
Aroclor 1242	ND	3.23	3.23	"	"	---	ND	---	---	---	30%	R-02
Aroclor 1248	ND	3.23	3.23	"	"	---	ND	---	---	---	30%	R-02
Aroclor 1254	**4.57**	1.24	2.45	"	"	---	4.52	---	---	1	30%	
Aroclor 1260	ND	4.15	4.15	"	"	---	ND	---	---	---	30%	R-02
Aroclor 1262	ND	2.45	2.45	"	"	---	ND	---	---	---	30%	
Aroclor 1268	ND	1.24	2.45	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 89 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Matrix Spike (6070555-MS1)					Prepared: 07/19/16 11:15		Analyzed: 07/19/16 20:56					C-07
QC Source Sample: 7/15 Sandy Loam-2 (A6G0572-04)												
EPA 8082A												

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070555 - EPA 3546							**Soil**					
Matrix Spike (6070555-MS1)					Prepared: 07/19/16 11:15		Analyzed: 07/19/16 20:56					C-07
QC Source Sample: 7/15 Sandy Loam-2 (A6G0572-04)												
Aroclor 1016	58.6	0.822	1.63	ug/kg dry	1	102	ND	57	47-134%	---	---	
Aroclor 1260	79.9	0.822	1.63	"	"	"	1.01	77	53-140%	---	---	

Surr: Decachlorobiphenyl (Surr) *Recovery: 87 %* *Limits: 44-120 %* *Dilution: 1x*

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070569 - EPA 3546/3640A (GPC)							**Soil**					
Blank (6070569-BLK1)					Prepared: 07/18/16 16:56		Analyzed: 07/20/16 11:35					C-05
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 99 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*102 %*	*65-151 %*			*"*					
LCS (6070569-BS1)					Prepared: 07/18/16 16:56		Analyzed: 07/20/16 11:53					C-05
EPA 8081B												
Aldrin	45.7	1.00	2.00	ug/kg wet	1	50.0	---	91	45-136%	---	---	
alpha-BHC	50.0	1.00	2.00	"	"	"	---	100	45-137%	---	---	
beta-BHC	47.4	1.00	2.00	"	"	"	---	95	50-136%	---	---	
delta-BHC	54.8	1.00	2.00	"	"	"	---	110	47-139%	---	---	Q-41
gamma-BHC (Lindane)	48.7	1.00	2.00	"	"	"	---	97	49-135%	---	---	
cis-Chlordane	46.9	1.00	2.00	"	"	"	---	94	54-133%	---	---	
trans-Chlordane	47.1	1.00	2.00	"	"	"	---	94	53-135%	---	---	
4,4'-DDD	50.7	1.00	2.00	"	"	"	---	101	56-139%	---	---	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070569 - EPA 3546/3640A (GPC)							**Soil**					
LCS (6070569-BS1)					Prepared: 07/18/16 16:56		Analyzed: 07/20/16 11:53					C-05
4,4'-DDE	47.8	1.00	2.00	ug/kg wet	"	"	---	96	56-134%	---	---	
4,4'-DDT	53.5	1.00	2.00	"	"	"	---	107	50-141%	---	---	
Dieldrin	49.8	1.00	2.00	"	"	"	---	100	56-136%	---	---	
Endosulfan I	47.0	1.00	2.00	"	"	"	---	94	52-132%	---	---	
Endosulfan II	52.7	1.00	2.00	"	"	"	---	105	53-134%	---	---	
Endosulfan sulfate	57.0	1.00	2.00	"	"	"	---	114	55-136%	---	---	Q-41
Endrin	49.9	1.00	2.00	"	"	"	---	100	56-140%	---	---	
Endrin Aldehyde	54.1	1.00	2.00	"	"	"	---	108	35-137%	---	---	
Endrin ketone	59.1	1.00	2.00	"	"	"	---	118	55-136%	---	---	Q-41
Heptachlor	48.3	1.00	2.00	"	"	"	---	97	47-136%	---	---	Q-41
Heptachlor epoxide	48.1	1.00	2.00	"	"	"	---	96	52-136%	---	---	
Methoxychlor	53.7	3.00	6.00	"	"	"	---	107	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 93 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*99 %*		*65-151 %*		*"*					
Duplicate (6070569-DUP1)					Prepared: 07/18/16 16:56		Analyzed: 07/20/16 12:45					C-05
QC Source Sample: 7/13 Compost-1 (A6G0572-01RE1)												
EPA 8081B												
Aldrin	ND	5.38	5.38	ug/kg dry	1	---	5.75	---	---	***	30%	R-02
alpha-BHC	ND	3.59	3.59	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	10.4	10.4	"	"	---	12.9	---	---	***	30%	R-02
delta-BHC	ND	7.54	7.54	"	"	---	9.42	---	---	***	30%	R-02
gamma-BHC (Lindane)	ND	4.31	4.31	"	"	---	6.27	---	---	***	30%	R-02
cis-Chlordane	ND	6.82	6.82	"	"	---	7.48	---	---	***	30%	R-02
trans-Chlordane	ND	7.18	7.18	"	"	---	7.39	---	---	***	30%	R-02
4,4'-DDD	ND	9.69	9.69	"	"	---	10.9	---	---	***	30%	R-02
4,4'-DDE	ND	11.8	11.8	"	"	---	12.8	---	---	***	30%	R-02
4,4'-DDT	ND	10.4	10.4	"	"	---	12.6	---	---	***	30%	R-02
Dieldrin	ND	6.46	6.46	"	"	---	7.91	---	---	***	30%	R-02
Endosulfan I	ND	6.82	6.82	"	"	---	8.26	---	---	***	30%	R-02
Endosulfan II	ND	7.90	7.90	"	"	---	9.01	---	---	***	30%	R-02
Endosulfan sulfate	ND	11.5	11.5	"	"	---	13.6	---	---	***	30%	R-02
Endrin	ND	7.18	7.18	"	"	---	8.26	---	---	***	30%	R-02
Endrin Aldehyde	ND	17.2	17.2	"	"	---	20.7	---	---	***	30%	R-02
Endrin ketone	ND	12.9	12.9	"	"	---	13.8	---	---	***	30%	R-02

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QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070569 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (6070569-DUP1)					Prepared: 07/18/16 16:56	Analyzed: 07/20/16 12:45						C-05
QC Source Sample: 7/13 Compost-1 (A6G0572-01RE1)												
Heptachlor	ND	4.31	4.31	ug/kg dry	"	---	6.73	---	---	***	30%	R-02
Heptachlor epoxide	ND	5.74	5.74	"	"	---	6.64	---	---	***	30%	R-02
Methoxychlor	ND	24.4	24.4	"	"	---	29.4	---	---	***	30%	R-02
Chlordane (Technical)	ND	53.8	108	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	53.8	108	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 87 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*104 %*	*65-151 %*			*"*					
Matrix Spike (6070569-MS1)					Prepared: 07/18/16 16:56	Analyzed: 07/20/16 16:15						C-05
QC Source Sample: Other (A6G0610-02RE1)												
EPA 8081B												
Aldrin	47.8	1.09	2.18	ug/kg dry	1	54.4	ND	88	45-136%	---	---	
alpha-BHC	53.5	1.09	2.18	"	"	"	ND	98	45-137%	---	---	Q-41
beta-BHC	50.2	1.09	2.18	"	"	"	ND	92	50-136%	---	---	
delta-BHC	60.2	1.09	2.18	"	"	"	ND	111	47-139%	---	---	Q-41
gamma-BHC (Lindane)	52.2	1.09	2.18	"	"	"	ND	96	49-135%	---	---	
cis-Chlordane	48.4	1.09	2.18	"	"	"	ND	89	54-133%	---	---	
trans-Chlordane	50.4	1.09	2.18	"	"	"	ND	93	53-135%	---	---	
4,4'-DDD	55.4	1.09	2.18	"	"	"	ND	102	56-139%	---	---	
4,4'-DDE	51.3	1.09	2.18	"	"	"	ND	94	56-134%	---	---	
4,4'-DDT	59.0	1.09	2.18	"	"	"	ND	108	50-141%	---	---	Q-41
Dieldrin	54.6	1.09	2.18	"	"	"	1.88	97	56-136%	---	---	
Endosulfan I	51.8	1.09	2.18	"	"	"	ND	95	52-132%	---	---	
Endosulfan II	56.3	1.09	2.18	"	"	"	ND	103	53-134%	---	---	Q-41
Endosulfan sulfate	62.4	1.09	2.18	"	"	"	ND	115	55-136%	---	---	Q-41
Endrin	55.1	1.09	2.18	"	"	"	ND	101	56-140%	---	---	
Endrin Aldehyde	58.4	1.09	2.18	"	"	"	ND	107	35-137%	---	---	
Endrin ketone	67.2	1.09	2.18	"	"	"	ND	123	55-136%	---	---	Q-41
Heptachlor	51.3	1.09	2.18	"	"	"	ND	94	47-136%	---	---	Q-41
Heptachlor epoxide	50.2	1.09	2.18	"	"	"	ND	92	52-136%	---	---	
Methoxychlor	57.2	3.27	6.53	"	"	"	ND	105	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 88 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*91 %*	*65-151 %*			*"*					

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Philip Nerenberg, Lab Director

Apex Labs

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Blank (6070531-BLK2)						Prepared: 07/19/16 07:09	Analyzed: 07/19/16 11:10					
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Blank (6070531-BLK2)					Prepared: 07/19/16 07:09 Analyzed: 07/19/16 11:10							
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Blank (6070531-BLK2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 11:10					
Isophorone	ND	3.12	6.25	ug/kg wet	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 100 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*95 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*89 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*102 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*81 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*120 %*		*39-132 %*		*"*					*Q-41*
LCS (6070531-BS2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 11:48					
EPA 8270D												
Acenaphthene	550	1.33	2.67	ug/kg wet	1	533	---	103	40-122%	---	---	
Acenaphthylene	525	1.33	2.67	"	"	"	---	98	32-132%	---	---	
Anthracene	539	1.33	2.67	"	"	"	---	101	47-123%	---	---	
Benz(a)anthracene	553	1.33	2.67	"	"	"	---	104	49-126%	---	---	
Benzo(a)pyrene	562	2.00	4.00	"	"	"	---	105	45-129%	---	---	
Benzo(b)fluoranthene	634	2.00	4.00	"	"	"	---	119	45-132%	---	---	
Benzo(k)fluoranthene	574	2.00	4.00	"	"	"	---	108	47-132%	---	---	
Benzo(g,h,i)perylene	523	1.33	2.67	"	"	"	---	98	43-134%	---	---	
Chrysene	549	1.33	2.67	"	"	"	---	103	50-124%	---	---	
Dibenz(a,h)anthracene	507	1.33	2.67	"	"	"	---	95	45-134%	---	---	
Fluoranthene	599	1.33	2.67	"	"	"	---	112	50-127%	---	---	
Fluorene	583	1.33	2.67	"	"	"	---	109	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	501	1.33	2.67	"	"	"	---	94	45-133%	---	---	
1-Methylnaphthalene	512	2.67	5.33	"	"	"	---	96	40-120%	---	---	
2-Methylnaphthalene	510	2.67	5.33	"	"	"	---	96	38-122%	---	---	
Naphthalene	503	2.67	5.33	"	"	"	---	94	35-123%	---	---	
Phenanthrene	531	1.33	2.67	"	"	"	---	100	50-121%	---	---	
Pyrene	568	1.33	2.67	"	"	"	---	106	47-127%	---	---	
Carbazole	549	2.00	4.00	"	"	"	---	103	50-122%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
LCS (6070531-BS2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 11:48					
Dibenzofuran	558	1.33	2.67	ug/kg wet	"	"	---	105	44-120%	---	---	
4-Chloro-3-methylphenol	581	13.3	26.7	"	"	"	---	109	45-122%	---	---	
2-Chlorophenol	529	6.67	13.3	"	"	"	---	99	34-121%	---	---	
2,4-Dichlorophenol	571	6.67	13.3	"	"	"	---	107	40-122%	---	---	
2,4-Dimethylphenol	591	6.67	13.3	"	"	"	---	111	30-127%	---	---	
2,4-Dinitrophenol	399	33.3	66.7	"	"	"	---	75	5-137%	---	---	
4,6-Dinitro-2-methylphenol	512	33.3	66.7	"	"	"	---	96	29-132%	---	---	
2-Methylphenol	567	3.33	6.67	"	"	"	---	106	32-122%	---	---	
3+4-Methylphenol(s)	552	3.33	6.67	"	"	"	---	104	34-120%	---	---	
2-Nitrophenol	539	13.3	26.7	"	"	"	---	101	36-123%	---	---	
4-Nitrophenol	560	13.3	26.7	"	"	"	---	105	30-132%	---	---	
Pentachlorophenol (PCP)	574	13.3	26.7	"	"	"	---	108	25-133%	---	---	
Phenol	557	2.67	5.33	"	"	"	---	104	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	620	6.67	13.3	"	"	"	---	116	44-125%	---	---	Q-41
2,3,5,6-Tetrachlorophenol	600	6.67	13.3	"	"	"	---	113	40-120%	---	---	Q-41
2,4,5-Trichlorophenol	609	6.67	13.3	"	"	"	---	114	41-124%	---	---	
2,4,6-Trichlorophenol	573	6.67	13.3	"	"	"	---	107	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	503	20.0	40.0	"	"	"	---	94	51-133%	---	---	
Butyl benzyl phthalate	539	13.3	26.7	"	"	"	---	101	48-132%	---	---	
Diethylphthalate	573	13.3	26.7	"	"	"	---	108	50-124%	---	---	
Dimethylphthalate	537	13.3	26.7	"	"	"	---	101	48-124%	---	---	
Di-n-butylphthalate	574	13.3	26.7	"	"	"	---	108	51-128%	---	---	
Di-n-octyl phthalate	519	13.3	26.7	"	"	"	---	97	44-140%	---	---	
N-Nitrosodimethylamine	540	3.33	6.67	"	"	"	---	101	23-120%	---	---	
N-Nitroso-di-n-propylamine	593	3.33	6.67	"	"	"	---	111	36-120%	---	---	Q-41
N-Nitrosodiphenylamine	542	3.33	6.67	"	"	"	---	102	38-127%	---	---	
Bis(2-Chloroethoxy) methane	519	3.33	6.67	"	"	"	---	97	36-121%	---	---	
Bis(2-Chloroethyl) ether	497	3.33	6.67	"	"	"	---	93	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	556	3.33	6.67	"	"	"	---	104	33-131%	---	---	Q-41
Hexachlorobenzene	630	1.33	2.67	"	"	"	---	118	44-122%	---	---	
Hexachlorobutadiene	591	3.33	6.67	"	"	"	---	111	32-123%	---	---	
Hexachlorocyclopentadiene	627	6.67	13.3	"	"	"	---	118	5-140%	---	---	Q-41
Hexachloroethane	547	3.33	6.67	"	"	"	---	102	28-120%	---	---	
2-Chloronaphthalene	516	1.33	2.67	"	"	"	---	97	41-120%	---	---	
1,2-Dichlorobenzene	482	3.33	6.67	"	"	"	---	90	33-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
LCS (6070531-BS2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 11:48					
1,3-Dichlorobenzene	488	3.33	6.67	ug/kg wet	"	"	---	92	30-120%	---	---	
1,4-Dichlorobenzene	488	3.33	6.67	"	"	"	---	92	31-120%	---	---	
1,2,4-Trichlorobenzene	523	3.33	6.67	"	"	"	---	98	34-120%	---	---	
4-Bromophenyl phenyl ether	607	3.33	6.67	"	"	"	---	114	46-124%	---	---	
4-Chlorophenyl phenyl ether	633	3.33	6.67	"	"	"	---	119	45-121%	---	---	
Aniline	483	6.67	13.3	"	"	"	---	91	7-120%	---	---	
4-Chloroaniline	236	3.33	6.67	"	"	"	---	44	16-120%	---	---	
2-Nitroaniline	555	26.7	53.3	"	"	"	---	104	44-127%	---	---	
3-Nitroaniline	407	26.7	53.3	"	"	"	---	76	33-120%	---	---	
4-Nitroaniline	549	26.7	53.3	"	"	"	---	103	35-120%	---	---	
Nitrobenzene	521	13.3	26.7	"	"	"	---	98	34-122%	---	---	
2,4-Dinitrotoluene	631	13.3	26.7	"	"	"	---	118	48-126%	---	---	
2,6-Dinitrotoluene	560	13.3	26.7	"	"	"	---	105	46-124%	---	---	
Benzoic acid	119	100	333	"	"	1070	---	11	5-140%	---	---	J
Benzyl alcohol	556	6.67	13.3	"	"	533	---	104	29-122%	---	---	
Isophorone	571	3.33	6.67	"	"	"	---	107	30-122%	---	---	
Azobenzene (1,2-DPH)	516	3.33	6.67	"	"	"	---	97	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	491	33.3	66.7	"	"	"	---	92	60-121%	---	---	
3,3'-Dichlorobenzidine	1580	13.3	26.7	"	"	1070	---	148	22-121%	---	---	Q-29, Q-41
1,2-Dinitrobenzene	585	33.3	66.7	"	"	533	---	110	44-120%	---	---	
1,3-Dinitrobenzene	548	33.3	66.7	"	"	"	---	103	42-127%	---	---	
1,4-Dinitrobenzene	564	33.3	66.7	"	"	"	---	106	37-132%	---	---	
Pyridine	471	6.67	13.3	"	"	"	---	88	5-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 96 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*100 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*108 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*112 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*100 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*126 %*	*39-132 %*			*"*					*Q-41*
Duplicate (6070531-DUP2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 17:01					
QC Source Sample: 7/13 Compost-1 (A6G0572-01)												
EPA 8270D												
Acenaphthene	ND	48.8	97.9	ug/kg dry	20	---	ND	---	---	---	30%	
Acenaphthylene	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	
Anthracene	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Duplicate (6070531-DUP2)					Prepared: 07/19/16 07:09 Analyzed: 07/19/16 17:01							
QC Source Sample: 7/13 Compost-1 (A6G0572-01)												
Benz(a)anthracene	**67.1**	48.8	97.9	ug/kg dry	"	---	114	---	---	51	30%	Q-17, J
Benzo(a)pyrene	**73.4**	73.4	147	"	"	---	123	---	---		30%	J
Benzo(b)fluoranthene	**76.6**	73.4	147	"	"	---	ND	---	---		30%	J
Benzo(k)fluoranthene	ND	73.4	147	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	
Chrysene	**89.5**	48.8	97.9	"	"	---	99.7	---	---	11	30%	J
Dibenz(a,h)anthracene	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	
Fluoranthene	**172**	48.8	97.9	"	"	---	206	---	---	18	30%	
Fluorene	**54.6**	48.8	97.9	"	"	---	ND	---	---		30%	J
Indeno(1,2,3-cd)pyrene	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	97.9	196	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	97.9	196	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	97.9	196	"	"	---	ND	---	---	---	30%	
Phenanthrene	**198**	48.8	97.9	"	"	---	215	---	---	8	30%	
Pyrene	**134**	48.8	97.9	"	"	---	158	---	---	17	30%	
Carbazole	ND	73.4	147	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	488	979	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	245	488	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	245	488	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	245	488	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	1220	2450	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	1220	2450	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	122	245	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	**379**	122	245	"	"	---	414	---	---	9	30%	
2-Nitrophenol	ND	488	979	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	488	979	"	"	---	546	---	---	***	30%	
Pentachlorophenol (PCP)	ND	488	979	"	"	---	667	---	---	***	30%	
Phenol	**418**	97.9	196	"	"	---	321	---	---	26	30%	
2,3,4,6-Tetrachlorophenol	ND	245	488	"	"	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	245	488	"	"	---	312	---	---	***	30%	
2,4,5-Trichlorophenol	ND	245	488	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	245	488	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	**766**	734	1470	"	"	---	ND	---	---		30%	J

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Duplicate (6070531-DUP2)					Prepared: 07/19/16 07:09 Analyzed: 07/19/16 17:01							
QC Source Sample: 7/13 Compost-1 (A6G0572-01)												
Butyl benzyl phthalate	ND	488	979	ug/kg dry	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	488	979	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	488	979	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	488	979	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	488	979	"	"	---	586	---	---	***	30%	
N-Nitrosodimethylamine	ND	122	245	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	122	245	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	122	245	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	122	245	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	122	245	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	122	245	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	122	245	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	245	488	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	122	245	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	48.8	97.9	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	122	245	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	122	245	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	122	245	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	122	245	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	122	245	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	122	245	"	"	---	ND	---	---	---	30%	
Aniline	ND	488	488	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	122	245	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	979	1960	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	979	1960	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	979	1960	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	488	979	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	488	979	"	"	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	488	979	"	"	---	ND	---	---	---	30%	
Benzoic acid	ND	6130	12200	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	245	488	"	"	---	ND	---	---	---	30%	
Isophorone	ND	122	245	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	122	245	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Duplicate (6070531-DUP2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 17:01					
QC Source Sample: 7/13 Compost-1 (A6G0572-01)												
Bis(2-Ethylhexyl) adipate	ND	1220	2450	ug/kg dry	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	488	979	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	1220	2450	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	1220	2450	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	1220	2450	"	"	---	ND	---	---	---	30%	
Pyridine	ND	245	488	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 92 %*		*Limits: 37-122 %*		*Dilution: 20x*					
2-Fluorobiphenyl (Surr)			*73 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*76 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*96 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*56 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*151 %*		*39-132 %*		*"*					*Q-41, S-06*
Matrix Spike (6070531-MS2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 13:50					
QC Source Sample: Other (A6G0582-03)												
EPA 8270D												
Acenaphthene	677	5.99	12.0	ug/kg dry	4	601	298	63	40-122%	---	---	
Acenaphthylene	598	5.99	12.0	"	"	"	91.6	84	32-132%	---	---	
Anthracene	661	5.99	12.0	"	"	"	98.5	94	47-123%	---	---	
Benz(a)anthracene	590	5.99	12.0	"	"	"	33.8	92	49-126%	---	---	
Benzo(a)pyrene	623	9.01	18.0	"	"	"	25.1	99	45-129%	---	---	
Benzo(b)fluoranthene	639	9.01	18.0	"	"	"	28.1	102	45-132%	---	---	
Benzo(k)fluoranthene	610	9.01	18.0	"	"	"	10.5	100	47-132%	---	---	
Benzo(g,h,i)perylene	595	5.99	12.0	"	"	"	8.88	98	43-134%	---	---	
Chrysene	604	5.99	12.0	"	"	"	35.2	95	50-124%	---	---	
Dibenz(a,h)anthracene	558	5.99	12.0	"	"	"	ND	93	45-134%	---	---	
Fluoranthene	715	5.99	12.0	"	"	"	113	100	50-127%	---	---	
Fluorene	748	5.99	12.0	"	"	"	485	44	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	545	5.99	12.0	"	"	"	11.2	89	45-133%	---	---	
1-Methylnaphthalene	1120	12.0	24.0	"	"	"	2440	-218	40-120%	---	---	Q-04
2-Methylnaphthalene	1340	12.0	24.0	"	"	"	3450	-351	38-122%	---	---	Q-04
Naphthalene	576	12.0	24.0	"	"	"	31.4	91	35-123%	---	---	
Phenanthrene	928	5.99	12.0	"	"	"	1070	-24	50-121%	---	---	Q-04
Pyrene	748	5.99	12.0	"	"	"	113	106	47-127%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Matrix Spike (6070531-MS2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 13:50					
QC Source Sample: Other (A6G0582-03)												
Carbazole	657	9.01	18.0	ug/kg dry	"	"	22.1	106	50-122%	---	---	
Dibenzofuran	681	5.99	12.0	"	"	"	254	71	44-120%	---	---	
4-Chloro-3-methylphenol	544	59.9	120	"	"	"	ND	91	45-122%	---	---	
2-Chlorophenol	567	30.1	59.9	"	"	"	ND	94	34-121%	---	---	
2,4-Dichlorophenol	579	30.1	59.9	"	"	"	ND	96	40-122%	---	---	
2,4-Dimethylphenol	635	30.1	59.9	"	"	"	ND	106	30-127%	---	---	
2,4-Dinitrophenol	345	150	301	"	"	"	ND	57	5-137%	---	---	
4,6-Dinitro-2-methylphenol	543	150	301	"	"	"	ND	90	29-132%	---	---	
2-Methylphenol	603	15.0	30.1	"	"	"	ND	100	32-122%	---	---	
3+4-Methylphenol(s)	587	15.0	30.1	"	"	"	ND	98	34-120%	---	---	
2-Nitrophenol	554	59.9	120	"	"	"	ND	92	36-123%	---	---	
4-Nitrophenol	602	59.9	120	"	"	"	239	60	30-132%	---	---	
Pentachlorophenol (PCP)	660	59.9	120	"	"	"	ND	110	25-133%	---	---	
Phenol	553	12.0	24.0	"	"	"	ND	92	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	680	30.1	59.9	"	"	"	ND	113	44-125%	---	---	Q-41
2,3,5,6-Tetrachlorophenol	659	30.1	59.9	"	"	"	ND	110	40-120%	---	---	Q-41
2,4,5-Trichlorophenol	589	30.1	59.9	"	"	"	ND	98	41-124%	---	---	
2,4,6-Trichlorophenol	634	30.1	59.9	"	"	"	32.5	100	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	647	90.1	180	"	"	"	ND	108	51-133%	---	---	
Butyl benzyl phthalate	532	59.9	120	"	"	"	ND	89	48-132%	---	---	
Diethylphthalate	661	59.9	120	"	"	"	ND	110	50-124%	---	---	
Dimethylphthalate	594	59.9	120	"	"	"	ND	99	48-124%	---	---	
Di-n-butylphthalate	679	59.9	120	"	"	"	ND	113	51-128%	---	---	
Di-n-octyl phthalate	572	59.9	120	"	"	"	ND	95	44-140%	---	---	
N-Nitrosodimethylamine	520	15.0	30.1	"	"	"	ND	87	23-120%	---	---	
N-Nitroso-di-n-propylamine	664	15.0	30.1	"	"	"	ND	111	36-120%	---	---	Q-41
N-Nitrosodiphenylamine	1060	15.0	30.1	"	"	"	1110	-7	38-127%	---	---	Q-04
Bis(2-Chloroethoxy) methane	564	15.0	30.1	"	"	"	31.5	89	36-121%	---	---	
Bis(2-Chloroethyl) ether	513	15.0	30.1	"	"	"	ND	85	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	641	15.0	30.1	"	"	"	ND	107	33-131%	---	---	Q-41
Hexachlorobenzene	640	5.99	12.0	"	"	"	ND	106	44-122%	---	---	
Hexachlorobutadiene	555	15.0	30.1	"	"	"	ND	92	32-123%	---	---	
Hexachlorocyclopentadiene	302	30.1	59.9	"	"	"	ND	50	5-140%	---	---	Q-41
Hexachloroethane	501	15.0	30.1	"	"	"	ND	83	28-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070531 - EPA 3546							**Soil**					
Matrix Spike (6070531-MS2)					Prepared: 07/19/16 07:09		Analyzed: 07/19/16 13:50					
QC Source Sample: Other (A6G0582-03)												
2-Chloronaphthalene	546	5.99	12.0	ug/kg dry	"	"	11.7	89	41-120%	---	---	
1,2-Dichlorobenzene	489	15.0	30.1	"	"	"	ND	81	33-120%	---	---	
1,3-Dichlorobenzene	498	15.0	30.1	"	"	"	ND	83	30-120%	---	---	
1,4-Dichlorobenzene	489	15.0	30.1	"	"	"	ND	81	31-120%	---	---	
1,2,4-Trichlorobenzene	527	15.0	30.1	"	"	"	ND	88	34-120%	---	---	
4-Bromophenyl phenyl ether	615	15.0	30.1	"	"	"	ND	102	46-124%	---	---	
4-Chlorophenyl phenyl ether	592	15.0	30.1	"	"	"	ND	99	45-121%	---	---	
Aniline	490	30.1	59.9	"	"	"	ND	81	7-120%	---	---	
4-Chloroaniline	420	15.0	30.1	"	"	"	19.6	67	16-120%	---	---	
2-Nitroaniline	547	120	240	"	"	"	ND	91	44-127%	---	---	
3-Nitroaniline	552	120	240	"	"	"	ND	92	33-120%	---	---	
4-Nitroaniline	640	120	240	"	"	"	ND	107	35-120%	---	---	
Nitrobenzene	572	59.9	120	"	"	"	75.0	83	34-122%	---	---	
2,4-Dinitrotoluene	713	59.9	120	"	"	"	453	43	48-126%	---	---	Q-04
2,6-Dinitrotoluene	669	59.9	120	"	"	"	278	65	46-124%	---	---	
Benzoic acid	1120	753	1500	"	"	1200	ND	93	5-140%	---	---	J
Benzyl alcohol	568	30.1	59.9	"	"	601	ND	95	29-122%	---	---	
Isophorone	647	15.0	30.1	"	"	"	85.5	93	30-122%	---	---	
Azobenzene (1,2-DPH)	698	15.0	30.1	"	"	"	86.8	102	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	528	150	301	"	"	"	ND	88	60-121%	---	---	
3,3'-Dichlorobenzidine	1800	59.9	120	"	"	1200	ND	150	22-121%	---	---	Q-04, Q-41
1,2-Dinitrobenzene	531	150	301	"	"	601	ND	88	44-120%	---	---	
1,3-Dinitrobenzene	538	150	301	"	"	"	ND	89	42-127%	---	---	
1,4-Dinitrobenzene	569	150	301	"	"	"	244	54	37-132%	---	---	
Pyridine	494	30.1	59.9	"	"	"	ND	82	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 85 %*	*Limits: 37-122 %*	*Dilution: 4x*
2-Fluorobiphenyl (Surr)	*82 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*83 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*86 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*78 %*	*35-115 %*	*"*
2,4,6-Tribromophenol (Surr)	*128 %*	*39-132 %*	*"*

Q-41

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070520 - EPA 3051A							**Soil**					
Blank (6070520-BLK1)					Prepared: 07/18/16 14:43		Analyzed: 07/20/16 18:19					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6070520-BS1)					Prepared: 07/18/16 14:43		Analyzed: 07/20/16 18:22					
EPA 6020A												
Arsenic	49.8	0.500	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Cadmium	50.2	0.100	0.200	"	"	"	---	100	"	---	---	
Chromium	51.3	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	52.2	0.500	1.00	"	"	"	---	104	"	---	---	
Lead	51.3	0.100	0.200	"	"	"	---	103	"	---	---	
Mercury	1.05	0.0400	0.0800	"	"	1.00	---	105	"	---	---	
Nickel	50.7	0.500	1.00	"	"	50.0	---	101	"	---	---	
Selenium	27.5	0.500	1.00	"	"	25.0	---	110	"	---	---	
Silver	26.6	0.100	0.200	"	"	"	---	106	"	---	---	
Zinc	51.2	2.00	4.00	"	"	50.0	---	102	"	---	---	
Duplicate (6070520-DUP1)					Prepared: 07/18/16 14:43		Analyzed: 07/20/16 18:37					
QC Source Sample: Other (A6G0266-11)												
EPA 6020A												
Arsenic	**0.982**	0.571	1.14	mg/kg dry	10	---	1.04	---	---	6	40%	J
Cadmium	ND	0.114	0.228	"	"	---	ND	---	---	---	40%	
Chromium	**5.57**	0.571	1.14	"	"	---	6.09	---	---	9	40%	
Copper	**1.11**	0.571	1.14	"	"	---	1.27	---	---	13	40%	J
Lead	**0.879**	0.114	0.228	"	"	---	0.980	---	---	11	40%	
Mercury	ND	0.0457	0.0913	"	"	---	ND	---	---	---	40%	
Nickel	**3.96**	0.571	1.14	"	"	---	4.29	---	---	8	40%	
Selenium	ND	0.571	1.14	"	"	---	ND	---	---	---	40%	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070520 - EPA 3051A							**Soil**					
Duplicate (6070520-DUP1)					Prepared: 07/18/16 14:43		Analyzed: 07/20/16 18:37					
QC Source Sample: Other (A6G0266-11)												
Silver	ND	0.114	0.228	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**10.3**	2.28	4.57	"	"	---	11.9	---	---	15	40%	
Matrix Spike (6070520-MS1)					Prepared: 07/18/16 14:43		Analyzed: 07/20/16 18:40					
QC Source Sample: Other (A6G0266-11)												
EPA 6020A												
Arsenic	59.6	0.574	1.15	mg/kg dry	10	57.4	1.04	102	75-125%	---	---	
Cadmium	62.6	0.115	0.230	"	"	"	ND	109	"	---	---	
Chromium	67.7	0.574	1.15	"	"	"	6.09	107	"	---	---	
Copper	62.2	0.574	1.15	"	"	"	1.27	106	"	---	---	
Lead	61.3	0.115	0.230	"	"	"	0.980	105	"	---	---	
Mercury	1.17	0.0459	0.0918	"	"	1.15	ND	102	"	---	---	
Nickel	64.3	0.574	1.15	"	"	57.4	4.29	105	"	---	---	
Selenium	33.8	0.574	1.15	"	"	28.7	ND	118	"	---	---	
Silver	31.2	0.115	0.230	"	"	"	ND	109	"	---	---	
Zinc	73.8	2.30	4.59	"	"	57.4	11.9	108	"	---	---	
Matrix Spike (6070520-MS2)					Prepared: 07/18/16 14:43		Analyzed: 07/20/16 20:21					
QC Source Sample: Other (A6G0576-01)												
EPA 6020A												
Arsenic	63.9	0.597	1.19	mg/kg dry	10	59.7	4.55	99	75-125%	---	---	
Cadmium	62.7	0.119	0.239	"	"	"	0.187	105	"	---	---	
Chromium	80.6	0.597	1.19	"	"	"	18.8	103	"	---	---	
Copper	77.3	0.597	1.19	"	"	"	14.8	105	"	---	---	
Lead	71.6	0.119	0.239	"	"	"	12.6	99	"	---	---	
Mercury	1.19	0.0477	0.0955	"	"	1.19	ND	100	"	---	---	
Nickel	74.1	0.597	1.19	"	"	59.7	12.7	103	"	---	---	
Selenium	33.5	0.597	1.19	"	"	29.8	ND	112	"	---	---	
Silver	31.8	0.119	0.239	"	"	"	ND	107	"	---	---	
Zinc	131	2.39	4.77	"	"	59.7	65.3	110	"	---	---	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6070467 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6070467-DUP1)					Prepared: 07/15/16 13:59		Analyzed: 07/18/16 09:06					
QC Source Sample: Other (A6G0498-02)												
EPA 8000C												
% Solids	**75.4**	1.00	1.00	% by Weight	1	---	75.9	---	---	0.7	10%	
Duplicate (6070467-DUP2)					Prepared: 07/15/16 13:59		Analyzed: 07/18/16 09:06					
QC Source Sample: Other (A6G0530-05)												
EPA 8000C												
% Solids	**71.1**	1.00	1.00	% by Weight	1	---	71.6	---	---	0.7	10%	
Duplicate (6070467-DUP3)					Prepared: 07/15/16 13:59		Analyzed: 07/18/16 09:06					
QC Source Sample: 7/15 Sandy Loam-2 (A6G0572-04)												
EPA 8000C												
% Solids	**81.7**	1.00	1.00	% by Weight	1	---	81.2	---	---	0.7	10%	
Duplicate (6070467-DUP4)					Prepared: 07/15/16 15:35		Analyzed: 07/18/16 09:06					
QC Source Sample: Other (A6G0329-02)												
EPA 8000C												
% Solids	**86.3**	1.00	1.00	% by Weight	1	---	86.3	---	---	0.008	10%	
Duplicate (6070467-DUP5)					Prepared: 07/15/16 19:22		Analyzed: 07/18/16 09:06					
QC Source Sample: Other (A6G0589-02)												
EPA 8000C												
% Solids	**75.7**	1.00	1.00	% by Weight	1	---	75.6	---	---	0.09	10%	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Prep: EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070561							
A6G0572-01	Soil	NWTPH-Dx/SG	07/13/16 16:30	07/19/16 13:21	10.32g/5mL	10g/5mL	0.97
A6G0572-02	Soil	NWTPH-Dx/SG	07/13/16 16:40	07/19/16 13:21	10.13g/5mL	10g/5mL	0.99
A6G0572-03	Soil	NWTPH-Dx/SG	07/15/16 08:55	07/19/16 13:21	10.84g/5mL	10g/5mL	0.92
A6G0572-04	Soil	NWTPH-Dx/SG	07/15/16 09:10	07/19/16 13:21	10.17g/5mL	10g/5mL	0.98

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070555							
A6G0572-01	Soil	EPA 8082A	07/13/16 16:30	07/19/16 11:15	30.12g/2mL	30g/2mL	1.00
A6G0572-02	Soil	EPA 8082A	07/13/16 16:40	07/19/16 11:15	30.07g/2mL	30g/2mL	1.00
A6G0572-03	Soil	EPA 8082A	07/15/16 08:55	07/19/16 11:15	30.02g/2mL	30g/2mL	1.00
A6G0572-04	Soil	EPA 8082A	07/15/16 09:10	07/19/16 11:15	30.09g/2mL	30g/2mL	1.00

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070569							
A6G0572-01RE1	Soil	EPA 8081B	07/13/16 16:30	07/18/16 16:56	10.36g/10mL	10g/5mL	1.93
A6G0572-02RE1	Soil	EPA 8081B	07/13/16 16:40	07/18/16 16:56	10.28g/10mL	10g/5mL	1.95
A6G0572-03RE1	Soil	EPA 8081B	07/15/16 08:55	07/18/16 16:56	10.69g/10mL	10g/5mL	1.87
A6G0572-04RE1	Soil	EPA 8081B	07/15/16 09:10	07/18/16 16:56	10.7g/10mL	10g/5mL	1.87

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070531							
A6G0572-01RE1	Soil	EPA 8270D	07/13/16 16:30	07/19/16 07:09	15.2g/2mL	15g/2mL	0.99
A6G0572-02	Soil	EPA 8270D	07/13/16 16:40	07/19/16 07:09	15.37g/2mL	15g/2mL	0.98
A6G0572-03RE1	Soil	EPA 8270D	07/15/16 08:55	07/19/16 07:09	15.88g/2mL	15g/2mL	0.95
A6G0572-04RE1	Soil	EPA 8270D	07/15/16 09:10	07/19/16 07:09	15.14g/2mL	15g/2mL	0.99

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070520							
A6G0572-01	Soil	EPA 6020A	07/13/16 16:30	07/18/16 14:43	0.486g/50mL	0.5g/50mL	1.03
A6G0572-02	Soil	EPA 6020A	07/13/16 16:40	07/18/16 14:43	0.512g/50mL	0.5g/50mL	0.98
A6G0572-03	Soil	EPA 6020A	07/15/16 08:55	07/18/16 14:43	0.514g/50mL	0.5g/50mL	0.97
A6G0572-04	Soil	EPA 6020A	07/15/16 09:10	07/18/16 14:43	0.48g/50mL	0.5g/50mL	1.04

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6070467							
A6G0572-01	Soil	EPA 8000C	07/13/16 16:30	07/15/16 13:59	1N/A/1N/A	1N/A/1N/A	NA
A6G0572-02	Soil	EPA 8000C	07/13/16 16:40	07/15/16 13:59	1N/A/1N/A	1N/A/1N/A	NA
A6G0572-03	Soil	EPA 8000C	07/15/16 08:55	07/15/16 13:59	1N/A/1N/A	1N/A/1N/A	NA
A6G0572-04	Soil	EPA 8000C	07/15/16 09:10	07/15/16 13:59	1N/A/1N/A	1N/A/1N/A	NA

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
P-10	Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-06	Surrogate recovery is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

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Portland, OR 97209	Project Manager: Phil Wiescher	07/22/16 16:55

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

Project: **Port of Ridgefield 9003.01.39**
Project Number: OPP 9003.01.39
Project Manager: Phil Wiescher

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Tigard, OR 97223
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Reported:
07/22/16 16:55

APEX LABS — CHAIN OF CUSTODY

Lab # A6G052 COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: Name MAUL FOSTER ALONGI | Project Mgr: PHIL WIESCHER | Project Name: Name OPP | Project #/PO# 9003.01.39

Address: 400 EAST MILL PLAIN BLVD | Phone: (503) 501-5209 | Fax: | Email: PWIESCHER@MAULFOSTER.COM

Sampled by: LINDSEY CROSBY

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	TOTAL METALS (EPA 6020)	ORGANIC PESTICIDES (EPA 8081B)	PCB AROCLORS (INCLUDE 1268)	PAH (EPA 8270D)	DIOXINS/FURRANS (EPA 1613B)	TPH-DX (NWTPH-D/DX)
7/13 COMPOST-1		7/13	1630	S	2	X	X	X	X	X	X
7/13 COMPOST-2		7/13	1640	S	2	X	X	X	X	X	X
7/15 SANDY LOAM-1		7/15	0855	S	2	X	X	X	X	X	X
7/15 SANDY LOAM-2		7/15	0910	S	2	X	X	X	X	X	X

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY, 2 DAY, 3 DAY, 4 DAY, 5 DAY, Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:
- SEE ATTACHED LIST FOR SPECIFIC ANALYTES OF ORG. PESTICIDES, SVOCS, & DIOXINS
- NWTPH-DX w/ SILICA GEL CLEANUP

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 7/15	Signature: [signature] Date: 7/15/16	Signature: Date:	Signature: Date:
Printed Name: LINDSEY CROSBY Time: 10:00	Printed Name: [illegible] Time: 11:32	Printed Name: Time:	Printed Name: Time:
Company: MAUL FOSTER & ALONGI	Company: Apex Labs	Company:	Company:

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Wednesday, August 10, 2016

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / OPP 9003.01.39

Enclosed are the results of analyses for work order A6H0119, which was received by the laboratory on 8/3/2016 at 2:15:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8.13.16-H&H BLEND-1	A6H0119-01	Soil	08/03/16 11:30	08/03/16 14:15
8.3.16-MCF-BLEND-1	A6H0119-03	Soil	08/03/16 11:50	08/03/16 14:15

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01)			**Matrix: Soil**		**Batch: 6080255**			
Diesel	ND	13.1	26.1	mg/kg dry	1	08/09/16 00:52	NWTPH-Dx/SG	
Oil	**48.8**	26.1	52.2	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 73 %*	*Limits: 50-150 %*	"	"	"	
8.3.16-MCF-BLEND-1 (A6H0119-03)			**Matrix: Soil**		**Batch: 6080255**			
Diesel	ND	13.3	26.5	mg/kg dry	1	08/09/16 01:12	NWTPH-Dx/SG	
Oil	**46.6**	26.5	53.1	"	"	"	"	J, Q-37
Surrogate: o-Terphenyl (Surr)			*Recovery: 69 %*	*Limits: 50-150 %*	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01)			**Matrix: Soil**		**Batch: 6080227**			C-07
Aroclor 1016	ND	1.54	1.54	ug/kg dry	1	08/08/16 18:49	EPA 8082A	
Aroclor 1221	ND	0.777	1.54	"	"	"	"	
Aroclor 1232	ND	2.43	2.55	"	"	"	"	R-02
Aroclor 1242	ND	1.54	1.54	"	"	"	"	
Aroclor 1248	ND	1.54	1.54	"	"	"	"	
Aroclor 1254	ND	1.54	1.54	"	"	"	"	
Aroclor 1260	**1.29**	0.777	1.54	"	"	"	"	J
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 67 %*	*Limits: 44-120 %*	"	"	"	
8.3.16-MCF-BLEND-1 (A6H0119-03)			**Matrix: Soil**		**Batch: 6080227**			C-07
Aroclor 1016	ND	0.786	1.56	ug/kg dry	1	08/08/16 20:03	EPA 8082A	Q-42
Aroclor 1221	ND	0.786	1.56	"	"	"	"	Q-42
Aroclor 1232	ND	1.56	1.56	"	"	"	"	Q-42
Aroclor 1242	ND	0.786	1.56	"	"	"	"	Q-42
Aroclor 1248	ND	1.56	1.56	"	"	"	"	Q-42
Aroclor 1254	ND	1.64	1.64	"	"	"	"	R-02
Aroclor 1260	**1.27**	0.786	1.56	"	"	"	"	J
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 44-120 %*	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01RE1)			**Matrix: Soil**	**Batch: 6080222**				C-05
Aldrin	ND	1.12	2.24	ug/kg dry	1	08/09/16 12:45	EPA 8081B	
alpha-BHC	ND	1.12	2.24	"	"	"	"	
beta-BHC	ND	1.12	2.24	"	"	"	"	
delta-BHC	ND	1.12	2.24	"	"	"	"	
gamma-BHC (Lindane)	ND	1.12	2.24	"	"	"	"	
cis-Chlordane	ND	1.12	2.24	"	"	"	"	
trans-Chlordane	ND	1.12	2.24	"	"	"	"	
4,4'-DDD	ND	1.12	2.24	"	"	"	"	
4,4'-DDE	**1.73**	1.12	2.24	"	"	"	"	J
4,4'-DDT	**1.45**	1.12	2.24	"	"	"	"	J
Dieldrin	ND	1.12	2.24	"	"	"	"	
Endosulfan I	ND	1.12	2.24	"	"	"	"	
Endosulfan II	ND	1.12	2.24	"	"	"	"	
Endosulfan sulfate	ND	1.12	2.24	"	"	"	"	
Endrin	ND	1.12	2.24	"	"	"	"	
Endrin Aldehyde	ND	1.12	2.24	"	"	"	"	
Endrin ketone	ND	1.12	2.24	"	"	"	"	
Heptachlor	ND	1.12	2.24	"	"	"	"	
Heptachlor epoxide	ND	1.12	2.24	"	"	"	"	
Methoxychlor	ND	3.35	6.71	"	"	"	"	
Chlordane (Technical)	ND	33.5	67.1	"	"	"	"	
Toxaphene (Total)	ND	33.5	67.1	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 61 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*76 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.3.16-MCF-BLEND-1 (A6H0119-03RE1)			**Matrix: Soil**	**Batch: 6080222**				C-05
Aldrin	ND	1.12	2.25	ug/kg dry	1	08/09/16 13:20	EPA 8081B	
alpha-BHC	ND	1.12	2.25	"	"	"	"	
beta-BHC	ND	1.12	2.25	"	"	"	"	
delta-BHC	ND	1.12	2.25	"	"	"	"	
gamma-BHC (Lindane)	ND	1.12	2.25	"	"	"	"	
cis-Chlordane	ND	1.12	2.25	"	"	"	"	
trans-Chlordane	ND	1.12	2.25	"	"	"	"	
4,4'-DDD	ND	1.12	2.25	"	"	"	"	
4,4'-DDE	**2.48**	1.12	2.25	"	"	"	"	
4,4'-DDT	**1.22**	1.12	2.25	"	"	"	"	J
Dieldrin	ND	1.12	2.25	"	"	"	"	
Endosulfan I	ND	1.12	2.25	"	"	"	"	
Endosulfan II	ND	1.12	2.25	"	"	"	"	
Endosulfan sulfate	ND	1.12	2.25	"	"	"	"	
Endrin	ND	1.12	2.25	"	"	"	"	
Endrin Aldehyde	ND	1.12	2.25	"	"	"	"	
Endrin ketone	ND	1.12	2.25	"	"	"	"	
Heptachlor	ND	1.12	2.25	"	"	"	"	
Heptachlor epoxide	ND	1.12	2.25	"	"	"	"	
Methoxychlor	ND	3.37	6.74	"	"	"	"	
Chlordane (Technical)	ND	33.7	67.4	"	"	"	"	
Toxaphene (Total)	ND	33.7	67.4	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 31 %*	*Limits: 42-129 %*	"	"	"	*S-03*
Decachlorobiphenyl (Surr)			*74 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01RE1)			**Matrix: Soil**		**Batch: 6080157**			
Acenaphthene	ND	15.5	31.1	ug/kg dry	10	08/04/16 19:08	EPA 8270D	
Acenaphthylene	ND	15.5	31.1	"	"	"	"	
Anthracene	ND	15.5	31.1	"	"	"	"	
Benz(a)anthracene	**17.3**	15.5	31.1	"	"	"	"	J
Benzo(a)pyrene	**28.1**	23.3	46.7	"	"	"	"	J
Benzo(b)fluoranthene	**33.6**	23.3	46.7	"	"	"	"	J
Benzo(k)fluoranthene	ND	23.3	46.7	"	"	"	"	
Benzo(g,h,i)perylene	ND	15.5	31.1	"	"	"	"	
Chrysene	**17.8**	15.5	31.1	"	"	"	"	J
Dibenz(a,h)anthracene	ND	15.5	31.1	"	"	"	"	
Fluoranthene	**42.0**	15.5	31.1	"	"	"	"	
Fluorene	ND	15.5	31.1	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	15.5	31.1	"	"	"	"	
1-Methylnaphthalene	ND	31.1	62.2	"	"	"	"	
2-Methylnaphthalene	ND	31.1	62.2	"	"	"	"	
Naphthalene	ND	31.1	62.2	"	"	"	"	
Phenanthrene	**28.5**	15.5	31.1	"	"	"	"	J
Pyrene	**33.8**	15.5	31.1	"	"	"	"	
Carbazole	ND	23.3	46.7	"	"	"	"	
Dibenzofuran	ND	15.5	31.1	"	"	"	"	
4-Chloro-3-methylphenol	ND	155	311	"	"	"	"	
2-Chlorophenol	ND	77.8	155	"	"	"	"	
2,4-Dichlorophenol	ND	77.8	155	"	"	"	"	
2,4-Dimethylphenol	ND	77.8	155	"	"	"	"	
2,4-Dinitrophenol	ND	388	778	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	388	778	"	"	"	"	
2-Methylphenol	ND	38.8	77.8	"	"	"	"	
3+4-Methylphenol(s)	**110**	38.8	77.8	"	"	"	"	
2-Nitrophenol	ND	155	311	"	"	"	"	
4-Nitrophenol	ND	155	311	"	"	"	"	
Pentachlorophenol (PCP)	ND	155	311	"	"	"	"	
Phenol	ND	31.1	62.2	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	77.8	155	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	77.8	155	"	"	"	"	
2,4,5-Trichlorophenol	ND	77.8	155	"	"	"	"	
2,4,6-Trichlorophenol	ND	77.8	155	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	233	467	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01RE1)			**Matrix: Soil**		**Batch: 6080157**			
Butyl benzyl phthalate	ND	155	311	ug/kg dry	10	"	EPA 8270D	
Diethylphthalate	ND	155	311	"	"	"	"	
Dimethylphthalate	ND	155	311	"	"	"	"	
Di-n-butylphthalate	ND	155	311	"	"	"	"	
Di-n-octyl phthalate	ND	155	311	"	"	"	"	
N-Nitrosodimethylamine	ND	38.8	77.8	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	38.8	77.8	"	"	"	"	
N-Nitrosodiphenylamine	ND	38.8	77.8	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	38.8	77.8	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	38.8	77.8	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	38.8	77.8	"	"	"	"	
Hexachlorobenzene	ND	15.5	31.1	"	"	"	"	
Hexachlorobutadiene	ND	38.8	77.8	"	"	"	"	
Hexachlorocyclopentadiene	ND	77.8	155	"	"	"	"	
Hexachloroethane	ND	38.8	77.8	"	"	"	"	
2-Chloronaphthalene	ND	15.5	31.1	"	"	"	"	
1,2-Dichlorobenzene	ND	38.8	77.8	"	"	"	"	
1,3-Dichlorobenzene	ND	38.8	77.8	"	"	"	"	
1,4-Dichlorobenzene	ND	38.8	77.8	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38.8	77.8	"	"	"	"	
4-Bromophenyl phenyl ether	ND	38.8	77.8	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	38.8	77.8	"	"	"	"	
Aniline	ND	77.8	155	"	"	"	"	
4-Chloroaniline	ND	38.8	77.8	"	"	"	"	
2-Nitroaniline	ND	311	622	"	"	"	"	
3-Nitroaniline	ND	311	622	"	"	"	"	
4-Nitroaniline	ND	311	622	"	"	"	"	
Nitrobenzene	ND	155	311	"	"	"	"	
2,4-Dinitrotoluene	ND	155	311	"	"	"	"	
2,6-Dinitrotoluene	ND	155	311	"	"	"	"	
Benzoic acid	ND	1950	3880	"	"	"	"	
Benzyl alcohol	ND	77.8	155	"	"	"	"	
Isophorone	ND	38.8	77.8	"	"	"	"	
Azobenzene (1,2-DPH)	ND	38.8	77.8	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	388	778	"	"	"	"	
3,3'-Dichlorobenzidine	ND	776	1560	"	"	"	"	
1,2-Dinitrobenzene	ND	388	778	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01RE1)			**Matrix: Soil**		**Batch: 6080157**			
1,3-Dinitrobenzene	ND	388	778	ug/kg dry	10	"	EPA 8270D	
1,4-Dinitrobenzene	ND	388	778	"	"	"	"	
Pyridine	ND	77.8	155	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 77 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*76 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*77 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*90 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*52 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*107 %*	*Limits: 39-132 %*	"	"	"	*Q-41*
8.3.16-MCF-BLEND-1 (A6H0119-03RE1)			**Matrix: Soil**		**Batch: 6080157**			
Acenaphthene	ND	15.3	30.7	ug/kg dry	10	08/04/16 20:22	EPA 8270D	
Acenaphthylene	ND	15.3	30.7	"	"	"	"	
Anthracene	ND	15.3	30.7	"	"	"	"	
Benz(a)anthracene	**17.4**	15.3	30.7	"	"	"	"	J
Benzo(a)pyrene	**26.8**	23.0	46.0	"	"	"	"	J
Benzo(b)fluoranthene	**37.8**	23.0	46.0	"	"	"	"	J
Benzo(k)fluoranthene	ND	23.0	46.0	"	"	"	"	
Benzo(g,h,i)perylene	ND	15.3	30.7	"	"	"	"	
Chrysene	**23.7**	15.3	30.7	"	"	"	"	J
Dibenz(a,h)anthracene	ND	15.3	30.7	"	"	"	"	
Fluoranthene	**57.9**	15.3	30.7	"	"	"	"	
Fluorene	ND	15.3	30.7	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	15.3	30.7	"	"	"	"	
1-Methylnaphthalene	ND	30.7	61.3	"	"	"	"	
2-Methylnaphthalene	ND	30.7	61.3	"	"	"	"	
Naphthalene	ND	30.7	61.3	"	"	"	"	
Phenanthrene	**70.0**	15.3	30.7	"	"	"	"	
Pyrene	**45.1**	15.3	30.7	"	"	"	"	
Carbazole	ND	23.0	46.0	"	"	"	"	
Dibenzofuran	ND	15.3	30.7	"	"	"	"	
4-Chloro-3-methylphenol	ND	153	307	"	"	"	"	
2-Chlorophenol	ND	76.7	153	"	"	"	"	
2,4-Dichlorophenol	ND	76.7	153	"	"	"	"	
2,4-Dimethylphenol	ND	76.7	153	"	"	"	"	
2,4-Dinitrophenol	ND	383	767	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	383	767	"	"	"	"	
2-Methylphenol	ND	38.3	76.7	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.3.16-MCF-BLEND-1 (A6H0119-03RE1)			**Matrix: Soil**		**Batch: 6080157**			
3+4-Methylphenol(s)	**723**	38.3	76.7	ug/kg dry	10	"	EPA 8270D	
2-Nitrophenol	ND	153	307	"	"	"	"	
4-Nitrophenol	ND	153	307	"	"	"	"	
Pentachlorophenol (PCP)	ND	153	307	"	"	"	"	
Phenol	**438**	30.7	61.3	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	76.7	153	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	76.7	153	"	"	"	"	
2,4,5-Trichlorophenol	ND	76.7	153	"	"	"	"	
2,4,6-Trichlorophenol	ND	76.7	153	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	230	460	"	"	"	"	
Butyl benzyl phthalate	ND	153	307	"	"	"	"	
Diethylphthalate	ND	153	307	"	"	"	"	
Dimethylphthalate	ND	153	307	"	"	"	"	
Di-n-butylphthalate	ND	153	307	"	"	"	"	
Di-n-octyl phthalate	ND	153	307	"	"	"	"	
N-Nitrosodimethylamine	ND	38.3	76.7	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	38.3	76.7	"	"	"	"	
N-Nitrosodiphenylamine	ND	38.3	76.7	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	38.3	76.7	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	38.3	76.7	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	38.3	76.7	"	"	"	"	
Hexachlorobenzene	ND	15.3	30.7	"	"	"	"	
Hexachlorobutadiene	ND	38.3	76.7	"	"	"	"	
Hexachlorocyclopentadiene	ND	76.7	153	"	"	"	"	Q-42
Hexachloroethane	ND	38.3	76.7	"	"	"	"	
2-Chloronaphthalene	ND	15.3	30.7	"	"	"	"	
1,2-Dichlorobenzene	ND	38.3	76.7	"	"	"	"	
1,3-Dichlorobenzene	ND	38.3	76.7	"	"	"	"	
1,4-Dichlorobenzene	ND	38.3	76.7	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38.3	76.7	"	"	"	"	
4-Bromophenyl phenyl ether	ND	38.3	76.7	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	38.3	76.7	"	"	"	"	
Aniline	ND	76.7	153	"	"	"	"	
4-Chloroaniline	ND	38.3	76.7	"	"	"	"	Q-42
2-Nitroaniline	ND	307	613	"	"	"	"	
3-Nitroaniline	ND	307	613	"	"	"	"	Q-42
4-Nitroaniline	ND	307	613	"	"	"	"	Q-42

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.3.16-MCF-BLEND-1 (A6H0119-03RE1)			**Matrix: Soil**		**Batch: 6080157**			
Nitrobenzene	ND	153	307	ug/kg dry	10	"	EPA 8270D	
2,4-Dinitrotoluene	ND	153	307	"	"	"	"	
2,6-Dinitrotoluene	ND	153	307	"	"	"	"	
Benzoic acid	**3100**	1920	3830	"	"	"	"	J
Benzyl alcohol	ND	153	153	"	"	"	"	
Isophorone	ND	38.3	76.7	"	"	"	"	
Azobenzene (1,2-DPH)	ND	38.3	76.7	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	383	767	"	"	"	"	
3,3'-Dichlorobenzidine	ND	765	1540	"	"	"	"	Q-42
1,2-Dinitrobenzene	ND	383	767	"	"	"	"	
1,3-Dinitrobenzene	ND	383	767	"	"	"	"	
1,4-Dinitrobenzene	ND	383	767	"	"	"	"	
Pyridine	ND	76.7	153	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 96 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*87 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*102 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*97 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*74 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*127 %*	*Limits: 39-132 %*	"	"	"	*Q-41*

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01)			**Matrix: Soil**					
Batch: 6080170								
Arsenic	**2.36**	0.638	1.28	mg/kg dry	10	08/05/16 19:54	EPA 6020A	
Cadmium	**0.204**	0.128	0.255	"	"	"	"	J
Chromium	**12.6**	0.638	1.28	"	"	"	"	
Copper	**20.3**	0.638	1.28	"	"	"	"	
Lead	**12.8**	0.638	1.28	"	"	"	"	
Mercury	ND	0.0510	0.102	"	"	"	"	
Nickel	**10.4**	0.638	1.28	"	"	"	"	
Selenium	ND	1.28	2.55	"	"	"	"	
Silver	ND	0.128	0.255	"	"	"	"	
Zinc	**68.1**	2.55	5.10	"	"	"	"	
8.3.16-MCF-BLEND-1 (A6H0119-03)			**Matrix: Soil**					
Batch: 6080170								
Arsenic	**2.58**	0.617	1.23	mg/kg dry	10	08/05/16 19:57	EPA 6020A	
Cadmium	**0.259**	0.123	0.247	"	"	"	"	
Chromium	**14.9**	0.617	1.23	"	"	"	"	
Copper	**22.8**	0.617	1.23	"	"	"	"	
Lead	**19.2**	0.617	1.23	"	"	"	"	
Mercury	ND	0.0494	0.0988	"	"	"	"	
Nickel	**11.6**	0.617	1.23	"	"	"	"	
Selenium	ND	1.23	2.47	"	"	"	"	
Silver	ND	0.123	0.247	"	"	"	"	
Zinc	**75.1**	2.47	4.94	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.13.16-H&H BLEND-1 (A6H0119-01)			**Matrix: Soil**		**Batch: 6080155**			
% Solids	**84.1**	1.00	1.00	% by Weight	1	08/05/16 09:03	EPA 8000C	
8.3.16-MCF-BLEND-1 (A6H0119-03)			**Matrix: Soil**		**Batch: 6080155**			
% Solids	**83.8**	1.00	1.00	% by Weight	1	08/05/16 09:03	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080255 - EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)							**Soil**					
Blank (6080255-BLK1)					Prepared: 08/08/16 18:00		Analyzed: 08/09/16 00:12					
NWTPH-Dx/SG												
Diesel	ND	10.4	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	20.8	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6080255-BS1)					Prepared: 08/08/16 18:00		Analyzed: 08/09/16 00:32					
NWTPH-Dx/SG												
Diesel	122	12.5	25.0	mg/kg wet	1	125	---	97	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 91 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6080255-DUP1)					Prepared: 08/08/16 18:00		Analyzed: 08/09/16 01:32					
QC Source Sample: 8.3.16-MCF-BLEND-1 (A6H0119-03)												
NWTPH-Dx/SG												
Diesel	ND	13.3	26.6	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**80.9**	26.6	53.3	"	"	---	46.6	---	---	54	30%	Q-05, F-03
Surr: o-Terphenyl (Surr)			*Recovery: 76 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080227 - EPA 3546							**Soil**					
Blank (6080227-BLK1)					Prepared: 08/08/16 10:15		Analyzed: 08/08/16 18:12					C-07
EPA 8082A												
Aroclor 1016	ND	0.648	1.29	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*	*Limits: 44-120 %*			*Dilution: 1x*					
LCS (6080227-BS1)					Prepared: 08/08/16 10:15		Analyzed: 08/08/16 18:31					C-07
EPA 8082A												
Aroclor 1016	58.1	0.670	1.33	ug/kg wet	1	83.3	---	70	47-134%	---	---	
Aroclor 1260	70.9	0.670	1.33	"	"	"	---	85	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 83 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Duplicate (6080227-DUP1)					Prepared: 08/08/16 10:15		Analyzed: 08/08/16 19:26					C-07
QC Source Sample: 8.13.16-H&H BLEND-1 (A6H0119-01)												
EPA 8082A												
Aroclor 1016	ND	1.54	1.54	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	1.54	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	4.18	4.18	"	"	---	ND	---	---	---	30%	R-02
Aroclor 1242	ND	2.21	2.21	"	"	---	ND	---	---	---	30%	R-02
Aroclor 1248	ND	1.54	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	1.54	1.54	"	"	---	ND	---	---	---	30%	
Aroclor 1260	**1.45**	0.778	1.54	"	"	---	1.29	---	---	11	30%	J
Surr: Decachlorobiphenyl (Surr)			*Recovery: 73 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Matrix Spike (6080227-MS1)					Prepared: 08/08/16 10:15		Analyzed: 08/08/16 20:39					A-01, C-07
QC Source Sample: 8.3.16-MCF-BLEND-1 (A6H0119-03)												
EPA 8082A												
Aroclor 1016	39.2	0.792	1.57	ug/kg dry	1	98.5	ND	40	47-134%	---	---	Q-01
Aroclor 1260	53.8	0.792	1.57	"	"	"	1.27	53	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 0.5 %*	*Limits: 44-120 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080222 - EPA 3546/3640A (GPC)							**Soil**					
Blank (6080222-BLK1)					Prepared: 08/04/16 12:38		Analyzed: 08/09/16 12:10					C-05
EPA 8081B												
Aldrin	ND	0.833	1.67	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.833	1.67	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.833	1.67	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 55 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*91 %*	*65-151 %*			*"*					
LCS (6080222-BS1)					Prepared: 08/04/16 12:38		Analyzed: 08/09/16 12:27					C-05
EPA 8081B												
Aldrin	37.4	1.00	2.00	ug/kg wet	1	50.0	---	75	45-136%	---	---	
alpha-BHC	37.8	1.00	2.00	"	"	"	---	76	45-137%	---	---	
beta-BHC	41.1	1.00	2.00	"	"	"	---	82	50-136%	---	---	
delta-BHC	45.8	1.00	2.00	"	"	"	---	92	47-139%	---	---	Q-41
gamma-BHC (Lindane)	40.5	1.00	2.00	"	"	"	---	81	49-135%	---	---	Q-41
cis-Chlordane	43.8	1.00	2.00	"	"	"	---	88	54-133%	---	---	
trans-Chlordane	42.8	1.00	2.00	"	"	"	---	86	53-135%	---	---	
4,4'-DDD	53.6	1.00	2.00	"	"	"	---	107	56-139%	---	---	Q-41

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080222 - EPA 3546/3640A (GPC)							**Soil**					
LCS (6080222-BS1)					Prepared: 08/04/16 12:38		Analyzed: 08/09/16 12:27					C-05
4,4'-DDE	46.4	1.00	2.00	ug/kg wet	"	"	---	93	56-134%	---	---	
4,4'-DDT	58.0	1.00	2.00	"	"	"	---	116	50-141%	---	---	
Dieldrin	48.2	1.00	2.00	"	"	"	---	96	56-136%	---	---	
Endosulfan I	46.0	1.00	2.00	"	"	"	---	92	52-132%	---	---	
Endosulfan II	51.8	1.00	2.00	"	"	"	---	104	53-134%	---	---	
Endosulfan sulfate	51.8	1.00	2.00	"	"	"	---	104	55-136%	---	---	
Endrin	56.0	1.00	2.00	"	"	"	---	112	56-140%	---	---	
Endrin Aldehyde	50.3	1.00	2.00	"	"	"	---	101	35-137%	---	---	
Endrin ketone	51.8	1.00	2.00	"	"	"	---	104	55-136%	---	---	Q-41
Heptachlor	39.5	1.00	2.00	"	"	"	---	79	47-136%	---	---	Q-41
Heptachlor epoxide	42.9	1.00	2.00	"	"	"	---	86	52-136%	---	---	
Methoxychlor	64.5	3.00	6.00	"	"	"	---	129	52-143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*92 %*		*65-151 %*		*"*					
Duplicate (6080222-DUP1)					Prepared: 08/04/16 12:38		Analyzed: 08/09/16 13:02					C-05
QC Source Sample: 8.13.16-H&H BLEND-1 (A6H0119-01RE1)												
EPA 8081B												
Aldrin	ND	1.08	2.15	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
4,4'-DDE	**1.68**	1.08	2.15	"	"	---	1.73	---	---	3	30%	J
4,4'-DDT	**1.24**	1.08	2.15	"	"	---	1.45	---	---	16	30%	J
Dieldrin	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
Endosulfan I	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
Endrin	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
Endrin ketone	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080222 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (6080222-DUP1)					Prepared: 08/04/16 12:38	Analyzed: 08/09/16 13:02						C-05
QC Source Sample: 8.13.16-H&H BLEND-1 (A6H0119-01RE1)												
Heptachlor	ND	1.08	2.15	ug/kg dry	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	1.08	2.15	"	"	---	ND	---	---	---	30%	
Methoxychlor	ND	3.23	6.46	"	"	---	3.31	---	---	***	30%	
Chlordane (Technical)	ND	32.3	64.6	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	32.3	64.6	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 63 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*77 %*	*65-151 %*			*"*					
Matrix Spike (6080222-MS1)					Prepared: 08/04/16 12:38	Analyzed: 08/09/16 13:37						C-05
QC Source Sample: 8.3.16-MCF-BLEND-1 (A6H0119-03RE1)												
EPA 8081B												
Aldrin	37.2	1.14	2.27	ug/kg dry	1	56.8	ND	66	45-136%	---	---	
alpha-BHC	33.0	1.14	2.27	"	"	"	ND	58	45-137%	---	---	
beta-BHC	49.0	1.14	2.27	"	"	"	ND	86	50-136%	---	---	
delta-BHC	52.1	1.14	2.27	"	"	"	ND	92	47-139%	---	---	Q-41
gamma-BHC (Lindane)	38.4	1.14	2.27	"	"	"	ND	68	49-135%	---	---	Q-41
cis-Chlordane	50.2	1.14	2.27	"	"	"	ND	88	54-133%	---	---	
trans-Chlordane	49.1	1.14	2.27	"	"	"	ND	86	53-135%	---	---	
4,4'-DDD	61.9	1.14	2.27	"	"	"	ND	109	56-139%	---	---	Q-41
4,4'-DDE	45.5	1.14	2.27	"	"	"	2.48	76	56-134%	---	---	
4,4'-DDT	52.6	1.14	2.27	"	"	"	1.22	91	50-141%	---	---	
Dieldrin	41.5	1.14	2.27	"	"	"	ND	73	56-136%	---	---	
Endosulfan I	49.4	1.14	2.27	"	"	"	ND	87	52-132%	---	---	
Endosulfan II	53.3	1.14	2.27	"	"	"	ND	94	53-134%	---	---	
Endosulfan sulfate	56.0	1.14	2.27	"	"	"	ND	99	55-136%	---	---	
Endrin	65.8	1.14	2.27	"	"	"	ND	116	56-140%	---	---	
Endrin Aldehyde	48.7	1.14	2.27	"	"	"	ND	86	35-137%	---	---	
Endrin ketone	57.9	1.14	2.27	"	"	"	ND	102	55-136%	---	---	Q-41
Heptachlor	37.2	1.14	2.27	"	"	"	ND	65	47-136%	---	---	Q-41
Heptachlor epoxide	45.7	1.14	2.27	"	"	"	ND	81	52-136%	---	---	
Methoxychlor	61.2	3.41	6.82	"	"	"	ND	108	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 40 %*	*Limits: 42-129 %*			*Dilution: 1x*					*S-03*
Decachlorobiphenyl (Surr)			*75 %*	*65-151 %*			*"*					

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Blank (6080157-BLK1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 16:29							
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Blank (6080157-BLK1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 16:29							
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Blank (6080157-BLK1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 16:29							
Isophorone	ND	3.12	6.25	ug/kg wet	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	62.3	125	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 79 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*82 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*83 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*107 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*79 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*90 %*		*39-132 %*		*"*					*Q-41*
LCS (6080157-BS1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 17:06							
EPA 8270D												
Acenaphthene	457	1.33	2.67	ug/kg wet	1	533	---	86	40-122%	---	---	
Acenaphthylene	485	1.33	2.67	"	"	"	---	91	32-132%	---	---	
Anthracene	507	1.33	2.67	"	"	"	---	95	47-123%	---	---	
Benz(a)anthracene	498	1.33	2.67	"	"	"	---	93	49-126%	---	---	
Benzo(a)pyrene	519	2.00	4.00	"	"	"	---	97	45-129%	---	---	
Benzo(b)fluoranthene	508	2.00	4.00	"	"	"	---	95	45-132%	---	---	
Benzo(k)fluoranthene	509	2.00	4.00	"	"	"	---	96	47-132%	---	---	
Benzo(g,h,i)perylene	505	1.33	2.67	"	"	"	---	95	43-134%	---	---	
Chrysene	493	1.33	2.67	"	"	"	---	93	50-124%	---	---	
Dibenz(a,h)anthracene	507	1.33	2.67	"	"	"	---	95	45-134%	---	---	
Fluoranthene	506	1.33	2.67	"	"	"	---	95	50-127%	---	---	
Fluorene	489	1.33	2.67	"	"	"	---	92	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	481	1.33	2.67	"	"	"	---	90	45-133%	---	---	
1-Methylnaphthalene	460	2.67	5.33	"	"	"	---	86	40-120%	---	---	
2-Methylnaphthalene	464	2.67	5.33	"	"	"	---	87	38-122%	---	---	
Naphthalene	446	2.67	5.33	"	"	"	---	84	35-123%	---	---	
Phenanthrene	478	1.33	2.67	"	"	"	---	90	50-121%	---	---	
Pyrene	504	1.33	2.67	"	"	"	---	94	47-127%	---	---	
Carbazole	492	2.00	4.00	"	"	"	---	92	50-122%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
LCS (6080157-BS1)					Prepared: 08/04/16 12:37	Analyzed: 08/04/16 17:06						
Dibenzofuran	486	1.33	2.67	ug/kg wet	"	"	---	91	44-120%	---	---	
4-Chloro-3-methylphenol	503	13.3	26.7	"	"	"	---	94	45-122%	---	---	Q-41
2-Chlorophenol	489	6.67	13.3	"	"	"	---	92	34-121%	---	---	
2,4-Dichlorophenol	501	6.67	13.3	"	"	"	---	94	40-122%	---	---	
2,4-Dimethylphenol	518	6.67	13.3	"	"	"	---	97	30-127%	---	---	
2,4-Dinitrophenol	372	33.3	66.7	"	"	"	---	70	5-137%	---	---	
4,6-Dinitro-2-methylphenol	477	33.3	66.7	"	"	"	---	89	29-132%	---	---	
2-Methylphenol	520	3.33	6.67	"	"	"	---	98	32-122%	---	---	
3+4-Methylphenol(s)	496	3.33	6.67	"	"	"	---	93	34-120%	---	---	
2-Nitrophenol	492	13.3	26.7	"	"	"	---	92	36-123%	---	---	
4-Nitrophenol	471	13.3	26.7	"	"	"	---	88	30-132%	---	---	
Pentachlorophenol (PCP)	461	13.3	26.7	"	"	"	---	86	25-133%	---	---	
Phenol	555	2.67	5.33	"	"	"	---	104	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	510	6.67	13.3	"	"	"	---	96	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	494	6.67	13.3	"	"	"	---	93	40-120%	---	---	
2,4,5-Trichlorophenol	515	6.67	13.3	"	"	"	---	97	41-124%	---	---	
2,4,6-Trichlorophenol	504	6.67	13.3	"	"	"	---	95	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	510	20.0	40.0	"	"	"	---	96	51-133%	---	---	
Butyl benzyl phthalate	500	13.3	26.7	"	"	"	---	94	48-132%	---	---	
Diethylphthalate	500	13.3	26.7	"	"	"	---	94	50-124%	---	---	
Dimethylphthalate	501	13.3	26.7	"	"	"	---	94	48-124%	---	---	
Di-n-butylphthalate	512	13.3	26.7	"	"	"	---	96	51-128%	---	---	
Di-n-octyl phthalate	500	13.3	26.7	"	"	"	---	94	44-140%	---	---	
N-Nitrosodimethylamine	430	3.33	6.67	"	"	"	---	81	23-120%	---	---	
N-Nitroso-di-n-propylamine	463	3.33	6.67	"	"	"	---	87	36-120%	---	---	
N-Nitrosodiphenylamine	527	3.33	6.67	"	"	"	---	99	38-127%	---	---	
Bis(2-Chloroethoxy) methane	460	3.33	6.67	"	"	"	---	86	36-121%	---	---	
Bis(2-Chloroethyl) ether	453	3.33	6.67	"	"	"	---	85	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	443	3.33	6.67	"	"	"	---	83	33-131%	---	---	
Hexachlorobenzene	523	1.33	2.67	"	"	"	---	98	44-122%	---	---	
Hexachlorobutadiene	457	3.33	6.67	"	"	"	---	86	32-123%	---	---	
Hexachlorocyclopentadiene	558	6.67	13.3	"	"	"	---	105	5-140%	---	---	
Hexachloroethane	446	3.33	6.67	"	"	"	---	84	28-120%	---	---	
2-Chloronaphthalene	493	1.33	2.67	"	"	"	---	92	41-120%	---	---	
1,2-Dichlorobenzene	438	3.33	6.67	"	"	"	---	82	33-120%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
LCS (6080157-BS1)					Prepared: 08/04/16 12:37		Analyzed: 08/04/16 17:06					
1,3-Dichlorobenzene	434	3.33	6.67	ug/kg wet	"	"	---	81	30-120%	---	---	
1,4-Dichlorobenzene	433	3.33	6.67	"	"	"	---	81	31-120%	---	---	
1,2,4-Trichlorobenzene	459	3.33	6.67	"	"	"	---	86	34-120%	---	---	
4-Bromophenyl phenyl ether	539	3.33	6.67	"	"	"	---	101	46-124%	---	---	
4-Chlorophenyl phenyl ether	503	3.33	6.67	"	"	"	---	94	45-121%	---	---	
Aniline	404	6.67	13.3	"	"	"	---	76	7-120%	---	---	
4-Chloroaniline	193	3.33	6.67	"	"	"	---	36	16-120%	---	---	
2-Nitroaniline	486	26.7	53.3	"	"	"	---	91	44-127%	---	---	
3-Nitroaniline	348	26.7	53.3	"	"	"	---	65	33-120%	---	---	Q-31
4-Nitroaniline	454	26.7	53.3	"	"	"	---	85	35-120%	---	---	Q-31
Nitrobenzene	470	13.3	26.7	"	"	"	---	88	34-122%	---	---	
2,4-Dinitrotoluene	484	13.3	26.7	"	"	"	---	91	48-126%	---	---	
2,6-Dinitrotoluene	492	13.3	26.7	"	"	"	---	92	46-124%	---	---	
Benzoic acid	189	167	167	"	"	1070	---	18	5-140%	---	---	
Benzyl alcohol	487	6.67	13.3	"	"	533	---	91	29-122%	---	---	
Isophorone	471	3.33	6.67	"	"	"	---	88	30-122%	---	---	
Azobenzene (1,2-DPH)	479	3.33	6.67	"	"	"	---	90	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	509	33.3	66.7	"	"	"	---	95	60-121%	---	---	
3,3'-Dichlorobenzidine	1470	66.5	134	"	"	1070	---	137	22-121%	---	---	Q-29, Q-41
1,2-Dinitrobenzene	503	33.3	66.7	"	"	533	---	94	44-120%	---	---	
1,3-Dinitrobenzene	487	33.3	66.7	"	"	"	---	91	42-127%	---	---	
1,4-Dinitrobenzene	484	33.3	66.7	"	"	"	---	91	37-132%	---	---	
Pyridine	400	6.67	13.3	"	"	"	---	75	5-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 84 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*85 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*90 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*94 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*80 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*108 %*	*39-132 %*			*"*					*Q-41*
Duplicate (6080157-DUP1)					Prepared: 08/04/16 12:37		Analyzed: 08/04/16 19:45					
QC Source Sample: 8.13.16-H&H BLEND-1 (A6H0119-01RE1)												
EPA 8270D												
Acenaphthene	ND	15.3	30.7	ug/kg dry	10	---	ND	---	---	---	30%	
Acenaphthylene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
Anthracene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Duplicate (6080157-DUP1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 19:45							
QC Source Sample: 8.13.16-H&H BLEND-1 (A6H0119-01RE1)												
Benz(a)anthracene	**15.7**	15.3	30.7	ug/kg dry	"	---	17.3	---	---	9	30%	J
Benzo(a)pyrene	**26.8**	23.0	46.0	"	"	---	28.1	---	---	5	30%	J
Benzo(b)fluoranthene	**34.9**	23.0	46.0	"	"	---	33.6	---	---	4	30%	J
Benzo(k)fluoranthene	ND	23.0	46.0	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
Chrysene	**17.4**	15.3	30.7	"	"	---	17.8	---	---	2	30%	J
Dibenz(a,h)anthracene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
Fluoranthene	**33.3**	15.3	30.7	"	"	---	42.0	---	---	23	30%	
Fluorene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	30.7	61.3	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	30.7	61.3	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	30.7	61.3	"	"	---	ND	---	---	---	30%	
Phenanthrene	**23.8**	15.3	30.7	"	"	---	28.5	---	---	18	30%	J
Pyrene	**28.0**	15.3	30.7	"	"	---	33.8	---	---	19	30%	J
Carbazole	ND	23.0	46.0	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	153	307	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	383	768	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	383	768	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	**102**	38.3	76.8	"	"	---	110	---	---	7	30%	
2-Nitrophenol	ND	153	307	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	153	307	"	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	153	307	"	"	---	ND	---	---	---	30%	
Phenol	ND	30.7	61.3	"	"	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	230	460	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Duplicate (6080157-DUP1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 19:45							
QC Source Sample: 8.13.16-H&H BLEND-1 (A6H0119-01RE1)												
Butyl benzyl phthalate	ND	153	307	ug/kg dry	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	153	307	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	153	307	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	153	307	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	153	307	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	76.8	153	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	15.3	30.7	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
Aniline	ND	76.8	153	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	307	613	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	307	613	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	307	613	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	153	307	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	153	307	"	"	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	153	307	"	"	---	ND	---	---	---	30%	
Benzoic acid	ND	1920	3830	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	76.8	153	"	"	---	ND	---	---	---	30%	
Isophorone	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	38.3	76.8	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Duplicate (6080157-DUP1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 19:45							
QC Source Sample: 8.13.16-H&H BLEND-1 (A6H0119-01RE1)												
Bis(2-Ethylhexyl) adipate	ND	383	768	ug/kg dry	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	765	1540	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	383	768	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	383	768	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	383	768	"	"	---	ND	---	---	---	30%	
Pyridine	ND	76.8	153	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 80 %*		*Limits: 37-122 %*		*Dilution: 10x*					
2-Fluorobiphenyl (Surr)			*75 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*79 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*83 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*56 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*106 %*		*39-132 %*		*"*					*Q-41*
Matrix Spike (6080157-MS1)					Prepared: 08/04/16 12:37 Analyzed: 08/04/16 20:59							
QC Source Sample: 8.3.16-MCF-BLEND-1 (A6H0119-03RE1)												
EPA 8270D												
Acenaphthene	544	15.5	31.0	ug/kg dry	10	620	ND	88	40-122%	---	---	
Acenaphthylene	549	15.5	31.0	"	"	"	ND	89	32-132%	---	---	
Anthracene	594	15.5	31.0	"	"	"	ND	96	47-123%	---	---	
Benz(a)anthracene	580	15.5	31.0	"	"	"	17.4	91	49-126%	---	---	
Benzo(a)pyrene	664	23.2	46.5	"	"	"	26.8	103	45-129%	---	---	
Benzo(b)fluoranthene	669	23.2	46.5	"	"	"	37.8	102	45-132%	---	---	
Benzo(k)fluoranthene	616	23.2	46.5	"	"	"	ND	99	47-132%	---	---	
Benzo(g,h,i)perylene	512	15.5	31.0	"	"	"	ND	83	43-134%	---	---	
Chrysene	604	15.5	31.0	"	"	"	23.7	94	50-124%	---	---	
Dibenz(a,h)anthracene	561	15.5	31.0	"	"	"	ND	90	45-134%	---	---	
Fluoranthene	650	15.5	31.0	"	"	"	57.9	96	50-127%	---	---	
Fluorene	573	15.5	31.0	"	"	"	ND	92	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	540	15.5	31.0	"	"	"	ND	87	45-133%	---	---	
1-Methylnaphthalene	544	31.0	61.9	"	"	"	ND	88	40-120%	---	---	
2-Methylnaphthalene	544	31.0	61.9	"	"	"	ND	88	38-122%	---	---	
Naphthalene	516	31.0	61.9	"	"	"	ND	83	35-123%	---	---	
Phenanthrene	629	15.5	31.0	"	"	"	70.0	90	50-121%	---	---	
Pyrene	631	15.5	31.0	"	"	"	45.1	95	47-127%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Matrix Spike (6080157-MS1)					Prepared: 08/04/16 12:37		Analyzed: 08/04/16 20:59					
QC Source Sample: 8.3.16-MCF-BLEND-1 (A6H0119-03RE1)												
Carbazole	613	23.2	46.5	ug/kg dry	"	"	ND	99	50-122%	---	---	
Dibenzofuran	577	15.5	31.0	"	"	"	ND	93	44-120%	---	---	
4-Chloro-3-methylphenol	678	155	310	"	"	"	ND	109	45-122%	---	---	Q-41
2-Chlorophenol	565	77.5	155	"	"	"	ND	91	34-121%	---	---	
2,4-Dichlorophenol	681	77.5	155	"	"	"	ND	110	40-122%	---	---	
2,4-Dimethylphenol	455	77.5	155	"	"	"	ND	73	30-127%	---	---	
2,4-Dinitrophenol	600	387	387	"	"	"	ND	97	5-137%	---	---	
4,6-Dinitro-2-methylphenol	639	387	387	"	"	"	ND	103	29-132%	---	---	
2-Methylphenol	601	38.7	77.5	"	"	"	ND	97	32-122%	---	---	
3+4-Methylphenol(s)	1250	38.7	77.5	"	"	"	723	86	34-120%	---	---	
2-Nitrophenol	611	155	310	"	"	"	ND	99	36-123%	---	---	
4-Nitrophenol	598	155	310	"	"	"	ND	97	30-132%	---	---	
Pentachlorophenol (PCP)	774	155	310	"	"	"	ND	125	25-133%	---	---	
Phenol	1000	31.0	61.9	"	"	"	438	91	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	712	77.5	155	"	"	"	ND	115	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	739	77.5	155	"	"	"	ND	119	40-120%	---	---	
2,4,5-Trichlorophenol	726	77.5	155	"	"	"	ND	117	41-124%	---	---	
2,4,6-Trichlorophenol	702	77.5	155	"	"	"	ND	113	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	664	232	465	"	"	"	ND	107	51-133%	---	---	
Butyl benzyl phthalate	730	155	310	"	"	"	ND	118	48-132%	---	---	
Diethylphthalate	578	155	310	"	"	"	ND	93	50-124%	---	---	
Dimethylphthalate	569	155	310	"	"	"	ND	92	48-124%	---	---	
Di-n-butylphthalate	629	155	310	"	"	"	ND	102	51-128%	---	---	
Di-n-octyl phthalate	769	155	310	"	"	"	ND	124	44-140%	---	---	
N-Nitrosodimethylamine	384	38.7	77.5	"	"	"	ND	62	23-120%	---	---	
N-Nitroso-di-n-propylamine	631	38.7	77.5	"	"	"	ND	102	36-120%	---	---	
N-Nitrosodiphenylamine	446	38.7	77.5	"	"	"	ND	72	38-127%	---	---	
Bis(2-Chloroethoxy) methane	546	38.7	77.5	"	"	"	ND	88	36-121%	---	---	
Bis(2-Chloroethyl) ether	513	38.7	77.5	"	"	"	ND	83	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	565	38.7	77.5	"	"	"	ND	91	33-131%	---	---	
Hexachlorobenzene	580	15.5	31.0	"	"	"	ND	94	44-122%	---	---	
Hexachlorobutadiene	485	38.7	77.5	"	"	"	ND	78	32-123%	---	---	
Hexachlorocyclopentadiene	ND	77.5	155	"	"	"	ND		5-140%	---	---	Q-02
Hexachloroethane	332	38.7	77.5	"	"	"	ND	54	28-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080157 - EPA 3546							**Soil**					
Matrix Spike (6080157-MS1)					Prepared: 08/04/16 12:37		Analyzed: 08/04/16 20:59					
QC Source Sample: 8.3.16-MCF-BLEND-1 (A6H0119-03RE1)												
2-Chloronaphthalene	554	15.5	31.0	ug/kg dry	"	"	ND	89	41-120%	---	---	
1,2-Dichlorobenzene	452	38.7	77.5	"	"	"	ND	73	33-120%	---	---	
1,3-Dichlorobenzene	427	38.7	77.5	"	"	"	ND	69	30-120%	---	---	
1,4-Dichlorobenzene	427	38.7	77.5	"	"	"	ND	69	31-120%	---	---	
1,2,4-Trichlorobenzene	492	38.7	77.5	"	"	"	ND	79	34-120%	---	---	
4-Bromophenyl phenyl ether	598	38.7	77.5	"	"	"	ND	96	46-124%	---	---	
4-Chlorophenyl phenyl ether	553	38.7	77.5	"	"	"	ND	89	45-121%	---	---	
Aniline	80.8	77.5	77.5	"	"	"	ND	13	7-120%	---	---	
4-Chloroaniline	ND	38.7	77.5	"	"	"	ND		16-120%	---	---	Q-02
2-Nitroaniline	576	310	310	"	"	"	ND	93	44-127%	---	---	
3-Nitroaniline	ND	310	619	"	"	"	ND		33-120%	---	---	Q-02, Q-31
4-Nitroaniline	ND	310	619	"	"	"	ND		35-120%	---	---	Q-02, Q-31
Nitrobenzene	576	155	310	"	"	"	ND	93	34-122%	---	---	
2,4-Dinitrotoluene	603	155	310	"	"	"	ND	97	48-126%	---	---	
2,6-Dinitrotoluene	619	155	310	"	"	"	ND	100	46-124%	---	---	
Benzoic acid	4180	1940	3870	"	"	1240	3100	87	5-140%	---	---	
Benzyl alcohol	764	77.5	155	"	"	620	81.8	110	29-122%	---	---	
Isophorone	560	38.7	77.5	"	"	"	ND	90	30-122%	---	---	
Azobenzene (1,2-DPH)	552	38.7	77.5	"	"	"	ND	89	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	596	387	387	"	"	"	ND	96	60-121%	---	---	
3,3'-Dichlorobenzidine	ND	773	1550	"	"	1240	ND		22-121%	---	---	Q-02, Q-41
1,2-Dinitrobenzene	544	387	387	"	"	620	ND	88	44-120%	---	---	
1,3-Dinitrobenzene	636	387	387	"	"	"	ND	103	42-127%	---	---	
1,4-Dinitrobenzene	630	387	387	"	"	"	ND	102	37-132%	---	---	
Pyridine	310	77.5	155	"	"	"	ND	50	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 90 %*	*Limits: 37-122 %*	*Dilution: 10x*
2-Fluorobiphenyl (Surr)	*84 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*98 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*93 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*74 %*	*35-115 %*	*"*
2,4,6-Tribromophenol (Surr)	*124 %*	*39-132 %*	*"*

Q-41

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080170 - EPA 3051A							**Soil**					
Blank (6080170-BLK1)					Prepared: 08/04/16 16:03		Analyzed: 08/05/16 18:22					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6080170-BS1)					Prepared: 08/04/16 16:03		Analyzed: 08/05/16 18:25					
EPA 6020A												
Arsenic	50.9	0.500	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Cadmium	52.4	0.100	0.200	"	"	"	---	105	"	---	---	
Chromium	51.4	0.500	1.00	"	"	"	---	103	"	---	---	
Copper	52.4	0.500	1.00	"	"	"	---	105	"	---	---	
Lead	52.4	0.100	0.200	"	"	"	---	105	"	---	---	
Mercury	1.04	0.0400	0.0800	"	"	1.00	---	104	"	---	---	
Nickel	50.2	0.500	1.00	"	"	50.0	---	100	"	---	---	
Selenium	29.5	0.500	1.00	"	"	25.0	---	118	"	---	---	
Silver	25.5	0.100	0.200	"	"	"	---	102	"	---	---	
Zinc	52.5	2.00	4.00	"	"	50.0	---	105	"	---	---	
Duplicate (6080170-DUP1)					Prepared: 08/04/16 16:03		Analyzed: 08/05/16 18:47					
QC Source Sample: Other (A6G1076-04)												
EPA 6020A												
Arsenic	**1.31**	0.556	1.11	mg/kg dry	10	---	1.16	---	---	13	40%	
Cadmium	**0.378**	0.111	0.222	"	"	---	0.363	---	---	4	40%	
Chromium	**9.03**	0.556	1.11	"	"	---	7.26	---	---	22	40%	
Copper	**31.1**	0.556	1.11	"	"	---	28.0	---	---	11	40%	
Lead	**51.0**	0.111	0.222	"	"	---	44.1	---	---	15	40%	
Mercury	ND	0.0445	0.0890	"	"	---	ND	---	---	---	40%	
Nickel	**9.23**	0.556	1.11	"	"	---	8.20	---	---	12	40%	
Selenium	ND	0.556	1.11	"	"	---	ND	---	---	---	40%	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080170 - EPA 3051A							**Soil**					
Duplicate (6080170-DUP1)					Prepared: 08/04/16 16:03		Analyzed: 08/05/16 18:47					
QC Source Sample: Other (A6G1076-04)												
Silver	ND	0.111	0.222	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**72.9**	2.22	4.45	"	"	---	63.6	---	---	14	40%	
Matrix Spike (6080170-MS1)					Prepared: 08/04/16 16:03		Analyzed: 08/05/16 18:50					
QC Source Sample: Other (A6G1076-04)												
EPA 6020A												
Arsenic	53.5	0.539	1.08	mg/kg dry	10	53.9	1.16	97	75-125%	---	---	
Cadmium	58.7	0.108	0.215	"	"	"	0.363	108	"	---	---	
Chromium	65.3	0.539	1.08	"	"	"	7.26	108	"	---	---	
Copper	86.8	0.539	1.08	"	"	"	28.0	109	"	---	---	
Lead	104	0.108	0.215	"	"	"	44.1	111	"	---	---	
Mercury	1.14	0.0431	0.0862	"	"	1.08	ND	106	"	---	---	
Nickel	63.6	0.539	1.08	"	"	53.9	8.20	103	"	---	---	
Selenium	24.6	0.539	1.08	"	"	26.9	ND	92	"	---	---	
Silver	28.2	0.108	0.215	"	"	"	ND	105	"	---	---	
Zinc	129	2.15	4.31	"	"	53.9	63.6	121	"	---	---	
Matrix Spike (6080170-MS2)					Prepared: 08/04/16 16:03		Analyzed: 08/05/16 20:00					
QC Source Sample: 8.3.16-MCF-BLEND-1 (A6H0119-03)												
EPA 6020A												
Arsenic	62.5	0.611	1.22	mg/kg dry	10	61.1	2.58	98	75-125%	---	---	
Cadmium	64.9	0.122	0.244	"	"	"	0.259	106	"	---	---	
Chromium	76.5	0.611	1.22	"	"	"	14.9	101	"	---	---	
Copper	84.2	0.611	1.22	"	"	"	22.8	100	"	---	---	
Lead	74.9	0.611	1.22	"	"	"	19.2	91	"	---	---	
Mercury	1.27	0.0489	0.0978	"	"	1.22	ND	104	"	---	---	
Nickel	72.2	0.611	1.22	"	"	61.1	11.6	99	"	---	---	
Selenium	30.3	1.22	2.44	"	"	30.5	ND	99	"	---	---	
Silver	31.0	0.122	0.244	"	"	"	ND	102	"	---	---	
Zinc	137	2.44	4.89	"	"	61.1	75.1	101	"	---	---	

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080155 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6080155-DUP1)					Prepared: 08/04/16 12:07		Analyzed: 08/05/16 09:03					
QC Source Sample: Other (A6H0125-03)												
EPA 8000C												
% Solids	**90.6**	1.00	1.00	% by Weight	1	---	89.7	---	---	1	10%	
Duplicate (6080155-DUP2)					Prepared: 08/04/16 12:07		Analyzed: 08/05/16 09:03					
QC Source Sample: Other (A6H0125-13)												
EPA 8000C												
% Solids	**86.5**	1.00	1.00	% by Weight	1	---	86.2	---	---	0.4	10%	
Duplicate (6080155-DUP3)					Prepared: 08/04/16 12:07		Analyzed: 08/05/16 09:03					
QC Source Sample: Other (A6H0132-04)												
EPA 8000C												
% Solids	**85.6**	1.00	1.00	% by Weight	1	---	85.5	---	---	0.1	10%	
Duplicate (6080155-DUP4)					Prepared: 08/04/16 13:10		Analyzed: 08/05/16 09:03					
QC Source Sample: Other (A6H0115-09)												
EPA 8000C												
% Solids	**77.4**	1.00	1.00	% by Weight	1	---	76.3	---	---	1	10%	
Duplicate (6080155-DUP5)					Prepared: 08/04/16 15:06		Analyzed: 08/05/16 09:03					
QC Source Sample: Other (A6H0155-02)												
EPA 8000C												
% Solids	**78.6**	1.00	1.00	% by Weight	1	---	79.8	---	---	2	10%	
Duplicate (6080155-DUP6)					Prepared: 08/04/16 18:13		Analyzed: 08/05/16 09:03					
QC Source Sample: Other (A6H0171-02)												
EPA 8000C												
% Solids	**91.1**	1.00	1.00	% by Weight	1	---	90.0	---	---	1	10%	
Duplicate (6080155-DUP7)					Prepared: 08/04/16 19:53		Analyzed: 08/05/16 09:03					
QC Source Sample: Other (A6H0179-02)												
EPA 8000C												
% Solids	**80.3**	1.00	1.00	% by Weight	1	---	80.5	---	---	0.2	10%	

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2001 NW 19th Ave, STE 200	Project Number: OPP 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Prep: EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080255							
A6H0119-01	Soil	NWTPH-Dx/SG	08/03/16 11:30	08/08/16 18:00	11.38g/5mL	10g/5mL	0.88
A6H0119-03	Soil	NWTPH-Dx/SG	08/03/16 11:50	08/08/16 18:00	11.24g/5mL	10g/5mL	0.89

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080227							
A6H0119-01	Soil	EPA 8082A	08/03/16 11:30	08/08/16 10:15	30.76g/2mL	30g/2mL	0.98
A6H0119-03	Soil	EPA 8082A	08/03/16 11:50	08/08/16 10:15	30.5g/2mL	30g/2mL	0.98

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080222							
A6H0119-01RE1	Soil	EPA 8081B	08/03/16 11:30	08/04/16 12:38	10.63g/10mL	10g/5mL	1.88
A6H0119-03RE1	Soil	EPA 8081B	08/03/16 11:50	08/04/16 12:38	10.62g/10mL	10g/5mL	1.88

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080157							
A6H0119-01RE1	Soil	EPA 8270D	08/03/16 11:30	08/04/16 12:37	15.28g/2mL	15g/2mL	0.98
A6H0119-03RE1	Soil	EPA 8270D	08/03/16 11:50	08/04/16 12:37	15.55g/2mL	15g/2mL	0.97

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080170							
A6H0119-01	Soil	EPA 6020A	08/03/16 11:30	08/04/16 16:03	0.466g/50mL	0.5g/50mL	1.07
A6H0119-03	Soil	EPA 6020A	08/03/16 11:50	08/04/16 16:03	0.483g/50mL	0.5g/50mL	1.04

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080155							
A6H0119-01	Soil	EPA 8000C	08/03/16 11:30	08/04/16 12:07	1N/A/1N/A	1N/A/1N/A	NA
A6H0119-03	Soil	EPA 8000C	08/03/16 11:50	08/04/16 12:07	1N/A/1N/A	1N/A/1N/A	NA

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

Notes and Definitions

Qualifiers:

A-01	Surrogate was apparently not added to sample.
C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-02	Spike recovery is outside of established control limits due to matrix interference.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-37	Sample is non-homogenous. Sample results are less than MRL and duplicate results have hits greater than the MRL. See Duplicate results.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-03	Reextraction and analysis, or analysis of laboratory duplicate, confirms surrogate failure due to sample matrix effect.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.

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Portland, OR 97209	Project Manager: Phil Wiescher	08/10/16 16:38

Blank Policy

Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

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Project Number: OPP 9003.01.39
Project Manager: Phil Wiescher

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Reported:
08/10/16 16:38

APEX LABS — CHAIN OF CUSTODY

Lab # A6H0119 COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: **Name**	Project Mgr: Phil Wiescher	Project Name: Port of Ridgefield OPP	Project #/PO# 9003.01.39
Address: 2001 NW 19th Ave Suite 200, Portland, OR	Phone: (503) 5015209	Fax:	Email: pwiescher@maulfoster.com
Sampled by: LINDSEY CROSBY			

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Totall Metals EPA 6020	Organochlorine pesticides EPA 8081B	PCB Arclors (include aroclor 1268)	PAH EPA 8270D	Dioxins/furrans EPA 1613B	TPH-Dx (NWTPH-D/Dx) w/ Silica Gel Cleanup	
8.3.16-H&H-BLEND-1		8/3	11:30	S	2	X	X	X	X	X	X	
8.3.16-H&H BLEND-2		8/3	11:40	S	1	X	X	X	X	X	X	HOLD
8.3.16-MCF-BLEND-1		8/3	11:50	S	2	X	X	X	X	X	X	
8.3.16-MCF-BLEND-2		8/3	1200	S	1	X	X	X	X	X	X	HOLD

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY 2 DAY 3 DAY 4 DAY **5 DAY** Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

See attached table for specific analytes of metals, organochlorine pesticides, SVOCs, and dioxins.

HOLD 8.3.16-H&H-BLEND-2 AND 8.3.16-MCF BLEND-2
5 DAY RUSH OTHER SAMPLES

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature: [signature]	Date: 8/3/16	Signature: [signature]	Date: 8-3-16	Signature:	Date:	Signature:	Date:
Printed Name: LINDSEY CROSBY	Time: 13:00	Printed Name: Adam Peters	Time: 14:15	Printed Name:	Time:	Printed Name:	Time:
Company: MFA		Company: Apex		Company:		Company:	

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Philip Nerenberg

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Philip Nerenberg, Lab Director

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Tuesday, August 16, 2016

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / Port of Ridgefield 9003.01.

Enclosed are the results of analyses for work order A6H0222, which was received by the laboratory on 8/6/2016 at 8:55:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Top Soil 5	A6H0222-01	Soil	08/05/16 12:45	08/06/16 08:55

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01)			**Matrix: Soil**		**Batch: 6080278**			
Diesel	ND	13.9	27.8	mg/kg dry	1	08/10/16 07:35	NWTPH-Dx/SG	
Oil	ND	27.8	55.6	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01)			**Matrix: Soil**		**Batch: 6080323**			C-07
Aroclor 1016	ND	1.50	1.50	ug/kg dry	1	08/10/16 17:37	EPA 8082A	
Aroclor 1221	ND	0.756	1.50	"	"	"	"	
Aroclor 1232	ND	3.50	3.50	"	"	"	"	R-02
Aroclor 1242	ND	1.69	1.69	"	"	"	"	R-02
Aroclor 1248	ND	2.37	2.37	"	"	"	"	R-02
Aroclor 1254	ND	2.71	2.71	"	"	"	"	R-02
Aroclor 1260	ND	1.50	1.50	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 101 %*	*Limits: 44-120 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01RE1)			**Matrix: Soil**	**Batch: 6080358**				C-05
Aldrin	ND	1.13	2.26	ug/kg dry	1	08/12/16 14:21	EPA 8081B	
alpha-BHC	ND	1.13	2.26	"	"	"	"	
beta-BHC	ND	1.13	2.26	"	"	"	"	
delta-BHC	ND	1.13	2.26	"	"	"	"	
gamma-BHC (Lindane)	ND	1.13	2.26	"	"	"	"	
cis-Chlordane	ND	2.26	2.26	"	"	"	"	
trans-Chlordane	ND	2.26	2.26	"	"	"	"	
4,4'-DDD	ND	2.26	2.26	"	"	"	"	
4,4'-DDE	**3.88**	1.13	2.26	"	"	"	"	P-11
4,4'-DDT	ND	2.26	2.26	"	"	"	"	
Dieldrin	**3.01**	1.13	2.26	"	"	"	"	
Endosulfan I	ND	1.13	2.26	"	"	"	"	
Endosulfan II	ND	1.13	2.26	"	"	"	"	
Endosulfan sulfate	ND	1.13	2.26	"	"	"	"	
Endrin	ND	1.13	2.26	"	"	"	"	
Endrin Aldehyde	ND	1.13	2.26	"	"	"	"	
Endrin ketone	ND	2.26	2.26	"	"	"	"	
Heptachlor	ND	1.13	2.26	"	"	"	"	
Heptachlor epoxide	ND	1.13	2.26	"	"	"	"	
Methoxychlor	ND	6.77	6.77	"	"	"	"	
Chlordane (Technical)	ND	33.9	67.7	"	"	"	"	
Toxaphene (Total)	ND	33.9	67.7	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 60 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*76 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01RE1)			**Matrix: Soil**		**Batch: 6080375**			
Acenaphthene	**24.1**	22.6	45.4	ug/kg dry	10	08/11/16 16:30	EPA 8270D	J
Acenaphthylene	ND	22.6	45.4	"	"	"	"	
Anthracene	ND	22.6	45.4	"	"	"	"	
Benz(a)anthracene	ND	45.4	45.4	"	"	"	"	
Benzo(a)pyrene	ND	34.0	68.1	"	"	"	"	
Benzo(b)fluoranthene	ND	34.0	68.1	"	"	"	"	
Benzo(k)fluoranthene	ND	34.0	68.1	"	"	"	"	
Benzo(g,h,i)perylene	ND	22.6	45.4	"	"	"	"	
Chrysene	ND	45.4	45.4	"	"	"	"	
Dibenz(a,h)anthracene	ND	22.6	45.4	"	"	"	"	
Fluoranthene	**69.0**	22.6	45.4	"	"	"	"	
Fluorene	**27.8**	22.6	45.4	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	22.6	45.4	"	"	"	"	
1-Methylnaphthalene	ND	45.4	90.7	"	"	"	"	
2-Methylnaphthalene	ND	45.4	90.7	"	"	"	"	
Naphthalene	ND	45.4	90.7	"	"	"	"	
Phenanthrene	**129**	22.6	45.4	"	"	"	"	
Pyrene	**52.1**	22.6	45.4	"	"	"	"	
Carbazole	ND	34.0	68.1	"	"	"	"	
Dibenzofuran	ND	22.6	45.4	"	"	"	"	
4-Chloro-3-methylphenol	ND	226	454	"	"	"	"	
2-Chlorophenol	ND	114	226	"	"	"	"	
2,4-Dichlorophenol	ND	114	226	"	"	"	"	
2,4-Dimethylphenol	ND	114	226	"	"	"	"	
2,4-Dinitrophenol	ND	567	1140	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	567	1140	"	"	"	"	
2-Methylphenol	ND	56.7	114	"	"	"	"	
3+4-Methylphenol(s)	**299**	56.7	114	"	"	"	"	
2-Nitrophenol	ND	226	454	"	"	"	"	
4-Nitrophenol	ND	226	454	"	"	"	"	
Pentachlorophenol (PCP)	ND	226	454	"	"	"	"	
Phenol	**369**	45.4	90.7	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	114	226	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	114	226	"	"	"	"	
2,4,5-Trichlorophenol	ND	114	226	"	"	"	"	
2,4,6-Trichlorophenol	ND	114	226	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	340	681	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01RE1)			**Matrix: Soil**		**Batch: 6080375**			
Butyl benzyl phthalate	ND	226	454	ug/kg dry	10	"	EPA 8270D	
Diethylphthalate	ND	226	454	"	"	"	"	
Dimethylphthalate	ND	226	454	"	"	"	"	
Di-n-butylphthalate	ND	226	454	"	"	"	"	
Di-n-octyl phthalate	ND	226	454	"	"	"	"	
N-Nitrosodimethylamine	ND	56.7	114	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	56.7	114	"	"	"	"	
N-Nitrosodiphenylamine	ND	56.7	114	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	56.7	114	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	56.7	114	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	56.7	114	"	"	"	"	
Hexachlorobenzene	ND	22.6	45.4	"	"	"	"	
Hexachlorobutadiene	ND	56.7	114	"	"	"	"	
Hexachlorocyclopentadiene	ND	114	226	"	"	"	"	
Hexachloroethane	ND	56.7	114	"	"	"	"	
2-Chloronaphthalene	ND	22.6	45.4	"	"	"	"	
1,2-Dichlorobenzene	ND	56.7	114	"	"	"	"	
1,3-Dichlorobenzene	ND	56.7	114	"	"	"	"	
1,4-Dichlorobenzene	ND	56.7	114	"	"	"	"	
1,2,4-Trichlorobenzene	ND	56.7	114	"	"	"	"	
4-Bromophenyl phenyl ether	ND	56.7	114	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	56.7	114	"	"	"	"	
Aniline	ND	114	226	"	"	"	"	
4-Chloroaniline	ND	56.7	114	"	"	"	"	
2-Nitroaniline	ND	454	907	"	"	"	"	
3-Nitroaniline	ND	454	907	"	"	"	"	
4-Nitroaniline	ND	454	907	"	"	"	"	
Nitrobenzene	ND	226	454	"	"	"	"	
2,4-Dinitrotoluene	ND	226	454	"	"	"	"	
2,6-Dinitrotoluene	ND	226	454	"	"	"	"	
Benzoic acid	**4330**	2840	5670	"	"	"	"	J
Benzyl alcohol	ND	114	226	"	"	"	"	
Isophorone	ND	56.7	114	"	"	"	"	
Azobenzene (1,2-DPH)	ND	56.7	114	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	567	1140	"	"	"	"	
3,3'-Dichlorobenzidine	ND	226	454	"	"	"	"	
1,2-Dinitrobenzene	ND	567	1140	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01RE1)			**Matrix: Soil**		**Batch: 6080375**			
1,3-Dinitrobenzene	ND	567	1140	ug/kg dry	10	"	EPA 8270D	
1,4-Dinitrobenzene	ND	567	1140	"	"	"	"	
Pyridine	ND	114	226	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 74 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*86 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*80 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*101 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*58 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*145 %*	*Limits: 39-132 %*	"	"	"	*Q-41, S-06*

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01)			**Matrix: Soil**					
Batch: 6080381								
Arsenic	**3.34**	0.568	1.14	mg/kg dry	10	08/11/16 18:46	EPA 6020A	
Cadmium	**0.114**	0.114	0.227	"	"	"	"	J
Chromium	**16.4**	0.568	1.14	"	"	"	"	
Copper	**21.3**	0.568	1.14	"	"	"	"	
Lead	**9.89**	0.114	0.227	"	"	"	"	
Mercury	**0.0788**	0.0455	0.0909	"	"	"	"	J
Nickel	**18.8**	0.568	1.14	"	"	"	"	
Selenium	ND	0.568	1.14	"	"	"	"	
Silver	ND	0.114	0.227	"	"	"	"	
Zinc	**47.1**	2.27	4.55	"	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Top Soil 5 (A6H0222-01)			**Matrix: Soil**		**Batch: 6080272**			
% Solids	**86.4**	1.00	1.00	% by Weight	1	08/10/16 09:02	EPA 8000C	

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080278 - EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)							**Soil**					
Blank (6080278-BLK1)					Prepared: 08/09/16 12:12		Analyzed: 08/10/16 03:36					
NWTPH-Dx/SG												
Diesel	ND	11.4	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	22.7	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6080278-BS1)					Prepared: 08/09/16 12:12		Analyzed: 08/10/16 03:56					
NWTPH-Dx/SG												
Diesel	122	12.5	25.0	mg/kg wet	1	125	---	97	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6080278-DUP1)					Prepared: 08/09/16 12:12		Analyzed: 08/10/16 04:36					
QC Source Sample: Other (A6H0107-01)												
NWTPH-Dx/SG												
Diesel	ND	16.6	33.2	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	33.2	66.3	"	"	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080323 - EPA 3546							**Soil**					
Blank (6080323-BLK1)					Prepared: 08/10/16 11:11		Analyzed: 08/10/16 17:01					C-07
EPA 8082A												
Aroclor 1016	ND	0.648	1.29	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 102 %*	*Limits: 44-120 %*			*Dilution: 1x*					
LCS (6080323-BS1)					Prepared: 08/10/16 11:11		Analyzed: 08/10/16 17:19					C-07
EPA 8082A												
Aroclor 1016	57.6	0.670	1.33	ug/kg wet	1	83.3	---	69	47-134%	---	---	
Aroclor 1260	83.1	0.670	1.33	"	"	"	---	100	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 104 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Duplicate (6080323-DUP1)					Prepared: 08/10/16 11:11		Analyzed: 08/10/16 18:48					C-07
QC Source Sample: Other (A6H0297-04)												
EPA 8082A												
Aroclor 1016	ND	5.64	11.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	5.64	11.2	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	5.64	11.2	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	5.64	11.2	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	5.64	11.2	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	5.64	11.2	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	5.64	11.2	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Matrix Spike (6080323-MS1)					Prepared: 08/10/16 11:11		Analyzed: 08/10/16 19:59					C-07
QC Source Sample: Other (A6H0297-05)												
EPA 8082A												
Aroclor 1016	160	5.51	10.9	ug/kg dry	1	274	ND	58	47-134%	---	---	
Aroclor 1260	201	5.51	10.9	"	"	"	ND	73	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 44-120 %*			*Dilution: 1x*					

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080358 - EPA 3546/3640A (GPC)							**Soil**					
Blank (6080358-BLK1)					Prepared: 08/10/16 11:09		Analyzed: 08/12/16 13:46					C-05
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*87 %*	*65-151 %*			*"*					
LCS (6080358-BS1)					Prepared: 08/10/16 11:09		Analyzed: 08/12/16 14:04					C-05
EPA 8081B												
Aldrin	40.9	1.00	2.00	ug/kg wet	1	50.0	---	82	45-136%	---	---	
alpha-BHC	38.9	1.00	2.00	"	"	"	---	78	45-137%	---	---	
beta-BHC	45.5	1.00	2.00	"	"	"	---	91	50-136%	---	---	
delta-BHC	42.7	1.00	2.00	"	"	"	---	85	47-139%	---	---	
gamma-BHC (Lindane)	41.3	1.00	2.00	"	"	"	---	83	49-135%	---	---	
cis-Chlordane	42.0	1.00	2.00	"	"	"	---	84	54-133%	---	---	
trans-Chlordane	42.9	1.00	2.00	"	"	"	---	86	53-135%	---	---	
4,4'-DDD	45.0	1.00	2.00	"	"	"	---	90	56-139%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080358 - EPA 3546/3640A (GPC)							**Soil**					
LCS (6080358-BS1)					Prepared: 08/10/16 11:09		Analyzed: 08/12/16 14:04					C-05
4,4'-DDE	43.4	1.00	2.00	ug/kg wet	"	"	---	87	56-134%	---	---	
4,4'-DDT	53.5	1.00	2.00	"	"	"	---	107	50-141%	---	---	
Dieldrin	43.7	1.00	2.00	"	"	"	---	87	56-136%	---	---	
Endosulfan I	43.3	1.00	2.00	"	"	"	---	87	52-132%	---	---	
Endosulfan II	46.0	1.00	2.00	"	"	"	---	92	53-134%	---	---	
Endosulfan sulfate	45.1	1.00	2.00	"	"	"	---	90	55-136%	---	---	
Endrin	48.6	1.00	2.00	"	"	"	---	97	56-140%	---	---	
Endrin Aldehyde	48.7	1.00	2.00	"	"	"	---	97	35-137%	---	---	
Endrin ketone	44.1	1.00	2.00	"	"	"	---	88	55-136%	---	---	
Heptachlor	42.4	1.00	2.00	"	"	"	---	85	47-136%	---	---	
Heptachlor epoxide	40.0	1.00	2.00	"	"	"	---	80	52-136%	---	---	
Methoxychlor	56.5	3.00	6.00	"	"	"	---	113	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 68 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*88 %*		*65-151 %*		*"*					
Duplicate (6080358-DUP1)					Prepared: 08/10/16 11:09		Analyzed: 08/12/16 14:39					C-05
QC Source Sample: Top Soil 5 (A6H0222-01RE1)												
EPA 8081B												
Aldrin	ND	1.13	2.27	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	1.13	2.27	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	1.13	2.27	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.13	2.27	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	2.95	2.95	"	"	---	ND	---	---	---	30%	R-02
trans-Chlordane	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
4,4'-DDD	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
4,4'-DDE	**5.29**	1.13	2.27	"	"	---	3.88	---	---	31	30%	P-11, Q-05
4,4'-DDT	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
Dieldrin	**4.00**	1.13	2.27	"	"	---	3.01	---	---	28	30%	
Endosulfan I	ND	1.13	2.27	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
Endrin	ND	1.13	2.27	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
Endrin ketone	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080358 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (6080358-DUP1)					Prepared: 08/10/16 11:09		Analyzed: 08/12/16 14:39					C-05
QC Source Sample: Top Soil 5 (A6H0222-01RE1)												
Heptachlor	ND	2.27	2.27	ug/kg dry	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	2.27	2.27	"	"	---	ND	---	---	---	30%	
Methoxychlor	ND	6.80	6.80	"	"	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	34.0	68.0	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	34.0	68.0	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 64 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*80 %*		*65-151 %*		*"*					
Matrix Spike (6080358-MS1)					Prepared: 08/10/16 11:09		Analyzed: 08/12/16 14:56					C-05
QC Source Sample: Top Soil 5 (A6H0222-01RE1)												
EPA 8081B												
Aldrin	37.1	1.13	2.26	ug/kg dry	1	56.5	ND	66	45-136%	---	---	
alpha-BHC	50.4	1.13	2.26	"	"	"	ND	89	45-137%	---	---	
beta-BHC	51.2	1.13	2.26	"	"	"	ND	91	50-136%	---	---	
delta-BHC	41.9	1.13	2.26	"	"	"	ND	74	47-139%	---	---	
gamma-BHC (Lindane)	38.7	1.13	2.26	"	"	"	ND	69	49-135%	---	---	
cis-Chlordane	47.6	1.13	2.26	"	"	"	2.02	81	54-133%	---	---	
trans-Chlordane	35.2	1.13	2.26	"	"	"	1.31	60	53-135%	---	---	
4,4'-DDD	40.2	1.13	2.26	"	"	"	1.54	68	56-139%	---	---	
4,4'-DDE	42.0	1.13	2.26	"	"	"	3.88	67	56-134%	---	---	
4,4'-DDT	55.5	1.13	2.26	"	"	"	1.26	96	50-141%	---	---	
Dieldrin	40.6	1.13	2.26	"	"	"	3.01	67	56-136%	---	---	
Endosulfan I	39.5	1.13	2.26	"	"	"	ND	70	52-132%	---	---	
Endosulfan II	39.8	1.13	2.26	"	"	"	ND	70	53-134%	---	---	
Endosulfan sulfate	42.6	1.13	2.26	"	"	"	ND	75	55-136%	---	---	
Endrin	49.1	1.13	2.26	"	"	"	ND	87	56-140%	---	---	
Endrin Aldehyde	44.2	1.13	2.26	"	"	"	ND	78	35-137%	---	---	
Endrin ketone	42.7	1.13	2.26	"	"	"	1.29	73	55-136%	---	---	
Heptachlor	59.6	1.13	2.26	"	"	"	ND	105	47-136%	---	---	Q-41
Heptachlor epoxide	39.7	1.13	2.26	"	"	"	ND	70	52-136%	---	---	
Methoxychlor	66.3	3.39	6.78	"	"	"	3.79	111	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 54 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*67 %*		*65-151 %*		*"*					

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
Blank (6080375-BLK1)						Prepared: 08/11/16 09:56	Analyzed: 08/11/16 13:50					
EPA 8270D												
Acenaphthene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Anthracene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	2.00	4.00	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	2.00	4.00	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	2.00	4.00	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Chrysene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Fluorene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.67	5.33	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.67	5.33	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.67	5.33	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Pyrene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Carbazole	ND	2.00	4.00	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.33	2.67	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	13.3	26.7	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.67	13.3	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.67	13.3	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.67	13.3	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	33.3	66.7	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	33.3	66.7	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.33	6.67	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.33	6.67	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	13.3	26.7	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	13.3	26.7	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	13.3	26.7	"	"	---	---	---	---	---	---	
Phenol	ND	2.67	5.33	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.67	13.3	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.67	13.3	"	"	---	---	---	---	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
Blank (6080375-BLK1)					Prepared: 08/11/16 09:56 Analyzed: 08/11/16 13:50							
2,4,5-Trichlorophenol	ND	6.67	13.3	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.67	13.3	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	20.0	40.0	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	13.3	26.7	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	13.3	26.7	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	13.3	26.7	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	13.3	26.7	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	13.3	26.7	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.33	6.67	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.33	6.67	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.33	6.67	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.33	6.67	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.33	6.67	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.33	6.67	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.33	6.67	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.67	13.3	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.33	6.67	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.33	2.67	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.33	6.67	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.33	6.67	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.33	6.67	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.33	6.67	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.33	6.67	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.33	6.67	"	"	---	---	---	---	---	---	
Aniline	ND	6.67	13.3	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.33	6.67	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	26.7	53.3	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	26.7	53.3	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	26.7	53.3	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	13.3	26.7	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	13.3	26.7	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	13.3	26.7	"	"	---	---	---	---	---	---	
Benzoic acid	ND	167	333	"	"	---	---	---	---	---	---	
Benzyl alcohol	ND	6.67	13.3	"	"	---	---	---	---	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
Blank (6080375-BLK1)					Prepared: 08/11/16 09:56 Analyzed: 08/11/16 13:50							
Isophorone	ND	3.33	6.67	ug/kg wet	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.33	6.67	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	33.3	66.7	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	13.3	26.7	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
Pyridine	ND	6.67	13.3	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 92 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*84 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*81 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*91 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*78 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*108 %*	*39-132 %*			*"*					*Q-41*
LCS (6080375-BS1)					Prepared: 08/11/16 09:56 Analyzed: 08/11/16 14:30							
EPA 8270D												
Acenaphthene	474	1.33	2.67	ug/kg wet	1	533	---	89	40-122%	---	---	
Acenaphthylene	452	1.33	2.67	"	"	"	---	85	32-132%	---	---	
Anthracene	467	1.33	2.67	"	"	"	---	88	47-123%	---	---	
Benz(a)anthracene	485	1.33	2.67	"	"	"	---	91	49-126%	---	---	
Benzo(a)pyrene	488	2.00	4.00	"	"	"	---	92	45-129%	---	---	
Benzo(b)fluoranthene	537	2.00	4.00	"	"	"	---	101	45-132%	---	---	
Benzo(k)fluoranthene	499	2.00	4.00	"	"	"	---	94	47-132%	---	---	
Benzo(g,h,i)perylene	468	1.33	2.67	"	"	"	---	88	43-134%	---	---	
Chrysene	483	1.33	2.67	"	"	"	---	91	50-124%	---	---	
Dibenz(a,h)anthracene	456	1.33	2.67	"	"	"	---	85	45-134%	---	---	
Fluoranthene	495	1.33	2.67	"	"	"	---	93	50-127%	---	---	
Fluorene	490	1.33	2.67	"	"	"	---	92	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	434	1.33	2.67	"	"	"	---	81	45-133%	---	---	
1-Methylnaphthalene	479	2.67	5.33	"	"	"	---	90	40-120%	---	---	
2-Methylnaphthalene	469	2.67	5.33	"	"	"	---	88	38-122%	---	---	
Naphthalene	453	2.67	5.33	"	"	"	---	85	35-123%	---	---	
Phenanthrene	462	1.33	2.67	"	"	"	---	87	50-121%	---	---	
Pyrene	467	1.33	2.67	"	"	"	---	88	47-127%	---	---	
Carbazole	459	2.00	4.00	"	"	"	---	86	50-122%	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
LCS (6080375-BS1)					Prepared: 08/11/16 09:56	Analyzed: 08/11/16 14:30						
Dibenzofuran	472	1.33	2.67	ug/kg wet	"	"	---	89	44-120%	---	---	
4-Chloro-3-methylphenol	548	13.3	26.7	"	"	"	---	103	45-122%	---	---	
2-Chlorophenol	472	6.67	13.3	"	"	"	---	88	34-121%	---	---	
2,4-Dichlorophenol	509	6.67	13.3	"	"	"	---	95	40-122%	---	---	
2,4-Dimethylphenol	562	6.67	13.3	"	"	"	---	105	30-127%	---	---	
2,4-Dinitrophenol	453	33.3	66.7	"	"	"	---	85	5-137%	---	---	
4,6-Dinitro-2-methylphenol	458	33.3	66.7	"	"	"	---	86	29-132%	---	---	
2-Methylphenol	516	3.33	6.67	"	"	"	---	97	32-122%	---	---	
3+4-Methylphenol(s)	494	3.33	6.67	"	"	"	---	93	34-120%	---	---	
2-Nitrophenol	493	13.3	26.7	"	"	"	---	92	36-123%	---	---	
4-Nitrophenol	427	13.3	26.7	"	"	"	---	80	30-132%	---	---	
Pentachlorophenol (PCP)	494	13.3	26.7	"	"	"	---	93	25-133%	---	---	
Phenol	514	2.67	5.33	"	"	"	---	96	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	521	6.67	13.3	"	"	"	---	98	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	500	6.67	13.3	"	"	"	---	94	40-120%	---	---	
2,4,5-Trichlorophenol	514	6.67	13.3	"	"	"	---	96	41-124%	---	---	
2,4,6-Trichlorophenol	508	6.67	13.3	"	"	"	---	95	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	503	20.0	40.0	"	"	"	---	94	51-133%	---	---	
Butyl benzyl phthalate	518	13.3	26.7	"	"	"	---	97	48-132%	---	---	
Diethylphthalate	502	13.3	26.7	"	"	"	---	94	50-124%	---	---	
Dimethylphthalate	469	13.3	26.7	"	"	"	---	88	48-124%	---	---	
Di-n-butylphthalate	511	13.3	26.7	"	"	"	---	96	51-128%	---	---	
Di-n-octyl phthalate	495	13.3	26.7	"	"	"	---	93	44-140%	---	---	
N-Nitrosodimethylamine	500	3.33	6.67	"	"	"	---	94	23-120%	---	---	
N-Nitroso-di-n-propylamine	590	3.33	6.67	"	"	"	---	111	36-120%	---	---	Q-41
N-Nitrosodiphenylamine	467	3.33	6.67	"	"	"	---	88	38-127%	---	---	
Bis(2-Chloroethoxy) methane	492	3.33	6.67	"	"	"	---	92	36-121%	---	---	
Bis(2-Chloroethyl) ether	463	3.33	6.67	"	"	"	---	87	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	574	3.33	6.67	"	"	"	---	108	33-131%	---	---	Q-41
Hexachlorobenzene	558	1.33	2.67	"	"	"	---	105	44-122%	---	---	
Hexachlorobutadiene	548	3.33	6.67	"	"	"	---	103	32-123%	---	---	
Hexachlorocyclopentadiene	533	6.67	13.3	"	"	"	---	100	5-140%	---	---	
Hexachloroethane	507	3.33	6.67	"	"	"	---	95	28-120%	---	---	
2-Chloronaphthalene	442	1.33	2.67	"	"	"	---	83	41-120%	---	---	
1,2-Dichlorobenzene	431	3.33	6.67	"	"	"	---	81	33-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
LCS (6080375-BS1)					Prepared: 08/11/16 09:56		Analyzed: 08/11/16 14:30					
1,3-Dichlorobenzene	440	3.33	6.67	ug/kg wet	"	"	---	83	30-120%	---	---	
1,4-Dichlorobenzene	436	3.33	6.67	"	"	"	---	82	31-120%	---	---	
1,2,4-Trichlorobenzene	462	3.33	6.67	"	"	"	---	87	34-120%	---	---	
4-Bromophenyl phenyl ether	517	3.33	6.67	"	"	"	---	97	46-124%	---	---	
4-Chlorophenyl phenyl ether	514	3.33	6.67	"	"	"	---	96	45-121%	---	---	
Aniline	483	6.67	13.3	"	"	"	---	91	7-120%	---	---	
4-Chloroaniline	295	3.33	6.67	"	"	"	---	55	16-120%	---	---	
2-Nitroaniline	457	26.7	53.3	"	"	"	---	86	44-127%	---	---	
3-Nitroaniline	349	26.7	53.3	"	"	"	---	65	33-120%	---	---	
4-Nitroaniline	376	26.7	53.3	"	"	"	---	71	35-120%	---	---	
Nitrobenzene	497	13.3	26.7	"	"	"	---	93	34-122%	---	---	
2,4-Dinitrotoluene	518	13.3	26.7	"	"	"	---	97	48-126%	---	---	
2,6-Dinitrotoluene	473	13.3	26.7	"	"	"	---	89	46-124%	---	---	
Benzoic acid	686	167	333	"	"	1070	---	64	5-140%	---	---	
Benzyl alcohol	504	6.67	13.3	"	"	533	---	94	29-122%	---	---	
Isophorone	567	3.33	6.67	"	"	"	---	106	30-122%	---	---	Q-41
Azobenzene (1,2-DPH)	500	3.33	6.67	"	"	"	---	94	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	471	33.3	66.7	"	"	"	---	88	60-121%	---	---	
3,3'-Dichlorobenzidine	1320	13.3	26.7	"	"	1070	---	124	22-121%	---	---	Q-29, Q-41
1,2-Dinitrobenzene	477	33.3	66.7	"	"	533	---	89	44-120%	---	---	
1,3-Dinitrobenzene	454	33.3	66.7	"	"	"	---	85	42-127%	---	---	
1,4-Dinitrobenzene	453	33.3	66.7	"	"	"	---	85	37-132%	---	---	
Pyridine	411	6.67	13.3	"	"	"	---	77	5-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 94 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*85 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*103 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*102 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*94 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*114 %*	*39-132 %*			*"*					*Q-41*
LCS Dup (6080375-BSD1)					Prepared: 08/11/16 10:18		Analyzed: 08/11/16 15:10					Q-19
EPA 8270D												
Acenaphthene	469	1.33	2.67	ug/kg wet	1	533	---	88	40-122%	1	30%	
Acenaphthylene	444	1.33	2.67	"	"	"	---	83	32-132%	2	30%	
Anthracene	461	1.33	2.67	"	"	"	---	86	47-123%	1	30%	
Benz(a)anthracene	472	1.33	2.67	"	"	"	---	88	49-126%	3	30%	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
LCS Dup (6080375-BSD1)					Prepared: 08/11/16 10:18	Analyzed: 08/11/16 15:10						Q-19
Benzo(a)pyrene	472	2.00	4.00	ug/kg wet	"	"	---	89	45-129%	3	30%	
Benzo(b)fluoranthene	519	2.00	4.00	"	"	"	---	97	45-132%	3	30%	
Benzo(k)fluoranthene	483	2.00	4.00	"	"	"	---	90	47-132%	3	30%	
Benzo(g,h,i)perylene	453	1.33	2.67	"	"	"	---	85	43-134%	3	30%	
Chrysene	473	1.33	2.67	"	"	"	---	89	50-124%	2	30%	
Dibenz(a,h)anthracene	448	1.33	2.67	"	"	"	---	84	45-134%	2	30%	
Fluoranthene	489	1.33	2.67	"	"	"	---	92	50-127%	1	30%	
Fluorene	481	1.33	2.67	"	"	"	---	90	43-125%	2	30%	
Indeno(1,2,3-cd)pyrene	433	1.33	2.67	"	"	"	---	81	45-133%	0.2	30%	
1-Methylnaphthalene	451	2.67	5.33	"	"	"	---	84	40-120%	6	30%	
2-Methylnaphthalene	443	2.67	5.33	"	"	"	---	83	38-122%	6	30%	
Naphthalene	435	2.67	5.33	"	"	"	---	81	35-123%	4	30%	
Phenanthrene	451	1.33	2.67	"	"	"	---	85	50-121%	2	30%	
Pyrene	466	1.33	2.67	"	"	"	---	87	47-127%	0.2	30%	
Carbazole	447	2.00	4.00	"	"	"	---	84	50-122%	3	30%	
Dibenzofuran	461	1.33	2.67	"	"	"	---	86	44-120%	2	30%	
4-Chloro-3-methylphenol	508	13.3	26.7	"	"	"	---	95	45-122%	8	30%	
2-Chlorophenol	469	6.67	13.3	"	"	"	---	88	34-121%	0.5	30%	
2,4-Dichlorophenol	485	6.67	13.3	"	"	"	---	91	40-122%	5	30%	
2,4-Dimethylphenol	522	6.67	13.3	"	"	"	---	98	30-127%	7	30%	
2,4-Dinitrophenol	458	33.3	66.7	"	"	"	---	86	5-137%	1	30%	
4,6-Dinitro-2-methylphenol	465	33.3	66.7	"	"	"	---	87	29-132%	2	30%	
2-Methylphenol	497	3.33	6.67	"	"	"	---	93	32-122%	4	30%	
3+4-Methylphenol(s)	468	3.33	6.67	"	"	"	---	88	34-120%	6	30%	
2-Nitrophenol	478	13.3	26.7	"	"	"	---	90	36-123%	3	30%	
4-Nitrophenol	430	13.3	26.7	"	"	"	---	81	30-132%	0.7	30%	
Pentachlorophenol (PCP)	491	13.3	26.7	"	"	"	---	92	25-133%	0.5	30%	
Phenol	489	2.67	5.33	"	"	"	---	92	34-120%	5	30%	
2,3,4,6-Tetrachlorophenol	514	6.67	13.3	"	"	"	---	96	44-125%	1	30%	
2,3,5,6-Tetrachlorophenol	497	6.67	13.3	"	"	"	---	93	40-120%	0.5	30%	
2,4,5-Trichlorophenol	503	6.67	13.3	"	"	"	---	94	41-124%	2	30%	
2,4,6-Trichlorophenol	501	6.67	13.3	"	"	"	---	94	39-126%	1	30%	
Bis(2-ethylhexyl)phthalate	472	20.0	40.0	"	"	"	---	88	51-133%	6	30%	
Butyl benzyl phthalate	497	13.3	26.7	"	"	"	---	93	48-132%	4	30%	
Diethylphthalate	494	13.3	26.7	"	"	"	---	93	50-124%	2	30%	

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Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
LCS Dup (6080375-BSD1)					Prepared: 08/11/16 10:18	Analyzed: 08/11/16 15:10						Q-19
Dimethylphthalate	465	13.3	26.7	ug/kg wet	"	"	---	87	48-124%	1	30%	
Di-n-butylphthalate	502	13.3	26.7	"	"	"	---	94	51-128%	2	30%	
Di-n-octyl phthalate	478	13.3	26.7	"	"	"	---	90	44-140%	3	30%	
N-Nitrosodimethylamine	478	3.33	6.67	"	"	"	---	90	23-120%	4	30%	
N-Nitroso-di-n-propylamine	558	3.33	6.67	"	"	"	---	105	36-120%	6	30%	Q-41
N-Nitrosodiphenylamine	463	3.33	6.67	"	"	"	---	87	38-127%	0.8	30%	
Bis(2-Chloroethoxy) methane	455	3.33	6.67	"	"	"	---	85	36-121%	8	30%	
Bis(2-Chloroethyl) ether	441	3.33	6.67	"	"	"	---	83	31-120%	5	30%	
Bis(2-Chloroisopropyl) ether	545	3.33	6.67	"	"	"	---	102	33-131%	5	30%	Q-41
Hexachlorobenzene	544	1.33	2.67	"	"	"	---	102	44-122%	3	30%	
Hexachlorobutadiene	524	3.33	6.67	"	"	"	---	98	32-123%	4	30%	
Hexachlorocyclopentadiene	535	6.67	13.3	"	"	"	---	100	5-140%	0.4	30%	
Hexachloroethane	489	3.33	6.67	"	"	"	---	92	28-120%	4	30%	
2-Chloronaphthalene	433	1.33	2.67	"	"	"	---	81	41-120%	2	30%	
1,2-Dichlorobenzene	421	3.33	6.67	"	"	"	---	79	33-120%	2	30%	
1,3-Dichlorobenzene	427	3.33	6.67	"	"	"	---	80	30-120%	3	30%	
1,4-Dichlorobenzene	427	3.33	6.67	"	"	"	---	80	31-120%	2	30%	
1,2,4-Trichlorobenzene	450	3.33	6.67	"	"	"	---	84	34-120%	3	30%	
4-Bromophenyl phenyl ether	509	3.33	6.67	"	"	"	---	95	46-124%	2	30%	
4-Chlorophenyl phenyl ether	510	3.33	6.67	"	"	"	---	96	45-121%	0.8	30%	
Aniline	459	6.67	13.3	"	"	"	---	86	7-120%	5	30%	
4-Chloroaniline	256	3.33	6.67	"	"	"	---	48	16-120%	14	30%	
2-Nitroaniline	454	26.7	53.3	"	"	"	---	85	44-127%	0.7	30%	
3-Nitroaniline	346	26.7	53.3	"	"	"	---	65	33-120%	0.8	30%	
4-Nitroaniline	375	26.7	53.3	"	"	"	---	70	35-120%	0.4	30%	
Nitrobenzene	478	13.3	26.7	"	"	"	---	90	34-122%	4	30%	
2,4-Dinitrotoluene	518	13.3	26.7	"	"	"	---	97	48-126%	0.08	30%	
2,6-Dinitrotoluene	462	13.3	26.7	"	"	"	---	87	46-124%	2	30%	
Benzoic acid	641	167	333	"	"	1070	---	60	5-140%	7	30%	
Benzyl alcohol	483	6.67	13.3	"	"	533	---	91	29-122%	4	30%	
Isophorone	531	3.33	6.67	"	"	"	---	100	30-122%	7	30%	Q-41
Azobenzene (1,2-DPH)	480	3.33	6.67	"	"	"	---	90	39-125%	4	30%	
Bis(2-Ethylhexyl) adipate	447	33.3	66.7	"	"	"	---	84	60-121%	5	30%	
3,3'-Dichlorobenzidine	1320	13.3	26.7	"	"	1070	---	124	22-121%	0.04	30%	Q-29, Q-41
1,2-Dinitrobenzene	480	33.3	66.7	"	"	533	---	90	44-120%	0.6	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080375 - EPA 3546							**Soil**					
LCS Dup (6080375-BSD1)					Prepared: 08/11/16 10:18		Analyzed: 08/11/16 15:10					Q-19
1,3-Dinitrobenzene	446	33.3	66.7	ug/kg wet	"	"	---	84	42-127%	2	30%	
1,4-Dinitrobenzene	452	33.3	66.7	"	"	"	---	85	37-132%	0.2	30%	
Pyridine	417	6.67	13.3	"	"	"	---	78	5-120%	1	30%	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 87 %*	*Limits: 37-122 %*	*Dilution: 1x*	
2-Fluorobiphenyl (Surr)	*84 %*	*44-115 %*	*"*	
Phenol-d6 (Surr)	*96 %*	*33-122 %*	*"*	
p-Terphenyl-d14 (Surr)	*97 %*	*54-127 %*	*"*	
2-Fluorophenol (Surr)	*91 %*	*35-115 %*	*"*	
2,4,6-Tribromophenol (Surr)	*109 %*	*39-132 %*	*"*	*Q-41*

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080381 - EPA 3051A							**Soil**					
Blank (6080381-BLK1)					Prepared: 08/11/16 11:10		Analyzed: 08/11/16 18:37					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6080381-BS1)					Prepared: 08/11/16 11:10		Analyzed: 08/11/16 18:43					
EPA 6020A												
Arsenic	54.5	0.500	1.00	mg/kg wet	10	50.0	---	109	80-120%	---	---	
Cadmium	56.7	0.100	0.200	"	"	"	---	113	"	---	---	
Chromium	53.7	0.500	1.00	"	"	"	---	107	"	---	---	
Copper	55.2	0.500	1.00	"	"	"	---	110	"	---	---	
Lead	58.0	0.100	0.200	"	"	"	---	116	"	---	---	
Mercury	1.10	0.0400	0.0800	"	"	1.00	---	110	"	---	---	
Nickel	53.0	0.500	1.00	"	"	50.0	---	106	"	---	---	
Selenium	31.0	0.500	1.00	"	"	25.0	---	124	"	---	---	Q-29
Silver	27.6	0.100	0.200	"	"	"	---	110	"	---	---	
Zinc	55.2	2.00	4.00	"	"	50.0	---	110	"	---	---	
Duplicate (6080381-DUP1)					Prepared: 08/11/16 11:10		Analyzed: 08/11/16 19:07					
QC Source Sample: Other (A6H0297-03)												
EPA 6020A												
Arsenic	**3.12**	0.604	1.21	mg/kg dry	10	---	3.33	---	---	7	40%	
Cadmium	**0.205**	0.121	0.242	"	"	---	0.249	---	---	19	40%	J
Chromium	**13.0**	0.604	1.21	"	"	---	14.1	---	---	8	40%	
Copper	**19.1**	0.604	1.21	"	"	---	19.8	---	---	3	40%	
Lead	**7.30**	0.121	0.242	"	"	---	7.37	---	---	1	40%	
Mercury	ND	0.0483	0.0967	"	"	---	ND	---	---	---	40%	
Nickel	**15.6**	0.604	1.21	"	"	---	16.8	---	---	8	40%	
Selenium	ND	0.604	1.21	"	"	---	ND	---	---	---	40%	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080381 - EPA 3051A							**Soil**					
Duplicate (6080381-DUP1)					Prepared: 08/11/16 11:10		Analyzed: 08/11/16 19:07					
QC Source Sample: Other (A6H0297-03)												
Silver	ND	0.121	0.242	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**59.5**	2.42	4.83	"	"	---	63.6	---	---	7	40%	
Matrix Spike (6080381-MS1)					Prepared: 08/11/16 11:10		Analyzed: 08/11/16 19:10					
QC Source Sample: Other (A6H0297-03)												
EPA 6020A												
Arsenic	66.0	0.628	1.26	mg/kg dry	10	62.9	3.33	100	75-125%	---	---	
Cadmium	66.4	0.126	0.251	"	"	"	0.249	105	"	---	---	
Chromium	77.9	0.628	1.26	"	"	"	14.1	101	"	---	---	
Copper	83.0	0.628	1.26	"	"	"	19.8	101	"	---	---	
Lead	73.7	0.126	0.251	"	"	"	7.37	106	"	---	---	
Mercury	1.33	0.0503	0.101	"	"	1.26	ND	106	"	---	---	
Nickel	78.7	0.628	1.26	"	"	62.9	16.8	98	"	---	---	
Selenium	35.5	0.628	1.26	"	"	31.4	ND	113	"	---	---	Q-29
Silver	32.7	0.126	0.251	"	"	"	ND	104	"	---	---	
Zinc	130	2.51	5.03	"	"	62.9	63.6	105	"	---	---	

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080272 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6080272-DUP1)					Prepared: 08/09/16 10:52		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0191-02)												
EPA 8000C												
% Solids	**85.8**	1.00	1.00	% by Weight	1	---	87.4	---	---	2	10%	
Duplicate (6080272-DUP2)					Prepared: 08/09/16 10:52		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0210-01)												
EPA 8000C												
% Solids	**96.6**	1.00	1.00	% by Weight	1	---	98.2	---	---	2	10%	
Duplicate (6080272-DUP3)					Prepared: 08/09/16 10:52		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0210-09)												
EPA 8000C												
% Solids	**97.2**	1.00	1.00	% by Weight	1	---	97.2	---	---	0.02	10%	
Duplicate (6080272-DUP4)					Prepared: 08/09/16 10:52		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0210-19)												
EPA 8000C												
% Solids	**97.2**	1.00	1.00	% by Weight	1	---	97.3	---	---	0.04	10%	
Duplicate (6080272-DUP5)					Prepared: 08/09/16 10:52		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0210-29)												
EPA 8000C												
% Solids	**88.4**	1.00	1.00	% by Weight	1	---	88.7	---	---	0.3	10%	
Duplicate (6080272-DUP6)					Prepared: 08/09/16 10:52		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0246-11)												
EPA 8000C												
% Solids	**81.4**	1.00	1.00	% by Weight	1	---	81.0	---	---	0.5	10%	
Duplicate (6080272-DUP7)					Prepared: 08/09/16 10:52		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0255-04)												
EPA 8000C												
% Solids	**78.2**	1.00	1.00	% by Weight	1	---	78.0	---	---	0.3	10%	
Duplicate (6080272-DUP8)					Prepared: 08/09/16 18:46		Analyzed: 08/10/16 09:02					

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080272 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6080272-DUP8)					Prepared: 08/09/16 18:46		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0285-02)												
EPA 8000C												
% Solids	**92.7**	1.00	1.00	% by Weight	1	---	91.4	---	---	1	10%	
Duplicate (6080272-DUP9)					Prepared: 08/09/16 20:41		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0288-01)												
EPA 8000C												
% Solids	**91.4**	1.00	1.00	% by Weight	1	---	90.5	---	---	1	10%	
Duplicate (6080272-DUPA)					Prepared: 08/09/16 20:41		Analyzed: 08/10/16 09:02					
QC Source Sample: Other (A6H0296-02)												
EPA 8000C												
% Solids	**82.4**	1.00	1.00	% by Weight	1	---	82.7	---	---	0.3	10%	

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Prep: EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080278							
A6H0222-01	Soil	NWTPH-Dx/SG	08/05/16 12:45	08/09/16 12:12	10.4g/5mL	10g/5mL	0.96

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080323							
A6H0222-01	Soil	EPA 8082A	08/05/16 12:45	08/10/16 11:11	30.77g/2mL	30g/2mL	0.98

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080358							
A6H0222-01RE1	Soil	EPA 8081B	08/05/16 12:45	08/10/16 11:09	10.25g/10mL	10g/5mL	1.95

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080375							
A6H0222-01RE1	Soil	EPA 8270D	08/05/16 12:45	08/11/16 09:56	10.2g/2mL	15g/2mL	1.47

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080381							
A6H0222-01	Soil	EPA 6020A	08/05/16 12:45	08/11/16 11:10	0.509g/50mL	0.5g/50mL	0.98

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080272							

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6H0222-01	Soil	EPA 8000C	08/05/16 12:45	08/09/16 10:52	1N/A/1N/A	1N/A/1N/A	NA

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
P-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-06	Surrogate recovery is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

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2001 NW 19th Ave, STE 200	Project Number:	Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager:	Phil Wiescher	08/16/16 11:49

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Portland, OR 97209	Project Manager: Phil Wiescher	08/16/16 11:49

APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A6H0222 COC 1 of 1

Company: Maul Foster & Alongi, Inc. Project Mgr: Phil Wiescher Project Name: Port of Ridgefield OPP Project #/PO# 9003.01.39 Task 5

Address: 2001 NW 19th Ave Suite 200, Portland, OR Phone: (503) 5015209 Fax: Email: pwiescher@maulfoster.com

Sampled by: Y. Van, MFA

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Total Metals EPA 6020	Organochlorine pesticides EPA 8081B	PCB Aroclors	PAH EPA 8270D	Dioxins/furans EPA 1613B	TPH-Dx (NWTPH-D/Dx) w/ Silica Gel Cleanu
Top soil 5		8/5/2016	1245	soil	2	X	X	X	X	X	X
Top soil 6		8/5/2016	1255	soil	2	X	X	X	X	X	X

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS:

See attached table for specific analytes of metals, organochlorine pesticides, SVOCs, and dioxins. Please HOLD Top Soil 6 sample. Will assess whether analysis is necessary based on results for Top Soil 5 sample.

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 8/5/16	Date: 8/6/16	Date:	Date:
Time: 14:20	Time: 8:55	Time:	Time:
Printed Name: YEN-VY VAN	Printed Name: Anissa Lopez	Printed Name:	Printed Name:
Company: Maul Foster & Alongi, Inc.	Company: Apex Labs	Company:	Company:

Apex Labs

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503-718-2323 Phone
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Friday, August 19, 2016

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / 9003.01.39

Enclosed are the results of analyses for work order A6H0354, which was received by the laboratory on 8/11/2016 at 9:25:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8.10.16-Topsoil-1	A6H0354-01	Soil	08/10/16 13:20	08/11/16 09:25

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01)			**Matrix: Soil**		**Batch: 6080550**			
Diesel	ND	15.4	30.7	mg/kg dry	1	08/16/16 22:21	NWTPH-Dx/SG	
Oil	**56.6**	30.7	61.4	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 92 %*	*Limits: 50-150 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01)			**Matrix: Soil**		**Batch: 6080549**			C-07
Aroclor 1016	ND	0.856	1.70	ug/kg dry	1	08/16/16 17:49	EPA 8082A	Q-42
Aroclor 1221	ND	0.856	1.70	"	"	"	"	Q-42
Aroclor 1232	ND	1.70	1.70	"	"	"	"	Q-42
Aroclor 1242	ND	0.856	1.70	"	"	"	"	Q-42
Aroclor 1248	ND	0.856	1.70	"	"	"	"	Q-42
Aroclor 1254	ND	0.856	1.70	"	"	"	"	Q-42
Aroclor 1260	ND	0.856	1.70	"	"	"	"	Q-42
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 44-120 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01RE1)			**Matrix: Soil**	**Batch: 6080462**				C-05
Aldrin	ND	2.41	2.41	ug/kg dry	1	08/15/16 18:16	EPA 8081B	
alpha-BHC	ND	2.41	2.41	"	"	"	"	
beta-BHC	ND	5.07	5.07	"	"	"	"	R-02
delta-BHC	ND	3.98	3.98	"	"	"	"	R-02
gamma-BHC (Lindane)	ND	3.14	3.14	"	"	"	"	R-02
cis-Chlordane	ND	2.65	2.65	"	"	"	"	R-02
trans-Chlordane	ND	2.41	2.41	"	"	"	"	
4,4'-DDD	ND	3.86	3.86	"	"	"	"	R-02
4,4'-DDE	**4.63**	1.21	2.41	"	"	"	"	
4,4'-DDT	**6.48**	1.21	2.41	"	"	"	"	
Dieldrin	ND	2.65	2.65	"	"	"	"	R-02
Endosulfan I	ND	2.90	2.90	"	"	"	"	R-02
Endosulfan II	ND	2.41	2.41	"	"	"	"	
Endosulfan sulfate	ND	3.38	3.38	"	"	"	"	R-02
Endrin	ND	4.71	4.71	"	"	"	"	R-02
Endrin Aldehyde	ND	4.71	4.71	"	"	"	"	R-02
Endrin ketone	ND	2.90	2.90	"	"	"	"	R-02
Heptachlor	ND	2.82	2.82	"	"	"	"	R-02
Heptachlor epoxide	ND	2.41	2.41	"	"	"	"	
Methoxychlor	ND	11.0	11.0	"	"	"	"	R-02
Chlordane (Technical)	ND	36.2	72.4	"	"	"	"	
Toxaphene (Total)	ND	36.2	72.4	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 70 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*92 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01RE1)			**Matrix: Soil**		**Batch: 6080530**			
Acenaphthene	ND	6.65	13.3	ug/kg dry	4	08/16/16 17:44	EPA 8270D	
Acenaphthylene	ND	6.65	13.3	"	"	"	"	
Anthracene	ND	6.65	13.3	"	"	"	"	
Benz(a)anthracene	ND	6.65	13.3	"	"	"	"	
Benzo(a)pyrene	ND	20.0	20.0	"	"	"	"	
Benzo(b)fluoranthene	**12.6**	10.0	20.0	"	"	"	"	J
Benzo(k)fluoranthene	ND	10.0	20.0	"	"	"	"	
Benzo(g,h,i)perylene	ND	6.65	13.3	"	"	"	"	
Chrysene	ND	13.3	13.3	"	"	"	"	
Dibenz(a,h)anthracene	ND	6.65	13.3	"	"	"	"	
Fluoranthene	**19.8**	6.65	13.3	"	"	"	"	
Fluorene	ND	6.65	13.3	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	6.65	13.3	"	"	"	"	
1-Methylnaphthalene	ND	13.3	26.6	"	"	"	"	
2-Methylnaphthalene	ND	13.3	26.6	"	"	"	"	
Naphthalene	ND	13.3	26.6	"	"	"	"	
Phenanthrene	**18.6**	6.65	13.3	"	"	"	"	
Pyrene	**15.3**	6.65	13.3	"	"	"	"	
Carbazole	ND	10.0	20.0	"	"	"	"	
Dibenzofuran	ND	6.65	13.3	"	"	"	"	
4-Chloro-3-methylphenol	ND	66.5	133	"	"	"	"	
2-Chlorophenol	ND	33.3	66.5	"	"	"	"	
2,4-Dichlorophenol	ND	33.3	66.5	"	"	"	"	
2,4-Dimethylphenol	ND	33.3	66.5	"	"	"	"	
2,4-Dinitrophenol	ND	166	333	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	166	333	"	"	"	"	
2-Methylphenol	ND	16.6	33.3	"	"	"	"	
3+4-Methylphenol(s)	**41.2**	16.6	33.3	"	"	"	"	Q-42
2-Nitrophenol	ND	66.5	133	"	"	"	"	
4-Nitrophenol	ND	66.5	133	"	"	"	"	
Pentachlorophenol (PCP)	ND	66.5	133	"	"	"	"	
Phenol	ND	13.3	26.6	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	33.3	66.5	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	33.3	66.5	"	"	"	"	
2,4,5-Trichlorophenol	ND	33.3	66.5	"	"	"	"	
2,4,6-Trichlorophenol	ND	33.3	66.5	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**234**	100	200	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01RE1)			**Matrix: Soil**		**Batch: 6080530**			
Butyl benzyl phthalate	ND	66.5	133	ug/kg dry	4	"	EPA 8270D	
Diethylphthalate	ND	66.5	133	"	"	"	"	
Dimethylphthalate	ND	66.5	133	"	"	"	"	
Di-n-butylphthalate	ND	66.5	133	"	"	"	"	
Di-n-octyl phthalate	ND	66.5	133	"	"	"	"	
N-Nitrosodimethylamine	ND	16.6	33.3	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	16.6	33.3	"	"	"	"	
N-Nitrosodiphenylamine	ND	16.6	33.3	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	16.6	33.3	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	16.6	33.3	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	16.6	33.3	"	"	"	"	
Hexachlorobenzene	ND	6.65	13.3	"	"	"	"	
Hexachlorobutadiene	ND	16.6	33.3	"	"	"	"	
Hexachlorocyclopentadiene	ND	33.3	66.5	"	"	"	"	
Hexachloroethane	ND	16.6	33.3	"	"	"	"	
2-Chloronaphthalene	ND	6.65	13.3	"	"	"	"	
1,2-Dichlorobenzene	ND	16.6	33.3	"	"	"	"	
1,3-Dichlorobenzene	ND	16.6	33.3	"	"	"	"	
1,4-Dichlorobenzene	ND	16.6	33.3	"	"	"	"	
1,2,4-Trichlorobenzene	ND	16.6	33.3	"	"	"	"	
4-Bromophenyl phenyl ether	ND	16.6	33.3	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	16.6	33.3	"	"	"	"	
Aniline	ND	33.3	66.5	"	"	"	"	
4-Chloroaniline	ND	16.6	33.3	"	"	"	"	
2-Nitroaniline	ND	133	266	"	"	"	"	
3-Nitroaniline	ND	133	266	"	"	"	"	
4-Nitroaniline	ND	133	266	"	"	"	"	
Nitrobenzene	ND	66.5	133	"	"	"	"	
2,4-Dinitrotoluene	ND	66.5	133	"	"	"	"	
2,6-Dinitrotoluene	ND	66.5	133	"	"	"	"	
Benzoic acid	ND	835	1660	"	"	"	"	
Benzyl alcohol	ND	33.3	66.5	"	"	"	"	
Isophorone	ND	16.6	33.3	"	"	"	"	
Azobenzene (1,2-DPH)	ND	16.6	33.3	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	166	333	"	"	"	"	
3,3'-Dichlorobenzidine	ND	66.5	133	"	"	"	"	
1,2-Dinitrobenzene	ND	166	333	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01RE1)			**Matrix: Soil**		**Batch: 6080530**			
1,3-Dinitrobenzene	ND	166	333	ug/kg dry	4	"	EPA 8270D	
1,4-Dinitrobenzene	ND	166	333	"	"	"	"	
Pyridine	ND	33.3	66.5	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 101 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*87 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*83 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*106 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*77 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*125 %*	*Limits: 39-132 %*	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01)			**Matrix: Soil**					
Batch: 6080563								
Arsenic	**2.28**	0.673	1.35	mg/kg dry	10	08/16/16 20:31	EPA 6020A	
Cadmium	**0.310**	0.135	0.269	"	"	"	"	
Chromium	**12.3**	0.673	1.35	"	"	"	"	
Copper	**23.5**	0.673	1.35	"	"	"	"	
Lead	**11.4**	0.135	0.269	"	"	"	"	
Mercury	ND	0.0539	0.108	"	"	"	"	
Nickel	**10.5**	0.673	1.35	"	"	"	"	
Selenium	ND	0.673	1.35	"	"	"	"	
Silver	ND	0.135	0.269	"	"	"	"	
Zinc	**78.7**	2.69	5.39	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.10.16-Topsoil-1 (A6H0354-01)			**Matrix: Soil**		**Batch: 6080444**			
% Solids	**76.9**	1.00	1.00	% by Weight	1	08/15/16 09:16	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080550 - EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)							**Soil**					
Blank (6080550-BLK1)					Prepared: 08/16/16 11:46		Analyzed: 08/16/16 21:41					
NWTPH-Dx/SG												
Diesel	ND	11.4	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	22.7	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6080550-BS1)					Prepared: 08/16/16 11:46		Analyzed: 08/16/16 22:01					
NWTPH-Dx/SG												
Diesel	118	12.5	25.0	mg/kg wet	1	125	---	94	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6080550-DUP1)					Prepared: 08/16/16 11:46		Analyzed: 08/16/16 22:41					
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01)												
NWTPH-Dx/SG												
Diesel	ND	15.6	31.3	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**60.5**	31.3	62.5	"	"	---	56.6	---	---	7	30%	J
Surr: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6080550-DUP2)					Prepared: 08/16/16 11:46		Analyzed: 08/16/16 23:01					
QC Source Sample: Other (A6H0467-12)												
NWTPH-Dx/SG												
Diesel	ND	18.6	37.3	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	37.3	74.5	"	"	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080549 - EPA 3546							**Soil**					
Blank (6080549-BLK1)					Prepared: 08/16/16 11:06		Analyzed: 08/16/16 17:13					C-07
EPA 8082A												
Aroclor 1016	ND	0.648	1.29	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 44-120 %*			*Dilution: 1x*					
LCS (6080549-BS1)					Prepared: 08/16/16 11:06		Analyzed: 08/16/16 17:31					C-07
EPA 8082A												
Aroclor 1016	49.7	0.670	1.33	ug/kg wet	1	83.3	---	60	47-134%	---	---	
Aroclor 1260	62.6	0.670	1.33	"	"	"	---	75	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Duplicate (6080549-DUP1)					Prepared: 08/16/16 11:06		Analyzed: 08/16/16 18:24					C-07
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01)												
EPA 8082A												
Aroclor 1016	ND	0.855	1.70	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	0.855	1.70	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	1.70	1.70	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	0.855	1.70	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	0.855	1.70	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	0.855	1.70	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	0.855	1.70	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 65 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Matrix Spike (6080549-MS1)					Prepared: 08/16/16 11:06		Analyzed: 08/16/16 19:00					C-07
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01)												
EPA 8082A												
Aroclor 1016	44.1	0.857	1.70	ug/kg dry	1	107	ND	41	47-134%	---	---	Q-01
Aroclor 1260	56.0	0.857	1.70	"	"	"	ND	52	53-140%	---	---	Q-01
Surr: Decachlorobiphenyl (Surr)			*Recovery: 66 %*	*Limits: 44-120 %*			*Dilution: 1x*					

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Philip Nerenberg, Lab Director

Apex Labs

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080462 - EPA 3546							**Soil**					
Blank (6080462-BLK1)					Prepared: 08/12/16 08:54		Analyzed: 08/15/16 16:31					C-05
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 78 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*92 %*	*65-151 %*			*"*					
LCS (6080462-BS1)					Prepared: 08/12/16 08:54		Analyzed: 08/15/16 16:48					C-05
EPA 8081B												
Aldrin	41.5	1.00	2.00	ug/kg wet	1	50.0	---	83	45-136%	---	---	
alpha-BHC	41.6	1.00	2.00	"	"	"	---	83	45-137%	---	---	
beta-BHC	50.7	1.00	2.00	"	"	"	---	101	50-136%	---	---	
delta-BHC	47.9	1.00	2.00	"	"	"	---	96	47-139%	---	---	Q-41
gamma-BHC (Lindane)	45.1	1.00	2.00	"	"	"	---	90	49-135%	---	---	
cis-Chlordane	43.1	1.00	2.00	"	"	"	---	86	54-133%	---	---	
trans-Chlordane	45.3	1.00	2.00	"	"	"	---	91	53-135%	---	---	
4,4'-DDD	47.9	1.00	2.00	"	"	"	---	96	56-139%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080462 - EPA 3546							**Soil**					
LCS (6080462-BS1)					Prepared: 08/12/16 08:54	Analyzed: 08/15/16 16:48						C-05
4,4'-DDE	47.0	1.00	2.00	ug/kg wet	"	"	---	94	56-134%	---	---	
4,4'-DDT	59.4	1.00	2.00	"	"	"	---	119	50-141%	---	---	
Dieldrin	46.2	1.00	2.00	"	"	"	---	92	56-136%	---	---	
Endosulfan I	45.5	1.00	2.00	"	"	"	---	91	52-132%	---	---	
Endosulfan II	48.5	1.00	2.00	"	"	"	---	97	53-134%	---	---	
Endosulfan sulfate	48.4	1.00	2.00	"	"	"	---	97	55-136%	---	---	
Endrin	54.0	1.00	2.00	"	"	"	---	108	56-140%	---	---	
Endrin Aldehyde	52.0	1.00	2.00	"	"	"	---	104	35-137%	---	---	
Endrin ketone	49.3	1.00	2.00	"	"	"	---	99	55-136%	---	---	
Heptachlor	45.0	1.00	2.00	"	"	"	---	90	47-136%	---	---	
Heptachlor epoxide	44.4	1.00	2.00	"	"	"	---	89	52-136%	---	---	
Methoxychlor	65.1	3.00	6.00	"	"	"	---	130	52-143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 77 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*93 %*	*65-151 %*			*"*					
Duplicate (6080462-DUP1)					Prepared: 08/12/16 08:54	Analyzed: 08/15/16 17:23						C-05
QC Source Sample: Other (A6H0298-01RE1)												
EPA 8081B												
Aldrin	ND	1.06	2.11	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	1.06	2.11	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	1.06	2.11	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	1.06	2.11	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.06	2.11	"	"	---	ND	---	---	---	30%	
cis-Chlordane	**140**	1.06	2.11	"	"	---	145	---	---	3	30%	P-11
trans-Chlordane	**76.9**	1.06	2.11	"	"	---	81.5	---	---	6	30%	
4,4'-DDD	ND	6.34	6.34	"	"	---	7.21	---	---	***	30%	R-02
Dieldrin	**10.7**	1.06	2.11	"	"	---	11.4	---	---	6	30%	
Endosulfan I	ND	2.11	2.11	"	"	---	2.17	---	---	***	30%	
Endosulfan II	ND	3.28	3.28	"	"	---	3.44	---	---	***	30%	R-02
Endosulfan sulfate	ND	2.11	2.11	"	"	---	ND	---	---	---	30%	
Endrin	**11.7**	11.7	11.7	"	"	---	14.1	---	---		30%	R-02
Endrin Aldehyde	ND	2.11	2.11	"	"	---	ND	---	---	---	30%	
Endrin ketone	ND	1.06	2.11	"	"	---	ND	---	---	---	30%	
Heptachlor	ND	1.06	2.11	"	"	---	ND	---	---	---	30%	
Heptachlor epoxide	**18.3**	1.06	2.11	"	"	---	19.7	---	---	8	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080462 - EPA 3546							**Soil**					
Duplicate (6080462-DUP1)					Prepared: 08/12/16 08:54		Analyzed: 08/15/16 17:23					C-05
QC Source Sample: Other (A6H0298-01RE1)												
Methoxychlor	ND	6.34	6.34	ug/kg dry	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	31.7	63.4	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 76 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*87 %*	*65-151 %*			*"*					
Duplicate (6080462-DUP2)					Prepared: 08/12/16 08:54		Analyzed: 08/16/16 12:43					C-05
QC Source Sample: Other (A6H0298-01RE2)												
EPA 8081B												
4,4'-DDE	**242**	5.29	10.6	ug/kg dry	5	---	283	---	---	16	30%	
4,4'-DDT	**214**	5.29	10.6	"	"	---	266	---	---	22	30%	
Chlordane (Technical)	**954**	159	317	"	"	---	1030	---	---	7	30%	
Matrix Spike (6080462-MS1)					Prepared: 08/12/16 08:54		Analyzed: 08/15/16 18:33					C-05
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01RE1)												
EPA 8081B												
Aldrin	54.4	1.24	2.47	ug/kg dry	1	61.8	1.83	85	45-136%	---	---	
alpha-BHC	44.5	1.24	2.47	"	"	"	1.86	69	45-137%	---	---	
beta-BHC	62.9	1.24	2.47	"	"	"	5.01	94	50-136%	---	---	
delta-BHC	54.9	1.24	2.47	"	"	"	3.86	83	47-139%	---	---	Q-41
gamma-BHC (Lindane)	60.7	1.24	2.47	"	"	"	2.92	94	49-135%	---	---	Q-41
cis-Chlordane	58.0	1.24	2.47	"	"	"	2.46	90	54-133%	---	---	
trans-Chlordane	48.5	1.24	2.47	"	"	"	2.24	75	53-135%	---	---	
4,4'-DDD	71.3	1.24	2.47	"	"	"	3.78	109	56-139%	---	---	Q-41
4,4'-DDE	54.8	1.24	2.47	"	"	"	4.63	81	56-134%	---	---	
4,4'-DDT	66.5	1.24	2.47	"	"	"	6.48	97	50-141%	---	---	
Dieldrin	50.7	1.24	2.47	"	"	"	2.44	78	56-136%	---	---	
Endosulfan I	60.9	1.24	2.47	"	"	"	2.71	94	52-132%	---	---	
Endosulfan II	62.2	1.24	2.47	"	"	"	2.26	97	53-134%	---	---	Q-41
Endosulfan sulfate	62.8	1.24	2.47	"	"	"	3.15	97	55-136%	---	---	Q-41
Endrin	62.0	1.24	2.47	"	"	"	4.57	93	56-140%	---	---	
Endrin Aldehyde	61.3	1.24	2.47	"	"	"	4.54	92	35-137%	---	---	
Endrin ketone	67.1	1.24	2.47	"	"	"	2.86	104	55-136%	---	---	Q-41
Heptachlor	62.4	1.24	2.47	"	"	"	2.79	97	47-136%	---	---	Q-41
Heptachlor epoxide	58.3	1.24	2.47	"	"	"	2.10	91	52-136%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080462 - EPA 3546							**Soil**					
Matrix Spike (6080462-MS1)					Prepared: 08/12/16 08:54		Analyzed: 08/15/16 18:33					C-05
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01RE1)												
Methoxychlor	81.0	3.71	7.41	ug/kg dry	"	"	10.8	114	52-143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*83 %*	*65-151 %*			*"*					

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Blank (6080530-BLK2)						Prepared: 08/16/16 07:06	Analyzed: 08/16/16 14:31					
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Blank (6080530-BLK2)					Prepared: 08/16/16 07:06 Analyzed: 08/16/16 14:31							
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Blank (6080530-BLK2)					Prepared: 08/16/16 07:06		Analyzed: 08/16/16 14:31					
Isophorone	ND	3.12	6.25	ug/kg wet	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 84 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*88 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*81 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*100 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*82 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*100 %*		*39-132 %*		*"*					
LCS (6080530-BS2)					Prepared: 08/16/16 07:06		Analyzed: 08/16/16 15:09					
EPA 8270D												
Acenaphthene	474	1.33	2.67	ug/kg wet	1	533	---	89	40-122%	---	---	
Acenaphthylene	476	1.33	2.67	"	"	"	---	89	32-132%	---	---	
Anthracene	472	1.33	2.67	"	"	"	---	88	47-123%	---	---	
Benz(a)anthracene	532	1.33	2.67	"	"	"	---	100	49-126%	---	---	
Benzo(a)pyrene	543	2.00	4.00	"	"	"	---	102	45-129%	---	---	
Benzo(b)fluoranthene	552	2.00	4.00	"	"	"	---	103	45-132%	---	---	
Benzo(k)fluoranthene	540	2.00	4.00	"	"	"	---	101	47-132%	---	---	
Benzo(g,h,i)perylene	511	1.33	2.67	"	"	"	---	96	43-134%	---	---	
Chrysene	523	1.33	2.67	"	"	"	---	98	50-124%	---	---	
Dibenz(a,h)anthracene	497	1.33	2.67	"	"	"	---	93	45-134%	---	---	
Fluoranthene	506	1.33	2.67	"	"	"	---	95	50-127%	---	---	
Fluorene	453	1.33	2.67	"	"	"	---	85	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	510	1.33	2.67	"	"	"	---	96	45-133%	---	---	
1-Methylnaphthalene	488	2.67	5.33	"	"	"	---	92	40-120%	---	---	
2-Methylnaphthalene	481	2.67	5.33	"	"	"	---	90	38-122%	---	---	
Naphthalene	460	2.67	5.33	"	"	"	---	86	35-123%	---	---	
Phenanthrene	460	1.33	2.67	"	"	"	---	86	50-121%	---	---	
Pyrene	483	1.33	2.67	"	"	"	---	91	47-127%	---	---	
Carbazole	457	2.00	4.00	"	"	"	---	86	50-122%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
LCS (6080530-BS2)					Prepared: 08/16/16 07:06		Analyzed: 08/16/16 15:09					
Dibenzofuran	466	1.33	2.67	ug/kg wet	"	"	---	87	44-120%	---	---	
4-Chloro-3-methylphenol	519	13.3	26.7	"	"	"	---	97	45-122%	---	---	
2-Chlorophenol	502	6.67	13.3	"	"	"	---	94	34-121%	---	---	
2,4-Dichlorophenol	521	6.67	13.3	"	"	"	---	98	40-122%	---	---	
2,4-Dimethylphenol	503	6.67	13.3	"	"	"	---	94	30-127%	---	---	
2,4-Dinitrophenol	470	33.3	66.7	"	"	"	---	88	5-137%	---	---	
4,6-Dinitro-2-methylphenol	496	33.3	66.7	"	"	"	---	93	29-132%	---	---	
2-Methylphenol	515	3.33	6.67	"	"	"	---	97	32-122%	---	---	
3+4-Methylphenol(s)	515	3.33	6.67	"	"	"	---	97	34-120%	---	---	
2-Nitrophenol	540	13.3	26.7	"	"	"	---	101	36-123%	---	---	
4-Nitrophenol	510	13.3	26.7	"	"	"	---	96	30-132%	---	---	
Pentachlorophenol (PCP)	490	13.3	26.7	"	"	"	---	92	25-133%	---	---	
Phenol	513	2.67	5.33	"	"	"	---	96	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	549	6.67	13.3	"	"	"	---	103	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	511	6.67	13.3	"	"	"	---	96	40-120%	---	---	
2,4,5-Trichlorophenol	554	6.67	13.3	"	"	"	---	104	41-124%	---	---	
2,4,6-Trichlorophenol	526	6.67	13.3	"	"	"	---	99	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	585	20.0	40.0	"	"	"	---	110	51-133%	---	---	
Butyl benzyl phthalate	577	13.3	26.7	"	"	"	---	108	48-132%	---	---	
Diethylphthalate	489	13.3	26.7	"	"	"	---	92	50-124%	---	---	
Dimethylphthalate	508	13.3	26.7	"	"	"	---	95	48-124%	---	---	
Di-n-butylphthalate	537	13.3	26.7	"	"	"	---	101	51-128%	---	---	
Di-n-octyl phthalate	589	13.3	26.7	"	"	"	---	110	44-140%	---	---	
N-Nitrosodimethylamine	484	3.33	6.67	"	"	"	---	91	23-120%	---	---	
N-Nitroso-di-n-propylamine	516	3.33	6.67	"	"	"	---	97	36-120%	---	---	
N-Nitrosodiphenylamine	488	3.33	6.67	"	"	"	---	92	38-127%	---	---	
Bis(2-Chloroethoxy) methane	494	3.33	6.67	"	"	"	---	93	36-121%	---	---	
Bis(2-Chloroethyl) ether	466	3.33	6.67	"	"	"	---	87	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	528	3.33	6.67	"	"	"	---	99	33-131%	---	---	
Hexachlorobenzene	528	1.33	2.67	"	"	"	---	99	44-122%	---	---	
Hexachlorobutadiene	501	3.33	6.67	"	"	"	---	94	32-123%	---	---	
Hexachlorocyclopentadiene	474	6.67	13.3	"	"	"	---	89	5-140%	---	---	
Hexachloroethane	506	3.33	6.67	"	"	"	---	95	28-120%	---	---	
2-Chloronaphthalene	479	1.33	2.67	"	"	"	---	90	41-120%	---	---	
1,2-Dichlorobenzene	464	3.33	6.67	"	"	"	---	87	33-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
LCS (6080530-BS2)					Prepared: 08/16/16 07:06		Analyzed: 08/16/16 15:09					
1,3-Dichlorobenzene	473	3.33	6.67	ug/kg wet	"	"	---	89	30-120%	---	---	
1,4-Dichlorobenzene	464	3.33	6.67	"	"	"	---	87	31-120%	---	---	
1,2,4-Trichlorobenzene	509	3.33	6.67	"	"	"	---	95	34-120%	---	---	
4-Bromophenyl phenyl ether	513	3.33	6.67	"	"	"	---	96	46-124%	---	---	
4-Chlorophenyl phenyl ether	475	3.33	6.67	"	"	"	---	89	45-121%	---	---	
Aniline	441	6.67	13.3	"	"	"	---	83	7-120%	---	---	
4-Chloroaniline	304	3.33	6.67	"	"	"	---	57	16-120%	---	---	
2-Nitroaniline	538	26.7	53.3	"	"	"	---	101	44-127%	---	---	
3-Nitroaniline	411	26.7	53.3	"	"	"	---	77	33-120%	---	---	
4-Nitroaniline	467	26.7	53.3	"	"	"	---	88	35-120%	---	---	
Nitrobenzene	492	13.3	26.7	"	"	"	---	92	34-122%	---	---	
2,4-Dinitrotoluene	520	13.3	26.7	"	"	"	---	97	48-126%	---	---	
2,6-Dinitrotoluene	521	13.3	26.7	"	"	"	---	98	46-124%	---	---	
Benzoic acid	558	167	333	"	"	1070	---	52	5-140%	---	---	Q-31
Benzyl alcohol	529	6.67	13.3	"	"	533	---	99	29-122%	---	---	
Isophorone	562	3.33	6.67	"	"	"	---	105	30-122%	---	---	
Azobenzene (1,2-DPH)	530	3.33	6.67	"	"	"	---	99	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	580	33.3	66.7	"	"	"	---	109	60-121%	---	---	
3,3'-Dichlorobenzidine	1230	13.3	26.7	"	"	1070	---	115	22-121%	---	---	Q-31
1,2-Dinitrobenzene	541	33.3	66.7	"	"	533	---	101	44-120%	---	---	
1,3-Dinitrobenzene	520	33.3	66.7	"	"	"	---	98	42-127%	---	---	
1,4-Dinitrobenzene	505	33.3	66.7	"	"	"	---	95	37-132%	---	---	
Pyridine	407	6.67	13.3	"	"	"	---	76	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 87 %*	*Limits: 37-122 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*88 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*93 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*104 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*93 %*	*35-115 %*	*"*
2,4,6-Tribromophenol (Surr)	*107 %*	*39-132 %*	*"*

Duplicate (6080530-DUP1) Prepared: 08/16/16 07:06 Analyzed: 08/16/16 18:22

QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01RE1)

EPA 8270D

Acenaphthene	ND	6.67	13.4	ug/kg dry	4	---	ND	---	---	---	30%
Acenaphthylene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%
Anthracene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Duplicate (6080530-DUP1)					Prepared: 08/16/16 07:06 Analyzed: 08/16/16 18:22							
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01RE1)												
Benz(a)anthracene	ND	6.67	13.4	ug/kg dry	"	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	20.1	20.1	"	"	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	**12.1**	10.0	20.1	"	"	---	12.6	---	---	4	30%	J
Benzo(k)fluoranthene	ND	10.0	20.1	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%	
Chrysene	ND	13.4	13.4	"	"	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%	
Fluoranthene	**17.5**	6.67	13.4	"	"	---	19.8	---	---	12	30%	
Fluorene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	13.4	26.7	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	13.4	26.7	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	13.4	26.7	"	"	---	ND	---	---	---	30%	
Phenanthrene	**16.0**	6.67	13.4	"	"	---	18.6	---	---	15	30%	
Pyrene	**13.6**	6.67	13.4	"	"	---	15.3	---	---	12	30%	
Carbazole	ND	10.0	20.1	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	6.67	13.4	"	"	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	66.7	134	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	167	335	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	167	335	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	**70.5**	16.7	33.5	"	"	---	41.2	---	---	52	30%	Q-04
2-Nitrophenol	ND	66.7	134	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	66.7	134	"	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	66.7	134	"	"	---	ND	---	---	---	30%	
Phenol	ND	26.7	26.7	"	"	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	**146**	100	201	"	"	---	234	---	---	47	30%	J, Q-05

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Duplicate (6080530-DUP1)					Prepared: 08/16/16 07:06 Analyzed: 08/16/16 18:22							
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01RE1)												
Butyl benzyl phthalate	**67.8**	66.7	134	ug/kg dry	"	---	ND	---	---		30%	J
Diethylphthalate	ND	66.7	134	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	66.7	134	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	66.7	134	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	66.7	134	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	6.67	13.4	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
Aniline	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	134	267	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	134	267	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	134	267	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	66.7	134	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	66.7	134	"	"	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	66.7	134	"	"	---	ND	---	---	---	30%	
Benzoic acid	ND	838	1670	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
Isophorone	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	16.7	33.5	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Duplicate (6080530-DUP1)					Prepared: 08/16/16 07:06		Analyzed: 08/16/16 18:22					
QC Source Sample: 8.10.16-Topsoil-1 (A6H0354-01RE1)												
Bis(2-Ethylhexyl) adipate	ND	167	335	ug/kg dry	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	66.7	134	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	167	335	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	167	335	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	167	335	"	"	---	ND	---	---	---	30%	
Pyridine	ND	33.5	66.7	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 110 %*		*Limits: 37-122 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*89 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*99 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*109 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*87 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*131 %*		*39-132 %*		*"*					
Matrix Spike (6080530-MS2)					Prepared: 08/16/16 07:06		Analyzed: 08/18/16 17:00					
QC Source Sample: Other (A6H0479-02RE2)												
EPA 8270D												
Acenaphthene	445	1.28	2.58	ug/kg wet	1	515	ND	87	40-122%	---	---	
Acenaphthylene	409	1.28	2.58	"	"	"	ND	79	32-132%	---	---	
Anthracene	487	1.28	2.58	"	"	"	ND	95	47-123%	---	---	
Benz(a)anthracene	460	1.28	2.58	"	"	"	1.83	89	49-126%	---	---	
Benzo(a)pyrene	462	1.93	3.86	"	"	"	2.62	89	45-129%	---	---	
Benzo(b)fluoranthene	512	1.93	3.86	"	"	"	ND	99	45-132%	---	---	
Benzo(k)fluoranthene	506	1.93	3.86	"	"	"	ND	98	47-132%	---	---	
Benzo(g,h,i)perylene	467	1.28	2.58	"	"	"	2.06	90	43-134%	---	---	
Chrysene	476	1.28	2.58	"	"	"	1.90	92	50-124%	---	---	
Dibenz(a,h)anthracene	474	1.28	2.58	"	"	"	ND	92	45-134%	---	---	
Fluoranthene	480	1.28	2.58	"	"	"	3.51	93	50-127%	---	---	
Fluorene	485	1.28	2.58	"	"	"	ND	94	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	428	1.28	2.58	"	"	"	1.68	83	45-133%	---	---	
1-Methylnaphthalene	431	2.58	5.14	"	"	"	ND	84	40-120%	---	---	
2-Methylnaphthalene	438	2.58	5.14	"	"	"	ND	85	38-122%	---	---	
Naphthalene	393	2.58	5.14	"	"	"	ND	76	35-123%	---	---	
Phenanthrene	482	1.28	2.58	"	"	"	2.41	93	50-121%	---	---	
Pyrene	481	1.28	2.58	"	"	"	3.41	93	47-127%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Matrix Spike (6080530-MS2)					Prepared: 08/16/16 07:06		Analyzed: 08/18/16 17:00					
QC Source Sample: Other (A6H0479-02RE2)												
Carbazole	453	1.93	3.86	ug/kg wet	"	"	ND	88	50-122%	---	---	
Dibenzofuran	464	1.28	2.58	"	"	"	ND	90	44-120%	---	---	
4-Chloro-3-methylphenol	548	12.8	25.8	"	"	"	ND	107	45-122%	---	---	
2-Chlorophenol	451	6.44	12.8	"	"	"	ND	88	34-121%	---	---	
2,4-Dichlorophenol	464	6.44	12.8	"	"	"	ND	90	40-122%	---	---	
2,4-Dimethylphenol	531	6.44	12.8	"	"	"	ND	103	30-127%	---	---	
2,4-Dinitrophenol	61.8	32.1	32.1	"	"	"	ND	12	5-137%	---	---	Q-31
4,6-Dinitro-2-methylphenol	284	32.1	64.4	"	"	"	ND	55	29-132%	---	---	
2-Methylphenol	531	3.21	6.44	"	"	"	ND	103	32-122%	---	---	
3+4-Methylphenol(s)	518	3.21	6.44	"	"	"	8.72	99	34-120%	---	---	
2-Nitrophenol	391	12.8	25.8	"	"	"	ND	76	36-123%	---	---	
4-Nitrophenol	391	12.8	25.8	"	"	"	ND	76	30-132%	---	---	Q-31
Pentachlorophenol (PCP)	544	12.8	25.8	"	"	"	ND	106	25-133%	---	---	
Phenol	476	2.58	5.14	"	"	"	5.29	91	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	528	6.44	12.8	"	"	"	ND	103	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	524	6.44	12.8	"	"	"	ND	102	40-120%	---	---	
2,4,5-Trichlorophenol	526	6.44	12.8	"	"	"	ND	102	41-124%	---	---	
2,4,6-Trichlorophenol	507	6.44	12.8	"	"	"	ND	98	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	546	19.3	38.6	"	"	"	31.1	100	51-133%	---	---	
Butyl benzyl phthalate	494	12.8	25.8	"	"	"	ND	96	48-132%	---	---	
Diethylphthalate	495	12.8	25.8	"	"	"	ND	96	50-124%	---	---	
Dimethylphthalate	450	12.8	25.8	"	"	"	ND	87	48-124%	---	---	
Di-n-butylphthalate	531	12.8	25.8	"	"	"	ND	103	51-128%	---	---	
Di-n-octyl phthalate	507	12.8	25.8	"	"	"	ND	98	44-140%	---	---	
N-Nitrosodimethylamine	357	3.21	6.44	"	"	"	ND	69	23-120%	---	---	
N-Nitroso-di-n-propylamine	552	3.21	6.44	"	"	"	ND	107	36-120%	---	---	Q-41
N-Nitrosodiphenylamine	507	3.21	6.44	"	"	"	ND	99	38-127%	---	---	
Bis(2-Chloroethoxy) methane	428	3.21	6.44	"	"	"	ND	83	36-121%	---	---	
Bis(2-Chloroethyl) ether	384	3.21	6.44	"	"	"	ND	75	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	551	3.21	6.44	"	"	"	ND	107	33-131%	---	---	Q-41
Hexachlorobenzene	555	1.28	2.58	"	"	"	ND	108	44-122%	---	---	
Hexachlorobutadiene	454	3.21	6.44	"	"	"	ND	88	32-123%	---	---	
Hexachlorocyclopentadiene	30.7	6.44	12.8	"	"	"	ND	6	5-140%	---	---	
Hexachloroethane	259	3.21	6.44	"	"	"	ND	50	28-120%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080530 - EPA 3546							**Soil**					
Matrix Spike (6080530-MS2)					Prepared: 08/16/16 07:06		Analyzed: 08/18/16 17:00					
QC Source Sample: Other (A6H0479-02RE2)												
2-Chloronaphthalene	404	1.28	2.58	ug/kg wet	"	"	ND	79	41-120%	---	---	
1,2-Dichlorobenzene	363	3.21	6.44	"	"	"	ND	71	33-120%	---	---	
1,3-Dichlorobenzene	350	3.21	6.44	"	"	"	ND	68	30-120%	---	---	
1,4-Dichlorobenzene	362	3.21	6.44	"	"	"	ND	70	31-120%	---	---	
1,2,4-Trichlorobenzene	379	3.21	6.44	"	"	"	ND	74	34-120%	---	---	
4-Bromophenyl phenyl ether	525	3.21	6.44	"	"	"	ND	102	46-124%	---	---	
4-Chlorophenyl phenyl ether	516	3.21	6.44	"	"	"	ND	100	45-121%	---	---	
Aniline	295	6.44	12.8	"	"	"	ND	57	7-120%	---	---	Q-41
4-Chloroaniline	123	3.21	6.44	"	"	"	ND	24	16-120%	---	---	
2-Nitroaniline	488	25.8	51.4	"	"	"	ND	95	44-127%	---	---	
3-Nitroaniline	230	25.8	51.4	"	"	"	ND	45	33-120%	---	---	
4-Nitroaniline	235	25.8	51.4	"	"	"	ND	46	35-120%	---	---	
Nitrobenzene	479	12.8	25.8	"	"	"	ND	93	34-122%	---	---	Q-41
2,4-Dinitrotoluene	513	12.8	25.8	"	"	"	ND	100	48-126%	---	---	
2,6-Dinitrotoluene	444	12.8	25.8	"	"	"	ND	86	46-124%	---	---	
Benzoic acid	1120	161	321	"	"	1030	ND	108	5-140%	---	---	
Benzyl alcohol	552	6.44	12.8	"	"	515	9.53	105	29-122%	---	---	
Isophorone	495	3.21	6.44	"	"	"	ND	96	30-122%	---	---	Q-41
Azobenzene (1,2-DPH)	538	3.21	6.44	"	"	"	ND	104	39-125%	---	---	Q-41
Bis(2-Ethylhexyl) adipate	465	32.1	64.4	"	"	"	ND	90	60-121%	---	---	
3,3'-Dichlorobenzidine	325	12.8	25.8	"	"	1030	ND	32	22-121%	---	---	Q-41
1,2-Dinitrobenzene	406	32.1	64.4	"	"	515	ND	79	44-120%	---	---	
1,3-Dinitrobenzene	401	32.1	64.4	"	"	"	ND	78	42-127%	---	---	
1,4-Dinitrobenzene	322	32.1	64.4	"	"	"	ND	63	37-132%	---	---	
Pyridine	336	6.44	12.8	"	"	"	ND	65	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 89 %*	*Limits: 37-122 %*	*Dilution: 1x*	*Q-41*
2-Fluorobiphenyl (Surr)	*72 %*	*44-115 %*	*"*	
Phenol-d6 (Surr)	*97 %*	*33-122 %*	*"*	
p-Terphenyl-d14 (Surr)	*88 %*	*54-127 %*	*"*	
2-Fluorophenol (Surr)	*80 %*	*35-115 %*	*"*	
2,4,6-Tribromophenol (Surr)	*120 %*	*39-132 %*	*"*	*Q-41*

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080456 - EPA 3546							**Soil**					
Blank (6080456-BLK1)					Prepared: 08/12/16 16:12		Analyzed: 08/15/16 14:13					
EPA 8270D (SIM)												
Acenaphthene	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Chrysene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluorene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Naphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Phenanthrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*105 %*	*54-127 %*			*"*					
LCS (6080456-BS1)					Prepared: 08/12/16 16:12		Analyzed: 08/15/16 14:40					
EPA 8270D (SIM)												
Acenaphthene	740	5.00	10.0	ug/kg wet	1	800	---	92	40-122%	---	---	
Acenaphthylene	718	5.00	10.0	"	"	"	---	90	32-132%	---	---	
Anthracene	713	5.00	10.0	"	"	"	---	89	47-123%	---	---	
Benz(a)anthracene	706	5.00	10.0	"	"	"	---	88	49-126%	---	---	
Benzo(a)pyrene	726	5.00	10.0	"	"	"	---	91	45-129%	---	---	
Benzo(b)fluoranthene	736	5.00	10.0	"	"	"	---	92	45-132%	---	---	
Benzo(k)fluoranthene	728	5.00	10.0	"	"	"	---	91	47-132%	---	---	
Benzo(g,h,i)perylene	716	5.00	10.0	"	"	"	---	90	43-134%	---	---	
Chrysene	757	5.00	10.0	"	"	"	---	95	50-124%	---	---	
Dibenz(a,h)anthracene	721	5.00	10.0	"	"	"	---	90	45-134%	---	---	
Dibenzofuran	730	5.00	10.0	"	"	"	---	91	44-120%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080456 - EPA 3546							**Soil**					
LCS (6080456-BS1)					Prepared: 08/12/16 16:12		Analyzed: 08/15/16 14:40					
Fluoranthene	744	5.00	10.0	ug/kg wet	"	"	---	93	50-127%	---	---	
Fluorene	743	5.00	10.0	"	"	"	---	93	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	703	5.00	10.0	"	"	"	---	88	45-133%	---	---	
1-Methylnaphthalene	736	5.00	10.0	"	"	"	---	92	40-120%	---	---	
2-Methylnaphthalene	718	5.00	10.0	"	"	"	---	90	38-122%	---	---	
Naphthalene	717	5.00	10.0	"	"	"	---	90	35-123%	---	---	
Phenanthrene	747	5.00	10.0	"	"	"	---	93	50-121%	---	---	
Pyrene	738	5.00	10.0	"	"	"	---	92	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 90 %*		*Limits: 44-120 %*			*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*100 %*		*54-127 %*			*"*				
Duplicate (6080456-DUP1)					Prepared: 08/12/16 16:12		Analyzed: 08/15/16 15:35					
QC Source Sample: Other (A6H0326-01)												
EPA 8270D (SIM)												
Acenaphthene	ND	2870	2870	ug/kg dry	20	---	ND	---	---	---	30%	R-02
Acenaphthylene	ND	861	861	"	"	---	906	---	---	***	30%	R-02
Anthracene	ND	933	933	"	"	---	1100	---	---	***	30%	R-02
Benz(a)anthracene	ND	239	239	"	"	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	120	239	"	"	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	120	239	"	"	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	120	239	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	120	239	"	"	---	ND	---	---	---	30%	
Chrysene	ND	239	239	"	"	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	120	239	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	4070	4070	"	"	---	ND	---	---	---	30%	R-02
Fluoranthene	**341**	120	239	"	"	---	311	---	---	9	30%	
Fluorene	**6580**	120	239	"	"	---	6310	---	---	4	30%	M-04
Indeno(1,2,3-cd)pyrene	ND	120	239	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	**42700**	120	239	"	"	---	40700	---	---	5	30%	
2-Methylnaphthalene	**60800**	120	239	"	"	---	58400	---	---	4	30%	
Naphthalene	**21900**	120	239	"	"	---	20900	---	---	5	30%	
Phenanthrene	**13000**	120	239	"	"	---	11700	---	---	10	30%	
Pyrene	**881**	120	239	"	"	---	830	---	---	6	30%	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 93 %*		*Limits: 44-120 %*			*Dilution: 20x*				
p-Terphenyl-d14 (Surr)			*109 %*		*54-127 %*			*"*				

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080456 - EPA 3546							**Soil**					
Matrix Spike (6080456-MS1)					Prepared: 08/12/16 16:12		Analyzed: 08/15/16 19:38					
QC Source Sample: Other (A6H0432-01)												
EPA 8270D (SIM)												
Acenaphthene	1180	9.27	18.5	ug/kg dry	1	1480	ND	79	40-122%	---	---	
Acenaphthylene	1150	9.27	18.5	"	"	"	ND	77	32-132%	---	---	
Anthracene	1110	9.27	18.5	"	"	"	ND	75	47-123%	---	---	
Benz(a)anthracene	1080	9.27	18.5	"	"	"	10.9	72	49-126%	---	---	
Benzo(a)pyrene	1120	9.27	18.5	"	"	"	10.4	75	45-129%	---	---	
Benzo(b)fluoranthene	1160	9.27	18.5	"	"	"	15.4	77	45-132%	---	---	
Benzo(k)fluoranthene	1160	9.27	18.5	"	"	"	ND	78	47-132%	---	---	
Benzo(g,h,i)perylene	1050	9.27	18.5	"	"	"	11.4	70	43-134%	---	---	
Chrysene	1120	9.27	18.5	"	"	"	ND	76	50-124%	---	---	
Dibenz(a,h)anthracene	1090	9.27	18.5	"	"	"	ND	73	45-134%	---	---	
Dibenzofuran	1160	9.27	18.5	"	"	"	ND	78	44-120%	---	---	
Fluoranthene	1130	9.27	18.5	"	"	"	10.2	76	50-127%	---	---	
Fluorene	1160	9.27	18.5	"	"	"	ND	78	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	1040	9.27	18.5	"	"	"	11.1	70	45-133%	---	---	
1-Methylnaphthalene	1170	9.27	18.5	"	"	"	ND	79	40-120%	---	---	
2-Methylnaphthalene	1160	9.27	18.5	"	"	"	ND	78	38-122%	---	---	
Naphthalene	1190	9.27	18.5	"	"	"	ND	80	35-123%	---	---	
Phenanthrene	1150	9.27	18.5	"	"	"	ND	78	50-121%	---	---	
Pyrene	1120	9.27	18.5	"	"	"	11.0	75	47-127%	---	---	

Surr: 2-Fluorobiphenyl (Surr)	*Recovery: 77 %*	*Limits: 44-120 %*	*Dilution: 1x*
p-Terphenyl-d14 (Surr)	*82 %*	*54-127 %*	*"*

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080563 - EPA 3051A							**Soil**					
Blank (6080563-BLK1)					Prepared: 08/16/16 13:32		Analyzed: 08/16/16 19:49					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6080563-BS1)					Prepared: 08/16/16 13:32		Analyzed: 08/16/16 19:52					
EPA 6020A												
Arsenic	50.1	0.500	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Cadmium	50.2	0.100	0.200	"	"	"	---	100	"	---	---	
Chromium	49.4	0.500	1.00	"	"	"	---	99	"	---	---	
Copper	50.6	0.500	1.00	"	"	"	---	101	"	---	---	
Lead	51.7	0.100	0.200	"	"	"	---	103	"	---	---	
Mercury	1.06	0.0400	0.0800	"	"	1.00	---	106	"	---	---	
Nickel	49.2	0.500	1.00	"	"	50.0	---	98	"	---	---	
Selenium	28.1	0.500	1.00	"	"	25.0	---	112	"	---	---	
Silver	25.0	0.100	0.200	"	"	"	---	100	"	---	---	
Zinc	52.2	2.00	4.00	"	"	50.0	---	104	"	---	---	
Duplicate (6080563-DUP1)					Prepared: 08/16/16 13:32		Analyzed: 08/16/16 20:19					
QC Source Sample: Other (A6H0188-02)												
EPA 6020A												
Arsenic	**1.06**	0.688	1.38	mg/kg dry	10	---	0.827	---	---	25	40%	J
Cadmium	ND	0.138	0.275	"	"	---	ND	---	---	---	40%	
Chromium	**4.80**	0.688	1.38	"	"	---	3.93	---	---	20	40%	
Copper	**7.33**	0.688	1.38	"	"	---	6.55	---	---	11	40%	
Lead	**2.54**	0.138	0.275	"	"	---	1.60	---	---	45	40%	Q-05
Mercury	ND	0.0550	0.110	"	"	---	ND	---	---	---	40%	
Nickel	**5.73**	0.688	1.38	"	"	---	5.20	---	---	10	40%	
Selenium	ND	0.688	1.38	"	"	---	ND	---	---	---	40%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080563 - EPA 3051A							**Soil**					
Duplicate (6080563-DUP1)					Prepared: 08/16/16 13:32		Analyzed: 08/16/16 20:19					
QC Source Sample: Other (A6H0188-02)												
Silver	ND	0.138	0.275	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**20.5**	2.75	5.50	"	"	---	18.4	---	---	11	40%	
Matrix Spike (6080563-MS1)					Prepared: 08/16/16 13:32		Analyzed: 08/16/16 20:22					
QC Source Sample: Other (A6H0188-02)												
EPA 6020A												
Arsenic	61.8	0.623	1.25	mg/kg dry	10	62.3	0.827	98	75-125%	---	---	
Cadmium	62.5	0.125	0.249	"	"	"	ND	100	"	---	---	
Chromium	65.3	0.623	1.25	"	"	"	3.93	99	"	---	---	
Copper	66.8	0.623	1.25	"	"	"	6.55	97	"	---	---	
Lead	65.5	0.125	0.249	"	"	"	1.60	102	"	---	---	
Mercury	1.35	0.0498	0.0996	"	"	1.25	ND	109	"	---	---	
Nickel	64.7	0.623	1.25	"	"	62.3	5.20	96	"	---	---	
Selenium	34.7	0.623	1.25	"	"	31.1	ND	112	"	---	---	
Silver	31.4	0.125	0.249	"	"	"	ND	101	"	---	---	
Zinc	83.3	2.49	4.98	"	"	62.3	18.4	104	"	---	---	
Matrix Spike (6080563-MS2)					Prepared: 08/16/16 13:32		Analyzed: 08/16/16 21:34					
QC Source Sample: Other (A6H0467-05)												
EPA 6020A												
Arsenic	63.9	0.662	1.32	mg/kg dry	10	66.2	0.815	95	75-125%	---	---	
Cadmium	64.9	0.132	0.265	"	"	"	0.191	98	"	---	---	
Chromium	85.9	0.662	1.32	"	"	"	21.2	98	"	---	---	
Copper	112	0.662	1.32	"	"	"	52.0	90	"	---	---	
Lead	66.5	0.132	0.265	"	"	"	2.31	97	"	---	---	
Mercury	1.37	0.0530	0.106	"	"	1.32	ND	104	"	---	---	
Nickel	107	0.662	1.32	"	"	66.2	43.7	96	"	---	---	
Selenium	34.7	0.662	1.32	"	"	33.1	ND	105	"	---	---	
Silver	33.1	0.132	0.265	"	"	"	ND	100	"	---	---	
Zinc	162	2.65	5.30	"	"	66.2	87.7	111	"	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080444 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6080444-DUP1)					Prepared: 08/12/16 12:17		Analyzed: 08/15/16 09:16					
QC Source Sample: Other (A6H0398-04)												
EPA 8000C												
% Solids	**90.5**	1.00	1.00	% by Weight	1	---	91.0	---	---	0.5	10%	
Duplicate (6080444-DUP2)					Prepared: 08/12/16 12:17		Analyzed: 08/15/16 09:16					
QC Source Sample: Other (A6H0399-06)												
EPA 8000C												
% Solids	**88.4**	1.00	1.00	% by Weight	1	---	89.3	---	---	1	10%	
Duplicate (6080444-DUP3)					Prepared: 08/12/16 17:44		Analyzed: 08/15/16 09:16					
QC Source Sample: Other (A6H0448-02)												
EPA 8000C												
% Solids	**89.8**	1.00	1.00	% by Weight	1	---	89.9	---	---	0.2	10%	
Duplicate (6080444-DUP4)					Prepared: 08/12/16 20:30		Analyzed: 08/15/16 09:16					
QC Source Sample: Other (A6H0450-01)												
EPA 8000C												
% Solids	**75.6**	1.00	1.00	% by Weight	1	---	75.9	---	---	0.4	10%	
Duplicate (6080444-DUP5)					Prepared: 08/12/16 20:30		Analyzed: 08/15/16 09:16					
QC Source Sample: Other (A6H0461-01)												
EPA 8000C												
% Solids	**78.2**	1.00	1.00	% by Weight	1	---	78.3	---	---	0.1	10%	

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Prep: EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080550							
A6H0354-01	Soil	NWTPH-Dx/SG	08/10/16 13:20	08/16/16 11:47	10.59g/5mL	10g/5mL	0.94

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080549							
A6H0354-01	Soil	EPA 8082A	08/10/16 13:20	08/16/16 11:06	30.55g/2mL	30g/2mL	0.98

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080462							
A6H0354-01RE1	Soil	EPA 8081B	08/10/16 13:20	08/12/16 08:54	10.78g/10mL	10g/5mL	1.86

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080530							
A6H0354-01RE1	Soil	EPA 8270D	08/10/16 13:20	08/16/16 07:06	15.61g/2mL	15g/2mL	0.96

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080563							
A6H0354-01	Soil	EPA 6020A	08/10/16 13:20	08/16/16 13:32	0.483g/50mL	0.5g/50mL	1.04

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080444							

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6H0354-01	Soil	EPA 8000C	08/10/16 13:20	08/12/16 12:17	1N/A/1N/A	1N/A/1N/A	NA

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-04	Due to matrix interference, this analyte cannot be accurately quantified. The reported result may contain a high bias.
P-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

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Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	08/19/16 16:53

APEX LABS **CHAIN OF CUSTODY** Lab # AleH0354 COC ___ of ___

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: Name MFA | Project Mgr: Phil Wiescher | Project Name: Port of Ridgefield OPP | Project #/PO# 9003.01.39

Address: 2001 NW 19th Ave Suite 200, Portland, OR | Phone: (503) 5015209 | Fax: | Email: pwiescher@maulfoster.com

Sampled by:

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Total Metals EPA 6020 (see comments)	Organochlorine pesticides EPA 8081B	Low Level 8082 PCB Arclors	Low Level 8270D SVOCs	Dioxins/furrans EPA 1613B	TPH-Dx (NWTPH-D/Dx) w/ Silica Gel Cleanup
8.10.16-Topsoil-1		10-Aug	1320	S	2	X	X	X	X	X	X
8.10.16-Topsoil-2		10-Aug	1330	S	2						

Hold

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle) 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: ___

SPECIAL INSTRUCTIONS:
Metlas: As, Cd, Cr, Pb, Hg, Ni, Se, Ag, Zn, Cu. Please report MDLs. Hold 8.10.16-Topsoil-2.

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Date: 8/11/16	Date: 8-11-16	Date:	Date:
Printed Name: CROSSLEY CROSBY	Printed Name: [signature]	Printed Name:	Printed Name:
Time: 0820	Time: 9:25	Time:	Time:
Company: MFA	Company: Apex	Company:	Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Thursday, September 1, 2016

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / Port of Ridgefield 9003.01.

Enclosed are the results of analyses for work order A6H0642, which was received by the laboratory on 8/19/2016 at 9:55:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8.17.16-Topsoil-1	A6H0642-01	Soil	08/17/16 14:35	08/19/16 09:55
8.17.16-Topsoil-3	A6H0642-03	Soil	08/17/16 14:55	08/19/16 09:55

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01)			**Matrix: Soil**		**Batch: 6080756**			
Diesel	**21.5**	14.3	28.6	mg/kg dry	1	08/22/16 19:21	NWTPH-Dx/SG	J
Oil	**39.4**	28.6	57.1	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*	"	"	"	
8.17.16-Topsoil-3 (A6H0642-03)			**Matrix: Soil**		**Batch: 6080756**			
Diesel	ND	15.1	30.2	mg/kg dry	1	08/22/16 20:14	NWTPH-Dx/SG	
Oil	**48.0**	30.2	60.4	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 90 %*	*Limits: 50-150 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01)			**Matrix: Soil**		**Batch: 6080764**			C-07
Aroclor 1016	ND	0.797	1.58	ug/kg dry	1	08/23/16 09:45	EPA 8082A	
Aroclor 1221	ND	0.797	1.58	"	"	"	"	
Aroclor 1232	ND	1.58	1.58	"	"	"	"	
Aroclor 1242	ND	0.797	1.58	"	"	"	"	
Aroclor 1248	ND	0.797	1.58	"	"	"	"	
Aroclor 1254	ND	1.58	1.58	"	"	"	"	
Aroclor 1260	ND	0.797	1.58	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 68 %*	*Limits: 44-120 %*	"	"	"	
8.17.16-Topsoil-3 (A6H0642-03)			**Matrix: Soil**		**Batch: 6080764**			C-07
Aroclor 1016	ND	0.834	1.65	ug/kg dry	1	08/23/16 10:56	EPA 8082A	
Aroclor 1221	ND	0.834	1.65	"	"	"	"	
Aroclor 1232	ND	1.65	1.65	"	"	"	"	
Aroclor 1242	ND	0.834	1.65	"	"	"	"	
Aroclor 1248	ND	0.834	1.65	"	"	"	"	
Aroclor 1254	ND	1.65	1.65	"	"	"	"	
Aroclor 1260	ND	1.65	1.65	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 44-120 %*	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01)			**Matrix: Soil**		**Batch: 6080817**			
Aldrin	ND	1.09	1.09	ug/kg dry	1	08/25/16 13:03	EPA 8081B	
alpha-BHC	ND	0.547	1.09	"	"	"	"	
beta-BHC	ND	1.42	1.42	"	"	"	"	R-02
delta-BHC	ND	1.09	1.09	"	"	"	"	
gamma-BHC (Lindane)	ND	0.547	1.09	"	"	"	"	
cis-Chlordane	ND	1.09	1.09	"	"	"	"	
trans-Chlordane	ND	1.09	1.09	"	"	"	"	
4,4'-DDD	ND	1.09	1.09	"	"	"	"	
4,4'-DDE	ND	1.70	1.70	"	"	"	"	R-02
Dieldrin	ND	1.09	1.09	"	"	"	"	
Endosulfan I	ND	1.09	1.09	"	"	"	"	
Endosulfan II	ND	1.42	1.42	"	"	"	"	R-02
Endosulfan sulfate	ND	1.86	1.86	"	"	"	"	R-02
Endrin	ND	1.20	1.20	"	"	"	"	R-02
Endrin Aldehyde	ND	2.30	2.30	"	"	"	"	R-02
Endrin ketone	ND	2.03	2.03	"	"	"	"	R-02
Heptachlor	ND	1.09	1.09	"	"	"	"	
Heptachlor epoxide	ND	1.09	1.09	"	"	"	"	
Chlordane (Technical)	ND	16.4	32.8	"	"	"	"	
Toxaphene (Total)	ND	16.4	32.8	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 61 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*85 %*	*Limits: 65-151 %*	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01RE2)			**Matrix: Soil**		**Batch: 6081060**			C-05
4,4'-DDT	ND	2.19	2.19	ug/kg dry	1	08/30/16 15:24	EPA 8081B	
Methoxychlor	ND	3.28	6.57	"	"	"	"	
8.17.16-Topsoil-3 (A6H0642-03)			**Matrix: Soil**		**Batch: 6080817**			
Aldrin	ND	1.12	1.12	ug/kg dry	1	08/25/16 14:13	EPA 8081B	
alpha-BHC	ND	0.559	1.12	"	"	"	"	
beta-BHC	ND	1.62	1.62	"	"	"	"	R-02
delta-BHC	ND	1.12	1.12	"	"	"	"	
gamma-BHC (Lindane)	ND	0.559	1.12	"	"	"	"	
cis-Chlordane	ND	1.45	1.45	"	"	"	"	R-02
trans-Chlordane	ND	1.12	1.12	"	"	"	"	
4,4'-DDD	ND	1.56	1.56	"	"	"	"	R-02
4,4'-DDE	ND	2.01	2.01	"	"	"	"	R-02
Dieldrin	ND	1.12	1.12	"	"	"	"	
Endosulfan I	ND	1.12	1.12	"	"	"	"	
Endosulfan II	ND	1.28	1.28	"	"	"	"	R-02
Endosulfan sulfate	ND	1.79	1.79	"	"	"	"	R-02
Endrin	ND	1.45	1.45	"	"	"	"	R-02
Endrin Aldehyde	ND	2.07	2.07	"	"	"	"	R-02
Endrin ketone	ND	1.90	1.90	"	"	"	"	R-02
Heptachlor	ND	1.12	1.12	"	"	"	"	
Heptachlor epoxide	ND	1.12	1.12	"	"	"	"	
Chlordane (Technical)	ND	16.8	33.5	"	"	"	"	
Toxaphene (Total)	ND	16.8	33.5	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 64 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*80 %*	*Limits: 65-151 %*	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-3 (A6H0642-03RE2)			**Matrix: Soil**		**Batch: 6081060**			C-05
4,4'-DDT	ND	2.23	2.23	ug/kg dry	1	08/30/16 15:59	EPA 8081B	
Methoxychlor	ND	3.35	6.70	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01RE2)			**Matrix: Soil**		**Batch: 6080741**			R-04
Acenaphthene	ND	15.5	31.2	ug/kg dry	10	08/25/16 16:12	EPA 8270D	
Acenaphthylene	ND	15.5	31.2	"	"	"	"	
Anthracene	ND	15.5	31.2	"	"	"	"	
Benz(a)anthracene	ND	15.5	31.2	"	"	"	"	
Benzo(a)pyrene	ND	23.4	46.7	"	"	"	"	
Benzo(b)fluoranthene	ND	23.4	46.7	"	"	"	"	
Benzo(k)fluoranthene	ND	23.4	46.7	"	"	"	"	
Benzo(g,h,i)perylene	ND	15.5	31.2	"	"	"	"	
Chrysene	ND	15.5	31.2	"	"	"	"	
Dibenz(a,h)anthracene	ND	15.5	31.2	"	"	"	"	
Fluoranthene	**21.2**	15.5	31.2	"	"	"	"	J
Fluorene	ND	15.5	31.2	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	15.5	31.2	"	"	"	"	
1-Methylnaphthalene	ND	31.2	62.2	"	"	"	"	
2-Methylnaphthalene	ND	31.2	62.2	"	"	"	"	
Naphthalene	ND	31.2	62.2	"	"	"	"	
Phenanthrene	ND	15.5	31.2	"	"	"	"	
Pyrene	ND	15.5	31.2	"	"	"	"	
Carbazole	ND	23.4	46.7	"	"	"	"	
Dibenzofuran	ND	15.5	31.2	"	"	"	"	
4-Chloro-3-methylphenol	ND	155	312	"	"	"	"	
2-Chlorophenol	ND	77.9	155	"	"	"	"	
2,4-Dichlorophenol	ND	77.9	155	"	"	"	"	
2,4-Dimethylphenol	ND	77.9	155	"	"	"	"	
2,4-Dinitrophenol	ND	389	779	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	389	779	"	"	"	"	
2-Methylphenol	ND	38.9	77.9	"	"	"	"	
3+4-Methylphenol(s)	ND	38.9	77.9	"	"	"	"	
2-Nitrophenol	ND	155	312	"	"	"	"	
4-Nitrophenol	ND	155	312	"	"	"	"	
Pentachlorophenol (PCP)	ND	155	312	"	"	"	"	
Phenol	ND	31.2	62.2	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	77.9	155	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	77.9	155	"	"	"	"	
2,4,5-Trichlorophenol	ND	77.9	155	"	"	"	"	
2,4,6-Trichlorophenol	ND	77.9	155	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	234	467	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01RE2)			**Matrix: Soil**		**Batch: 6080741**			R-04
Butyl benzyl phthalate	ND	155	312	ug/kg dry	10	"	EPA 8270D	
Diethylphthalate	ND	155	312	"	"	"	"	
Dimethylphthalate	ND	155	312	"	"	"	"	
Di-n-butylphthalate	ND	155	312	"	"	"	"	
Di-n-octyl phthalate	ND	155	312	"	"	"	"	
N-Nitrosodimethylamine	ND	38.9	77.9	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	38.9	77.9	"	"	"	"	
N-Nitrosodiphenylamine	ND	38.9	77.9	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	38.9	77.9	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	38.9	77.9	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	38.9	77.9	"	"	"	"	
Hexachlorobenzene	ND	15.5	31.2	"	"	"	"	
Hexachlorobutadiene	ND	38.9	77.9	"	"	"	"	
Hexachlorocyclopentadiene	ND	77.9	155	"	"	"	"	
Hexachloroethane	ND	38.9	77.9	"	"	"	"	
2-Chloronaphthalene	ND	15.5	31.2	"	"	"	"	
1,2-Dichlorobenzene	ND	38.9	77.9	"	"	"	"	
1,3-Dichlorobenzene	ND	38.9	77.9	"	"	"	"	
1,4-Dichlorobenzene	ND	38.9	77.9	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38.9	77.9	"	"	"	"	
4-Bromophenyl phenyl ether	ND	38.9	77.9	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	38.9	77.9	"	"	"	"	
Aniline	ND	77.9	155	"	"	"	"	
4-Chloroaniline	ND	38.9	77.9	"	"	"	"	
2-Nitroaniline	ND	312	622	"	"	"	"	
3-Nitroaniline	ND	312	622	"	"	"	"	
4-Nitroaniline	ND	312	622	"	"	"	"	
Nitrobenzene	ND	155	312	"	"	"	"	
2,4-Dinitrotoluene	ND	155	312	"	"	"	"	
2,6-Dinitrotoluene	ND	155	312	"	"	"	"	
Benzoic acid	ND	1950	3890	"	"	"	"	
Benzyl alcohol	ND	77.9	155	"	"	"	"	
Isophorone	ND	38.9	77.9	"	"	"	"	
Azobenzene (1,2-DPH)	ND	38.9	77.9	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	389	779	"	"	"	"	
3,3'-Dichlorobenzidine	ND	155	312	"	"	"	"	
1,2-Dinitrobenzene	ND	389	779	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01RE2)			**Matrix: Soil**		**Batch: 6080741**			R-04
1,3-Dinitrobenzene	ND	389	779	ug/kg dry	10	"	EPA 8270D	
1,4-Dinitrobenzene	ND	389	779	"	"	"	"	
Pyridine	ND	77.9	155	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 91 %*	*Limits: 37-122 %*	"	"	"	*Q-41*
2-Fluorobiphenyl (Surr)			*82 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*83 %*	*Limits: 33-122 %*	"	"	"	*Q-41*
p-Terphenyl-d14 (Surr)			*98 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*70 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*114 %*	*Limits: 39-132 %*	"	"	"	
8.17.16-Topsoil-3 (A6H0642-03RE2)			**Matrix: Soil**		**Batch: 6080741**			R-04
Acenaphthene	ND	16.1	32.3	ug/kg dry	10	08/25/16 16:51	EPA 8270D	
Acenaphthylene	ND	16.1	32.3	"	"	"	"	
Anthracene	ND	16.1	32.3	"	"	"	"	
Benz(a)anthracene	ND	16.1	32.3	"	"	"	"	
Benzo(a)pyrene	ND	24.2	48.4	"	"	"	"	
Benzo(b)fluoranthene	ND	24.2	48.4	"	"	"	"	
Benzo(k)fluoranthene	ND	24.2	48.4	"	"	"	"	
Benzo(g,h,i)perylene	ND	16.1	32.3	"	"	"	"	
Chrysene	ND	16.1	32.3	"	"	"	"	
Dibenz(a,h)anthracene	ND	16.1	32.3	"	"	"	"	
Fluoranthene	**19.4**	16.1	32.3	"	"	"	"	J
Fluorene	ND	16.1	32.3	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	16.1	32.3	"	"	"	"	
1-Methylnaphthalene	ND	32.3	64.5	"	"	"	"	
2-Methylnaphthalene	ND	32.3	64.5	"	"	"	"	
Naphthalene	ND	32.3	64.5	"	"	"	"	
Phenanthrene	**16.4**	16.1	32.3	"	"	"	"	J
Pyrene	ND	16.1	32.3	"	"	"	"	
Carbazole	ND	24.2	48.4	"	"	"	"	
Dibenzofuran	ND	16.1	32.3	"	"	"	"	
4-Chloro-3-methylphenol	ND	161	323	"	"	"	"	
2-Chlorophenol	ND	80.7	161	"	"	"	"	
2,4-Dichlorophenol	ND	80.7	161	"	"	"	"	
2,4-Dimethylphenol	ND	80.7	161	"	"	"	"	
2,4-Dinitrophenol	ND	403	807	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	403	807	"	"	"	"	
2-Methylphenol	ND	40.3	80.7	"	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-3 (A6H0642-03RE2)			**Matrix: Soil**		**Batch: 6080741**			R-04
3+4-Methylphenol(s)	**67.6**	40.3	80.7	ug/kg dry	10	"	EPA 8270D	J
2-Nitrophenol	ND	161	323	"	"	"	"	
4-Nitrophenol	ND	161	323	"	"	"	"	
Pentachlorophenol (PCP)	ND	161	323	"	"	"	"	
Phenol	ND	32.3	64.5	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	80.7	161	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	80.7	161	"	"	"	"	
2,4,5-Trichlorophenol	ND	80.7	161	"	"	"	"	
2,4,6-Trichlorophenol	ND	80.7	161	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	242	484	"	"	"	"	
Butyl benzyl phthalate	ND	161	323	"	"	"	"	
Diethylphthalate	ND	161	323	"	"	"	"	
Dimethylphthalate	ND	161	323	"	"	"	"	
Di-n-butylphthalate	ND	161	323	"	"	"	"	
Di-n-octyl phthalate	ND	161	323	"	"	"	"	
N-Nitrosodimethylamine	ND	40.3	80.7	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	40.3	80.7	"	"	"	"	
N-Nitrosodiphenylamine	ND	40.3	80.7	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	40.3	80.7	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	40.3	80.7	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	40.3	80.7	"	"	"	"	
Hexachlorobenzene	ND	16.1	32.3	"	"	"	"	
Hexachlorobutadiene	ND	40.3	80.7	"	"	"	"	
Hexachlorocyclopentadiene	ND	80.7	161	"	"	"	"	Q-42
Hexachloroethane	ND	40.3	80.7	"	"	"	"	
2-Chloronaphthalene	ND	16.1	32.3	"	"	"	"	
1,2-Dichlorobenzene	ND	40.3	80.7	"	"	"	"	
1,3-Dichlorobenzene	ND	40.3	80.7	"	"	"	"	
1,4-Dichlorobenzene	ND	40.3	80.7	"	"	"	"	
1,2,4-Trichlorobenzene	ND	40.3	80.7	"	"	"	"	
4-Bromophenyl phenyl ether	ND	40.3	80.7	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	40.3	80.7	"	"	"	"	
Aniline	ND	80.7	161	"	"	"	"	
4-Chloroaniline	ND	40.3	80.7	"	"	"	"	Q-42
2-Nitroaniline	ND	323	645	"	"	"	"	
3-Nitroaniline	ND	323	645	"	"	"	"	Q-42
4-Nitroaniline	ND	323	645	"	"	"	"	Q-42

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-3 (A6H0642-03RE2)			**Matrix: Soil**		**Batch: 6080741**			R-04
Nitrobenzene	ND	161	323	ug/kg dry	10	"	EPA 8270D	
2,4-Dinitrotoluene	ND	161	323	"	"	"	"	
2,6-Dinitrotoluene	ND	161	323	"	"	"	"	
Benzoic acid	ND	2020	4030	"	"	"	"	
Benzyl alcohol	ND	80.7	161	"	"	"	"	
Isophorone	ND	40.3	80.7	"	"	"	"	
Azobenzene (1,2-DPH)	ND	40.3	80.7	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	403	807	"	"	"	"	
3,3'-Dichlorobenzidine	ND	161	323	"	"	"	"	Q-42
1,2-Dinitrobenzene	ND	403	807	"	"	"	"	
1,3-Dinitrobenzene	ND	403	807	"	"	"	"	
1,4-Dinitrobenzene	ND	403	807	"	"	"	"	
Pyridine	ND	80.7	161	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 97 %*	*Limits: 37-122 %*	"	"	"	*Q-41*
2-Fluorobiphenyl (Surr)			*86 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*89 %*	*Limits: 33-122 %*	"	"	"	*Q-41*
p-Terphenyl-d14 (Surr)			*93 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*79 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*114 %*	*Limits: 39-132 %*	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01)			**Matrix: Soil**					
Batch: 6080753								
Arsenic	**2.72**	0.669	1.34	mg/kg dry	10	08/22/16 19:57	EPA 6020A	
Cadmium	**0.294**	0.134	0.268	"	"	"	"	
Chromium	**13.0**	0.669	1.34	"	"	"	"	
Copper	**23.4**	0.669	1.34	"	"	"	"	
Lead	**9.66**	0.134	0.268	"	"	"	"	
Mercury	ND	0.0535	0.107	"	"	"	"	
Nickel	**11.7**	0.669	1.34	"	"	"	"	
Selenium	**1.47**	1.34	2.68	"	"	"	"	J
Silver	ND	0.134	0.268	"	"	"	"	
Zinc	**74.9**	2.68	5.35	"	"	"	"	
8.17.16-Topsoil-3 (A6H0642-03)			**Matrix: Soil**					
Batch: 6080753								
Arsenic	**2.46**	0.668	1.34	mg/kg dry	10	08/22/16 20:00	EPA 6020A	
Cadmium	**0.267**	0.134	0.267	"	"	"	"	
Chromium	**12.4**	0.668	1.34	"	"	"	"	
Copper	**25.9**	0.668	1.34	"	"	"	"	
Lead	**10.5**	0.134	0.267	"	"	"	"	
Mercury	ND	0.0534	0.107	"	"	"	"	
Nickel	**10.5**	0.668	1.34	"	"	"	"	
Selenium	**1.42**	1.34	2.67	"	"	"	"	J
Silver	ND	0.134	0.267	"	"	"	"	
Zinc	**80.3**	2.67	5.34	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8.17.16-Topsoil-1 (A6H0642-01)			**Matrix: Soil**		**Batch: 6080767**			
% Solids	**82.5**	1.00	1.00	% by Weight	1	08/23/16 08:36	EPA 8000C	
8.17.16-Topsoil-3 (A6H0642-03)			**Matrix: Soil**		**Batch: 6080767**			
% Solids	**79.5**	1.00	1.00	% by Weight	1	08/23/16 08:36	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080756 - EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)							**Soil**					
Blank (6080756-BLK1)					Prepared: 08/22/16 10:09		Analyzed: 08/22/16 18:28					
NWTPH-Dx/SG												
Diesel	ND	11.4	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	22.7	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6080756-BS1)					Prepared: 08/22/16 10:09		Analyzed: 08/22/16 18:54					
NWTPH-Dx/SG												
Diesel	112	12.5	25.0	mg/kg wet	1	125	---	90	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6080756-DUP1)					Prepared: 08/22/16 10:09		Analyzed: 08/22/16 19:47					
QC Source Sample: 8.17.16-Topsoil-1 (A6H0642-01)												
NWTPH-Dx/SG												
Diesel	ND	14.6	29.2	mg/kg dry	1	---	21.5	---	---	***	30%	
Oil	**53.0**	29.2	58.5	"	"	---	39.4	---	---	29	30%	J
Surr: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080764 - EPA 3546							**Soil**					
Blank (6080764-BLK1)					Prepared: 08/22/16 12:16		Analyzed: 08/23/16 08:34					C-07
EPA 8082A												
Aroclor 1016	ND	0.648	1.29	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.648	1.29	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 100 %*	*Limits: 44-120 %*			*Dilution: 1x*					
LCS (6080764-BS1)					Prepared: 08/22/16 12:16		Analyzed: 08/23/16 08:52					C-07
EPA 8082A												
Aroclor 1016	46.3	0.670	1.33	ug/kg wet	1	83.3	---	56	47-134%	---	---	
Aroclor 1260	68.3	0.670	1.33	"	"	"	---	82	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 99 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Duplicate (6080764-DUP1)					Prepared: 08/22/16 12:16		Analyzed: 08/23/16 10:20					C-07
QC Source Sample: 8.17.16-Topsoil-1 (A6H0642-01)												
EPA 8082A												
Aroclor 1016	ND	0.798	1.58	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	0.798	1.58	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	1.58	1.58	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	0.798	1.58	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	0.798	1.58	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	1.58	1.58	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	0.798	1.58	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 80 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Matrix Spike (6080764-MS1)					Prepared: 08/22/16 12:16		Analyzed: 08/23/16 11:31					C-07
QC Source Sample: 8.17.16-Topsoil-3 (A6H0642-03)												
EPA 8082A												
Aroclor 1016	59.5	0.842	1.67	ug/kg dry	1	105	ND	57	47-134%	---	---	
Aroclor 1260	69.1	0.842	1.67	"	"	"	ND	66	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 44-120 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080817 - EPA 3546							**Soil**					
Blank (6080817-BLK1)						Prepared: 08/23/16 12:30	Analyzed: 08/25/16 11:19					
EPA 8081B												
Aldrin	ND	0.417	0.833	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.417	0.833	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.417	0.833	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.417	0.833	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.417	0.833	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.417	0.833	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.417	0.833	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.417	0.833	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Endrin	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.417	0.833	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 89 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*106 %*	*65-151 %*			*"*					
Blank (6080817-BLK2)						Prepared: 08/23/16 12:30	Analyzed: 08/26/16 13:23					
EPA 8081B												
4,4'-DDT	ND	0.417	0.833	ug/kg wet	1	---	---	---	---	---	---	
Methoxychlor	ND	1.25	2.50	"	"	---	---	---	---	---	---	
LCS (6080817-BS1)						Prepared: 08/23/16 12:30	Analyzed: 08/25/16 11:36					
EPA 8081B												
Aldrin	50.4	0.500	1.00	ug/kg wet	1	50.0	---	101	45-136%	---	---	
alpha-BHC	52.6	0.500	1.00	"	"	"	---	105	45-137%	---	---	Q-41
beta-BHC	59.3	0.500	1.00	"	"	"	---	119	50-136%	---	---	Q-41
delta-BHC	59.7	0.500	1.00	"	"	"	---	119	47-139%	---	---	Q-41
gamma-BHC (Lindane)	54.5	0.500	1.00	"	"	"	---	109	49-135%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080817 - EPA 3546							**Soil**					
LCS (6080817-BS1)					Prepared: 08/23/16 12:30		Analyzed: 08/25/16 11:36					
cis-Chlordane	51.8	0.500	1.00	ug/kg wet	"	"	---	104	54-133%	---	---	
trans-Chlordane	53.2	0.500	1.00	"	"	"	---	106	53-135%	---	---	
4,4'-DDD	57.0	0.500	1.00	"	"	"	---	114	56-139%	---	---	Q-41
4,4'-DDE	55.0	0.500	1.00	"	"	"	---	110	56-134%	---	---	
Dieldrin	54.4	0.500	1.00	"	"	"	---	109	56-136%	---	---	
Endosulfan I	50.4	0.500	1.00	"	"	"	---	101	52-132%	---	---	
Endosulfan II	56.0	0.500	1.00	"	"	"	---	112	53-134%	---	---	
Endosulfan sulfate	56.2	0.500	1.00	"	"	"	---	112	55-136%	---	---	
Endrin	60.2	0.500	1.00	"	"	"	---	120	56-140%	---	---	
Endrin Aldehyde	58.6	0.500	1.00	"	"	"	---	117	35-137%	---	---	
Endrin ketone	55.8	0.500	1.00	"	"	"	---	112	55-136%	---	---	Q-41
Heptachlor	50.9	0.500	1.00	"	"	"	---	102	47-136%	---	---	
Heptachlor epoxide	49.5	0.500	1.00	"	"	"	---	99	52-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 88 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*103 %*		*65-151 %*			*"*				
LCS (6080817-BS2)					Prepared: 08/23/16 12:30		Analyzed: 08/26/16 13:40					
EPA 8081B												
4,4'-DDT	56.0	0.500	1.00	ug/kg wet	1	50.0	---	112	50-141%	---	---	
Methoxychlor	66.1	1.50	3.00	"	"	"	---	132	52-143%	---	---	Q-41
Duplicate (6080817-DUP1)					Prepared: 08/23/16 12:30		Analyzed: 08/25/16 13:38					
QC Source Sample: 8.17.16-Topsoil-1 (A6H0642-01)												
EPA 8081B												
Aldrin	ND	0.545	1.09	ug/kg dry	1	---	0.558	---	---	***	30%	
alpha-BHC	ND	0.545	1.09	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	1.09	1.09	"	"	---	1.41	---	---	***	30%	
delta-BHC	ND	1.09	1.09	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	0.545	1.09	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.09	1.09	"	"	---	ND	---	---	---	30%	
trans-Chlordane	ND	0.545	1.09	"	"	---	0.558	---	---	***	30%	
4,4'-DDD	ND	1.09	1.09	"	"	---	ND	---	---	---	30%	
4,4'-DDE	ND	1.31	1.31	"	"	---	1.68	---	---	***	30%	R-02
Dieldrin	ND	1.09	1.09	"	"	---	ND	---	---	---	30%	
Endosulfan I	ND	1.09	1.09	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	1.09	1.09	"	"	---	1.32	---	---	***	30%	

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080817 - EPA 3546							**Soil**					
Duplicate (6080817-DUP1)					Prepared: 08/23/16 12:30 Analyzed: 08/25/16 13:38							
QC Source Sample: 8.17.16-Topsoil-1 (A6H0642-01)												
Endosulfan sulfate	ND	1.42	1.42	ug/kg dry	"	---	1.82	---	---	***	30%	R-02
Endrin	ND	1.09	1.09	"	"	---	1.13	---	---	***	30%	
Endrin Aldehyde	ND	1.63	1.63	"	"	---	2.27	---	---	***	30%	R-02
Endrin ketone	ND	1.63	1.63	"	"	---	1.98	---	---	***	30%	R-02
Heptachlor	ND	1.09	1.09	"	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	1.09	1.09	"	"	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	16.3	32.7	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	16.3	32.7	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*82 %*	*65-151 %*			*"*					
Matrix Spike (6080817-MS1)					Prepared: 08/23/16 12:30 Analyzed: 08/25/16 12:11							
QC Source Sample: Other (A6H0662-03)												
EPA 8081B												
Aldrin	41.7	0.510	1.02	ug/kg dry	1	51.0	ND	82	45-136%	---	---	
alpha-BHC	44.3	0.510	1.02	"	"	"	ND	87	45-137%	---	---	Q-41
beta-BHC	52.5	0.510	1.02	"	"	"	ND	103	50-136%	---	---	Q-41
delta-BHC	51.9	0.510	1.02	"	"	"	ND	102	47-139%	---	---	Q-41
gamma-BHC (Lindane)	47.7	0.510	1.02	"	"	"	ND	94	49-135%	---	---	
cis-Chlordane	49.0	0.510	1.02	"	"	"	ND	96	54-133%	---	---	
trans-Chlordane	42.4	0.510	1.02	"	"	"	ND	83	53-135%	---	---	
4,4'-DDD	52.0	0.510	1.02	"	"	"	ND	102	56-139%	---	---	Q-41
4,4'-DDE	58.9	0.510	1.02	"	"	"	5.47	105	56-134%	---	---	
Dieldrin	46.2	0.510	1.02	"	"	"	ND	91	56-136%	---	---	
Endosulfan I	44.9	0.510	1.02	"	"	"	ND	88	52-132%	---	---	
Endosulfan II	50.7	0.510	1.02	"	"	"	ND	100	53-134%	---	---	
Endosulfan sulfate	48.8	0.510	1.02	"	"	"	ND	96	55-136%	---	---	
Endrin	57.1	0.510	1.02	"	"	"	ND	112	56-140%	---	---	
Endrin Aldehyde	53.9	0.510	1.02	"	"	"	ND	106	35-137%	---	---	
Endrin ketone	49.9	0.510	1.02	"	"	"	ND	98	55-136%	---	---	Q-41
Heptachlor	45.5	0.510	1.02	"	"	"	ND	89	47-136%	---	---	
Heptachlor epoxide	43.3	0.510	1.02	"	"	"	ND	85	52-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*77 %*	*65-151 %*			*"*					

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080817 - EPA 3546							**Soil**					
Matrix Spike (6080817-MS2)					Prepared: 08/23/16 12:30		Analyzed: 08/26/16 14:15					
QC Source Sample: Other (A6H0662-03RE1)												
EPA 8081B												
4,4'-DDT	68.3	0.510	1.02	ug/kg dry	1	51.0	2.76	129	50-141%	---	---	
Methoxychlor	80.4	1.53	3.06	"	"	"	ND	158	52-143%	---	---	Q-41

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6081060 - EPA 3546							**Soil**					
Blank (6081060-BLK1)					Prepared: 08/23/16 12:30		Analyzed: 08/30/16 14:49					C-05
EPA 8081B												
4,4'-DDT	ND	0.833	1.67	ug/kg wet	1	---	---	---	---	---	---	
Methoxychlor	ND	2.50	5.00	"	"	---	---	---	---	---	---	
LCS (6081060-BS1)					Prepared: 08/23/16 12:30		Analyzed: 08/30/16 15:07					C-05
EPA 8081B												
4,4'-DDT	58.3	1.00	2.00	ug/kg wet	1	50.0	---	117	50-141%	---	---	Q-41
Methoxychlor	69.6	3.00	6.00	"	"	"	---	139	52-143%	---	---	Q-41
Duplicate (6081060-DUP1)					Prepared: 08/23/16 12:30		Analyzed: 08/30/16 15:41					C-05
QC Source Sample: 8.17.16-Topsoil-1 (A6H0642-01RE2)												
EPA 8081B												
4,4'-DDT	ND	2.18	2.18	ug/kg dry	1	---	ND	---	---	---	30%	
Methoxychlor	ND	3.27	6.53	"	"	---	ND	---	---	---	30%	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Blank (6080741-BLK2)					Prepared: 08/22/16 07:09		Analyzed: 08/22/16 14:12					
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Blank (6080741-BLK2)					Prepared: 08/22/16 07:09 Analyzed: 08/22/16 14:12							
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Blank (6080741-BLK2)					Prepared: 08/22/16 07:09 Analyzed: 08/22/16 14:12							
Isophorone	ND	3.12	6.25	ug/kg wet	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 92 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*94 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*96 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*108 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*88 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*89 %*	*39-132 %*			*"*					
LCS (6080741-BS3)					Prepared: 08/22/16 07:09 Analyzed: 08/23/16 11:36							
EPA 8270D												
Acenaphthene	545	2.66	5.34	ug/kg wet	2	533	---	102	40-122%	---	---	
Acenaphthylene	531	2.66	5.34	"	"	"	---	99	32-132%	---	---	
Anthracene	556	2.66	5.34	"	"	"	---	104	47-123%	---	---	
Benz(a)anthracene	538	2.66	5.34	"	"	"	---	101	49-126%	---	---	
Benzo(a)pyrene	559	4.00	8.00	"	"	"	---	105	45-129%	---	---	
Benzo(b)fluoranthene	607	4.00	8.00	"	"	"	---	114	45-132%	---	---	
Benzo(k)fluoranthene	563	4.00	8.00	"	"	"	---	106	47-132%	---	---	
Benzo(g,h,i)perylene	532	2.66	5.34	"	"	"	---	100	43-134%	---	---	
Chrysene	546	2.66	5.34	"	"	"	---	102	50-124%	---	---	
Dibenz(a,h)anthracene	520	2.66	5.34	"	"	"	---	97	45-134%	---	---	
Fluoranthene	612	2.66	5.34	"	"	"	---	115	50-127%	---	---	
Fluorene	574	2.66	5.34	"	"	"	---	108	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	494	2.66	5.34	"	"	"	---	93	45-133%	---	---	
1-Methylnaphthalene	544	5.34	10.7	"	"	"	---	102	40-120%	---	---	
2-Methylnaphthalene	541	5.34	10.7	"	"	"	---	102	38-122%	---	---	
Naphthalene	528	5.34	10.7	"	"	"	---	99	35-123%	---	---	
Phenanthrene	526	2.66	5.34	"	"	"	---	99	50-121%	---	---	
Pyrene	594	2.66	5.34	"	"	"	---	111	47-127%	---	---	
Carbazole	568	4.00	8.00	"	"	"	---	106	50-122%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
LCS (6080741-BS3)					Prepared: 08/22/16 07:09		Analyzed: 08/23/16 11:36					
Dibenzofuran	561	2.66	5.34	ug/kg wet	"	"	---	105	44-120%	---	---	
4-Chloro-3-methylphenol	596	26.6	53.4	"	"	"	---	112	45-122%	---	---	
2-Chlorophenol	537	13.3	26.6	"	"	"	---	101	34-121%	---	---	
2,4-Dichlorophenol	567	13.3	26.6	"	"	"	---	106	40-122%	---	---	
2,4-Dimethylphenol	610	13.3	26.6	"	"	"	---	114	30-127%	---	---	
2,4-Dinitrophenol	527	66.6	133	"	"	"	---	99	5-137%	---	---	
4,6-Dinitro-2-methylphenol	615	66.6	133	"	"	"	---	115	29-132%	---	---	
2-Methylphenol	575	6.66	13.3	"	"	"	---	108	32-122%	---	---	
3+4-Methylphenol(s)	543	6.66	13.3	"	"	"	---	102	34-120%	---	---	
2-Nitrophenol	549	26.6	53.4	"	"	"	---	103	36-123%	---	---	
4-Nitrophenol	461	26.6	53.4	"	"	"	---	86	30-132%	---	---	Q-31
Pentachlorophenol (PCP)	564	26.6	53.4	"	"	"	---	106	25-133%	---	---	
Phenol	540	5.34	10.7	"	"	"	---	101	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	638	13.3	26.6	"	"	"	---	120	44-125%	---	---	Q-41
2,3,5,6-Tetrachlorophenol	608	13.3	26.6	"	"	"	---	114	40-120%	---	---	
2,4,5-Trichlorophenol	565	13.3	26.6	"	"	"	---	106	41-124%	---	---	
2,4,6-Trichlorophenol	566	13.3	26.6	"	"	"	---	106	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	503	40.0	80.0	"	"	"	---	94	51-133%	---	---	
Butyl benzyl phthalate	524	26.6	53.4	"	"	"	---	98	48-132%	---	---	
Diethylphthalate	591	26.6	53.4	"	"	"	---	111	50-124%	---	---	
Dimethylphthalate	562	26.6	53.4	"	"	"	---	105	48-124%	---	---	
Di-n-butylphthalate	595	26.6	53.4	"	"	"	---	112	51-128%	---	---	
Di-n-octyl phthalate	501	26.6	53.4	"	"	"	---	94	44-140%	---	---	
N-Nitrosodimethylamine	509	6.66	13.3	"	"	"	---	95	23-120%	---	---	
N-Nitroso-di-n-propylamine	629	6.66	13.3	"	"	"	---	118	36-120%	---	---	Q-41
N-Nitrosodiphenylamine	554	6.66	13.3	"	"	"	---	104	38-127%	---	---	
Bis(2-Chloroethoxy) methane	561	6.66	13.3	"	"	"	---	105	36-121%	---	---	
Bis(2-Chloroethyl) ether	500	6.66	13.3	"	"	"	---	94	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	640	6.66	13.3	"	"	"	---	120	33-131%	---	---	Q-41
Hexachlorobenzene	658	2.66	5.34	"	"	"	---	123	44-122%	---	---	Q-29, Q-41
Hexachlorobutadiene	633	6.66	13.3	"	"	"	---	119	32-123%	---	---	Q-41
Hexachlorocyclopentadiene	606	13.3	26.6	"	"	"	---	114	5-140%	---	---	Q-41
Hexachloroethane	560	6.66	13.3	"	"	"	---	105	28-120%	---	---	
2-Chloronaphthalene	517	2.66	5.34	"	"	"	---	97	41-120%	---	---	
1,2-Dichlorobenzene	495	6.66	13.3	"	"	"	---	93	33-120%	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
LCS (6080741-BS3)					Prepared: 08/22/16 07:09		Analyzed: 08/23/16 11:36					
1,3-Dichlorobenzene	503	6.66	13.3	ug/kg wet	"	"	---	94	30-120%	---	---	
1,4-Dichlorobenzene	494	6.66	13.3	"	"	"	---	93	31-120%	---	---	
1,2,4-Trichlorobenzene	535	6.66	13.3	"	"	"	---	100	34-120%	---	---	
4-Bromophenyl phenyl ether	624	6.66	13.3	"	"	"	---	117	46-124%	---	---	
4-Chlorophenyl phenyl ether	603	6.66	13.3	"	"	"	---	113	45-121%	---	---	
Aniline	491	13.3	26.6	"	"	"	---	92	7-120%	---	---	
4-Chloroaniline	372	6.66	13.3	"	"	"	---	70	16-120%	---	---	
2-Nitroaniline	568	53.4	107	"	"	"	---	106	44-127%	---	---	
3-Nitroaniline	443	53.4	107	"	"	"	---	83	33-120%	---	---	
4-Nitroaniline	568	53.4	107	"	"	"	---	106	35-120%	---	---	
Nitrobenzene	555	26.6	53.4	"	"	"	---	104	34-122%	---	---	Q-41
2,4-Dinitrotoluene	605	26.6	53.4	"	"	"	---	113	48-126%	---	---	
2,6-Dinitrotoluene	581	26.6	53.4	"	"	"	---	109	46-124%	---	---	
Benzoic acid	259	200	200	"	"	1070	---	24	5-140%	---	---	
Benzyl alcohol	554	13.3	26.6	"	"	533	---	104	29-122%	---	---	
Isophorone	632	6.66	13.3	"	"	"	---	118	30-122%	---	---	Q-41
Azobenzene (1,2-DPH)	558	6.66	13.3	"	"	"	---	105	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	499	66.6	133	"	"	"	---	94	60-121%	---	---	
3,3'-Dichlorobenzidine	1590	26.6	53.4	"	"	1070	---	149	22-121%	---	---	Q-29, Q-41
1,2-Dinitrobenzene	557	66.6	133	"	"	533	---	104	44-120%	---	---	
1,3-Dinitrobenzene	569	66.6	133	"	"	"	---	107	42-127%	---	---	
1,4-Dinitrobenzene	551	66.6	133	"	"	"	---	103	37-132%	---	---	
Pyridine	490	13.3	26.6	"	"	"	---	92	5-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 106 %*	*Limits: 37-122 %*			*Dilution: 2x*					
2-Fluorobiphenyl (Surr)			*108 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*111 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*118 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*105 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*144 %*	*39-132 %*			*"*					*Q-41, S-06*
Duplicate (6080741-DUP4)					Prepared: 08/22/16 07:09		Analyzed: 08/24/16 18:54					
QC Source Sample: Other (A6H0609-01RE2)												
EPA 8270D												
Acenaphthene	ND	1.47	2.94	ug/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Anthracene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Duplicate (6080741-DUP4)					Prepared: 08/22/16 07:09 Analyzed: 08/24/16 18:54							
QC Source Sample: Other (A6H0609-01RE2)												
Benz(a)anthracene	ND	1.47	2.94	ug/kg dry	"	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	2.20	4.41	"	"	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	2.20	4.41	"	"	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	2.20	4.41	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Chrysene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Fluoranthene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Fluorene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	2.94	5.87	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	2.94	5.87	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	2.94	5.87	"	"	---	ND	---	---	---	30%	
Phenanthrene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Pyrene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Carbazole	ND	2.20	4.41	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	36.7	73.5	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	36.7	73.5	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
2-Nitrophenol	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
Phenol	ND	2.94	5.87	"	"	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	22.0	44.1	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Duplicate (6080741-DUP4)					Prepared: 08/22/16 07:09 Analyzed: 08/24/16 18:54							
QC Source Sample: Other (A6H0609-01RE2)												
Butyl benzyl phthalate	ND	14.7	29.4	ug/kg dry	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	1.47	2.94	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
Aniline	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	29.4	58.7	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	29.4	58.7	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	29.4	58.7	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
Benzoic acid	ND	184	367	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
Isophorone	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	3.67	7.35	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Duplicate (6080741-DUP4)					Prepared: 08/22/16 07:09		Analyzed: 08/24/16 18:54					
QC Source Sample: Other (A6H0609-01RE2)												
Bis(2-Ethylhexyl) adipate	ND	36.7	73.5	ug/kg dry	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	14.7	29.4	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	36.7	73.5	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	36.7	73.5	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	36.7	73.5	"	"	---	ND	---	---	---	30%	
Pyridine	ND	7.35	14.7	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 75 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*74 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*79 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*96 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*65 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*91 %*		*39-132 %*		*"*					
Matrix Spike (6080741-MS2)					Prepared: 08/22/16 07:09		Analyzed: 08/24/16 17:00					
QC Source Sample: 8.17.16-Topsoil-3 (A6H0642-03RE1)												
EPA 8270D												
Acenaphthene	552	32.5	65.3	ug/kg dry	20	652	ND	85	40-122%	---	---	
Acenaphthylene	556	32.5	65.3	"	"	"	ND	85	32-132%	---	---	
Anthracene	600	32.5	65.3	"	"	"	ND	92	47-123%	---	---	
Benz(a)anthracene	597	32.5	65.3	"	"	"	ND	92	49-126%	---	---	
Benzo(a)pyrene	609	48.9	97.8	"	"	"	ND	93	45-129%	---	---	
Benzo(b)fluoranthene	600	48.9	97.8	"	"	"	ND	92	45-132%	---	---	
Benzo(k)fluoranthene	601	48.9	97.8	"	"	"	ND	92	47-132%	---	---	
Benzo(g,h,i)perylene	610	32.5	65.3	"	"	"	ND	94	43-134%	---	---	
Chrysene	596	32.5	65.3	"	"	"	ND	91	50-124%	---	---	
Dibenz(a,h)anthracene	565	32.5	65.3	"	"	"	ND	87	45-134%	---	---	
Fluoranthene	619	32.5	65.3	"	"	"	ND	95	50-127%	---	---	
Fluorene	588	32.5	65.3	"	"	"	ND	90	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	579	32.5	65.3	"	"	"	ND	89	45-133%	---	---	
1-Methylnaphthalene	532	65.3	130	"	"	"	ND	82	40-120%	---	---	
2-Methylnaphthalene	538	65.3	130	"	"	"	ND	83	38-122%	---	---	
Naphthalene	516	65.3	130	"	"	"	ND	79	35-123%	---	---	
Phenanthrene	604	32.5	65.3	"	"	"	ND	93	50-121%	---	---	
Pyrene	611	32.5	65.3	"	"	"	ND	94	47-127%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Matrix Spike (6080741-MS2)					Prepared: 08/22/16 07:09	Analyzed: 08/24/16 17:00						
QC Source Sample: 8.17.16-Topsoil-3 (A6H0642-03RE1)												
Carbazole	661	48.9	97.8	ug/kg dry	"	"	ND	101	50-122%	---	---	
Dibenzofuran	580	32.5	65.3	"	"	"	ND	89	44-120%	---	---	
4-Chloro-3-methylphenol	620	325	325	"	"	"	ND	95	45-122%	---	---	
2-Chlorophenol	531	163	325	"	"	"	ND	81	34-121%	---	---	
2,4-Dichlorophenol	611	163	325	"	"	"	ND	94	40-122%	---	---	
2,4-Dimethylphenol	456	163	325	"	"	"	ND	70	30-127%	---	---	
2,4-Dinitrophenol	489	244	244	"	"	"	ND	75	5-137%	---	---	
4,6-Dinitro-2-methylphenol	847	814	814	"	"	"	ND	130	29-132%	---	---	
2-Methylphenol	566	81.4	163	"	"	"	ND	87	32-122%	---	---	
3+4-Methylphenol(s)	681	81.4	163	"	"	"	ND	104	34-120%	---	---	
2-Nitrophenol	602	325	325	"	"	"	ND	92	36-123%	---	---	Q-41
4-Nitrophenol	504	325	325	"	"	"	ND	77	30-132%	---	---	
Pentachlorophenol (PCP)	839	325	653	"	"	"	ND	129	25-133%	---	---	
Phenol	537	65.3	130	"	"	"	ND	82	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	701	163	325	"	"	"	ND	107	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	725	163	325	"	"	"	ND	111	40-120%	---	---	
2,4,5-Trichlorophenol	687	163	325	"	"	"	ND	105	41-124%	---	---	
2,4,6-Trichlorophenol	674	163	325	"	"	"	ND	103	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	677	489	489	"	"	"	ND	104	51-133%	---	---	
Butyl benzyl phthalate	659	325	653	"	"	"	ND	101	48-132%	---	---	
Diethylphthalate	593	325	325	"	"	"	ND	91	50-124%	---	---	
Dimethylphthalate	582	325	325	"	"	"	ND	89	48-124%	---	---	
Di-n-butylphthalate	621	325	325	"	"	"	ND	95	51-128%	---	---	
Di-n-octyl phthalate	753	325	653	"	"	"	ND	116	44-140%	---	---	
N-Nitrosodimethylamine	441	81.4	163	"	"	"	ND	68	23-120%	---	---	
N-Nitroso-di-n-propylamine	591	81.4	163	"	"	"	ND	91	36-120%	---	---	
N-Nitrosodiphenylamine	575	81.4	163	"	"	"	ND	88	38-127%	---	---	
Bis(2-Chloroethoxy) methane	523	81.4	163	"	"	"	ND	80	36-121%	---	---	
Bis(2-Chloroethyl) ether	500	81.4	163	"	"	"	ND	77	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	541	81.4	163	"	"	"	ND	83	33-131%	---	---	
Hexachlorobenzene	534	32.5	65.3	"	"	"	ND	82	44-122%	---	---	
Hexachlorobutadiene	476	81.4	163	"	"	"	ND	73	32-123%	---	---	
Hexachlorocyclopentadiene	30.8	24.4	24.4	"	"	"	ND	5	5-140%	---	---	Q-01
Hexachloroethane	397	81.4	163	"	"	"	ND	61	28-120%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080741 - EPA 3546							**Soil**					
Matrix Spike (6080741-MS2)					Prepared: 08/22/16 07:09	Analyzed: 08/24/16 17:00						
QC Source Sample: 8.17.16-Topsoil-3 (A6H0642-03RE1)												
2-Chloronaphthalene	546	32.5	65.3	ug/kg dry	"	"	ND	84	41-120%	---	---	
1,2-Dichlorobenzene	455	81.4	163	"	"	"	ND	70	33-120%	---	---	
1,3-Dichlorobenzene	446	81.4	163	"	"	"	ND	68	30-120%	---	---	
1,4-Dichlorobenzene	447	81.4	163	"	"	"	ND	69	31-120%	---	---	
1,2,4-Trichlorobenzene	479	81.4	163	"	"	"	ND	73	34-120%	---	---	
4-Bromophenyl phenyl ether	603	81.4	163	"	"	"	ND	92	46-124%	---	---	
4-Chlorophenyl phenyl ether	561	81.4	163	"	"	"	ND	86	45-121%	---	---	
Aniline	103	24.4	24.4	"	"	"	ND	16	7-120%	---	---	
4-Chloroaniline	55.9	24.4	24.4	"	"	"	ND	9	16-120%	---	---	Q-01
2-Nitroaniline	638	24.4	24.4	"	"	"	185	70	44-127%	---	---	
3-Nitroaniline	69.0	24.4	24.4	"	"	"	ND	11	33-120%	---	---	Q-01
4-Nitroaniline	198	24.4	24.4	"	"	"	ND	30	35-120%	---	---	Q-01
Nitrobenzene	545	325	325	"	"	"	ND	84	34-122%	---	---	
2,4-Dinitrotoluene	610	325	325	"	"	"	ND	94	48-126%	---	---	
2,6-Dinitrotoluene	567	325	325	"	"	"	ND	87	46-124%	---	---	
Benzoic acid	1620	1220	1220	"	"	1300	1590	2	5-140%	---	---	Q-31
Benzyl alcohol	581	163	325	"	"	652	ND	89	29-122%	---	---	
Isophorone	547	81.4	163	"	"	"	ND	84	30-122%	---	---	
Azobenzene (1,2-DPH)	642	81.4	163	"	"	"	ND	98	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	605	24.4	24.4	"	"	"	ND	93	60-121%	---	---	
3,3'-Dichlorobenzidine	ND	325	653	"	"	1300	ND		22-121%	---	---	Q-01
1,2-Dinitrobenzene	737	24.4	24.4	"	"	652	ND	113	44-120%	---	---	
1,3-Dinitrobenzene	644	24.4	24.4	"	"	"	ND	99	42-127%	---	---	
1,4-Dinitrobenzene	641	24.4	24.4	"	"	"	ND	98	37-132%	---	---	
Pyridine	285	163	163	"	"	"	ND	44	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 83 %*	*Limits: 37-122 %*	*Dilution: 20x*
2-Fluorobiphenyl (Surr)	*83 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*80 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*91 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*69 %*	*35-115 %*	*"*
2,4,6-Tribromophenol (Surr)	*125 %*	*39-132 %*	*"*

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080753 - EPA 3051A							**Soil**					
Blank (6080753-BLK1)					Prepared: 08/22/16 09:25		Analyzed: 08/22/16 18:23					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	1.00	2.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6080753-BS1)					Prepared: 08/22/16 09:25		Analyzed: 08/22/16 18:29					
EPA 6020A												
Arsenic	50.0	0.500	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Cadmium	49.6	0.100	0.200	"	"	"	---	99	"	---	---	
Chromium	49.6	0.500	1.00	"	"	"	---	99	"	---	---	
Copper	50.8	0.500	1.00	"	"	"	---	102	"	---	---	
Lead	50.9	0.100	0.200	"	"	"	---	102	"	---	---	
Mercury	1.01	0.0400	0.0800	"	"	1.00	---	101	"	---	---	
Nickel	50.0	0.500	1.00	"	"	50.0	---	100	"	---	---	
Selenium	27.2	1.00	2.00	"	"	25.0	---	109	"	---	---	
Silver	24.8	0.100	0.200	"	"	"	---	99	"	---	---	
Zinc	50.9	2.00	4.00	"	"	50.0	---	102	"	---	---	
Duplicate (6080753-DUP1)					Prepared: 08/22/16 09:25		Analyzed: 08/22/16 18:44					
QC Source Sample: Other (A6H0429-03)												
EPA 6020A												
Arsenic	**4.76**	0.543	1.09	mg/kg dry	10	---	4.32	---	---	10	40%	
Cadmium	**0.250**	0.109	0.217	"	"	---	0.231	---	---	8	40%	
Chromium	**19.7**	0.543	1.09	"	"	---	16.8	---	---	16	40%	
Copper	**19.5**	0.543	1.09	"	"	---	18.6	---	---	5	40%	
Lead	**9.54**	0.109	0.217	"	"	---	8.18	---	---	15	40%	
Mercury	ND	0.0435	0.0869	"	"	---	ND	---	---	---	40%	
Nickel	**12.3**	0.543	1.09	"	"	---	11.9	---	---	4	40%	
Selenium	ND	1.09	2.17	"	"	---	ND	---	---	---	40%	

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080753 - EPA 3051A							**Soil**					
Duplicate (6080753-DUP1)					Prepared: 08/22/16 09:25		Analyzed: 08/22/16 18:44					
QC Source Sample: Other (A6H0429-03)												
Silver	ND	0.109	0.217	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**116**	2.17	4.35	"	"	---	109	---	---	6	40%	
Matrix Spike (6080753-MS1)					Prepared: 08/22/16 09:25		Analyzed: 08/22/16 18:59					
QC Source Sample: Other (A6H0429-04)												
EPA 6020A												
Arsenic	55.8	0.559	1.12	mg/kg dry	10	55.9	2.46	95	75-125%	---	---	
Cadmium	55.7	0.112	0.224	"	"	"	0.250	99	"	---	---	
Chromium	67.9	0.559	1.12	"	"	"	14.4	96	"	---	---	
Copper	69.3	0.559	1.12	"	"	"	15.9	95	"	---	---	
Lead	64.1	0.112	0.224	"	"	"	10.6	96	"	---	---	
Mercury	1.04	0.0447	0.0895	"	"	1.12	ND	93	"	---	---	
Nickel	64.9	0.559	1.12	"	"	55.9	12.3	94	"	---	---	
Selenium	27.6	1.12	2.24	"	"	27.9	ND	99	"	---	---	
Silver	27.3	0.112	0.224	"	"	"	ND	98	"	---	---	
Zinc	273	2.24	4.47	"	"	55.9	227	83	"	---	---	
Matrix Spike (6080753-MS2)					Prepared: 08/22/16 09:25		Analyzed: 08/22/16 20:03					
QC Source Sample: 8.17.16-Topsoil-3 (A6H0642-03)												
EPA 6020A												
Arsenic	68.6	0.675	1.35	mg/kg dry	10	67.5	2.46	98	75-125%	---	---	
Cadmium	69.1	0.135	0.270	"	"	"	0.267	102	"	---	---	
Chromium	79.3	0.675	1.35	"	"	"	12.4	99	"	---	---	
Copper	95.0	0.675	1.35	"	"	"	25.9	102	"	---	---	
Lead	76.3	0.135	0.270	"	"	"	10.5	97	"	---	---	
Mercury	1.32	0.0540	0.108	"	"	1.35	ND	98	"	---	---	
Nickel	79.3	0.675	1.35	"	"	67.5	10.5	102	"	---	---	
Selenium	34.9	1.35	2.70	"	"	33.7	1.42	99	"	---	---	
Silver	33.9	0.135	0.270	"	"	"	ND	101	"	---	---	
Zinc	149	2.70	5.40	"	"	67.5	80.3	102	"	---	---	

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Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080767 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6080767-DUP1)					Prepared: 08/22/16 12:40		Analyzed: 08/23/16 08:36					
QC Source Sample: Other (A6H0601-16)												
EPA 8000C												
% Solids	**97.8**	1.00	1.00	% by Weight	1	---	97.3	---	---	0.5	10%	
Duplicate (6080767-DUP2)					Prepared: 08/22/16 12:40		Analyzed: 08/23/16 08:36					
QC Source Sample: Other (A6H0601-37)												
EPA 8000C												
% Solids	**93.8**	1.00	1.00	% by Weight	1	---	94.5	---	---	0.7	10%	
Duplicate (6080767-DUP3)					Prepared: 08/22/16 12:40		Analyzed: 08/23/16 08:36					
QC Source Sample: Other (A6H0601-55)												
EPA 8000C												
% Solids	**86.8**	1.00	1.00	% by Weight	1	---	86.7	---	---	0.02	10%	
Duplicate (6080767-DUP4)					Prepared: 08/22/16 12:40		Analyzed: 08/23/16 08:36					
QC Source Sample: Other (A6H0646-01)												
EPA 8000C												
% Solids	**90.7**	1.00	1.00	% by Weight	1	---	90.2	---	---	0.5	10%	
Duplicate (6080767-DUP5)					Prepared: 08/22/16 20:06		Analyzed: 08/23/16 08:36					
QC Source Sample: Other (A6H0684-05)												
EPA 8000C												
% Solids	**78.3**	1.00	1.00	% by Weight	1	---	77.1	---	---	2	10%	
Duplicate (6080767-DUP6)					Prepared: 08/22/16 20:06		Analyzed: 08/23/16 08:36					
QC Source Sample: Other (A6H0691-01)												
EPA 8000C												
% Solids	**83.6**	1.00	1.00	% by Weight	1	---	83.4	---	---	0.2	10%	

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Prep: EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080756							
A6H0642-01	Soil	NWTPH-Dx/SG	08/17/16 14:35	08/22/16 10:09	10.61g/5mL	10g/5mL	0.94
A6H0642-03	Soil	NWTPH-Dx/SG	08/17/16 14:55	08/22/16 10:09	10.42g/5mL	10g/5mL	0.96

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080764							
A6H0642-01	Soil	EPA 8082A	08/17/16 14:35	08/22/16 12:16	30.57g/2mL	30g/2mL	0.98
A6H0642-03	Soil	EPA 8082A	08/17/16 14:55	08/22/16 12:16	30.34g/2mL	30g/2mL	0.99

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080817							
A6H0642-01	Soil	EPA 8081B	08/17/16 14:35	08/23/16 12:30	11.07g/5mL	10g/5mL	0.90
A6H0642-03	Soil	EPA 8081B	08/17/16 14:55	08/23/16 12:30	11.26g/5mL	10g/5mL	0.89
Batch: 6081060							
A6H0642-01RE1	Soil	EPA 8081B	08/17/16 14:35	08/23/16 12:30	11.07g/10mL	10g/5mL	1.81
A6H0642-03RE1	Soil	EPA 8081B	08/17/16 14:55	08/23/16 12:30	11.26g/10mL	10g/5mL	1.78

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080741							
A6H0642-01RE1	Soil	EPA 8270D	08/17/16 14:35	08/22/16 07:09	15.57g/2mL	15g/2mL	0.96
A6H0642-03RE1	Soil	EPA 8270D	08/17/16 14:55	08/22/16 07:09	15.6g/2mL	15g/2mL	0.96

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080753							

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SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6H0642-01	Soil	EPA 6020A	08/17/16 14:35	08/22/16 09:25	0.453g/50mL	0.5g/50mL	1.10
A6H0642-03	Soil	EPA 6020A	08/17/16 14:55	08/22/16 09:25	0.471g/50mL	0.5g/50mL	1.06

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6080767							
A6H0642-01	Soil	EPA 8000C	08/17/16 14:35	08/22/16 12:40	1N/A/1N/A	1N/A/1N/A	NA
A6H0642-03	Soil	EPA 8000C	08/17/16 14:55	08/22/16 12:40	1N/A/1N/A	1N/A/1N/A	NA

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Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
R-04	Reporting levels elevated due to dilution necessary for analysis.
S-06	Surrogate recovery is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	09/01/16 16:09

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

Project: **Port of Ridgefield 9003.01.39**
Project Number: Port of Ridgefield 9003.01.39
Project Manager: Phil Wiescher

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Reported:
09/01/16 16:09

APEX LABS — CHAIN OF CUSTODY

Lab # A6H0642 COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: **Name** | Project Mgr: Phil Wiescher | Project Name: Port of Ridgefield OPP | Project #/PO# 9003.01.39

Address: 2001 NW 19th Ave Suite 200, Portland, OR | Phone: (503) 5015209 | Fax: | Email: pwiescher@maulfoster.com

Sampled by: Lindsey Crosby

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Totall Metals EPA 6020 (see comments)	Organochlorine pesticides EPA 8081B	Low Level 8082 PCB Arclors	Low Level 8270D SVOCs	Dioxins/furrans EPA 1613B	TPH-Dx (NWTPH-D/Dx) w/ Silica Gel Cleanup
8.17.16-Topsoil-1		17-Aug	1435	S	2	X	X	X	X	X	X
8.17.16-Topsoil-2		17-Aug	1445	S	2						
8.17.16-Topsoil-3		17-Aug	1455	S	2	X	X	X	X	X	X
8.17.16-Topsoil-4		17-Aug	1510	S	2						

Hold

Hold

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

Metlas: As, Cd, Cr, Pb, Hg, Ni, Se, Ag, Zn, Cu. Please report MDLs. Hold 8.10.16-Topsoil-2.

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature: [signature]	Date: 8/19/16	Signature: [signature]	Date: 8-19-16	Signature:	Date:	Signature:	Date:
Printed Name: Lindsey Crosby	Time: 0800	Printed Name: Alan Peterson	Time: 9:55	Printed Name:	Time:	Printed Name:	Time:
Company: MFA		Company: Apex		Company:		Company:	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Your Project #: A6G0259
Your C.O.C. #: na

Attention:Philip Nerenberg

Apex Laboratories
12232 SW Garden Place
Tigard, OR
USA 97223

Report Date: 2016/07/20
Report #: R4074187
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6E1743
Received: 2016/07/09, 13:11

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Dioxins/Furans in Soil (1613B) (1)	2	2016/07/17	2016/07/19	BRL SOP-00410	EPA 1613B m
Moisture	2	N/A	2016/07/11	CAM SOP-00445	Carter 2nd ed 51.2 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Melissa DiGrazia, Project Manager - ATUT
Email: MDiGrazia@maxxam.ca
Phone# (905) 817-5700
==========
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

RESULTS OF ANALYSES OF SOIL

Maxxam ID		CRF816	CRF817			
Sampling Date		2016/07/06 08:25	2016/07/06 08:32			
COC Number		na	na			
	UNITS	**TOPSOIL 3 A6G0259-01**	**TOPSOIL 4 A6G0259-02**	**RDL**	**MDL**	**QC Batch**
Moisture	%	13	23	1.0	0.50	4572976

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CRF816							
Sampling Date		2016/07/06 08:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	TOPSOIL 3 A6G0259-01	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	<0.152	0.152	1.00	0.400	1.00	0.152	N/A	4582119
1,2,3,7,8-Penta CDD *	pg/g	0.158	0.149	5.00	0.400	1.00	0.158	N/A	4582119
1,2,3,4,7,8-Hexa CDD *	pg/g	0.315	0.136	5.00	0.400	0.100	0.0315	N/A	4582119
1,2,3,6,7,8-Hexa CDD *	pg/g	0.817	0.142	5.00	0.400	0.100	0.0817	N/A	4582119
1,2,3,7,8,9-Hexa CDD *	pg/g	0.800	0.145	5.00	0.400	0.100	0.0800	N/A	4582119
1,2,3,4,6,7,8-Hepta CDD *	pg/g	25.9	0.108	5.00	0.400	0.0100	0.259	N/A	4582119
Octa CDD *	pg/g	314	0.132	10.0	0.800	0.000300	0.0942	N/A	4582119
Total Tetra CDD *	pg/g	0.239	0.152	1.00	0.400	N/A	N/A	1	4582119
Total Penta CDD *	pg/g	0.158	0.149	5.00	0.400	N/A	N/A	1	4582119
Total Hexa CDD *	pg/g	7.57	0.148	5.00	0.400	N/A	N/A	7	4582119
Total Hepta CDD *	pg/g	53.6	0.108	5.00	0.400	N/A	N/A	2	4582119
2,3,7,8-Tetra CDF **	pg/g	<0.200 (1)	0.200	1.00	0.400	0.100	0.0200	N/A	4582119
1,2,3,7,8-Penta CDF **	pg/g	<0.148	0.148	5.00	0.400	0.0300	0.00444	N/A	4582119
2,3,4,7,8-Penta CDF **	pg/g	<0.161 (2)	0.161	5.00	0.400	0.300	0.0483	N/A	4582119
1,2,3,4,7,8-Hexa CDF **	pg/g	0.381	0.153	5.00	0.400	0.100	0.0381	N/A	4582119
1,2,3,6,7,8-Hexa CDF **	pg/g	0.165	0.159	5.00	0.400	0.100	0.0165	N/A	4582119
2,3,4,6,7,8-Hexa CDF **	pg/g	0.252	0.139	5.00	0.400	0.100	0.0252	N/A	4582119
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.156	0.156	5.00	0.400	0.100	0.0156	N/A	4582119
1,2,3,4,6,7,8-Hepta CDF **	pg/g	3.26	0.153	5.00	0.400	0.0100	0.0326	N/A	4582119
1,2,3,4,7,8,9-Hepta CDF **	pg/g	<0.225 (2)	0.225	5.00	0.400	0.0100	0.00225	N/A	4582119
Octa CDF **	pg/g	9.84	0.130	10.0	0.800	0.000300	0.00295	N/A	4582119
Total Tetra CDF **	pg/g	0.379	0.143	1.00	0.400	N/A	N/A	2	4582119
Total Penta CDF **	pg/g	<0.161 (2)	0.161	5.00	0.400	N/A	N/A	0	4582119
Total Hexa CDF **	pg/g	3.42	0.151	5.00	0.400	N/A	N/A	5	4582119
Total Hepta CDF **	pg/g	10.3	0.153	5.00	0.400	N/A	N/A	2	4582119
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.06	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CRF816							
Sampling Date		2016/07/06 08:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	TOPSOIL 3 A6G0259-01	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-1234678 HeptaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-1234678 HeptaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123478 HexaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123478 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-1234789 HeptaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123678 HexaCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123678 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-12378 PentaCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-12378 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123789 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-234678 HexaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-23478 PentaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-2378 TetraCDD *	%	55	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-2378 TetraCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-OCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4582119

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CRF817							
Sampling Date		2016/07/06 08:32							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	TOPSOIL 4 A6G0259-02	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	<0.153	0.153	1.00	0.400	1.00	0.153	N/A	4582119
1,2,3,7,8-Penta CDD *	pg/g	<0.179	0.179	5.00	0.400	1.00	0.179	N/A	4582119
1,2,3,4,7,8-Hexa CDD *	pg/g	0.428	0.110	5.00	0.400	0.100	0.0428	N/A	4582119
1,2,3,6,7,8-Hexa CDD *	pg/g	0.948	0.115	5.00	0.400	0.100	0.0948	N/A	4582119
1,2,3,7,8,9-Hexa CDD *	pg/g	1.18	0.117	5.00	0.400	0.100	0.118	N/A	4582119
1,2,3,4,6,7,8-Hepta CDD *	pg/g	27.7	0.129	5.00	0.400	0.0100	0.277	N/A	4582119
Octa CDD *	pg/g	296	0.137	10.0	0.800	0.000300	0.0888	N/A	4582119
Total Tetra CDD *	pg/g	<0.258 (1)	0.258	1.00	0.400	N/A	N/A	0	4582119
Total Penta CDD *	pg/g	<0.179	0.179	5.00	0.400	N/A	N/A	0	4582119
Total Hexa CDD *	pg/g	10.6	0.119	5.00	0.400	N/A	N/A	7	4582119
Total Hepta CDD *	pg/g	56.3	0.129	5.00	0.400	N/A	N/A	2	4582119
2,3,7,8-Tetra CDF **	pg/g	<0.157 (1)	0.157	1.00	0.400	0.100	0.0157	N/A	4582119
1,2,3,7,8-Penta CDF **	pg/g	<0.157	0.157	5.00	0.400	0.0300	0.00471	N/A	4582119
2,3,4,7,8-Penta CDF **	pg/g	<0.156	0.156	5.00	0.400	0.300	0.0468	N/A	4582119
1,2,3,4,7,8-Hexa CDF **	pg/g	0.300	0.151	5.00	0.400	0.100	0.0300	N/A	4582119
1,2,3,6,7,8-Hexa CDF **	pg/g	0.200	0.157	5.00	0.400	0.100	0.0200	N/A	4582119
2,3,4,6,7,8-Hexa CDF **	pg/g	0.219	0.138	5.00	0.400	0.100	0.0219	N/A	4582119
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.155 (1)	0.155	5.00	0.400	0.100	0.0155	N/A	4582119
1,2,3,4,6,7,8-Hepta CDF **	pg/g	2.82	0.132	5.00	0.400	0.0100	0.0282	N/A	4582119
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.234	0.131	5.00	0.400	0.0100	0.00234	N/A	4582119
Octa CDF **	pg/g	9.16	0.124	10.0	0.800	0.000300	0.00275	N/A	4582119
Total Tetra CDF **	pg/g	<0.157 (1)	0.157	1.00	0.400	N/A	N/A	0	4582119
Total Penta CDF **	pg/g	<0.157	0.157	5.00	0.400	N/A	N/A	0	4582119
Total Hexa CDF **	pg/g	3.16	0.150	5.00	0.400	N/A	N/A	5	4582119
Total Hepta CDF **	pg/g	9.72	0.132	5.00	0.400	N/A	N/A	3	4582119
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.14	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CRF817							
Sampling Date		2016/07/06 08:32							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	TOPSOIL 4 A6G0259-02	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	61	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-1234678 HeptaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-1234678 HeptaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123478 HexaCDD *	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123478 HexaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-1234789 HeptaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123678 HexaCDD *	%	58	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123678 HexaCDF **	%	56	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-12378 PentaCDD *	%	65	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-12378 PentaCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-123789 HexaCDF **	%	64	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-234678 HexaCDF **	%	57	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-23478 PentaCDF **	%	57	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-2378 TetraCDD *	%	48	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-2378 TetraCDF **	%	56	N/A	N/A	N/A	N/A	N/A	N/A	4582119
C13-OCDD *	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4582119

EDL = Estimated Detection Limit

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

TEST SUMMARY

Maxxam ID: CRF816
Sample ID: TOPSOIL 3 A6G0259-01
Matrix: Soil

Collected: 2016/07/06
Shipped:
Received: 2016/07/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	4582119	2016/07/17	2016/07/19	Cathy Xu
Moisture	BAL	4572976	N/A	2016/07/11	Valentina Kaftani

Maxxam ID: CRF817
Sample ID: TOPSOIL 4 A6G0259-02
Matrix: Soil

Collected: 2016/07/06
Shipped:
Received: 2016/07/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	4582119	2016/07/17	2016/07/19	Cathy Xu
Moisture	BAL	4572976	N/A	2016/07/11	Valentina Kaftani

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.7°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4572976	NS3	RPD - Sample/Sample Dup	Moisture	2016/07/11	5.9		%	20
4582119	CXU	Matrix Spike	37CL4 2378 Tetra CDD	2016/07/19		76	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/19		95	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/19		87	%	28 - 143
			C13-123478 HexaCDD	2016/07/19		88	%	32 - 141
			C13-123478 HexaCDF	2016/07/19		87	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/19		87	%	26 - 138
			C13-123678 HexaCDD	2016/07/19		72	%	28 - 130
			C13-123678 HexaCDF	2016/07/19		78	%	26 - 123
			C13-12378 PentaCDD	2016/07/19		84	%	25 - 181
			C13-12378 PentaCDF	2016/07/19		81	%	24 - 185
			C13-123789 HexaCDF	2016/07/19		82	%	29 - 147
			C13-234678 HexaCDF	2016/07/19		76	%	28 - 136
			C13-23478 PentaCDF	2016/07/19		74	%	21 - 178
			C13-2378 TetraCDD	2016/07/19		60	%	25 - 164
			C13-2378 TetraCDF	2016/07/19		71	%	24 - 169
			C13-OCDD	2016/07/19		89	%	17 - 157
4582119	CXU	Matrix Spike(CRF817)	2,3,7,8-Tetra CDD	2016/07/19		105	%	67 - 158
			1,2,3,7,8-Penta CDD	2016/07/19		86	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2016/07/19		96	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2016/07/19		107	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2016/07/19		110	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2016/07/19		90	%	70 - 140
			Octa CDD	2016/07/19		109	%	78 - 144
			2,3,7,8-Tetra CDF	2016/07/19		107	%	75 - 158
			1,2,3,7,8-Penta CDF	2016/07/19		102	%	80 - 134
			2,3,4,7,8-Penta CDF	2016/07/19		103	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2016/07/19		105	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2016/07/19		106	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2016/07/19		102	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2016/07/19		104	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2016/07/19		108	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2016/07/19		113	%	78 - 138
			Octa CDF	2016/07/19		108	%	63 - 170
4582119	CXU	Spiked Blank	37CL4 2378 Tetra CDD	2016/07/19		80	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/19		82	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/19		83	%	28 - 143
			C13-123478 HexaCDD	2016/07/19		76	%	32 - 141
			C13-123478 HexaCDF	2016/07/19		77	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/19		79	%	26 - 138
			C13-123678 HexaCDD	2016/07/19		68	%	28 - 130
			C13-123678 HexaCDF	2016/07/19		73	%	26 - 123
			C13-12378 PentaCDD	2016/07/19		80	%	25 - 181
			C13-12378 PentaCDF	2016/07/19		78	%	24 - 185
			C13-123789 HexaCDF	2016/07/19		78	%	29 - 147
			C13-234678 HexaCDF	2016/07/19		71	%	28 - 136
			C13-23478 PentaCDF	2016/07/19		71	%	21 - 178
			C13-2378 TetraCDD	2016/07/19		59	%	25 - 164
			C13-2378 TetraCDF	2016/07/19		71	%	24 - 169
			C13-OCDD	2016/07/19		67	%	17 - 157
			2,3,7,8-Tetra CDD	2016/07/19		103	%	67 - 158
			1,2,3,7,8-Penta CDD	2016/07/19		85	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2016/07/19		96	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2016/07/19		108	%	76 - 134

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDD	2016/07/19		113	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2016/07/19		93	%	70 - 140
			Octa CDD	2016/07/19		112	%	78 - 144
			2,3,7,8-Tetra CDF	2016/07/19		111	%	75 - 158
			1,2,3,7,8-Penta CDF	2016/07/19		101	%	80 - 134
			2,3,4,7,8-Penta CDF	2016/07/19		104	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2016/07/19		103	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2016/07/19		105	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2016/07/19		100	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2016/07/19		101	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2016/07/19		107	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2016/07/19		108	%	78 - 138
			Octa CDF	2016/07/19		113	%	63 - 170
4582119	CXU	Spiked Blank DUP	37CL4 2378 Tetra CDD	2016/07/19		68	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/19		88	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/19		81	%	28 - 143
			C13-123478 HexaCDD	2016/07/19		83	%	32 - 141
			C13-123478 HexaCDF	2016/07/19		80	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/19		86	%	26 - 138
			C13-123678 HexaCDD	2016/07/19		66	%	28 - 130
			C13-123678 HexaCDF	2016/07/19		67	%	26 - 123
			C13-12378 PentaCDD	2016/07/19		79	%	25 - 181
			C13-12378 PentaCDF	2016/07/19		73	%	24 - 185
			C13-123789 HexaCDF	2016/07/19		80	%	29 - 147
			C13-234678 HexaCDF	2016/07/19		73	%	28 - 136
			C13-23478 PentaCDF	2016/07/19		72	%	21 - 178
			C13-2378 TetraCDD	2016/07/19		51	%	25 - 164
			C13-2378 TetraCDF	2016/07/19		63	%	24 - 169
			C13-OCDD	2016/07/19		72	%	17 - 157
			2,3,7,8-Tetra CDD	2016/07/19		106	%	67 - 158
			1,2,3,7,8-Penta CDD	2016/07/19		87	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2016/07/19		102	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2016/07/19		121	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2016/07/19		107	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2016/07/19		106	%	70 - 140
			Octa CDD	2016/07/19		120	%	78 - 144
			2,3,7,8-Tetra CDF	2016/07/19		110	%	75 - 158
			1,2,3,7,8-Penta CDF	2016/07/19		111	%	80 - 134
			2,3,4,7,8-Penta CDF	2016/07/19		110	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2016/07/19		108	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2016/07/19		115	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2016/07/19		107	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2016/07/19		102	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2016/07/19		113	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2016/07/19		116	%	78 - 138
			Octa CDF	2016/07/19		118	%	63 - 170
4582119	CXU	RPD	2,3,7,8-Tetra CDD	2016/07/19	2.9		%	25
			1,2,3,7,8-Penta CDD	2016/07/19	2.3		%	25
			1,2,3,4,7,8-Hexa CDD	2016/07/19	6.1		%	25
			1,2,3,6,7,8-Hexa CDD	2016/07/19	11		%	25
			1,2,3,7,8,9-Hexa CDD	2016/07/19	5.5		%	25
			1,2,3,4,6,7,8-Hepta CDD	2016/07/19	13		%	25
			Octa CDD	2016/07/19	6.9		%	25
			2,3,7,8-Tetra CDF	2016/07/19	0.90		%	25

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8-Penta CDF	2016/07/19	9.4		%	25
			2,3,4,7,8-Penta CDF	2016/07/19	5.6		%	25
			1,2,3,4,7,8-Hexa CDF	2016/07/19	4.7		%	25
			1,2,3,6,7,8-Hexa CDF	2016/07/19	9.1		%	25
			2,3,4,6,7,8-Hexa CDF	2016/07/19	6.8		%	25
			1,2,3,7,8,9-Hexa CDF	2016/07/19	0.99		%	25
			1,2,3,4,6,7,8-Hepta CDF	2016/07/19	5.5		%	25
			1,2,3,4,7,8,9-Hepta CDF	2016/07/19	7.1		%	25
			Octa CDF	2016/07/19	4.3		%	25
4582119	CXU	Method Blank	37CL4 2378 Tetra CDD	2016/07/19		83	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/19		94	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/19		86	%	28 - 143
			C13-123478 HexaCDD	2016/07/19		88	%	32 - 141
			C13-123478 HexaCDF	2016/07/19		82	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/19		95	%	26 - 138
			C13-123678 HexaCDD	2016/07/19		76	%	28 - 130
			C13-123678 HexaCDF	2016/07/19		73	%	26 - 123
			C13-12378 PentaCDD	2016/07/19		93	%	25 - 181
			C13-12378 PentaCDF	2016/07/19		82	%	24 - 185
			C13-123789 HexaCDF	2016/07/19		85	%	29 - 147
			C13-234678 HexaCDF	2016/07/19		84	%	28 - 136
			C13-23478 PentaCDF	2016/07/19		80	%	21 - 178
			C13-2378 TetraCDD	2016/07/19		67	%	25 - 164
			C13-2378 TetraCDF	2016/07/19		77	%	24 - 169
			C13-OCDD	2016/07/19		84	%	17 - 157
			2,3,7,8-Tetra CDD	2016/07/19	<0.121, EDL=0.121		pg/g	
			1,2,3,7,8-Penta CDD	2016/07/19	<0.147, EDL=0.147		pg/g	
			1,2,3,4,7,8-Hexa CDD	2016/07/19	<0.141, EDL=0.141 (1)		pg/g	
			1,2,3,6,7,8-Hexa CDD	2016/07/19	<0.127, EDL=0.127 (1)		pg/g	
			1,2,3,7,8,9-Hexa CDD	2016/07/19	0.158, EDL=0.106		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2016/07/19	0.223, EDL=0.115		pg/g	
			Octa CDD	2016/07/19	2.06, EDL=0.148		pg/g	
			Total Tetra CDD	2016/07/19	<0.121, EDL=0.121		pg/g	
			Total Penta CDD	2016/07/19	<0.147, EDL=0.147		pg/g	
			Total Hexa CDD	2016/07/19	0.158, EDL=0.108		pg/g	
			Total Hepta CDD	2016/07/19	0.223, EDL=0.115		pg/g	
			2,3,7,8-Tetra CDF	2016/07/19	<0.124, EDL=0.124		pg/g	
			1,2,3,7,8-Penta CDF	2016/07/19	<0.134, EDL=0.134		pg/g	
			2,3,4,7,8-Penta CDF	2016/07/19	<0.133, EDL=0.133		pg/g	

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Maxxam Job #: B6E1743
Report Date: 2016/07/20

Apex Laboratories
Client Project #: A6G0259

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,4,7,8-Hexa CDF	2016/07/19	0.176, EDL=0.131		pg/g	
			1,2,3,6,7,8-Hexa CDF	2016/07/19	0.147, EDL=0.136		pg/g	
			2,3,4,6,7,8-Hexa CDF	2016/07/19	0.156, EDL=0.120		pg/g	
			1,2,3,7,8,9-Hexa CDF	2016/07/19	<0.204, EDL=0.204 (1)		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2016/07/19	0.166, EDL=0.110		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2016/07/19	0.148, EDL=0.109		pg/g	
			Octa CDF	2016/07/19	<0.259, EDL=0.259 (1)		pg/g	
			Total Tetra CDF	2016/07/19	<0.124, EDL=0.124		pg/g	
			Total Penta CDF	2016/07/19	<0.134, EDL=0.134		pg/g	
			Total Hexa CDF	2016/07/19	0.479, EDL=0.130		pg/g	
			Total Hepta CDF	2016/07/19	0.314, EDL=0.109		pg/g	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6E1743
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Apex Laboratories
Client Project #: A6G0259

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, Scientific Specialist

Kay Shaw, C. Chem, Sr Scientific Specialist, HRMS Services

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam
A Bureau Veritas Group Company

Your Project #: A6G0572
Your C.O.C. #: na

Attention:Philip Nerenberg

Apex Laboratories
12232 SW Garden Place
Tigard, OR
USA 97223

Report Date: 2016/07/30
Report #: R4087382
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6E8269
Received: 2016/07/16, 12:50

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Dioxins/Furans in Soil (1613B) (1)	4	2016/07/26	2016/07/29	BRL SOP-00410	EPA 1613B m
2378TCDF Confirmation (M8290A/M1613)	2	N/A	2016/07/30	BRL SOP-00406	EPA M8290A / M1613
Moisture	4	N/A	2016/07/18	CAM SOP-00445	Carter 2nd ed 51.2 m

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Melissa DiGrazia, Project Manager - ATUT
Email: MDiGrazia@maxxam.ca
Phone# (905) 817-5700
==========
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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

RESULTS OF ANALYSES OF SOIL

Maxxam ID		CSI563	CSI564	CSI565	CSI566			
Sampling Date		2016/07/13 16:30	2016/07/13 16:40	2016/07/15 08:55	2016/07/15 09:10			
COC Number		na	na	na	na			
	UNITS	**7/13 COMPOST-1**	**7/13 COMPOST-2**	**7/15 SANDY LOAM-1**	**7/15 SANDY LOAM-2**	**RDL**	**MDL**	**QC Batch**
Moisture	%	48	44	14	18	1.0	0.50	4582781

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI563							
Sampling Date		2016/07/13 16:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	7/13 COMPOST-1	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	<0.855 (1)	0.855	1.00	0.400	1.00	0.855	N/A	4599337
1,2,3,7,8-Penta CDD *	pg/g	1.51	0.526	5.00	0.400	1.00	1.51	N/A	4599337
1,2,3,4,7,8-Hexa CDD *	pg/g	3.54	0.572	5.00	0.400	0.100	0.354	N/A	4599337
1,2,3,6,7,8-Hexa CDD *	pg/g	18.1	0.596	5.00	0.400	0.100	1.81	N/A	4599337
1,2,3,7,8,9-Hexa CDD *	pg/g	11.6	0.609	5.00	0.400	0.100	1.16	N/A	4599337
1,2,3,4,6,7,8-Hepta CDD *	pg/g	938	0.427	5.00	0.400	0.0100	9.38	N/A	4599337
Octa CDD *	pg/g	9860 (2)	21.5	100	0.800	0.000300	2.96	N/A	4599337
Total Tetra CDD *	pg/g	1.90	0.332	1.00	0.400	N/A	N/A	2	4599337
Total Penta CDD *	pg/g	10.0	0.526	5.00	0.400	N/A	N/A	6	4599337
Total Hexa CDD *	pg/g	183	0.620	5.00	0.400	N/A	N/A	7	4599337
Total Hepta CDD *	pg/g	1870	0.427	5.00	0.400	N/A	N/A	2	4599337
2,3,7,8-Tetra CDF **	pg/g	2.45	0.176	1.00	0.400	0.100	0.245	N/A	4599337
1,2,3,7,8-Penta CDF **	pg/g	1.21	0.570	5.00	0.400	0.0300	0.0363	N/A	4599337
2,3,4,7,8-Penta CDF **	pg/g	1.50	0.563	5.00	0.400	0.300	0.450	N/A	4599337
1,2,3,4,7,8-Hexa CDF **	pg/g	6.65	0.558	5.00	0.400	0.100	0.665	N/A	4599337
1,2,3,6,7,8-Hexa CDF **	pg/g	3.86	0.580	5.00	0.400	0.100	0.386	N/A	4599337
2,3,4,6,7,8-Hexa CDF **	pg/g	2.96	0.510	5.00	0.400	0.100	0.296	N/A	4599337
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.572	0.572	5.00	0.400	0.100	0.0572	N/A	4599337
1,2,3,4,6,7,8-Hepta CDF **	pg/g	68.4	0.470	5.00	0.400	0.0100	0.684	N/A	4599337
1,2,3,4,7,8,9-Hepta CDF **	pg/g	4.38	0.466	5.00	0.400	0.0100	0.0438	N/A	4599337
Octa CDF **	pg/g	<169 (3)	169	10.0	0.800	0.000300	0.0507	N/A	4599337
Total Tetra CDF **	pg/g	8.59	0.176	1.00	0.400	N/A	N/A	9	4599337
Total Penta CDF **	pg/g	10.2	0.566	5.00	0.400	N/A	N/A	5	4599337
Total Hexa CDF **	pg/g	81.0	0.553	5.00	0.400	N/A	N/A	8	4599337

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.

(2) ** From 10X Dilution **

(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI563							
Sampling Date		2016/07/13 16:30							
COC Number		na				**TOXIC EQUIVALENCY**		# of	
	UNITS	**7/13 COMPOST-1**	**EDL**	**RDL**	**MDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Total Hepta CDF **	pg/g	244	0.468	5.00	0.400	N/A	N/A	3	4599337
Confirmation 2,3,7,8-Tetra CDF **	pg/g	0.77	0.10	1.0	0.90	0.100	0.0770	N/A	4601492
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	20.8	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDD *	%	61	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDF **	%	51	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDD *	%	58	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDF **	%	50	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234789 HeptaCDF **	%	56	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDD *	%	51	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDF **	%	45	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDD *	%	53	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDF **	%	52	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123789 HexaCDF **	%	52	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-234678 HexaCDF **	%	55	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-23478 PentaCDF **	%	48	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDD *	%	47	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDF **	%	49	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-OCDD *	%	46 (1)	N/A	N/A	N/A	N/A	N/A	N/A	4599337
Confirmation C13-2378 TetraCDF **	%	64	N/A	N/A	N/A	N/A	N/A	N/A	4601492

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin
(1) ** From 10X Dilution **

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI564							
Sampling Date		2016/07/13 16:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	7/13 COMPOST-2	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.513	0.264	1.00	0.400	1.00	0.513	N/A	4599337
1,2,3,7,8-Penta CDD *	pg/g	1.39	0.292	5.00	0.400	1.00	1.39	N/A	4599337
1,2,3,4,7,8-Hexa CDD *	pg/g	3.01	0.200	5.00	0.400	0.100	0.301	N/A	4599337
1,2,3,6,7,8-Hexa CDD *	pg/g	16.2	0.209	5.00	0.400	0.100	1.62	N/A	4599337
1,2,3,7,8,9-Hexa CDD *	pg/g	10.7	0.213	5.00	0.400	0.100	1.07	N/A	4599337
1,2,3,4,6,7,8-Hepta CDD *	pg/g	807	0.303	5.00	0.400	0.0100	8.07	N/A	4599337
Octa CDD *	pg/g	9630 (1)	1.82	100	0.800	0.000300	2.89	N/A	4599337
Total Tetra CDD *	pg/g	1.17	0.264	1.00	0.400	N/A	N/A	3	4599337
Total Penta CDD *	pg/g	9.65	0.292	5.00	0.400	N/A	N/A	8	4599337
Total Hexa CDD *	pg/g	164	0.217	5.00	0.400	N/A	N/A	7	4599337
Total Hepta CDD *	pg/g	1850	0.303	5.00	0.400	N/A	N/A	2	4599337
2,3,7,8-Tetra CDF **	pg/g	1.80	0.301	1.00	0.400	0.100	0.180	N/A	4599337
1,2,3,7,8-Penta CDF **	pg/g	1.14	0.286	5.00	0.400	0.0300	0.0342	N/A	4599337
2,3,4,7,8-Penta CDF **	pg/g	1.37	0.283	5.00	0.400	0.300	0.411	N/A	4599337
1,2,3,4,7,8-Hexa CDF **	pg/g	5.96	0.437	5.00	0.400	0.100	0.596	N/A	4599337
1,2,3,6,7,8-Hexa CDF **	pg/g	2.87	0.454	5.00	0.400	0.100	0.287	N/A	4599337
2,3,4,6,7,8-Hexa CDF **	pg/g	2.08	0.399	5.00	0.400	0.100	0.208	N/A	4599337
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.447	0.447	5.00	0.400	0.100	0.0447	N/A	4599337
1,2,3,4,6,7,8-Hepta CDF **	pg/g	59.6	0.307	5.00	0.400	0.0100	0.596	N/A	4599337
1,2,3,4,7,8,9-Hepta CDF **	pg/g	4.69	0.304	5.00	0.400	0.0100	0.0469	N/A	4599337
Octa CDF **	pg/g	161	0.429	10.0	0.800	0.000300	0.0483	N/A	4599337
Total Tetra CDF **	pg/g	5.61	0.301	1.00	0.400	N/A	N/A	6	4599337
Total Penta CDF **	pg/g	9.82	0.285	5.00	0.400	N/A	N/A	6	4599337
Total Hexa CDF **	pg/g	72.1	0.433	5.00	0.400	N/A	N/A	8	4599337
Total Hepta CDF **	pg/g	238	0.306	5.00	0.400	N/A	N/A	3	4599337
Confirmation 2,3,7,8-Tetra CDF **	pg/g	0.64	0.12	1.0	0.90	0.100	0.0640	N/A	4601492
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	18.2	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) ** From 10X Dilution **

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI564							
Sampling Date		2016/07/13 16:40							
COC Number		na				**TOXIC EQUIVALENCY**		# of	
	UNITS	**7/13 COMPOST-2**	**EDL**	**RDL**	**MDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDD *	%	62	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDF **	%	62	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDF **	%	59	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234789 HeptaCDF **	%	44	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDD *	%	59	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDF **	%	53	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDD *	%	65	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDF **	%	60	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123789 HexaCDF **	%	60	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-234678 HexaCDF **	%	64	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-23478 PentaCDF **	%	59	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDD *	%	53	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDF **	%	60	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-OCDD *	%	107 (1)	N/A	N/A	N/A	N/A	N/A	N/A	4599337
Confirmation C13-2378 TetraCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4601492

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) ** From 10X Dilution **

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

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Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI565							
Sampling Date		2016/07/15 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	7/15 SANDY LOAM-1	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	<0.160	0.160	1.00	0.400	1.00	0.160	N/A	4599337
1,2,3,7,8-Penta CDD *	pg/g	0.254	0.232	5.00	0.400	1.00	0.254	N/A	4599337
1,2,3,4,7,8-Hexa CDD *	pg/g	0.502	0.136	5.00	0.400	0.100	0.0502	N/A	4599337
1,2,3,6,7,8-Hexa CDD *	pg/g	2.06	0.142	5.00	0.400	0.100	0.206	N/A	4599337
1,2,3,7,8,9-Hexa CDD *	pg/g	1.38	0.145	5.00	0.400	0.100	0.138	N/A	4599337
1,2,3,4,6,7,8-Hepta CDD *	pg/g	55.7	0.206	5.00	0.400	0.0100	0.557	N/A	4599337
Octa CDD *	pg/g	427	0.303	10.0	0.800	0.000300	0.128	N/A	4599337
Total Tetra CDD *	pg/g	<0.160	0.160	1.00	0.400	N/A	N/A	0	4599337
Total Penta CDD *	pg/g	0.254	0.232	5.00	0.400	N/A	N/A	1	4599337
Total Hexa CDD *	pg/g	12.0	0.148	5.00	0.400	N/A	N/A	7	4599337
Total Hepta CDD *	pg/g	111	0.206	5.00	0.400	N/A	N/A	2	4599337
2,3,7,8-Tetra CDF **	pg/g	0.287	0.153	1.00	0.400	0.100	0.0287	N/A	4599337
1,2,3,7,8-Penta CDF **	pg/g	<0.226 (1)	0.226	5.00	0.400	0.0300	0.00678	N/A	4599337
2,3,4,7,8-Penta CDF **	pg/g	0.263	0.167	5.00	0.400	0.300	0.0789	N/A	4599337
1,2,3,4,7,8-Hexa CDF **	pg/g	1.57	0.156	5.00	0.400	0.100	0.157	N/A	4599337
1,2,3,6,7,8-Hexa CDF **	pg/g	0.520	0.162	5.00	0.400	0.100	0.0520	N/A	4599337
2,3,4,6,7,8-Hexa CDF **	pg/g	0.376	0.143	5.00	0.400	0.100	0.0376	N/A	4599337
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.160	0.160	5.00	0.400	0.100	0.0160	N/A	4599337
1,2,3,4,6,7,8-Hepta CDF **	pg/g	12.7	0.298	5.00	0.400	0.0100	0.127	N/A	4599337
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.785	0.296	5.00	0.400	0.0100	0.00785	N/A	4599337
Octa CDF **	pg/g	35.6	0.238	10.0	0.800	0.000300	0.0107	N/A	4599337
Total Tetra CDF **	pg/g	0.287	0.153	1.00	0.400	N/A	N/A	1	4599337
Total Penta CDF **	pg/g	0.521	0.168	5.00	0.400	N/A	N/A	2	4599337
Total Hexa CDF **	pg/g	17.7	0.155	5.00	0.400	N/A	N/A	7	4599337
Total Hepta CDF **	pg/g	64.0	0.297	5.00	0.400	N/A	N/A	3	4599337
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	2.02	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI565							
Sampling Date		2016/07/15 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	7/15 SANDY LOAM-1	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDD *	%	63	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDF **	%	55	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234789 HeptaCDF **	%	47	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDF **	%	45	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDD *	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123789 HexaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-234678 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-23478 PentaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-OCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4599337

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI566							
Sampling Date		2016/07/15 09:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	7/15 SANDY LOAM-2	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	<0.170	0.170	1.00	0.400	1.00	0.170	N/A	4599337
1,2,3,7,8-Penta CDD *	pg/g	<0.175	0.175	5.00	0.400	1.00	0.175	N/A	4599337
1,2,3,4,7,8-Hexa CDD *	pg/g	0.406	0.145	5.00	0.400	0.100	0.0406	N/A	4599337
1,2,3,6,7,8-Hexa CDD *	pg/g	1.69	0.151	5.00	0.400	0.100	0.169	N/A	4599337
1,2,3,7,8,9-Hexa CDD *	pg/g	1.13	0.154	5.00	0.400	0.100	0.113	N/A	4599337
1,2,3,4,6,7,8-Hepta CDD *	pg/g	40.7	0.204	5.00	0.400	0.0100	0.407	N/A	4599337
Octa CDD *	pg/g	311	0.165	10.0	0.800	0.000300	0.0933	N/A	4599337
Total Tetra CDD *	pg/g	0.183	0.170	1.00	0.400	N/A	N/A	1	4599337
Total Penta CDD *	pg/g	<0.175	0.175	5.00	0.400	N/A	N/A	0	4599337
Total Hexa CDD *	pg/g	10.5	0.157	5.00	0.400	N/A	N/A	6	4599337
Total Hepta CDD *	pg/g	71.9	0.204	5.00	0.400	N/A	N/A	2	4599337
2,3,7,8-Tetra CDF **	pg/g	0.537	0.132	1.00	0.400	0.100	0.0537	N/A	4599337
1,2,3,7,8-Penta CDF **	pg/g	0.239	0.165	5.00	0.400	0.0300	0.00717	N/A	4599337
2,3,4,7,8-Penta CDF **	pg/g	0.322	0.164	5.00	0.400	0.300	0.0966	N/A	4599337
1,2,3,4,7,8-Hexa CDF **	pg/g	1.11	0.151	5.00	0.400	0.100	0.111	N/A	4599337
1,2,3,6,7,8-Hexa CDF **	pg/g	0.446	0.157	5.00	0.400	0.100	0.0446	N/A	4599337
2,3,4,6,7,8-Hexa CDF **	pg/g	0.362	0.138	5.00	0.400	0.100	0.0362	N/A	4599337
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.155	0.155	5.00	0.400	0.100	0.0155	N/A	4599337
1,2,3,4,6,7,8-Hepta CDF **	pg/g	9.95	0.165	5.00	0.400	0.0100	0.0995	N/A	4599337
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.621	0.164	5.00	0.400	0.0100	0.00621	N/A	4599337
Octa CDF **	pg/g	31.9	0.246	10.0	0.800	0.000300	0.00957	N/A	4599337
Total Tetra CDF **	pg/g	1.31	0.132	1.00	0.400	N/A	N/A	4	4599337
Total Penta CDF **	pg/g	1.87	0.165	5.00	0.400	N/A	N/A	7	4599337
Total Hexa CDF **	pg/g	14.4	0.150	5.00	0.400	N/A	N/A	7	4599337
Total Hepta CDF **	pg/g	39.4	0.164	5.00	0.400	N/A	N/A	3	4599337
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.65	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4599337

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI566							
Sampling Date		2016/07/15 09:10							
COC Number		na				**TOXIC EQUIVALENCY**		# of	
	UNITS	**7/15 SANDY LOAM-2**	**EDL**	**RDL**	**MDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
C13-1234678 HeptaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234789 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDF **	%	60	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123789 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-234678 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-23478 PentaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDD *	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-OCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4599337

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI566							
Sampling Date		2016/07/15 09:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	7/15 SANDY LOAM-2 Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.199	0.153	1.00	0.400	1.00	0.199	N/A	4599337
1,2,3,7,8-Penta CDD *	pg/g	0.242	0.188	5.00	0.400	1.00	0.242	N/A	4599337
1,2,3,4,7,8-Hexa CDD *	pg/g	0.341	0.134	5.00	0.400	0.100	0.0341	N/A	4599337
1,2,3,6,7,8-Hexa CDD *	pg/g	1.37	0.140	5.00	0.400	0.100	0.137	N/A	4599337
1,2,3,7,8,9-Hexa CDD *	pg/g	1.03	0.143	5.00	0.400	0.100	0.103	N/A	4599337
1,2,3,4,6,7,8-Hepta CDD *	pg/g	36.3	0.137	5.00	0.400	0.0100	0.363	N/A	4599337
Octa CDD *	pg/g	274	0.151	10.0	0.800	0.000300	0.0822	N/A	4599337
Total Tetra CDD *	pg/g	0.199	0.153	1.00	0.400	N/A	N/A	1	4599337
Total Penta CDD *	pg/g	0.453	0.188	5.00	0.400	N/A	N/A	2	4599337
Total Hexa CDD *	pg/g	10.2	0.145	5.00	0.400	N/A	N/A	7	4599337
Total Hepta CDD *	pg/g	64.5	0.137	5.00	0.400	N/A	N/A	2	4599337
2,3,7,8-Tetra CDF **	pg/g	0.627	0.115	1.00	0.400	0.100	0.0627	N/A	4599337
1,2,3,7,8-Penta CDF **	pg/g	0.269	0.175	5.00	0.400	0.0300	0.00807	N/A	4599337
2,3,4,7,8-Penta CDF **	pg/g	0.372	0.173	5.00	0.400	0.300	0.112	N/A	4599337
1,2,3,4,7,8-Hexa CDF **	pg/g	1.11	0.170	5.00	0.400	0.100	0.111	N/A	4599337
1,2,3,6,7,8-Hexa CDF **	pg/g	0.418	0.177	5.00	0.400	0.100	0.0418	N/A	4599337
2,3,4,6,7,8-Hexa CDF **	pg/g	0.472	0.156	5.00	0.400	0.100	0.0472	N/A	4599337
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.175	0.175	5.00	0.400	0.100	0.0175	N/A	4599337
1,2,3,4,6,7,8-Hepta CDF **	pg/g	6.82	0.142	5.00	0.400	0.0100	0.0682	N/A	4599337
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.491	0.141	5.00	0.400	0.0100	0.00491	N/A	4599337
Octa CDF **	pg/g	17.7	0.143	10.0	0.800	0.000300	0.00531	N/A	4599337
Total Tetra CDF **	pg/g	2.13	0.115	1.00	0.400	N/A	N/A	6	4599337
Total Penta CDF **	pg/g	2.18	0.174	5.00	0.400	N/A	N/A	6	4599337
Total Hexa CDF **	pg/g	10.8	0.169	5.00	0.400	N/A	N/A	7	4599337
Total Hepta CDF **	pg/g	24.1	0.142	5.00	0.400	N/A	N/A	3	4599337
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.64	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

DIOXINS AND FURANS BY HRMS (SOIL)

Maxxam ID		CSI566							
Sampling Date		2016/07/15 09:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	7/15 SANDY LOAM-2 Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234678 HeptaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123478 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-1234789 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDD *	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123678 HexaCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-12378 PentaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-123789 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-234678 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-23478 PentaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-2378 TetraCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4599337
C13-OCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4599337

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

TEST SUMMARY

Maxxam ID: CSI563
Sample ID: 7/13 COMPOST-1
Matrix: Soil

Collected: 2016/07/13
Shipped:
Received: 2016/07/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	4599337	2016/07/26	2016/07/29	Cuong Duc Do
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	4601492	N/A	2016/07/30	Owen Cosby
Moisture	BAL	4582781	N/A	2016/07/18	Valentina Kaftani

Maxxam ID: CSI564
Sample ID: 7/13 COMPOST-2
Matrix: Soil

Collected: 2016/07/13
Shipped:
Received: 2016/07/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	4599337	2016/07/26	2016/07/29	Cuong Duc Do
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	4601492	N/A	2016/07/30	Owen Cosby
Moisture	BAL	4582781	N/A	2016/07/18	Valentina Kaftani

Maxxam ID: CSI565
Sample ID: 7/15 SANDY LOAM-1
Matrix: Soil

Collected: 2016/07/15
Shipped:
Received: 2016/07/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	4599337	2016/07/26	2016/07/29	Cuong Duc Do
Moisture	BAL	4582781	N/A	2016/07/18	Valentina Kaftani

Maxxam ID: CSI566
Sample ID: 7/15 SANDY LOAM-2
Matrix: Soil

Collected: 2016/07/15
Shipped:
Received: 2016/07/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	4599337	2016/07/26	2016/07/29	Cuong Duc Do
Moisture	BAL	4582781	N/A	2016/07/18	Valentina Kaftani

Maxxam ID: CSI566 Dup
Sample ID: 7/15 SANDY LOAM-2
Matrix: Soil

Collected: 2016/07/15
Shipped:
Received: 2016/07/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	4599337	2016/07/26	2016/07/29	Cuong Duc Do

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.1°C

Samples received at an elevated temperature. Consent received to proceed with the analysis.

Results relate only to the items tested.

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4582781	NS3	RPD - Sample/Sample Dup	Moisture	2016/07/18	5.6		%	20
4599337	CD	Matrix Spike	37CL4 2378 Tetra CDD	2016/07/29		86	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/29		91	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/29		65	%	28 - 143
			C13-123478 HexaCDD	2016/07/29		89	%	32 - 141
			C13-123478 HexaCDF	2016/07/29		58	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/29		80	%	26 - 138
			C13-123678 HexaCDD	2016/07/29		78	%	28 - 130
			C13-123678 HexaCDF	2016/07/29		48	%	26 - 123
			C13-12378 PentaCDD	2016/07/29		82	%	25 - 181
			C13-12378 PentaCDF	2016/07/29		75	%	24 - 185
			C13-123789 HexaCDF	2016/07/29		85	%	29 - 147
			C13-234678 HexaCDF	2016/07/29		87	%	28 - 136
			C13-23478 PentaCDF	2016/07/29		74	%	21 - 178
			C13-2378 TetraCDD	2016/07/29		73	%	25 - 164
			C13-2378 TetraCDF	2016/07/29		83	%	24 - 169
			C13-OCDD	2016/07/29		78	%	17 - 157
4599337	CD	Matrix Spike(CSI565)	2,3,7,8-Tetra CDD	2016/07/29		101	%	67 - 158
			1,2,3,7,8-Penta CDD	2016/07/29		86	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2016/07/29		94	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2016/07/29		110	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2016/07/29		120	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2016/07/29		89	%	70 - 140
			Octa CDD	2016/07/29		91	%	78 - 144
			2,3,7,8-Tetra CDF	2016/07/29		108	%	75 - 158
			1,2,3,7,8-Penta CDF	2016/07/29		101	%	80 - 134
			2,3,4,7,8-Penta CDF	2016/07/29		110	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2016/07/29		108	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2016/07/29		114	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2016/07/29		102	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2016/07/29		108	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2016/07/29		108	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2016/07/29		105	%	78 - 138
			Octa CDF	2016/07/29		112	%	63 - 170
4599337	CD	Spiked Blank	37CL4 2378 Tetra CDD	2016/07/29		91	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/29		83	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/29		60	%	28 - 143
			C13-123478 HexaCDD	2016/07/29		84	%	32 - 141
			C13-123478 HexaCDF	2016/07/29		55	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/29		73	%	26 - 138
			C13-123678 HexaCDD	2016/07/29		75	%	28 - 130
			C13-123678 HexaCDF	2016/07/29		50	%	26 - 123
			C13-12378 PentaCDD	2016/07/29		87	%	25 - 181
			C13-12378 PentaCDF	2016/07/29		75	%	24 - 185
			C13-123789 HexaCDF	2016/07/29		72	%	29 - 147
			C13-234678 HexaCDF	2016/07/29		82	%	28 - 136
			C13-23478 PentaCDF	2016/07/29		74	%	21 - 178
			C13-2378 TetraCDD	2016/07/29		73	%	25 - 164
			C13-2378 TetraCDF	2016/07/29		80	%	24 - 169
			C13-OCDD	2016/07/29		68	%	17 - 157
			2,3,7,8-Tetra CDD	2016/07/29		103	%	67 - 158
			1,2,3,7,8-Penta CDD	2016/07/29		84	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2016/07/29		92	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2016/07/29		112	%	76 - 134

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDD	2016/07/29		113	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2016/07/29		93	%	70 - 140
			Octa CDD	2016/07/29		94	%	78 - 144
			2,3,7,8-Tetra CDF	2016/07/29		106	%	75 - 158
			1,2,3,7,8-Penta CDF	2016/07/29		103	%	80 - 134
			2,3,4,7,8-Penta CDF	2016/07/29		112	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2016/07/29		107	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2016/07/29		107	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2016/07/29		102	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2016/07/29		102	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2016/07/29		100	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2016/07/29		104	%	78 - 138
			Octa CDF	2016/07/29		98	%	63 - 170
4599337	CD	Spiked Blank DUP	37CL4 2378 Tetra CDD	2016/07/29		89	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/29		90	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/29		69	%	28 - 143
			C13-123478 HexaCDD	2016/07/29		89	%	32 - 141
			C13-123478 HexaCDF	2016/07/29		64	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/29		87	%	26 - 138
			C13-123678 HexaCDD	2016/07/29		79	%	28 - 130
			C13-123678 HexaCDF	2016/07/29		57	%	26 - 123
			C13-12378 PentaCDD	2016/07/29		87	%	25 - 181
			C13-12378 PentaCDF	2016/07/29		77	%	24 - 185
			C13-123789 HexaCDF	2016/07/29		85	%	29 - 147
			C13-234678 HexaCDF	2016/07/29		85	%	28 - 136
			C13-23478 PentaCDF	2016/07/29		76	%	21 - 178
			C13-2378 TetraCDD	2016/07/29		79	%	25 - 164
			C13-2378 TetraCDF	2016/07/29		79	%	24 - 169
			C13-OCDD	2016/07/29		82	%	17 - 157
			2,3,7,8-Tetra CDD	2016/07/29		104	%	67 - 158
			1,2,3,7,8-Penta CDD	2016/07/29		94	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2016/07/29		102	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2016/07/29		113	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2016/07/29		114	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2016/07/29		108	%	70 - 140
			Octa CDD	2016/07/29		104	%	78 - 144
			2,3,7,8-Tetra CDF	2016/07/29		119	%	75 - 158
			1,2,3,7,8-Penta CDF	2016/07/29		109	%	80 - 134
			2,3,4,7,8-Penta CDF	2016/07/29		116	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2016/07/29		116	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2016/07/29		123	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2016/07/29		116	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2016/07/29		121	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2016/07/29		115	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2016/07/29		106	%	78 - 138
			Octa CDF	2016/07/29		105	%	63 - 170
4599337	CD	RPD	2,3,7,8-Tetra CDD	2016/07/29	0.97		%	25
			1,2,3,7,8-Penta CDD	2016/07/29	11		%	25
			1,2,3,4,7,8-Hexa CDD	2016/07/29	10		%	25
			1,2,3,6,7,8-Hexa CDD	2016/07/29	0.89		%	25
			1,2,3,7,8,9-Hexa CDD	2016/07/29	0.88		%	25
			1,2,3,4,6,7,8-Hepta CDD	2016/07/29	15		%	25
			Octa CDD	2016/07/29	10		%	25
			2,3,7,8-Tetra CDF	2016/07/29	12		%	25

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8-Penta CDF	2016/07/29	5.7		%	25
			2,3,4,7,8-Penta CDF	2016/07/29	3.5		%	25
			1,2,3,4,7,8-Hexa CDF	2016/07/29	8.1		%	25
			1,2,3,6,7,8-Hexa CDF	2016/07/29	14		%	25
			2,3,4,6,7,8-Hexa CDF	2016/07/29	13		%	25
			1,2,3,7,8,9-Hexa CDF	2016/07/29	17		%	25
			1,2,3,4,6,7,8-Hepta CDF	2016/07/29	14		%	25
			1,2,3,4,7,8,9-Hepta CDF	2016/07/29	1.9		%	25
			Octa CDF	2016/07/29	6.9		%	25
4599337	CD	Method Blank	37CL4 2378 Tetra CDD	2016/07/29		93	%	35 - 197
			C13-1234678 HeptaCDD	2016/07/29		97	%	23 - 140
			C13-1234678 HeptaCDF	2016/07/29		64	%	28 - 143
			C13-123478 HexaCDD	2016/07/29		86	%	32 - 141
			C13-123478 HexaCDF	2016/07/29		67	%	26 - 152
			C13-1234789 HeptaCDF	2016/07/29		87	%	26 - 138
			C13-123678 HexaCDD	2016/07/29		75	%	28 - 130
			C13-123678 HexaCDF	2016/07/29		59	%	26 - 123
			C13-12378 PentaCDD	2016/07/29		91	%	25 - 181
			C13-12378 PentaCDF	2016/07/29		85	%	24 - 185
			C13-123789 HexaCDF	2016/07/29		85	%	29 - 147
			C13-234678 HexaCDF	2016/07/29		84	%	28 - 136
			C13-23478 PentaCDF	2016/07/29		80	%	21 - 178
			C13-2378 TetraCDD	2016/07/29		75	%	25 - 164
			C13-2378 TetraCDF	2016/07/29		88	%	24 - 169
			C13-OCDD	2016/07/29		81	%	17 - 157
			2,3,7,8-Tetra CDD	2016/07/29	<0.114, EDL=0.114		pg/g	
			1,2,3,7,8-Penta CDD	2016/07/29	<0.110, EDL=0.110		pg/g	
			1,2,3,4,7,8-Hexa CDD	2016/07/29	<0.0986, EDL=0.0986		pg/g	
			1,2,3,6,7,8-Hexa CDD	2016/07/29	<0.103, EDL=0.103		pg/g	
			1,2,3,7,8,9-Hexa CDD	2016/07/29	<0.105, EDL=0.105		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2016/07/29	<0.138, EDL=0.138		pg/g	
			Octa CDD	2016/07/29	0.359, EDL=0.123		pg/g	
			Total Tetra CDD	2016/07/29	<0.114, EDL=0.114		pg/g	
			Total Penta CDD	2016/07/29	<0.110, EDL=0.110		pg/g	
			Total Hexa CDD	2016/07/29	<0.107, EDL=0.107		pg/g	
			Total Hepta CDD	2016/07/29	<0.138, EDL=0.138		pg/g	
			2,3,7,8-Tetra CDF	2016/07/29	<0.0732, EDL=0.0732		pg/g	
			1,2,3,7,8-Penta CDF	2016/07/29	<0.0724, EDL=0.0724		pg/g	
			2,3,4,7,8-Penta CDF	2016/07/29	<0.0716, EDL=0.0716		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,4,7,8-Hexa CDF	2016/07/29	<0.113, EDL=0.113		pg/g	
			1,2,3,6,7,8-Hexa CDF	2016/07/29	<0.117, EDL=0.117		pg/g	
			2,3,4,6,7,8-Hexa CDF	2016/07/29	<0.103, EDL=0.103		pg/g	
			1,2,3,7,8,9-Hexa CDF	2016/07/29	<0.115, EDL=0.115		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2016/07/29	<0.118, EDL=0.118		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2016/07/29	<0.117, EDL=0.117		pg/g	
			Octa CDF	2016/07/29	<0.117, EDL=0.117		pg/g	
			Total Tetra CDF	2016/07/29	<0.0732, EDL=0.0732		pg/g	
			Total Penta CDF	2016/07/29	<0.0720, EDL=0.0720		pg/g	
			Total Hexa CDF	2016/07/29	<0.112, EDL=0.112		pg/g	
			Total Hepta CDF	2016/07/29	<0.118, EDL=0.118		pg/g	
4599337	CD	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2016/07/29	NC		%	25
			1,2,3,7,8-Penta CDD	2016/07/29	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2016/07/29	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2016/07/29	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2016/07/29	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2016/07/29	11		%	25
			Octa CDD	2016/07/29	13		%	25
			Total Tetra CDD	2016/07/29	NC		%	25
			Total Penta CDD	2016/07/29	NC		%	25
			Total Hexa CDD	2016/07/29	NC		%	25
			Total Hepta CDD	2016/07/29	11		%	25
			2,3,7,8-Tetra CDF	2016/07/29	NC		%	25
			1,2,3,7,8-Penta CDF	2016/07/29	NC		%	25
			2,3,4,7,8-Penta CDF	2016/07/29	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2016/07/29	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2016/07/29	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2016/07/29	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2016/07/29	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2016/07/29	NC		%	25
			1,2,3,4,7,8,9-Hepta CDF	2016/07/29	NC		%	25
			Octa CDF	2016/07/29	NC		%	25
			Total Tetra CDF	2016/07/29	NC		%	25
			Total Penta CDF	2016/07/29	NC		%	25
			Total Hexa CDF	2016/07/29	NC		%	25
			Total Hepta CDF	2016/07/29	NC		%	25
4601492	OBC	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2016/07/30	<0.12, EDL=0.12		pg/g	

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Confirmation C13-2378 TetraCDF	2016/07/30		111	%	40 - 135

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

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Maxxam Job #: B6E8269
Report Date: 2016/07/30

Apex Laboratories
Client Project #: A6G0572

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, Scientific Specialist

Cathy Xu, Senior Analyst, HRMS Services, Senior Analyst, HRMS Services

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

August 11, 2016

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Dioxin & PCB's subcontract
Work Order: 9571
SDG: A6H0119

Dear Mr. Nerenberg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 05, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

SUBCONTRACT ORDER

Apex Laboratories

A6H0119

DA

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
3306 Kitty Hawk Rd Suite 120
Wilmington, NC 28405
Phone :(910) 795-0421
Fax: -

Sample Name: 8.13.16-H&H BLEND-1 **Soil** **Sampled: 08/03/16 11:30** (A6H0119-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)4 oz Glass Jar	~~08/09/16 17:00~~ 8/12 TA	01/30/17 11:30	

Sample Name: 8.3.16-MCF-BLEND-1 **Soil** **Sampled: 08/03/16 11:50** (A6H0119-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)4 oz Glass Jar	~~08/09/16 17:00~~ 8/12	01/30/17 11:50	

5 Day TAT, from receipt.

2.0°C

Released By	Date	Received By	Date
[signature]	8/4/16	UPS (Shipper)	
UPS (Shipper)		[signature] @ CFA	05 AUG 16 @ 1155
Released By	Date	Received By	Date

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 9571
Shipping Company: UPS	Date/Time Received: 05 AUG 16 @ 11:55

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: NA

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 3.3°C − 1.3°C = 2.0°C
4	Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: #2 - 4 oz clear glass
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: AS Date: 05 AUG 16

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A6H0119
Work Order 9571

Method/Analysis Information

Product:	**Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3540C
Analytical Batch Number:	32492
Clean Up Batch Number:	32490
Extraction Batch Number:	32489

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
9571001	8.3.16-H&H Blend-1
9571002	8.3.16-MCF-Blend-1
12016605	Method Blank (MB)
12016606	Laboratory Control Sample (LCS)
12016607	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6H0119 CFA Work Order: 9571

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 11 AUG 2016 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9571001**	**Date Collected:**	**08/03/2016 11:30**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**08/05/2016 11:55**	**%Moisture:**	**15.6**
Client ID:	**8.3.16-H&H Blend-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/10/2016 10:50**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A10AUG16A-3**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**13.59 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.209	pg/g	0.183	0.871
40321-76-4	1,2,3,7,8-PeCDD	J	0.354	pg/g	0.235	4.36
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.615	pg/g	0.251	4.36
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.00	pg/g	0.235	4.36
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.47	pg/g	0.247	4.36
35822-46-9	1,2,3,4,6,7,8-HpCDD		65.9	pg/g	0.870	4.36
3268-87-9	1,2,3,4,6,7,8,9-OCDD		622	pg/g	2.07	8.71
51207-31-9	2,3,7,8-TCDF	J	0.378	pg/g	0.322	0.871
57117-41-6	1,2,3,7,8-PeCDF	J	0.232	pg/g	0.120	4.36
57117-31-4	2,3,4,7,8-PeCDF	J	0.680	pg/g	0.112	4.36
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.746	pg/g	0.228	4.36
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.486	pg/g	0.227	4.36
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.727	pg/g	0.234	4.36
72918-21-9	1,2,3,7,8,9-HxCDF	U	.347	pg/g	0.347	4.36
67562-39-4	1,2,3,4,6,7,8-HpCDF		6.33	pg/g	0.308	4.36
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.551	pg/g	0.551	4.36
39001-02-0	1,2,3,4,6,7,8,9-OCDF		15.0	pg/g	1.39	8.71
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		2.68	pg/g	0.183	0.871
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	3.30	pg/g	0.235	4.36
34465-46-8	Total Hexachlorodibenzo-p-dioxin		17.5	pg/g	0.235	4.36
37871-00-4	Total Heptachlorodibenzo-p-dioxin		130	pg/g	0.870	4.36
30402-14-3	Total Tetrachlorodibenzofuran		7.74	pg/g	0.322	0.871
30402-15-4	Total Pentachlorodibenzofuran		5.94	pg/g	0.0681	4.36
55684-94-1	Total Hexachlorodibenzofuran		11.7	pg/g	0.227	4.36
38998-75-3	Total Heptachlorodibenzofuran		20.1	pg/g	0.308	4.36
3333-30-0	TEQ WHO2005 ND=0		2.33	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		2.35	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		145	174	pg/g	83.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		159	174	pg/g	91.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		125	174	pg/g	71.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	174	pg/g	83.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		130	174	pg/g	74.7	(23%-140%)
13C-OCDD		211	349	pg/g	60.5	(17%-157%)
13C-2,3,7,8-TCDF		141	174	pg/g	80.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		152	174	pg/g	87.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		152	174	pg/g	87.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		118	174	pg/g	67.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	174	pg/g	77.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		127	174	pg/g	72.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		126	174	pg/g	72.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9571001**	**Date Collected:**	**08/03/2016 11:30**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**08/05/2016 11:55**	**%Moisture:**	**15.6**
Client ID:	**8.3.16-H&H Blend-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/10/2016 10:50**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A10AUG16A-3**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**13.59 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		131	174	pg/g	75.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		124	174	pg/g	71.2	(26%-138%)
37Cl-2,3,7,8-TCDD		15.4	17.4	pg/g	88.1	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9571002**	**Date Collected:**	**08/03/2016 11:50**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**08/05/2016 11:55**	**%Moisture:**	**16.4**
Client ID:	**8.3.16-MCF-Blend-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/10/2016 11:37**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A10AUG16A-4**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**13.26 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.202	pg/g	0.143	0.902
40321-76-4	1,2,3,7,8-PeCDD	J	0.846	pg/g	0.178	4.51
39227-28-6	1,2,3,4,7,8-HxCDD	J	2.45	pg/g	0.309	4.51
57653-85-7	1,2,3,6,7,8-HxCDD		6.14	pg/g	0.292	4.51
19408-74-3	1,2,3,7,8,9-HxCDD		5.62	pg/g	0.307	4.51
35822-46-9	1,2,3,4,6,7,8-HpCDD		292	pg/g	1.33	4.51
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2630	pg/g	2.56	9.02
51207-31-9	2,3,7,8-TCDF	J	0.276	pg/g	0.267	0.902
57117-41-6	1,2,3,7,8-PeCDF	J	0.260	pg/g	0.108	4.51
57117-31-4	2,3,4,7,8-PeCDF	J	0.577	pg/g	0.103	4.51
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.51	pg/g	0.271	4.51
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.832	pg/g	0.263	4.51
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.24	pg/g	0.271	4.51
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.444	pg/g	0.404	4.51
67562-39-4	1,2,3,4,6,7,8-HpCDF		42.2	pg/g	0.442	4.51
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.48	pg/g	0.774	4.51
39001-02-0	1,2,3,4,6,7,8,9-OCDF		330	pg/g	0.720	9.02
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		2.51	pg/g	0.143	0.902
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	3.73	pg/g	0.178	4.51
34465-46-8	Total Hexachlorodibenzo-p-dioxin		35.9	pg/g	0.292	4.51
37871-00-4	Total Heptachlorodibenzo-p-dioxin		466	pg/g	1.33	4.51
30402-14-3	Total Tetrachlorodibenzofuran		6.96	pg/g	0.267	0.902
30402-15-4	Total Pentachlorodibenzofuran		6.32	pg/g	0.0523	4.51
55684-94-1	Total Hexachlorodibenzofuran		33.7	pg/g	0.263	4.51
38998-75-3	Total Heptachlorodibenzofuran		201	pg/g	0.442	4.51
3333-30-0	TEQ WHO2005 ND=0		7.35	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		7.35	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	180	pg/g	92.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		171	180	pg/g	94.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		144	180	pg/g	79.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		168	180	pg/g	93.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		159	180	pg/g	88.4	(23%-140%)
13C-OCDD		275	361	pg/g	76.3	(17%-157%)
13C-2,3,7,8-TCDF		159	180	pg/g	88.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	180	pg/g	94.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		171	180	pg/g	94.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		139	180	pg/g	77.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		156	180	pg/g	86.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	180	pg/g	80.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		149	180	pg/g	82.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9571002**	**Date Collected:**	**08/03/2016 11:50**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**08/05/2016 11:55**	**%Moisture:**	**16.4**
Client ID:	**8.3.16-MCF-Blend-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/10/2016 11:37**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A10AUG16A-4**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**13.26 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	180	pg/g	85.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		148	180	pg/g	81.9	(26%-138%)
37Cl-2,3,7,8-TCDD		16.4	18.0	pg/g	90.7	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Quality Control Summary

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A6H0119

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12016606	LCS for batch 32489	13C-2,3,7,8-TCDD		86.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		91.5	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		78.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		91.0	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		82.3	(22%-166%)
		13C-OCDD		60.3	(13%-199%)
		13C-2,3,7,8-TCDF		80.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		83.1	(21%-192%)
		13C-2,3,4,7,8-PeCDF		88.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		76.0	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		82.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		78.9	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		79.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		75.8	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		69.9	(20%-186%)
		37Cl-2,3,7,8-TCDD		90.9	(31%-191%)
12016607	LCSD for batch 32489	13C-2,3,7,8-TCDD		84.8	(20%-175%)
		13C-1,2,3,7,8-PeCDD		89.5	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		74.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		82.2	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		76.0	(22%-166%)
		13C-OCDD		56.5	(13%-199%)
		13C-2,3,7,8-TCDF		79.4	(22%-152%)
		13C-1,2,3,7,8-PeCDF		82.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		85.0	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		72.2	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		76.1	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		75.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		73.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		69.2	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		65.2	(20%-186%)
		37Cl-2,3,7,8-TCDD		91.0	(31%-191%)
12016605	MB for batch 32489	13C-2,3,7,8-TCDD		88.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		93.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		79.6	(23%-140%)
		13C-OCDD		53.0	(17%-157%)
		13C-2,3,7,8-TCDF		80.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		65.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		86.7	(35%-197%)
9571001	8.3.16-H&H Blend-1	13C-2,3,7,8-TCDD		83.2	(25%-164%)

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A6H0119

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9571001	8.3.16-H&H Blend-1	13C-1,2,3,7,8-PeCDD		91.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		71.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		74.7	(23%-140%)
		13C-OCDD		60.5	(17%-157%)
		13C-2,3,7,8-TCDF		80.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		87.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		71.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		88.1	(35%-197%)
9571002	8.3.16-MCF-Blend-1	13C-2,3,7,8-TCDD		92.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		94.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		93.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.4	(23%-140%)
		13C-OCDD		76.3	(17%-157%)
		13C-2,3,7,8-TCDF		88.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		94.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		86.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.7	(35%-197%)

* Recovery outside Acceptance Limits
\# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0119
Client ID: LCS for batch 32489
Lab Sample ID: 12016606
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 08/09/2016 21:50
Dilution: 1
Prep Batch ID: 32489
Batch ID: 32492

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	18.8	94.2	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	95.6	95.6	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	104	104	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	102	102	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	107	107	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	93.9	93.9	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	199	99.7	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	19.4	97.2	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	90.1	90.1	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	88.7	88.7	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	96.2	96.2	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	102	102	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	98.2	98.2	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	95.5	95.5	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	96.4	96.4	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	97.1	97.1	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	192	96.2	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0119
Client ID: LCSD for batch 32489
Lab Sample ID: 12016607
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOIL
Analysis Date: 08/09/2016 22:37
Dilution: 1
Prep Batch ID: 32489
Batch ID: 32492

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	18.9	94.5	67-158	0.339	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	95.9	95.9	70-142	0.299	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	104	104	70-164	0.0172	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	100	100	76-134	2.08	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	109	109	64-162	2.05	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	96.6	96.6	70-140	2.83	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	202	101	78-144	1.37	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	18.8	94.1	75-158	3.27	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	89.7	89.7	80-134	0.429	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	87.1	87.1	68-160	1.77	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	94.5	94.5	72-134	1.78	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	96.6	96.6	84-130	5.71	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	94.7	94.7	70-156	3.61	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	93.1	93.1	78-130	2.55	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	94.6	94.6	82-122	1.86	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	94.1	94.1	78-138	3.11	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	191	95.6	63-170	0.676	0-20

Method Blank Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 32489**	**Instrument ID:**	**HRP750**	**Data File:**	**A09AUG16A-12**
Lab Sample ID:	**12016605**	**Prep Date:**	**07-AUG-16**	**Analyzed:**	**08/09/16 23:24**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 32489	12016606	A09AUG16A-10	08/09/16	2150
02	LCSD for batch 32489	12016607	A09AUG16A-11	08/09/16	2237
03	8.3.16-H&H Blend-1	9571001	A10AUG16A-3	08/10/16	1050
04	8.3.16-MCF-Blend-1	9571002	A10AUG16A-4	08/10/16	1137

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016605**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32489**				
Client ID:	**MB for batch 32489**			**Prep Basis:**	**As Received**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/09/2016 23:24**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A09AUG16A-12**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.157	pg/g	0.157	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	.156	pg/g	0.156	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	.149	pg/g	0.149	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	.142	pg/g	0.142	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	.149	pg/g	0.149	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.292	pg/g	0.292	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	6.10	pg/g	1.54	10.0
51207-31-9	2,3,7,8-TCDF	U	.212	pg/g	0.212	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	.111	pg/g	0.111	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	.104	pg/g	0.104	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	.152	pg/g	0.152	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	.136	pg/g	0.136	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	.14	pg/g	0.140	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	.208	pg/g	0.208	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.188	pg/g	0.188	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.33	pg/g	0.330	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.762	pg/g	0.762	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.157	pg/g	0.157	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.156	pg/g	0.156	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.142	pg/g	0.142	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.292	pg/g	0.292	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.212	pg/g	0.212	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	.0706	pg/g	0.0706	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	.132	pg/g	0.132	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	.188	pg/g	0.188	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00183	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.243	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		177	200	pg/g	88.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		186	200	pg/g	93.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	200	pg/g	76.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		172	200	pg/g	86.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		159	200	pg/g	79.6	(23%-140%)
13C-OCDD		212	400	pg/g	53.0	(17%-157%)
13C-2,3,7,8-TCDF		161	200	pg/g	80.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	200	pg/g	85.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		175	200	pg/g	87.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	200	pg/g	74.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		159	200	pg/g	79.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		151	200	pg/g	75.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		151	200	pg/g	75.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016605**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32489**				
Client ID:	**MB for batch 32489**			**Prep Basis:**	**As Received**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/09/2016 23:24**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A09AUG16A-12**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		142	200	pg/g	71.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		131	200	pg/g	65.4	(26%-138%)
37Cl-2,3,7,8-TCDD		17.3	20.0	pg/g	86.7	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016606**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32489**				
Client ID:	**LCS for batch 32489**			**Prep Basis:**	**As Received**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/09/2016 21:50**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A09AUG16A-10**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.8	pg/g	0.174	1.00
40321-76-4	1,2,3,7,8-PeCDD		95.6	pg/g	0.302	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		104	pg/g	0.558	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		102	pg/g	0.524	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		107	pg/g	0.552	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		93.9	pg/g	1.32	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		199	pg/g	2.64	10.0
51207-31-9	2,3,7,8-TCDF		19.4	pg/g	0.284	1.00
57117-41-6	1,2,3,7,8-PeCDF		90.1	pg/g	0.374	5.00
57117-31-4	2,3,4,7,8-PeCDF		88.7	pg/g	0.372	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		96.2	pg/g	1.02	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		102	pg/g	0.982	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		98.2	pg/g	1.04	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		95.5	pg/g	1.43	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		96.4	pg/g	0.830	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		97.1	pg/g	1.42	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		192	pg/g	1.76	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		172	200	pg/g	86.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		183	200	pg/g	91.5	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		156	200	pg/g	78.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		182	200	pg/g	91.0	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		165	200	pg/g	82.3	(22%-166%)
13C-OCDD		241	400	pg/g	60.3	(13%-199%)
13C-2,3,7,8-TCDF		160	200	pg/g	80.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		166	200	pg/g	83.1	(21%-192%)
13C-2,3,4,7,8-PeCDF		177	200	pg/g	88.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		152	200	pg/g	76.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		166	200	pg/g	82.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		158	200	pg/g	78.9	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		159	200	pg/g	79.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		152	200	pg/g	75.8	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		140	200	pg/g	69.9	(20%-186%)
37Cl-2,3,7,8-TCDD		18.2	20.0	pg/g	90.9	(31%-191%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0119**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016607**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32489**				
Client ID:	**LCSD for batch 32489**			**Prep Basis:**	**As Received**
Batch ID:	**32492**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/09/2016 22:37**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A09AUG16A-11**			**Dilution:**	**1**
Prep Batch:	**32489**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**07-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.9	pg/g	0.192	1.00
40321-76-4	1,2,3,7,8-PeCDD		95.9	pg/g	0.396	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		104	pg/g	0.848	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		100	pg/g	0.800	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		109	pg/g	0.842	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		96.6	pg/g	1.14	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		202	pg/g	3.08	10.0
51207-31-9	2,3,7,8-TCDF		18.8	pg/g	0.210	1.00
57117-41-6	1,2,3,7,8-PeCDF		89.7	pg/g	0.360	5.00
57117-31-4	2,3,4,7,8-PeCDF		87.1	pg/g	0.336	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		94.5	pg/g	0.876	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		96.6	pg/g	0.894	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		94.7	pg/g	0.918	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		93.1	pg/g	1.36	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		94.6	pg/g	0.924	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		94.1	pg/g	1.76	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		191	pg/g	2.72	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	84.8	(20%-175%)
13C-1,2,3,7,8-PeCDD		179	200	pg/g	89.5	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		149	200	pg/g	74.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		164	200	pg/g	82.2	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		152	200	pg/g	76.0	(22%-166%)
13C-OCDD		226	400	pg/g	56.5	(13%-199%)
13C-2,3,7,8-TCDF		159	200	pg/g	79.4	(22%-152%)
13C-1,2,3,7,8-PeCDF		164	200	pg/g	82.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		170	200	pg/g	85.0	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		144	200	pg/g	72.2	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		152	200	pg/g	76.1	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		151	200	pg/g	75.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		147	200	pg/g	73.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		138	200	pg/g	69.2	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		130	200	pg/g	65.2	(20%-186%)
37Cl-2,3,7,8-TCDD		18.2	20.0	pg/g	91.0	(31%-191%)

Comments:

K **Estimated Maximum Possible Concentration**

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

August 16, 2016

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Dioxin & PCB's subcontract
Work Order: 9586
SDG: A6H0222

Dear Mr. Nerenberg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 09, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

SUBCONTRACT ORDER

Apex Laboratories

A6H0222

LD 8/8/16

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
3306 Kitty Hawk Rd Suite 120
Wilmington, NC 28405
Phone :(910) 795-0421
Fax: -

Sample Name: Top Soil 5 **Soil** **Sampled: 08/05/16 12:45** (A6H0222-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)4 oz Glass Jar	08/12/16 17:00	02/01/17 12:45	

5 day TAT, From Receipt

CFA WO #9586

Released By	Date	Received By	Date
UPS (Shipper)	8/8/16	UPS (Shipper)	
UPS (Shipper)			
Released By	Date	Received By	Date
		[illegible]	09Aug2016 11:10

5.0°C

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 9586
Shipping Company: UPS	Date/Time Received: 09Aug2016 11:10

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 4.7+0.3= 5.0°C
4	Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 1-4oz clear jar
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:
*5 day TAT

Checklist performed by: Initials: MJO Date: 09Aug2016

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A6H0222
Work Order 9586

Method/Analysis Information

Product:	**Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3540C
Analytical Batch Number:	32527
Clean Up Batch Number:	32526
Extraction Batch Number:	32525

Sample Analysis

The following samples were analyzed using the analytical protocol as established in Method 1613B:

Sample ID	Client ID
9586001	Top Soil 5
12016630	Method Blank (MB)
12016631	Laboratory Control Sample (LCS)
12016632	Laboratory Control Sample Duplicate (LCSD)
12016633	9586001(Top Soil 5) Matrix Spike (MS)
12016634	9586001(Top Soil 5) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 9586001 (Top Soil 5)- Batch 32527 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike/Duplicate (MS/MSD) Recovery Statement
The MS recoveries for this SDG were not within the acceptance limits. The failures confirm in the matrix spike duplicate and are attributed to matrix interference. 12016633 (Top Soil 5) and 12016634 (Top Soil 5)- Batch 32527.

MS/MSD Relative Percent Difference (RPD) Statement
The relative percent differences (RPD) between each MS and MSD were not within the required acceptance limits. Sample data is validated based on acceptable LCS/LCSD results. 12016633 (Top Soil 5) and 12016634 (Top Soil 5)- Batch 32527.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 645919 12016633 (Top Soil 5) and 12016634 (Top Soil 5)- Batch 32527.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6H0222 CFA Work Order: 9586

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 16 AUG 2016 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9586001**	**Date Collected:**	**08/05/2016 12:45**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**08/09/2016 11:10**	**%Moisture:**	**14.8**
Client ID:	**Top Soil 5**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 12:21**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-5**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**13.05 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.416	pg/g	0.416	0.899
40321-76-4	1,2,3,7,8-PeCDD	J	0.403	pg/g	0.239	4.50
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.757	pg/g	0.309	4.50
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.96	pg/g	0.302	4.50
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.08	pg/g	0.317	4.50
35822-46-9	1,2,3,4,6,7,8-HpCDD		59.3	pg/g	0.827	4.50
3268-87-9	1,2,3,4,6,7,8,9-OCDD		683	pg/g	2.66	8.99
51207-31-9	2,3,7,8-TCDF	U	.419	pg/g	0.419	0.899
57117-41-6	1,2,3,7,8-PeCDF	J	0.342	pg/g	0.209	4.50
57117-31-4	2,3,4,7,8-PeCDF	J	0.478	pg/g	0.171	4.50
70648-26-9	1,2,3,4,7,8-HxCDF	U	.687	pg/g	0.687	4.50
57117-44-9	1,2,3,6,7,8-HxCDF	U	.428	pg/g	0.428	4.50
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.646	pg/g	0.286	4.50
72918-21-9	1,2,3,7,8,9-HxCDF	U	.417	pg/g	0.417	4.50
67562-39-4	1,2,3,4,6,7,8-HpCDF		8.79	pg/g	0.259	4.50
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.774	pg/g	0.412	4.50
39001-02-0	1,2,3,4,6,7,8,9-OCDF		36.0	pg/g	1.05	8.99
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		1.26	pg/g	0.416	0.899
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	2.91	pg/g	0.239	4.50
34465-46-8	Total Hexachlorodibenzo-p-dioxin		17.6	pg/g	0.302	4.50
37871-00-4	Total Heptachlorodibenzo-p-dioxin		130	pg/g	0.827	4.50
30402-14-3	Total Tetrachlorodibenzofuran		2.13	pg/g	0.419	0.899
30402-15-4	Total Pentachlorodibenzofuran		5.54	pg/g	0.106	4.50
55684-94-1	Total Hexachlorodibenzofuran		11.9	pg/g	0.257	4.50
38998-75-3	Total Heptachlorodibenzofuran		33.1	pg/g	0.259	4.50
3333-30-0	TEQ WHO2005 ND=0		1.91	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		2.21	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		137	180	pg/g	76.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		150	180	pg/g	83.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		135	180	pg/g	75.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		155	180	pg/g	86.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		123	180	pg/g	68.6	(23%-140%)
13C-OCDD		231	360	pg/g	64.3	(17%-157%)
13C-2,3,7,8-TCDF		148	180	pg/g	82.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		157	180	pg/g	87.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		171	180	pg/g	95.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		138	180	pg/g	76.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		173	180	pg/g	96.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	180	pg/g	85.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		150	180	pg/g	83.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9586001**	**Date Collected:**	**08/05/2016 12:45**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**08/09/2016 11:10**	**%Moisture:**	**14.8**
Client ID:	**Top Soil 5**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 12:21**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-5**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**13.05 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		129	180	pg/g	71.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		119	180	pg/g	66.0	(26%-138%)
37Cl-2,3,7,8-TCDD		14.4	18.0	pg/g	80.2	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A6H0222

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12016631	LCS for batch 32525	13C-2,3,7,8-TCDD		58.9	(20%-175%)
		13C-1,2,3,7,8-PeCDD		63.9	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		62.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		71.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		58.1	(22%-166%)
		13C-OCDD		49.5	(13%-199%)
		13C-2,3,7,8-TCDF		62.8	(22%-152%)
		13C-1,2,3,7,8-PeCDF		65.1	(21%-192%)
		13C-2,3,4,7,8-PeCDF		77.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		66.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		72.1	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		69.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		68.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		59.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		54.9	(20%-186%)
		37Cl-2,3,7,8-TCDD		75.1	(31%-191%)
12016632	LCSD for batch 32525	13C-2,3,7,8-TCDD		67.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		61.7	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		67.8	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		74.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		61.2	(22%-166%)
		13C-OCDD		53.0	(13%-199%)
		13C-2,3,7,8-TCDF		73.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		72.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		75.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		71.6	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		76.4	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		74.6	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		74.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		65.9	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		60.4	(20%-186%)
		37Cl-2,3,7,8-TCDD		82.5	(31%-191%)
12016630	MB for batch 32525	13C-2,3,7,8-TCDD		74.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		77.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		68.6	(23%-140%)
		13C-OCDD		59.6	(17%-157%)
		13C-2,3,7,8-TCDF		82.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		82.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		94.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		91.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		87.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		70.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		63.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.8	(35%-197%)
9586001	Top Soil 5	13C-2,3,7,8-TCDD		76.2	(25%-164%)

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A6H0222

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9586001	Top Soil 5	13C-1,2,3,7,8-PeCDD		83.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		75.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		68.6	(23%-140%)
		13C-OCDD		64.3	(17%-157%)
		13C-2,3,7,8-TCDF		82.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		87.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		95.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		96.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		66.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		80.2	(35%-197%)
12016633	Top Soil 5(9586001MS)	13C-2,3,7,8-TCDD		60.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		63.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		63.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		68.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		58.2	(23%-140%)
		13C-OCDD		54.4	(17%-157%)
		13C-2,3,7,8-TCDF		65.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		67.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		75.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		65.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		69.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		66.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		56.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		53.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.4	(35%-197%)
12016634	Top Soil 5(9586001MSD)	13C-2,3,7,8-TCDD		76.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		89.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		68.2	(23%-140%)
		13C-OCDD		66.3	(17%-157%)
		13C-2,3,7,8-TCDF		81.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		94.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		90.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		69.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		68.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		77.4	(35%-197%)

* Recovery outside Acceptance Limits

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6H0222

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0222
Client ID: LCS for batch 32525
Lab Sample ID: 12016631
Instrument: HRP763
Analyst: CLP

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 08/12/2016 10:02
Dilution: 1
Prep Batch ID: 32525
Batch ID: 32527

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	18.9	94.7	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	109	109	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	115	115	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	114	114	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	115	115	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	104	104	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	241	120	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.9	109	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	109	109	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	106	106	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	114	114	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	117	117	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	111	111	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	112	112	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	114	114	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	116	116	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	267	133	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0222
Client ID: LCSD for batch 32525
Lab Sample ID: 12016632
Instrument: HRP763
Analyst: CLP

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOIL
Analysis Date: 08/12/2016 10:48
Dilution: 1
Prep Batch ID: 32525
Batch ID: 32527

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	19.1	95.4	67-158	0.726	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	111	111	70-142	2.20	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	113	113	70-164	1.37	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	113	113	76-134	1.00	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	113	113	64-162	1.34	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	110	110	70-140	5.28	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	245	123	78-144	1.93	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	22.1	110	75-158	0.947	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	110	110	80-134	0.325	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	107	107	68-160	1.31	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	114	114	72-134	0.389	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	116	116	84-130	0.855	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	110	110	70-156	0.501	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	110	110	78-130	1.65	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	113	113	82-122	0.734	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	115	115	78-138	0.681	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	258	129	63-170	3.38	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A6H0222**	**Sample Type:**	**Matrix Spike**	
Client ID:	**Top Soil 5(9586001MS)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12016633**	**%Moisture:**	**14.8**	
Instrument:	**HRP763**	**Analysis Date:**	**08/12/2016 13:07**	**Dilution: 1**
Analyst:	**CLP**	**Prep Batch ID:**	**32525**	
		Batch ID:	**32527**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	17.9	U	17.8	99.5	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	89.6	J	99.3	110	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	89.6	J	102	113	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	89.6	J	103	113	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	89.6	J	98.0	108	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	89.6		164	117	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	179		1340	366 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	17.9	U	19.5	109	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	89.6	J	96.1	107	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	89.6	J	97.7	109	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	89.6	U	104	116	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	89.6	U	103	115	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	89.6	J	103	115	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	89.6	U	99.5	111	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	89.6		117	121	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	89.6	J	105	116	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	179		261	126	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A6H0222**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**Top Soil 5(9586001MSD)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12016634**	**%Moisture:**	**14.8**	
Instrument:	**HRP763**	**Analysis Date:**	**08/12/2016 13:54**	**Dilution: 1**
Analyst:	**CLP**	**Prep Batch ID:**	**32525**	
		Batch ID:	**32527**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	17.9	U	17.4	97.1	70-130	2.24	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	89.7	J	101	112	70-130	1.53	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	89.7	J	102	113	70-130	0.213	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	89.7	J	106	116	70-130	2.51	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	89.7	J	104	114	70-130	5.62	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	89.7		203	160 *	70-130	21.3 *	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	179		1260	323 *	70-130	5.80	0-20
51207-31-9	MSD	2,3,7,8-TCDF	17.9	U	19.7	110	70-130	1.27	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	89.7	J	99.2	110	70-130	3.16	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	89.7	J	97.1	108	70-130	0.679	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	89.7	U	104	116	70-130	0.155	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	89.7	U	105	117	70-130	1.82	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	89.7	J	104	115	70-130	0.859	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	89.7	U	105	117	70-130	5.18	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	89.7		132	138 *	70-130	12.1	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	89.7	J	103	114	70-130	2.09	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	179		307	151 *	70-130	16.2	0-20

Method Blank Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 32525**	**Instrument ID:**	**HRP763**	**Data File:**	**b12aug16a-4**
Lab Sample ID:	**12016630**	**Prep Date:**	**10-AUG-16**	**Analyzed:**	**08/12/16 11:34**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 32525	12016631	b12aug16a-2	08/12/16	1002
02	LCSD for batch 32525	12016632	b12aug16a-3	08/12/16	1048
03	Top Soil 5	9586001	b12aug16a-5	08/12/16	1221
04	Top Soil 5(9586001MS)	12016633	b12aug16a-6	08/12/16	1307
05	Top Soil 5(9586001MSD)	12016634	b12aug16a-7	08/12/16	1354

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016630**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32525**				
Client ID:	**MB for batch 32525**			**Prep Basis:**	**As Received**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 11:34**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-4**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.542	pg/g	0.542	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	.304	pg/g	0.304	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	.3	pg/g	0.300	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	.298	pg/g	0.298	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	.31	pg/g	0.310	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.724	pg/g	0.506	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	3.42	pg/g	1.08	10.0
51207-31-9	2,3,7,8-TCDF	U	.416	pg/g	0.416	1.00
57117-41-6	1,2,3,7,8-PeCDF	J	0.304	pg/g	0.197	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	.159	pg/g	0.159	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	.35	pg/g	0.350	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	.308	pg/g	0.308	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	.304	pg/g	0.304	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	.46	pg/g	0.460	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.572	pg/g	0.572	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.318	pg/g	0.318	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	1.15	pg/g	1.15	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.542	pg/g	0.542	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.264	pg/g	0.264	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.298	pg/g	0.298	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	1.24	pg/g	0.506	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.416	pg/g	0.416	1.00
30402-15-4	Total Pentachlorodibenzofuran	J	0.304	pg/g	0.129	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	.304	pg/g	0.304	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	.193	pg/g	0.193	5.00
3333-30-0	TEQ WHO2005 ND=0		0.0174	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.582	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		150	200	pg/g	74.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		155	200	pg/g	77.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	200	pg/g	79.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		173	200	pg/g	86.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		137	200	pg/g	68.6	(23%-140%)
13C-OCDD		238	400	pg/g	59.6	(17%-157%)
13C-2,3,7,8-TCDF		165	200	pg/g	82.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		165	200	pg/g	82.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		189	200	pg/g	94.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		163	200	pg/g	81.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		183	200	pg/g	91.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		175	200	pg/g	87.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		168	200	pg/g	84.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016630**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32525**				
Client ID:	**MB for batch 32525**			**Prep Basis:**	**As Received**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 11:34**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-4**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		141	200	pg/g	70.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		128	200	pg/g	63.9	(26%-138%)
37Cl-2,3,7,8-TCDD		16.6	20.0	pg/g	82.8	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016631**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32525**				
Client ID:	**LCS for batch 32525**			**Prep Basis:**	**As Received**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 10:02**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-2**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.9	pg/g	0.572	1.00
40321-76-4	1,2,3,7,8-PeCDD		109	pg/g	0.398	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		115	pg/g	0.686	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		114	pg/g	0.642	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		115	pg/g	0.688	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		104	pg/g	0.912	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		241	pg/g	2.06	10.0
51207-31-9	2,3,7,8-TCDF		21.9	pg/g	0.434	1.00
57117-41-6	1,2,3,7,8-PeCDF		109	pg/g	0.468	5.00
57117-31-4	2,3,4,7,8-PeCDF		106	pg/g	0.364	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		114	pg/g	0.908	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		117	pg/g	0.920	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		111	pg/g	0.902	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		112	pg/g	1.33	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		114	pg/g	0.900	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		116	pg/g	1.41	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		267	pg/g	2.22	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		118	200	pg/g	58.9	(20%-175%)
13C-1,2,3,7,8-PeCDD		128	200	pg/g	63.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		125	200	pg/g	62.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		143	200	pg/g	71.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		116	200	pg/g	58.1	(22%-166%)
13C-OCDD		198	400	pg/g	49.5	(13%-199%)
13C-2,3,7,8-TCDF		126	200	pg/g	62.8	(22%-152%)
13C-1,2,3,7,8-PeCDF		130	200	pg/g	65.1	(21%-192%)
13C-2,3,4,7,8-PeCDF		155	200	pg/g	77.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		134	200	pg/g	66.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		144	200	pg/g	72.1	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		140	200	pg/g	69.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		137	200	pg/g	68.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		119	200	pg/g	59.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		110	200	pg/g	54.9	(20%-186%)
37Cl-2,3,7,8-TCDD		15.0	20.0	pg/g	75.1	(31%-191%)

Comments:

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016632**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32525**				
Client ID:	**LCSD for batch 32525**			**Prep Basis:**	**As Received**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 10:48**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-3**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.1	pg/g	0.676	1.00
40321-76-4	1,2,3,7,8-PeCDD		111	pg/g	0.490	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		113	pg/g	0.868	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		113	pg/g	0.830	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		113	pg/g	0.880	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		110	pg/g	0.976	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		245	pg/g	2.92	10.0
51207-31-9	2,3,7,8-TCDF		22.1	pg/g	0.464	1.00
57117-41-6	1,2,3,7,8-PeCDF		110	pg/g	0.582	5.00
57117-31-4	2,3,4,7,8-PeCDF		107	pg/g	0.500	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		114	pg/g	0.900	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		116	pg/g	0.898	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		110	pg/g	0.940	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		110	pg/g	1.30	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		113	pg/g	0.670	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		115	pg/g	1.21	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		258	pg/g	2.02	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		134	200	pg/g	67.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		123	200	pg/g	61.7	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		136	200	pg/g	67.8	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		149	200	pg/g	74.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		122	200	pg/g	61.2	(22%-166%)
13C-OCDD		212	400	pg/g	53.0	(13%-199%)
13C-2,3,7,8-TCDF		146	200	pg/g	73.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		144	200	pg/g	72.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		152	200	pg/g	75.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		143	200	pg/g	71.6	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		153	200	pg/g	76.4	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		149	200	pg/g	74.6	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		149	200	pg/g	74.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		132	200	pg/g	65.9	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		121	200	pg/g	60.4	(20%-186%)
37Cl-2,3,7,8-TCDD		16.5	20.0	pg/g	82.5	(31%-191%)

Comments:

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016633**	**Date Collected:**	**08/05/2016 12:45**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32525**	**Date Received:**	**08/09/2016 11:10**	**%Moisture:**	**14.8**
Client ID:	**Top Soil 5(9586001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 13:07**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-6**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**13.1 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.8	pg/g	0.541	0.896
40321-76-4	1,2,3,7,8-PeCDD		99.3	pg/g	0.419	4.48
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	0.930	4.48
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	0.950	4.48
19408-74-3	1,2,3,7,8,9-HxCDD		98.0	pg/g	0.977	4.48
35822-46-9	1,2,3,4,6,7,8-HpCDD		164	pg/g	1.47	4.48
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1340	pg/g	2.29	8.96
51207-31-9	2,3,7,8-TCDF		19.5	pg/g	0.478	0.896
57117-41-6	1,2,3,7,8-PeCDF		96.1	pg/g	0.439	4.48
57117-31-4	2,3,4,7,8-PeCDF		97.7	pg/g	0.375	4.48
70648-26-9	1,2,3,4,7,8-HxCDF		104	pg/g	0.889	4.48
57117-44-9	1,2,3,6,7,8-HxCDF		103	pg/g	0.839	4.48
60851-34-5	2,3,4,6,7,8-HxCDF		103	pg/g	0.912	4.48
72918-21-9	1,2,3,7,8,9-HxCDF		99.5	pg/g	1.43	4.48
67562-39-4	1,2,3,4,6,7,8-HpCDF		117	pg/g	0.618	4.48
55673-89-7	1,2,3,4,7,8,9-HpCDF		105	pg/g	1.00	4.48
39001-02-0	1,2,3,4,6,7,8,9-OCDF		261	pg/g	1.88	8.96

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		108	179	pg/g	60.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		114	179	pg/g	63.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		114	179	pg/g	63.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		122	179	pg/g	68.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		104	179	pg/g	58.2	(23%-140%)
13C-OCDD		195	358	pg/g	54.4	(17%-157%)
13C-2,3,7,8-TCDF		116	179	pg/g	65.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		121	179	pg/g	67.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		135	179	pg/g	75.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		116	179	pg/g	65.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	179	pg/g	77.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		124	179	pg/g	69.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		120	179	pg/g	66.9	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		101	179	pg/g	56.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		95.2	179	pg/g	53.1	(26%-138%)
37Cl-2,3,7,8-TCDD		14.6	17.9	pg/g	81.4	(35%-197%)

Comments:

K Estimated Maximum Possible Concentration

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0222**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016634**	**Date Collected:**	**08/05/2016 12:45**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32525**	**Date Received:**	**08/09/2016 11:10**	**%Moisture:**	**14.8**
Client ID:	**Top Soil 5(9586001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32527**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/12/2016 13:54**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b12aug16a-7**			**Dilution:**	**1**
Prep Batch:	**32525**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**10-AUG-16**	**Prep Aliquot:**	**13.08 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.4	pg/g	0.409	0.897
40321-76-4	1,2,3,7,8-PeCDD		101	pg/g	0.397	4.49
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	0.668	4.49
57653-85-7	1,2,3,6,7,8-HxCDD		106	pg/g	0.673	4.49
19408-74-3	1,2,3,7,8,9-HxCDD		104	pg/g	0.695	4.49
35822-46-9	1,2,3,4,6,7,8-HpCDD		203	pg/g	1.23	4.49
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1260	pg/g	2.82	8.97
51207-31-9	2,3,7,8-TCDF		19.7	pg/g	0.413	0.897
57117-41-6	1,2,3,7,8-PeCDF		99.2	pg/g	0.303	4.49
57117-31-4	2,3,4,7,8-PeCDF		97.1	pg/g	0.266	4.49
70648-26-9	1,2,3,4,7,8-HxCDF		104	pg/g	0.619	4.49
57117-44-9	1,2,3,6,7,8-HxCDF		105	pg/g	0.564	4.49
60851-34-5	2,3,4,6,7,8-HxCDF		104	pg/g	0.617	4.49
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	0.948	4.49
67562-39-4	1,2,3,4,6,7,8-HpCDF		132	pg/g	0.612	4.49
55673-89-7	1,2,3,4,7,8,9-HpCDF		103	pg/g	1.02	4.49
39001-02-0	1,2,3,4,6,7,8,9-OCDF		307	pg/g	1.29	8.97

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		136	179	pg/g	76.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		147	179	pg/g	81.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		134	179	pg/g	74.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		160	179	pg/g	89.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		122	179	pg/g	68.2	(23%-140%)
13C-OCDD		238	359	pg/g	66.3	(17%-157%)
13C-2,3,7,8-TCDF		147	179	pg/g	81.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		154	179	pg/g	85.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		170	179	pg/g	94.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		142	179	pg/g	79.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		163	179	pg/g	90.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		150	179	pg/g	83.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		143	179	pg/g	79.6	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		125	179	pg/g	69.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		122	179	pg/g	68.2	(26%-138%)
37Cl-2,3,7,8-TCDD		13.9	17.9	pg/g	77.4	(35%-197%)

Comments:

K **Estimated Maximum Possible Concentration**

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

August 22, 2016

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Dioxin & PCB's subcontract
Work Order: 9616
SDG: A6H0354

Dear Mr. Nerenberg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 12, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

SUBCONTRACT ORDER

Apex Laboratories

A6H0354

DA

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
3306 Kitty Hawk Rd Suite 120
Wilmington, NC 28405
Phone :(910) 795-0421
Fax: -

Sample Name: 8.10.16-Topsoil-1 **Soil** **Sampled: 08/10/16 13:20** (A6H0354-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)4 oz Glass Jar	~~08/17/16 17:00~~	02/06/17 13:20	

10 Day, or sooner please.

By 8/26.

WO# 9616

Amissa Kya

Released By Date

UPS (Shipper)

Received By Date

UPS (Shipper)

Released By Date

Received By Date 12Aug2016 9:45

Page 1 of 1

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 9616
Shipping Company: UPS	Date/Time Received: 12Aug2016 9:45

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?			

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 4.0+0.3=4.3°C
4	Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 1-4oz clear jar
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

*Rush

Checklist performed by: Initials: MJD Date: 12Aug 2016

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A6H0354
Work Order 9616

Method/Analysis Information

Product:	**Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3540C
Analytical Batch Number:	32587
Clean Up Batch Number:	32586
Extraction Batch Number:	32585

Sample Analysis

The following samples were analyzed using the analytical protocol as established in Method 1613B:

Sample ID	Client ID
9616001	8.10.16-Topsoil-1
12016693	Method Blank (MB)
12016694	Laboratory Control Sample (LCS)
12016695	Laboratory Control Sample Duplicate (LCSD)
12016696	9616001(8.10.16-Topsoil-1) Matrix Spike (MS)
12016697	9616001(8.10.16-Topsoil-1) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 9616001 (8.10.16-Topsoil-1)- Batch 32587 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike/Duplicate (MS/MSD) Recovery Statement
The MS recoveries for this SDG were not within the acceptance limits. The failures confirm in the matrix spike duplicate and are attributed to matrix interference. 12016696 (8.10.16-Topsoil-1) and 12016697 (8.10.16-Topsoil-1)- Batch 32587.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 645940 12016696 (8.10.16-Topsoil-1) and 12016697 (8.10.16-Topsoil-1)- Batch 32587.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6H0354 CFA Work Order: 9616

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
J	Value is estimated
K	Estimated Maximum Possible Concentration
U	Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 22 AUG 2016 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9616001**	**Date Collected:**	**08/10/2016 13:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/12/2016 09:45**	**%Moisture:**	**21.9**
Client ID:	**8.10.16-Topsoil-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 18:58**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-6**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**13.19 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.139	pg/g	0.139	0.971
40321-76-4	1,2,3,7,8-PeCDD	U	.412	pg/g	0.412	4.86
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.705	pg/g	0.237	4.86
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.44	pg/g	0.243	4.86
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.38	pg/g	0.249	4.86
35822-46-9	1,2,3,4,6,7,8-HpCDD		82.0	pg/g	0.717	4.86
3268-87-9	1,2,3,4,6,7,8,9-OCDD		749	pg/g	1.08	9.71
51207-31-9	2,3,7,8-TCDF	J	0.447	pg/g	0.237	0.971
57117-41-6	1,2,3,7,8-PeCDF	U	.2	pg/g	0.200	4.86
57117-31-4	2,3,4,7,8-PeCDF	U	.608	pg/g	0.608	4.86
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.948	pg/g	0.136	4.86
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.643	pg/g	0.149	4.86
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.810	pg/g	0.139	4.86
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.336	pg/g	0.187	4.86
67562-39-4	1,2,3,4,6,7,8-HpCDF		8.12	pg/g	0.227	4.86
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.645	pg/g	0.289	4.86
39001-02-0	1,2,3,4,6,7,8,9-OCDF		21.1	pg/g	0.387	9.71
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		1.84	pg/g	0.139	0.971
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	2.46	pg/g	0.163	4.86
34465-46-8	Total Hexachlorodibenzo-p-dioxin		17.9	pg/g	0.237	4.86
37871-00-4	Total Heptachlorodibenzo-p-dioxin		169	pg/g	0.717	4.86
30402-14-3	Total Tetrachlorodibenzofuran		5.55	pg/g	0.237	0.971
30402-15-4	Total Pentachlorodibenzofuran		5.12	pg/g	0.0684	4.86
55684-94-1	Total Hexachlorodibenzofuran		15.3	pg/g	0.136	4.86
38998-75-3	Total Heptachlorodibenzofuran		26.6	pg/g	0.227	4.86
3333-30-0	TEQ WHO2005 ND=0		1.91	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		2.28	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	194	pg/g	87.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		147	194	pg/g	75.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	194	pg/g	84.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	194	pg/g	82.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		116	194	pg/g	59.9	(23%-140%)
13C-OCDD		179	389	pg/g	46.0	(17%-157%)
13C-2,3,7,8-TCDF		174	194	pg/g	89.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		146	194	pg/g	75.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		148	194	pg/g	76.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	194	pg/g	79.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		140	194	pg/g	72.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		158	194	pg/g	81.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		154	194	pg/g	79.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9616001**	**Date Collected:**	**08/10/2016 13:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/12/2016 09:45**	**%Moisture:**	**21.9**
Client ID:	**8.10.16-Topsoil-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 18:58**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-6**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**13.19 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		102	194	pg/g	52.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		114	194	pg/g	58.8	(26%-138%)
37Cl-2,3,7,8-TCDD		17.4	19.4	pg/g	89.4	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A6H0354

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12016694	LCS for batch 32585	13C-2,3,7,8-TCDD		83.7	(20%-175%)
		13C-1,2,3,7,8-PeCDD		77.5	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		84.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		85.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		66.4	(22%-166%)
		13C-OCDD		40.4	(13%-199%)
		13C-2,3,7,8-TCDF		84.9	(22%-152%)
		13C-1,2,3,7,8-PeCDF		72.5	(21%-192%)
		13C-2,3,4,7,8-PeCDF		77.7	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		81.3	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		82.2	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		84.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.2	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		61.4	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		63.1	(20%-186%)
		37Cl-2,3,7,8-TCDD		88.9	(31%-191%)
12016695	LCSD for batch 32585	13C-2,3,7,8-TCDD		82.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		71.3	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		82.4	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		81.3	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		62.2	(22%-166%)
		13C-OCDD		44.3	(13%-199%)
		13C-2,3,7,8-TCDF		85.2	(22%-152%)
		13C-1,2,3,7,8-PeCDF		68.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		72.1	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		78.7	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		77.1	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		78.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		75.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		55.1	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		60.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		88.8	(31%-191%)
12016693	MB for batch 32585	13C-2,3,7,8-TCDD		89.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		69.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		61.6	(23%-140%)
		13C-OCDD		42.4	(17%-157%)
		13C-2,3,7,8-TCDF		90.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		68.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		70.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		56.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		59.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.1	(35%-197%)
9616001	8.10.16-Topsoil-1	13C-2,3,7,8-TCDD		87.0	(25%-164%)

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A6H0354

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9616001	8.10.16-Topsoil-1	13C-1,2,3,7,8-PeCDD		75.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		59.9	(23%-140%)
		13C-OCDD		46.0	(17%-157%)
		13C-2,3,7,8-TCDF		89.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		75.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		52.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		58.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.4	(35%-197%)
12016696	8.10.16-Topsoil-1(9616001MS)	13C-2,3,7,8-TCDD		90.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		90.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		69.1	(23%-140%)
		13C-OCDD		53.3	(17%-157%)
		13C-2,3,7,8-TCDF		96.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		85.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		86.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		62.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		65.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.3	(35%-197%)
12016697	8.10.16-Topsoil-1(9616001MSD)	13C-2,3,7,8-TCDD		88.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		79.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		64.3	(23%-140%)
		13C-OCDD		45.7	(17%-157%)
		13C-2,3,7,8-TCDF		90.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		57.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		64.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.9	(35%-197%)

* Recovery outside Acceptance Limits

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6H0354

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0354
Client ID: LCS for batch 32585
Lab Sample ID: 12016694
Instrument: HRP763
Analyst: CLP

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 08/18/2016 15:47
Dilution: 1
Prep Batch ID: 32585
Batch ID: 32587

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	21.9	109	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	103	103	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	94.5	94.5	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	97.8	97.8	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	93.5	93.5	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	101	101	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	203	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	20.5	102	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	104	104	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	103	103	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	108	108	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	109	109	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	109	109	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	107	107	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	113	113	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	112	112	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	238	119	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0354
Client ID: LCSD for batch 32585
Lab Sample ID: 12016695
Instrument: HRP763
Analyst: CLP

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOIL
Analysis Date: 08/18/2016 16:34
Dilution: 1
Prep Batch ID: 32585
Batch ID: 32587

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	20.8	104	67-158	4.97	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	101	101	70-142	1.81	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	94.7	94.7	70-164	0.250	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	96.2	96.2	76-134	1.74	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	94.5	94.5	64-162	1.08	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	100	100	70-140	0.310	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	196	98.1	78-144	3.41	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	20.2	101	75-158	1.47	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	110	110	80-134	4.86	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	102	102	68-160	0.969	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	109	109	72-134	0.832	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	112	112	84-130	2.89	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	108	108	70-156	1.32	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	108	108	78-130	0.572	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	109	109	82-122	3.54	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	112	112	78-138	0.390	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	231	116	63-170	2.83	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A6H0354**	**Sample Type:**	**Matrix Spike**	
Client ID:	**8.10.16-Topsoil-1(9616001MS)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12016696**	**%Moisture:**	**21.9**	
Instrument:	**HRP763**	**Analysis Date:**	**08/18/2016 19:46**	**Dilution: 1**
Analyst:	**CLP**	**Prep Batch ID:**	**32585**	
		Batch ID:	**32587**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	19.5	U	22.1	114	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	97.3	U	98.6	101	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	97.3	J	96.1	98	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	97.3	J	95.8	95.9	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	97.3	J	90.9	91.9	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	97.3		144	63.5 *	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	195		585	-84.5 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	19.5	J	20.4	103	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	97.3	U	103	105	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	97.3	U	99.1	102	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	97.3	J	109	111	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	97.3	J	108	111	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	97.3	J	109	111	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	97.3	J	109	112	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	97.3		111	106	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	97.3	J	110	112	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	195		225	105	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A6H0354**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**8.10.16-Topsoil-1(9616001MSD)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12016697**	**%Moisture:**	**21.9**	
Instrument:	**HRP763**	**Analysis Date:**	**08/18/2016 20:34**	**Dilution: 1**
Analyst:	**CLP**	**Prep Batch ID:**	**32585**	
		Batch ID:	**32587**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	19.5	U	21.1	108	70-130	5.03	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	97.7	U	97.8	100	70-130	0.863	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	97.7	J	91.6	93.1	70-130	4.71	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	97.7	J	92.5	92.2	70-130	3.51	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	97.7	J	91.5	92.2	70-130	0.678	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	97.7		145	64.5 *	70-130	0.807	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	195		712	-19 *	70-130	19.6	0-20
51207-31-9	MSD	2,3,7,8-TCDF	19.5	J	20.8	104	70-130	1.82	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	97.7	U	106	109	70-130	3.58	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	97.7	U	97.8	100	70-130	1.36	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	97.7	J	106	107	70-130	2.45	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	97.7	J	106	108	70-130	2.22	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	97.7	J	105	107	70-130	3.28	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	97.7	J	109	111	70-130	0.102	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	97.7		113	108	70-130	1.69	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	97.7	J	109	111	70-130	1.37	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	195		256	120	70-130	12.8	0-20

Method Blank Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 32585**	**Instrument ID:**	**HRP763**	**Data File:**	**b18aug16b-4**
Lab Sample ID:	**12016693**	**Prep Date:**	**17-AUG-16**	**Analyzed:**	**08/18/16 17:22**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 32585	12016694	b18aug16b-2	08/18/16	1547
02	LCSD for batch 32585	12016695	b18aug16b-3	08/18/16	1634
03	8.10.16-Topsoil-1	9616001	b18aug16b-6	08/18/16	1858
04	8.10.16-Topsoil-1(9616001MS)	12016696	b18aug16b-7	08/18/16	1946
05	8.10.16-Topsoil-1(9616001MSD)	12016697	b18aug16b-8	08/18/16	2034

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016693**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**				
Client ID:	**MB for batch 32585**			**Prep Basis:**	**As Received**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 17:22**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-4**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.103	pg/g	0.103	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	.121	pg/g	0.121	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	.134	pg/g	0.134	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	.138	pg/g	0.138	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.142	pg/g	0.141	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.276	pg/g	0.174	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	1.26	pg/g	0.520	10.0
51207-31-9	2,3,7,8-TCDF	U	.149	pg/g	0.149	1.00
57117-41-6	1,2,3,7,8-PeCDF	J	0.168	pg/g	0.0812	5.00
57117-31-4	2,3,4,7,8-PeCDF	J	0.150	pg/g	0.0792	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.188	pg/g	0.103	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.152	pg/g	0.102	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.130	pg/g	0.0994	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.166	pg/g	0.133	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.134	pg/g	0.134	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.177	pg/g	0.177	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.392	pg/g	0.392	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.103	pg/g	0.103	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.121	pg/g	0.121	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.142	pg/g	0.134	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.276	pg/g	0.174	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.149	pg/g	0.149	1.00
30402-15-4	Total Pentachlorodibenzofuran	J	0.318	pg/g	0.064	5.00
55684-94-1	Total Hexachlorodibenzofuran	J	0.636	pg/g	0.0994	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	.117	pg/g	0.117	5.00
3333-30-0	TEQ WHO2005 ND=0		0.131	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.266	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		178	200	pg/g	89.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		138	200	pg/g	69.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		172	200	pg/g	86.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		168	200	pg/g	84.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		123	200	pg/g	61.6	(23%-140%)
13C-OCDD		170	400	pg/g	42.4	(17%-157%)
13C-2,3,7,8-TCDF		181	200	pg/g	90.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		136	200	pg/g	68.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		141	200	pg/g	70.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	200	pg/g	80.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		156	200	pg/g	78.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		167	200	pg/g	83.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	200	pg/g	83.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016693**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**				
Client ID:	**MB for batch 32585**			**Prep Basis:**	**As Received**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 17:22**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-4**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		113	200	pg/g	56.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		119	200	pg/g	59.6	(26%-138%)
37Cl-2,3,7,8-TCDD		18.6	20.0	pg/g	93.1	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016694**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**				
Client ID:	**LCS for batch 32585**			**Prep Basis:**	**As Received**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 15:47**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-2**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.9	pg/g	0.162	1.00
40321-76-4	1,2,3,7,8-PeCDD		103	pg/g	0.280	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		94.5	pg/g	0.384	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		97.8	pg/g	0.358	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		93.5	pg/g	0.386	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		101	pg/g	0.564	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		203	pg/g	1.70	10.0
51207-31-9	2,3,7,8-TCDF		20.5	pg/g	0.184	1.00
57117-41-6	1,2,3,7,8-PeCDF		104	pg/g	0.230	5.00
57117-31-4	2,3,4,7,8-PeCDF		103	pg/g	0.208	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		108	pg/g	0.402	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		109	pg/g	0.398	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		109	pg/g	0.394	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		107	pg/g	0.588	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		113	pg/g	0.450	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		112	pg/g	0.632	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		238	pg/g	1.17	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	200	pg/g	83.7	(20%-175%)
13C-1,2,3,7,8-PeCDD		155	200	pg/g	77.5	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		170	200	pg/g	84.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		171	200	pg/g	85.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		133	200	pg/g	66.4	(22%-166%)
13C-OCDD		161	400	pg/g	40.4	(13%-199%)
13C-2,3,7,8-TCDF		170	200	pg/g	84.9	(22%-152%)
13C-1,2,3,7,8-PeCDF		145	200	pg/g	72.5	(21%-192%)
13C-2,3,4,7,8-PeCDF		155	200	pg/g	77.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		163	200	pg/g	81.3	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		164	200	pg/g	82.2	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		169	200	pg/g	84.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		160	200	pg/g	80.2	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		123	200	pg/g	61.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		126	200	pg/g	63.1	(20%-186%)
37Cl-2,3,7,8-TCDD		17.8	20.0	pg/g	88.9	(31%-191%)

Comments:

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016695**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**				
Client ID:	**LCSD for batch 32585**			**Prep Basis:**	**As Received**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 16:34**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-3**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.8	pg/g	0.133	1.00
40321-76-4	1,2,3,7,8-PeCDD		101	pg/g	0.175	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		94.7	pg/g	0.346	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		96.2	pg/g	0.334	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		94.5	pg/g	0.354	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		100	pg/g	0.496	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		196	pg/g	0.956	10.0
51207-31-9	2,3,7,8-TCDF		20.2	pg/g	0.169	1.00
57117-41-6	1,2,3,7,8-PeCDF		110	pg/g	0.182	5.00
57117-31-4	2,3,4,7,8-PeCDF		102	pg/g	0.173	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		109	pg/g	0.338	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		112	pg/g	0.340	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		108	pg/g	0.344	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		108	pg/g	0.476	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		109	pg/g	0.360	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		112	pg/g	0.538	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		231	pg/g	1.06	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	200	pg/g	82.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		143	200	pg/g	71.3	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		165	200	pg/g	82.4	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		163	200	pg/g	81.3	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		124	200	pg/g	62.2	(22%-166%)
13C-OCDD		177	400	pg/g	44.3	(13%-199%)
13C-2,3,7,8-TCDF		170	200	pg/g	85.2	(22%-152%)
13C-1,2,3,7,8-PeCDF		136	200	pg/g	68.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		144	200	pg/g	72.1	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		157	200	pg/g	78.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		154	200	pg/g	77.1	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		157	200	pg/g	78.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		151	200	pg/g	75.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		110	200	pg/g	55.1	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		121	200	pg/g	60.7	(20%-186%)
37Cl-2,3,7,8-TCDD		17.8	20.0	pg/g	88.8	(31%-191%)

Comments:

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016696**	**Date Collected:**	**08/10/2016 13:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**	**Date Received:**	**08/12/2016 09:45**	**%Moisture:**	**21.9**
Client ID:	**8.10.16-Topsoil-1(9616001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 19:46**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-7**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**13.16 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		22.1	pg/g	0.154	0.973
40321-76-4	1,2,3,7,8-PeCDD		98.6	pg/g	0.183	4.87
39227-28-6	1,2,3,4,7,8-HxCDD		96.1	pg/g	0.337	4.87
57653-85-7	1,2,3,6,7,8-HxCDD		95.8	pg/g	0.325	4.87
19408-74-3	1,2,3,7,8,9-HxCDD		90.9	pg/g	0.345	4.87
35822-46-9	1,2,3,4,6,7,8-HpCDD		144	pg/g	0.559	4.87
3268-87-9	1,2,3,4,6,7,8,9-OCDD		585	pg/g	0.946	9.73
51207-31-9	2,3,7,8-TCDF		20.4	pg/g	0.216	0.973
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	0.163	4.87
57117-31-4	2,3,4,7,8-PeCDF		99.1	pg/g	0.163	4.87
70648-26-9	1,2,3,4,7,8-HxCDF		109	pg/g	0.282	4.87
57117-44-9	1,2,3,6,7,8-HxCDF		108	pg/g	0.269	4.87
60851-34-5	2,3,4,6,7,8-HxCDF		109	pg/g	0.292	4.87
72918-21-9	1,2,3,7,8,9-HxCDF		109	pg/g	0.407	4.87
67562-39-4	1,2,3,4,6,7,8-HpCDF		111	pg/g	0.304	4.87
55673-89-7	1,2,3,4,7,8,9-HpCDF		110	pg/g	0.426	4.87
39001-02-0	1,2,3,4,6,7,8,9-OCDF		225	pg/g	0.569	9.73
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		24.2	pg/g	0.154	0.973
36088-22-9	Total Pentachlorodibenzo-p-dioxin		101	pg/g	0.183	4.87
34465-46-8	Total Hexachlorodibenzo-p-dioxin		291	pg/g	0.325	4.87
37871-00-4	Total Heptachlorodibenzo-p-dioxin		191	pg/g	0.559	4.87
30402-14-3	Total Tetrachlorodibenzofuran		24.1	pg/g	0.216	0.973
30402-15-4	Total Pentachlorodibenzofuran		209	pg/g	0.0625	4.87
55684-94-1	Total Hexachlorodibenzofuran		443	pg/g	0.269	4.87
38998-75-3	Total Heptachlorodibenzofuran		233	pg/g	0.304	4.87
3333-30-0	TEQ WHO2005 ND=0		231	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		231	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		175	195	pg/g	90.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		167	195	pg/g	86.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		176	195	pg/g	90.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		169	195	pg/g	86.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		135	195	pg/g	69.1	(23%-140%)
13C-OCDD		207	389	pg/g	53.3	(17%-157%)
13C-2,3,7,8-TCDF		187	195	pg/g	96.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		163	195	pg/g	83.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		167	195	pg/g	85.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		169	195	pg/g	86.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	195	pg/g	82.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		157	195	pg/g	80.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	195	pg/g	81.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016696**	**Date Collected:**	**08/10/2016 13:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**	**Date Received:**	**08/12/2016 09:45**	**%Moisture:**	**21.9**
Client ID:	**8.10.16-Topsoil-1(9616001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 19:46**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-7**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**13.16 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		121	195	pg/g	62.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		127	195	pg/g	65.5	(26%-138%)
37Cl-2,3,7,8-TCDD		18.0	19.5	pg/g	92.3	(35%-197%)

Comments:

K Estimated Maximum Possible Concentration

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016697**	**Date Collected:**	**08/10/2016 13:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**	**Date Received:**	**08/12/2016 09:45**	**%Moisture:**	**21.9**
Client ID:	**8.10.16-Topsoil-1(9616001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 20:34**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-8**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**13.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.1	pg/g	0.120	0.977
40321-76-4	1,2,3,7,8-PeCDD		97.8	pg/g	0.217	4.89
39227-28-6	1,2,3,4,7,8-HxCDD		91.6	pg/g	0.295	4.89
57653-85-7	1,2,3,6,7,8-HxCDD		92.5	pg/g	0.313	4.89
19408-74-3	1,2,3,7,8,9-HxCDD		91.5	pg/g	0.317	4.89
35822-46-9	1,2,3,4,6,7,8-HpCDD		145	pg/g	0.535	4.89
3268-87-9	1,2,3,4,6,7,8,9-OCDD		712	pg/g	1.21	9.77
51207-31-9	2,3,7,8-TCDF		20.8	pg/g	0.225	0.977
57117-41-6	1,2,3,7,8-PeCDF		106	pg/g	0.289	4.89
57117-31-4	2,3,4,7,8-PeCDF		97.8	pg/g	0.276	4.89
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	0.317	4.89
57117-44-9	1,2,3,6,7,8-HxCDF		106	pg/g	0.326	4.89
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	0.326	4.89
72918-21-9	1,2,3,7,8,9-HxCDF		109	pg/g	0.448	4.89
67562-39-4	1,2,3,4,6,7,8-HpCDF		113	pg/g	0.352	4.89
55673-89-7	1,2,3,4,7,8,9-HpCDF		109	pg/g	0.455	4.89
39001-02-0	1,2,3,4,6,7,8,9-OCDF		256	pg/g	0.735	9.77
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		23.9	pg/g	0.120	0.977
36088-22-9	Total Pentachlorodibenzo-p-dioxin		100	pg/g	0.217	4.89
34465-46-8	Total Hexachlorodibenzo-p-dioxin		280	pg/g	0.295	4.89
37871-00-4	Total Heptachlorodibenzo-p-dioxin		195	pg/g	0.535	4.89
30402-14-3	Total Tetrachlorodibenzofuran		27.5	pg/g	0.225	0.977
30402-15-4	Total Pentachlorodibenzofuran		209	pg/g	0.0551	4.89
55684-94-1	Total Hexachlorodibenzofuran		435	pg/g	0.317	4.89
38998-75-3	Total Heptachlorodibenzofuran		246	pg/g	0.352	4.89
3333-30-0	TEQ WHO2005 ND=0		228	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		228	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		173	195	pg/g	88.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		156	195	pg/g	79.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		168	195	pg/g	86.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		160	195	pg/g	81.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		126	195	pg/g	64.3	(23%-140%)
13C-OCDD		179	391	pg/g	45.7	(17%-157%)
13C-2,3,7,8-TCDF		176	195	pg/g	90.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		153	195	pg/g	78.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		159	195	pg/g	81.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		162	195	pg/g	82.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		154	195	pg/g	78.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		156	195	pg/g	79.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		149	195	pg/g	76.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0354**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016697**	**Date Collected:**	**08/10/2016 13:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32585**	**Date Received:**	**08/12/2016 09:45**	**%Moisture:**	**21.9**
Client ID:	**8.10.16-Topsoil-1(9616001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32587**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/18/2016 20:34**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b18aug16b-8**			**Dilution:**	**1**
Prep Batch:	**32585**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-AUG-16**	**Prep Aliquot:**	**13.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		112	195	pg/g	57.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		125	195	pg/g	64.2	(26%-138%)
37Cl-2,3,7,8-TCDD		17.8	19.5	pg/g	90.9	(35%-197%)

Comments:

K Estimated Maximum Possible Concentration

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

September 02, 2016

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Dioxin & PCB's subcontract
Work Order: 9658
SDG: A6H0642

Dear Mr. Nerenberg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 20, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

WO #19658

SUBCONTRACT ORDER

Apex Laboratories

A6H0642

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
3306 Kitty Hawk Rd Suite 120
Wilmington, NC 28405
Phone :(910) 795-0421
Fax: -

Sample Name: 8.17.16-Topsoil-1 **Soil** **Sampled: 08/17/16 14:35** (A6H0642-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)4 oz Glass Jar	08/25/16 17:00	02/13/17 14:35	

Sample Name: 8.17.16-Topsoil-3 **Soil** **Sampled: 08/17/16 14:55** (A6H0642-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)4 oz Glass Jar	08/25/16 17:00	02/13/17 14:55	

MJO 22Aug16
5.1°C + 0.3°C = ~~4.8°C~~
5.4°C
MJO 22Aug16

10 day TAT

~~Standard~~

or sooner if possible

[signature] 8/19/16
Released By Date

UPS (Shipper)
Received By Date

UPS (Shipper)
Released By Date

[signature] @ CFA 20AUG16
Received By Date

@1034

Page 1 of 1

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 9658
Shipping Company: UPS	Date/Time Received: 20Aug2016 10:34

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 5.1+0.3 = 5.4°C
4	Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 1-4oz clear jar each
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:
#10 day TAT

Checklist performed by: Initials: MJD Date: 22Aug2016

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A6H0642
Work Order 9658

Method/Analysis Information

Product:	**Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3540C
Analytical Batch Number:	32668
Clean Up Batch Number:	32667
Extraction Batch Number:	32666

Sample Analysis

The following samples were analyzed using the analytical protocol as established in :

Sample ID	Client ID
9658001	8.17.16-Topsoil-1
9658002	8.17.16-Topsoil-3
12016768	Method Blank (MB)
12016769	Laboratory Control Sample (LCS)
12016770	Laboratory Control Sample Duplicate (LCSD)
12016771	9658001(8.17.16-Topsoil-1) Matrix Spike (MS)
12016772	9658001(8.17.16-Topsoil-1) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 9658001 (8.17.16-Topsoil-1)- Batch 32668 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
Two MSD recoveries for this SDG were not within the acceptance limits. 12016772 (8.17.16-Topsoil-1) - Batch 32668.

MS/MSD Relative Percent Difference (RPD) Statement
The relative percent differences (RPD) between each MS and MSD were not within the required acceptance limits. Batch is validated by the passing LCS/LCSD. 12016771 (8.17.16-Topsoil-1) and 12016772 (8.17.16-Topsoil-1) - Batch 32668.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of

expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 645961 - Batch 32668.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample Preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6H0642 CFA Work Order: 9658

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
J	Value is estimated
K	Estimated Maximum Possible Concentration
U	Analyte was analyzed for, but not detected above the specified detection limit.

DL	Indicates that sample is diluted.
RA	Indicates that sample is re-analyzed without re-extraction.
RE	Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: ESuhrie **Name: Erin Suhrie**

Date: 02 SEP 2016 **Title: Data Validator**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9658001**	**Date Collected:**	**08/17/2016 14:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/20/2016 10:34**	**%Moisture:**	**26.5**
Client ID:	**8.17.16-Topsoil-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 14:28**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-10**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**13.79 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.679	pg/g	0.679	0.987
40321-76-4	1,2,3,7,8-PeCDD	U	.624	pg/g	0.624	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	U	.91	pg/g	0.910	4.94
57653-85-7	1,2,3,6,7,8-HxCDD	U	2.13	pg/g	2.13	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.58	pg/g	1.58	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		53.3	pg/g	2.82	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		466	pg/g	4.46	9.87
51207-31-9	2,3,7,8-TCDF	U	.705	pg/g	0.705	0.987
57117-41-6	1,2,3,7,8-PeCDF	U	.421	pg/g	0.421	4.94
57117-31-4	2,3,4,7,8-PeCDF	U	.523	pg/g	0.523	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	U	.758	pg/g	0.758	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	U	.717	pg/g	0.717	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	U	.744	pg/g	0.744	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.09	pg/g	1.09	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		5.21	pg/g	0.673	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.16	pg/g	1.16	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		15.5	pg/g	1.99	9.87
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.902	pg/g	0.679	0.987
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.766	pg/g	0.624	4.94
34465-46-8	Total Hexachlorodibenzo-p-dioxin		9.60	pg/g	0.910	4.94
37871-00-4	Total Heptachlorodibenzo-p-dioxin		101	pg/g	2.82	4.94
30402-14-3	Total Tetrachlorodibenzofuran		2.62	pg/g	0.705	0.987
30402-15-4	Total Pentachlorodibenzofuran	J	1.03	pg/g	0.215	4.94
55684-94-1	Total Hexachlorodibenzofuran		8.68	pg/g	0.717	4.94
38998-75-3	Total Heptachlorodibenzofuran		16.7	pg/g	0.673	4.94
3333-30-0	TEQ WHO2005 ND=0		0.729	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		1.90	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	197	pg/g	75.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		163	197	pg/g	82.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	197	pg/g	80.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		162	197	pg/g	81.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		153	197	pg/g	77.5	(23%-140%)
13C-OCDD		218	395	pg/g	55.2	(17%-157%)
13C-2,3,7,8-TCDF		154	197	pg/g	77.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		159	197	pg/g	80.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		167	197	pg/g	84.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	197	pg/g	80.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	197	pg/g	79.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		159	197	pg/g	80.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		144	197	pg/g	73.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9658001**	**Date Collected:**	**08/17/2016 14:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/20/2016 10:34**	**%Moisture:**	**26.5**
Client ID:	**8.17.16-Topsoil-1**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 14:28**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-10**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**13.79 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		145	197	pg/g	73.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		154	197	pg/g	78.2	(26%-138%)
37Cl-2,3,7,8-TCDD		14.9	19.7	pg/g	75.5	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9658002**	**Date Collected:**	**08/17/2016 14:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/20/2016 10:34**	**%Moisture:**	**23.1**
Client ID:	**8.17.16-Topsoil-3**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 16:49**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-13**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**13.86 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.351	pg/g	0.351	0.939
40321-76-4	1,2,3,7,8-PeCDD	U	.505	pg/g	0.505	4.69
39227-28-6	1,2,3,4,7,8-HxCDD	U	.456	pg/g	0.456	4.69
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.70	pg/g	0.432	4.69
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.17	pg/g	1.17	4.69
35822-46-9	1,2,3,4,6,7,8-HpCDD		49.7	pg/g	1.11	4.69
3268-87-9	1,2,3,4,6,7,8,9-OCDD		474	pg/g	2.38	9.39
51207-31-9	2,3,7,8-TCDF	U	.46	pg/g	0.460	0.939
57117-41-6	1,2,3,7,8-PeCDF	J	0.342	pg/g	0.225	4.69
57117-31-4	2,3,4,7,8-PeCDF	J	0.563	pg/g	0.237	4.69
70648-26-9	1,2,3,4,7,8-HxCDF	U	.76	pg/g	0.760	4.69
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.359	pg/g	0.276	4.69
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.451	pg/g	0.287	4.69
72918-21-9	1,2,3,7,8,9-HxCDF	U	.387	pg/g	0.387	4.69
67562-39-4	1,2,3,4,6,7,8-HpCDF		4.86	pg/g	0.340	4.69
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.498	pg/g	0.483	4.69
39001-02-0	1,2,3,4,6,7,8,9-OCDF		14.2	pg/g	0.755	9.39
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		1.97	pg/g	0.351	0.939
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.02	pg/g	0.441	4.69
34465-46-8	Total Hexachlorodibenzo-p-dioxin		12.0	pg/g	0.432	4.69
37871-00-4	Total Heptachlorodibenzo-p-dioxin		101	pg/g	1.11	4.69
30402-14-3	Total Tetrachlorodibenzofuran		4.67	pg/g	0.460	0.939
30402-15-4	Total Pentachlorodibenzofuran	J	4.59	pg/g	0.0768	4.69
55684-94-1	Total Hexachlorodibenzofuran		7.73	pg/g	0.263	4.69
38998-75-3	Total Heptachlorodibenzofuran		14.7	pg/g	0.340	4.69
3333-30-0	TEQ WHO2005 ND=0		1.13	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		1.72	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	188	pg/g	80.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		165	188	pg/g	87.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		149	188	pg/g	79.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	188	pg/g	80.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		148	188	pg/g	78.6	(23%-140%)
13C-OCDD		220	376	pg/g	58.5	(17%-157%)
13C-2,3,7,8-TCDF		153	188	pg/g	81.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		164	188	pg/g	87.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		168	188	pg/g	89.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	188	pg/g	79.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		148	188	pg/g	79.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		148	188	pg/g	78.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		148	188	pg/g	78.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**9658002**	**Date Collected:**	**08/17/2016 14:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/20/2016 10:34**	**%Moisture:**	**23.1**
Client ID:	**8.17.16-Topsoil-3**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 16:49**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-13**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**13.86 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		135	188	pg/g	72.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		152	188	pg/g	80.7	(26%-138%)
37Cl-2,3,7,8-TCDD		15.1	18.8	pg/g	80.4	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A6H0642

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12016769	LCS for batch 32666	13C-2,3,7,8-TCDD		79.4	(20%-175%)
		13C-1,2,3,7,8-PeCDD		90.9	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		84.2	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		80.2	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		85.6	(22%-166%)
		13C-OCDD		71.6	(13%-199%)
		13C-2,3,7,8-TCDF		80.5	(22%-152%)
		13C-1,2,3,7,8-PeCDF		87.6	(21%-192%)
		13C-2,3,4,7,8-PeCDF		91.7	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		79.6	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		76.0	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		80.0	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		79.8	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		79.8	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		86.8	(20%-186%)
		37Cl-2,3,7,8-TCDD		78.6	(31%-191%)
12016770	LCSD for batch 32666	13C-2,3,7,8-TCDD		82.9	(20%-175%)
		13C-1,2,3,7,8-PeCDD		97.9	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		85.4	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		86.0	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		86.6	(22%-166%)
		13C-OCDD		64.5	(13%-199%)
		13C-2,3,7,8-TCDF		84.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		95.4	(21%-192%)
		13C-2,3,4,7,8-PeCDF		98.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		83.2	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		80.5	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		83.2	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		82.6	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		78.4	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		90.4	(20%-186%)
		37Cl-2,3,7,8-TCDD		82.4	(31%-191%)
12016768	MB for batch 32666	13C-2,3,7,8-TCDD		81.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		92.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.7	(23%-140%)
		13C-OCDD		60.4	(17%-157%)
		13C-2,3,7,8-TCDF		83.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		90.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		93.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		79.1	(35%-197%)
9658001	8.17.16-Topsoil-1	13C-2,3,7,8-TCDD		75.7	(25%-164%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6H0642

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9658001	8.17.16-Topsoil-1	13C-1,2,3,7,8-PeCDD		82.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		77.5	(23%-140%)
		13C-OCDD		55.2	(17%-157%)
		13C-2,3,7,8-TCDF		77.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		75.5	(35%-197%)
12016771	8.17.16-Topsoil-1(9658001MS)	13C-2,3,7,8-TCDD		81.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.9	(23%-140%)
		13C-OCDD		63.6	(17%-157%)
		13C-2,3,7,8-TCDF		82.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		88.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		87.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.4	(35%-197%)
12016772	8.17.16-Topsoil-1(9658001MSD)	13C-2,3,7,8-TCDD		80.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		79.2	(23%-140%)
		13C-OCDD		58.0	(17%-157%)
		13C-2,3,7,8-TCDF		81.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		86.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		90.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		85.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		84.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.5	(35%-197%)
9658002	8.17.16-Topsoil-3	13C-2,3,7,8-TCDD		80.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.8	(25%-181%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6H0642

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9658002	8.17.16-Topsoil-3	13C-1,2,3,4,7,8-HxCDD		79.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.6	(23%-140%)
		13C-OCDD		58.5	(17%-157%)
		13C-2,3,7,8-TCDF		81.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		87.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		72.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		80.4	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0642
Client ID: LCS for batch 32666
Lab Sample ID: 12016769
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 08/28/2016 12:07
Dilution: 1
Prep Batch ID: 32666
Batch ID: 32668

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	20.2	101	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	106	106	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	103	103	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	103	103	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	105	105	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	103	103	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	210	105	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	19.9	99.3	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	106	106	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	103	103	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	105	105	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	110	110	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	107	107	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	105	105	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	102	102	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	104	104	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	228	114	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6H0642
Client ID: LCSD for batch 32666
Lab Sample ID: 12016770
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOIL
Analysis Date: 08/28/2016 12:54
Dilution: 1
Prep Batch ID: 32666
Batch ID: 32668

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	19.6	98.1	67-158	2.93	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	102	102	70-142	4.07	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	102	102	70-164	1.38	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	101	101	76-134	1.67	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	104	104	64-162	0.830	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	100	100	70-140	2.74	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	214	107	78-144	1.78	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	19.2	95.8	75-158	3.65	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	102	102	80-134	3.99	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	99.8	99.8	68-160	3.08	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	100	100	72-134	4.99	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	108	108	84-130	2.52	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	103	103	70-156	3.58	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	103	103	78-130	2.12	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	98.4	98.4	82-122	3.61	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	103	103	78-138	1.00	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	228	114	63-170	0.404	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A6H0642**	**Sample Type:**	**Matrix Spike**	
Client ID:	**8.17.16-Topsoil-1(9658001MS)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12016771**	**%Moisture:**	**26.5**	
Instrument:	**HRP750**	**Analysis Date:**	**08/28/2016 15:15**	**Dilution: 1**
Analyst:	**JTF**	**Prep Batch ID:**	**32666**	
		Batch ID:	**32668**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	19.8	U	19.3	97.2	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	99.1	U	99.7	101	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	99.1	U	104	105	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	99.1	U	97.5	98.4	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	99.1	U	101	102	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	99.1		152	99.8	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	198		658	97.1	70-130
51207-31-9	MS	2,3,7,8-TCDF	19.8	U	20.3	102	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	99.1	U	104	105	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	99.1	U	99.1	100	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	99.1	U	102	103	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	99.1	U	103	104	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	99.1	U	101	101	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	99.1	U	103	104	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	99.1		107	103	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	99.1	U	105	106	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	198		257	122	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A6H0642**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**8.17.16-Topsoil-1(9658001MSD)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12016772**	**%Moisture:**	**26.5**	
Instrument:	**HRP750**	**Analysis Date:**	**08/28/2016 16:02**	**Dilution: 1**
Analyst:	**JTF**	**Prep Batch ID:**	**32666**	
		Batch ID:	**32668**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	19.7	U	19.9	101	70-130	3.10	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	98.7	U	101	102	70-130	1.12	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	98.7	U	109	110	70-130	4.93	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	98.7	U	101	102	70-130	3.10	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	98.7	U	101	103	70-130	0.0512	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	98.7		187	135 *	70-130	20.4 *	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	197		824	181 *	70-130	22.3 *	0-20
51207-31-9	MSD	2,3,7,8-TCDF	19.7	U	20.2	103	70-130	0.338	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	98.7	U	105	106	70-130	1.02	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	98.7	U	101	102	70-130	1.98	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	98.7	U	102	103	70-130	0.0903	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	98.7	U	108	110	70-130	4.79	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	98.7	U	105	107	70-130	4.51	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	98.7	U	110	111	70-130	6.41	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	98.7		106	102	70-130	1.52	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	98.7	U	103	105	70-130	1.80	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	197		251	119	70-130	2.53	0-20

Method Blank Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 32666**	**Instrument ID:**	**HRP750**	**Data File:**	**A27AUG16A_3-9**
Lab Sample ID:	**12016768**	**Prep Date:**	**25-AUG-16**	**Analyzed:**	**08/28/16 13:41**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 32666	12016769	A27AUG16A_3-7	08/28/16	1207
02	LCSD for batch 32666	12016770	A27AUG16A_3-8	08/28/16	1254
03	8.17.16-Topsoil-1	9658001	A27AUG16A_3-10	08/28/16	1428
04	8.17.16-Topsoil-1(9658001MS)	12016771	A27AUG16A_3-11	08/28/16	1515
05	8.17.16-Topsoil-1(9658001MSD)	12016772	A27AUG16A_3-12	08/28/16	1602
06	8.17.16-Topsoil-3	9658002	A27AUG16A_3-13	08/28/16	1649

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016768**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32666**				
Client ID:	**MB for batch 32666**			**Prep Basis:**	**As Received**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 13:41**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-9**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.304	pg/g	0.304	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	.266	pg/g	0.266	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	.318	pg/g	0.318	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	.306	pg/g	0.306	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	.318	pg/g	0.318	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.904	pg/g	0.904	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	4.15	pg/g	1.85	10.0
51207-31-9	2,3,7,8-TCDF	U	.328	pg/g	0.328	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	.171	pg/g	0.171	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	.163	pg/g	0.163	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	.228	pg/g	0.228	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	.23	pg/g	0.230	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	.232	pg/g	0.232	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	.316	pg/g	0.316	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.274	pg/g	0.274	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.388	pg/g	0.388	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.788	pg/g	0.788	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.304	pg/g	0.304	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.266	pg/g	0.266	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.306	pg/g	0.306	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.904	pg/g	0.904	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.328	pg/g	0.328	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	.1	pg/g	0.100	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	.228	pg/g	0.228	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	.274	pg/g	0.274	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00124	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.435	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	200	pg/g	81.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		186	200	pg/g	92.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		168	200	pg/g	84.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		166	200	pg/g	82.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		165	200	pg/g	82.7	(23%-140%)
13C-OCDD		242	400	pg/g	60.4	(17%-157%)
13C-2,3,7,8-TCDF		167	200	pg/g	83.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		180	200	pg/g	90.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		188	200	pg/g	93.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		165	200	pg/g	82.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		158	200	pg/g	79.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		165	200	pg/g	82.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		161	200	pg/g	80.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016768**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32666**				
Client ID:	**MB for batch 32666**			**Prep Basis:**	**As Received**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 13:41**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-9**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	200	pg/g	75.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		173	200	pg/g	86.3	(26%-138%)
37Cl-2,3,7,8-TCDD		15.8	20.0	pg/g	79.1	(35%-197%)

Comments:

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016769**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32666**				
Client ID:	**LCS for batch 32666**			**Prep Basis:**	**As Received**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 12:07**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-7**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.2	pg/g	0.388	1.00
40321-76-4	1,2,3,7,8-PeCDD		106	pg/g	0.416	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		103	pg/g	1.07	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	0.984	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		105	pg/g	1.05	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		103	pg/g	1.20	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		210	pg/g	2.00	10.0
51207-31-9	2,3,7,8-TCDF		19.9	pg/g	0.372	1.00
57117-41-6	1,2,3,7,8-PeCDF		106	pg/g	0.532	5.00
57117-31-4	2,3,4,7,8-PeCDF		103	pg/g	0.500	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		105	pg/g	1.02	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		110	pg/g	1.01	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		107	pg/g	1.05	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	1.50	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		102	pg/g	1.10	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		104	pg/g	1.65	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		228	pg/g	1.99	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	200	pg/g	79.4	(20%-175%)
13C-1,2,3,7,8-PeCDD		182	200	pg/g	90.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		168	200	pg/g	84.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		160	200	pg/g	80.2	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		171	200	pg/g	85.6	(22%-166%)
13C-OCDD		287	400	pg/g	71.6	(13%-199%)
13C-2,3,7,8-TCDF		161	200	pg/g	80.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		175	200	pg/g	87.6	(21%-192%)
13C-2,3,4,7,8-PeCDF		183	200	pg/g	91.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		159	200	pg/g	79.6	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		152	200	pg/g	76.0	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	80.0	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		160	200	pg/g	79.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		160	200	pg/g	79.8	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		174	200	pg/g	86.8	(20%-186%)
37Cl-2,3,7,8-TCDD		15.7	20.0	pg/g	78.6	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016770**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32666**				
Client ID:	**LCSD for batch 32666**			**Prep Basis:**	**As Received**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 12:54**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-8**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.6	pg/g	0.294	1.00
40321-76-4	1,2,3,7,8-PeCDD		102	pg/g	0.368	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	0.512	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		101	pg/g	0.508	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		104	pg/g	0.522	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		100	pg/g	1.21	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		214	pg/g	2.00	10.0
51207-31-9	2,3,7,8-TCDF		19.2	pg/g	0.318	1.00
57117-41-6	1,2,3,7,8-PeCDF		102	pg/g	0.562	5.00
57117-31-4	2,3,4,7,8-PeCDF		99.8	pg/g	0.548	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		100	pg/g	0.962	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		108	pg/g	0.970	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		103	pg/g	1.00	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		103	pg/g	1.38	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		98.4	pg/g	0.972	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		103	pg/g	1.49	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		228	pg/g	2.10	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		166	200	pg/g	82.9	(20%-175%)
13C-1,2,3,7,8-PeCDD		196	200	pg/g	97.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		171	200	pg/g	85.4	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		172	200	pg/g	86.0	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		173	200	pg/g	86.6	(22%-166%)
13C-OCDD		258	400	pg/g	64.5	(13%-199%)
13C-2,3,7,8-TCDF		169	200	pg/g	84.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		191	200	pg/g	95.4	(21%-192%)
13C-2,3,4,7,8-PeCDF		197	200	pg/g	98.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		166	200	pg/g	83.2	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		161	200	pg/g	80.5	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		166	200	pg/g	83.2	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		165	200	pg/g	82.6	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		157	200	pg/g	78.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		181	200	pg/g	90.4	(20%-186%)
37Cl-2,3,7,8-TCDD		16.5	20.0	pg/g	82.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016771**	**Date Collected:**	**08/17/2016 14:35**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32666**	**Date Received:**	**08/20/2016 10:34**	**%Moisture:**	**26.5**
Client ID:	**8.17.16-Topsoil-1(9658001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 15:15**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-11**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.3	pg/g	0.448	0.991
40321-76-4	1,2,3,7,8-PeCDD		99.7	pg/g	0.642	4.95
39227-28-6	1,2,3,4,7,8-HxCDD		104	pg/g	1.05	4.95
57653-85-7	1,2,3,6,7,8-HxCDD		97.5	pg/g	0.912	4.95
19408-74-3	1,2,3,7,8,9-HxCDD		101	pg/g	1.00	4.95
35822-46-9	1,2,3,4,6,7,8-HpCDD		152	pg/g	1.83	4.95
3268-87-9	1,2,3,4,6,7,8,9-OCDD		658	pg/g	2.62	9.91
51207-31-9	2,3,7,8-TCDF		20.3	pg/g	0.634	0.991
57117-41-6	1,2,3,7,8-PeCDF		104	pg/g	0.511	4.95
57117-31-4	2,3,4,7,8-PeCDF		99.1	pg/g	0.462	4.95
70648-26-9	1,2,3,4,7,8-HxCDF		102	pg/g	1.07	4.95
57117-44-9	1,2,3,6,7,8-HxCDF		103	pg/g	1.10	4.95
60851-34-5	2,3,4,6,7,8-HxCDF		101	pg/g	1.01	4.95
72918-21-9	1,2,3,7,8,9-HxCDF		103	pg/g	1.57	4.95
67562-39-4	1,2,3,4,6,7,8-HpCDF		107	pg/g	1.17	4.95
55673-89-7	1,2,3,4,7,8,9-HpCDF		105	pg/g	1.61	4.95
39001-02-0	1,2,3,4,6,7,8,9-OCDF		257	pg/g	2.79	9.91

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	198	pg/g	81.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		176	198	pg/g	88.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		170	198	pg/g	86.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		166	198	pg/g	83.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		164	198	pg/g	82.9	(23%-140%)
13C-OCDD		252	396	pg/g	63.6	(17%-157%)
13C-2,3,7,8-TCDF		164	198	pg/g	82.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		175	198	pg/g	88.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		183	198	pg/g	92.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		167	198	pg/g	84.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		162	198	pg/g	81.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		169	198	pg/g	85.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		163	198	pg/g	82.4	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		154	198	pg/g	77.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		174	198	pg/g	87.9	(26%-138%)
37Cl-2,3,7,8-TCDD		16.1	19.8	pg/g	81.4	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6H0642**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12016772**	**Date Collected:**	**08/17/2016 14:35**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 32666**	**Date Received:**	**08/20/2016 10:34**	**%Moisture:**	**26.5**
Client ID:	**8.17.16-Topsoil-1(9658001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**32668**	**Method:**	**EPA Method 1613B**		
Run Date:	**08/28/2016 16:02**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A27AUG16A_3-12**			**Dilution:**	**1**
Prep Batch:	**32666**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**25-AUG-16**	**Prep Aliquot:**	**13.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.9	pg/g	0.395	0.987
40321-76-4	1,2,3,7,8-PeCDD		101	pg/g	0.653	4.93
39227-28-6	1,2,3,4,7,8-HxCDD		109	pg/g	0.862	4.93
57653-85-7	1,2,3,6,7,8-HxCDD		101	pg/g	0.829	4.93
19408-74-3	1,2,3,7,8,9-HxCDD		101	pg/g	0.864	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		187	pg/g	2.09	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		824	pg/g	3.10	9.87
51207-31-9	2,3,7,8-TCDF		20.2	pg/g	0.574	0.987
57117-41-6	1,2,3,7,8-PeCDF		105	pg/g	0.474	4.93
57117-31-4	2,3,4,7,8-PeCDF		101	pg/g	0.460	4.93
70648-26-9	1,2,3,4,7,8-HxCDF		102	pg/g	0.848	4.93
57117-44-9	1,2,3,6,7,8-HxCDF		108	pg/g	0.890	4.93
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	0.915	4.93
72918-21-9	1,2,3,7,8,9-HxCDF		110	pg/g	1.32	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF		106	pg/g	1.20	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF		103	pg/g	1.56	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF		251	pg/g	2.05	9.87

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		158	197	pg/g	80.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	197	pg/g	87.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		161	197	pg/g	81.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		165	197	pg/g	83.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		156	197	pg/g	79.2	(23%-140%)
13C-OCDD		229	395	pg/g	58.0	(17%-157%)
13C-2,3,7,8-TCDF		160	197	pg/g	81.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		171	197	pg/g	86.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		178	197	pg/g	90.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		169	197	pg/g	85.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	197	pg/g	79.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		161	197	pg/g	81.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		154	197	pg/g	77.9	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		149	197	pg/g	75.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		167	197	pg/g	84.8	(26%-138%)
37Cl-2,3,7,8-TCDD		16.1	19.7	pg/g	81.5	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Ceres Analytical Laboratory, Inc.
4919 Windplay Dr., Suite 1
El Dorado Hills, CA 95762

July 24, 2017 Ceres ID: 11526

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223

The following report contains the results for the two soil samples received on July 20, 2017. These samples were analyzed for tetra through octa chlorinated dioxins and dibenzofurans by EPA method 1613B. Rush 3-day turn-around time was provided for this work.

Results for the soil sample are reported on a dry weight basis.

This work was authorized under Apex Laboratories' Project # A7G0405.

The report consists of a Cover Letter, Sample Inventory (Section I), Data Summary (Section II), Sample Tracking (Section VI), and Qualifiers/Abbreviations (Section VII). Raw Data (Section III), Continuing Calibration (Section IV), and Initial Calibration (Section V) are available in a full report (.pdf format) upon request.

The Sample Tracking Section includes all external and internal chain of custodies, laboratory bench sheets, and any special instructions received.

If you have any questions regarding this report, please feel free to contact me at (916)932-5011.

Sincerely,

James M. Hedin
Director of Operations/CEO
jhedin@ceres-lab.com

Section I: Sample Inventory

Ceres Sample ID:	Sample ID	Date Received	Collection Date	&Time
11526-001	SS-071417-30 (A7G0405-01)	7/20/2017	7/14/2017	11:45
11526-002	SS-071417-Swanson (A7G0405-02)	7/20/2017	7/14/2017	11:55

Section II: Data Summary

CERES Analytical Laboratory, Inc.
4919 Windplay Dr.Suite 1, El Dorado Hills, CA 95762

EPA Method 1613B

Quality Assurance Sample Method Blank		
	QC Batch #: 1627	**Date Received:** NA
	Matrix: Soil	**Date Extracted:** 7/20/2017
		ZB-5MS Analysis: 7/23/2017
Project ID: A7G0405	**Sample Size:** 10.00 g	

Analyte	Conc. (pg/g)	MDL	Qualifiers	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 0.241	0.172		13C-2378-TCDD	86.1	25-164	
12378-PeCDD	DL= 0.321	0.327		13C-12378-PeCDD	90.4	25-181	
123478-HxCDD	DL= 0.436	0.327		13C-123478-HxCDD	102	32-141	
123678-HxCDD	DL= 0.512	0.655		13C-123678-HxCDD	91.4	28-130	
123789-HxCDD	DL= 0.455	0.315		13C-1234678-HpCDD	90.7	23-140	
1234678-HpCDD	DL= 0.578	0.409		13C-OCDD	87.0	17-157	
OCDD	DL= 0.651	1.01		13C-2378-TCDF	90.4	24-169	
2,3,7,8-TCDF	DL= 0.214	0.0886		13C-12378-PeCDF	98.7	24-185	
12378-PeCDF	DL= 0.220	0.412		13C-23478-PeCDF	103	21-178	
23478-PeCDF	DL= 0.192	0.422		13C-123478-HxCDF	97.8	26-152	
123478-HxCDF	DL= 0.247	0.518		13C-123678-HxCDF	95.9	26-123	
123678-HxCDF	DL= 0.265	0.533		13C-234678-HxCDF	93.0	28-136	
234678-HxCDF	DL= 0.284	0.319		13C-123789-HxCDF	82.0	29-147	
123789-HxCDF	DL= 0.414	0.425		13C-1234678-HpCDF	88.8	28-143	
1234678-HpCDF	DL= 0.469	0.279		13C-1234789-HpCDF	86.6	26-138	
1234789-HpCDF	DL= 0.622	0.378					
OCDF	DL= 1.48	0.461					
Totals	**Conc. (pg/g)**	**EMPC**		**CRS**			
Total TCDD	DL= 0.241			37Cl4-2378-TCDD	92.2	35-197	
Total PeCDD	DL= 0.321						
Total HxCDD	DL= 0.512						
Total HpCDD	DL= 0.578						
Total TCDF	DL= 0.214						
Total PeCDF	DL= 0.220						
Total HxCDF	DL= 0.414						
Total HpCDF	DL= 0.622						

DL - Signifies Non-Detect (ND) at sample specific detection limit.
EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
(a) - Lower control limit - Upper control limit
(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.

Total Toxic Equivalency (TEQ min.) (b)**:** 0.0 pg/g

Analyst: JMH **Reviewed by: BS**

CERES Analytical Laboratory, Inc.
4919 Windplay Dr.Suite 1, El Dorado Hills, CA 95762

EPA Method 1613B

Quality Assurance Sample Ongoing Precision and Recovery **Project ID:** A7G0405	**QC Batch #:** 1627 **Matrix:** Soil **Sample Size:** 10.00 g	**Date Received:** NA **Date Extracted:** 7/20/2017 **ZB-5MS Analysis:** 7/23/2017

Analyte	Conc. (ng/mL)	Limits (a)	Labeled Standards	% Rec.	Limits (a)
2,3,7,8-TCDD	9.39	6.7-15.8	13C-2378-TCDD	93.8	20-175
12378-PeCDD	48.4	35-71	13C-12378-PeCDD	81.8	21-227
123478-HxCDD	46.0	35-82	13C-123478-HxCDD	83.4	21-193
123678-HxCDD	50.5	38-67	13C-123678-HxCDD	91.7	25-163
123789-HxCDD	56.1	32-81	13C-1234678-HpCDD	99.7	26-166
1234678-HpCDD	49.7	35-70	13C-OCDD	98.3	13-198
OCDD	104	78-144	13C-2378-TCDF	86.9	22-152
2,3,7,8-TCDF	9.53	7.5-15.8	13C-12378-PeCDF	87.2	21-192
12378-PeCDF	45.2	40-67	13C-23478-PeCDF	89.4	13-328
23478-PeCDF	44.2	34-80	13C-123478-HxCDF	79.7	19-202
123478-HxCDF	43.1	36-67	13C-123678-HxCDF	70.3	21-159
123678-HxCDF	42.8	42-65	13C-234678-HxCDF	76.4	22-176
234678-HxCDF	44.0	35-78	13C-123789-HxCDF	91.6	17-205
123789-HxCDF	47.2	39-65	13C-1234678-HpCDF	91.0	21-158
1234678-HpCDF	43.6	41-61	13C-1234789-HpCDF	93.7	20-186
1234789-HpCDF	42.2	39-69			
OCDF	99.1	63-170			
			CRS		
			37Cl4-2378-TCDD	104	31-191

(a) Limits based on method acceptance criteria.

Analyst: JMH **Reviewed by: BS**

CERES Analytical Laboratory, Inc.
4919 Windplay Dr.Suite 1, El Dorado Hills, CA 95762

EPA Method 1613B

Client Sample ID: SS-071417-30 (A7G0405-01)					
Project ID: A7G0405	**Ceres Sample ID:** 11526-001			**Date Received:** 7/20/2017	
	QC Batch #: 1627			**Date Extracted:** 7/20/2017	
Date Collected: 7/14/2017	**Matrix:** Soil			**ZB-5MS Analysis:** 7/23/2017	
Time Collected: 11:45 AM	**Sample Size:** 17.28 g	**% Solids:** 57.2		**Q-225 Analysis:** NA	

Analyte	Conc. (pg/g)	MDL	Qualifiers	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 0.369	0.172		13C-2378-TCDD	78.3	25-164	
12378-PeCDD	DL= 0.919	0.327		13C-12378-PeCDD	83.6	25-181	
123478-HxCDD	1.39	0.327	J	13C-123478-HxCDD	90.1	32-141	
123678-HxCDD	4.43	0.655	J	13C-123678-HxCDD	90.2	28-130	
123789-HxCDD	3.14	0.315	J	13C-1234678-HpCDD	84.5	23-140	
1234678-HpCDD	156	0.409		13C-OCDD	61.6	17-157	
OCDD	1,430	1.01		13C-2378-TCDF	85.3	24-169	
2,3,7,8-TCDF	DL= 0.420	0.0886		13C-12378-PeCDF	85.3	24-185	
12378-PeCDF	DL= 0.392	0.412		13C-23478-PeCDF	95.3	21-178	
23478-PeCDF	DL= 0.316	0.422		13C-123478-HxCDF	94.7	26-152	
123478-HxCDF	1.75	0.518	J	13C-123678-HxCDF	89.4	26-123	
123678-HxCDF	0.703	0.533	J	13C-234678-HxCDF	86.0	28-136	
234678-HxCDF	DL= 0.546	0.319		13C-123789-HxCDF	78.2	29-147	
123789-HxCDF	DL= 0.699	0.425		13C-1234678-HpCDF	70.0	28-143	
1234678-HpCDF	9.98	0.279		13C-1234789-HpCDF	82.9	26-138	
1234789-HpCDF	DL= 0.776	0.378					
OCDF	32.2	0.461					

Totals	Conc. (pg/g)	EMPC
Total TCDD	1.47	
Total PeCDD	1.97	
Total HxCDD	39.6	
Total HpCDD	292	
Total TCDF	2.73	
Total PeCDF	5.77	
Total HxCDF	23.2	
Total HpCDF	33.4	

CRS		
37Cl4-2378-TCDD	89.4	35-197

DL - Signifies Non-Detect (ND) at sample specific detection limit.
EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
(a) - Lower control limit - Upper control limit
(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.

Total Toxic Equivalency (TEQ min.) (b)**:** 3.24 pg/g

Analyst: JMH **Reviewed by: BS**

CERES Analytical Laboratory, Inc.
4919 Windplay Dr.Suite 1, El Dorado Hills, CA 95762

EPA Method 1613B

Client Sample ID: SS-071417-Swanson (A7G0405-02)					
Project ID: A7G0405	**Ceres Sample ID:** 11526-002			**Date Received:** 7/20/2017	
	QC Batch #: 1627			**Date Extracted:** 7/20/2017	
Date Collected: 7/14/2017	**Matrix:** Soil			**ZB-5MS Analysis:** 7/23/2017	
Time Collected: 11:55 AM	**Sample Size:** 15.75 g	**% Solids:** 63.0		**Q-225 Analysis:** NA	

Analyte	Conc. (pg/g)	MDL	Qualifiers	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 0.250	0.172		13C-2378-TCDD	82.9	25-164	
12378-PeCDD	DL= 0.510	0.327		13C-12378-PeCDD	89.2	25-181	
123478-HxCDD	0.929	0.327	J	13C-123478-HxCDD	91.0	32-141	
123678-HxCDD	3.27	0.655	J	13C-123678-HxCDD	91.6	28-130	
123789-HxCDD	2.31	0.315	J	13C-1234678-HpCDD	89.2	23-140	
1234678-HpCDD	99.2	0.409		13C-OCDD	45.9	17-157	
OCDD	1,170	1.01		13C-2378-TCDF	90.2	24-169	
2,3,7,8-TCDF	DL= 0.418	0.0886		13C-12378-PeCDF	96.9	24-185	
12378-PeCDF	DL= 0.442	0.412		13C-23478-PeCDF	102	21-178	
23478-PeCDF	DL= 0.422	0.422		13C-123478-HxCDF	95.7	26-152	
123478-HxCDF	1.44	0.518	J	13C-123678-HxCDF	90.7	26-123	
123678-HxCDF	0.498	0.533	J	13C-234678-HxCDF	84.6	28-136	
234678-HxCDF	DL= 0.353	0.319		13C-123789-HxCDF	80.0	29-147	
123789-HxCDF	DL= 0.449	0.425		13C-1234678-HpCDF	70.7	28-143	
1234678-HpCDF	10.4	0.279		13C-1234789-HpCDF	94.6	26-138	
1234789-HpCDF	1.39	0.378	J				
OCDF	45.5	0.461					
Totals	**Conc. (pg/g)**	**EMPC**		**CRS**			
Total TCDD	0.521			37Cl4-2378-TCDD	100	35-197	
Total PeCDD	1.37						
Total HxCDD	24.1						
Total HpCDD	188						
Total TCDF	1.34						
Total PeCDF	1.88	4.07					
Total HxCDF	18.0						
Total HpCDF	37.6						

DL - Signifies Non-Detect (ND) at sample specific detection limit.
EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
(a) - Lower control limit - Upper control limit
(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.

Total Toxic Equivalency (TEQ min.) (b)**:** 2.32 pg/g

Analyst: JMH **Reviewed by: BS**

Section VI: Sample Tracking

SUBCONTRACT ORDER

Apex Laboratories

A7G0405

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Ceres Analytical Laboratory, Inc
4919 Windplay Drive, Suite 1
El Dorado Hills, CA 95762
Phone :(916) 932-5011
Fax: -9

Sample Name: SS-071417-30 **Soil** **Sampled: 07/14/17 11:45** (A7G0405-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)2 oz Glass Jar	07/24/17 17:00	01/10/18 11:45	

Sample Name: SS-071417-Swanson **Soil** **Sampled: 07/14/17 11:55** (A7G0405-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)2 oz Glass Jar	07/24/17 17:00	01/10/18 11:55	

Released By	Date	Received By	Date
	7/19/17	UPS (Shipper)	
UPS (Shipper)			
		7/20/17	09:31

Sample Receipt Check List

Ceres ID: 11526	Date/Time: 7/20/17 09:31
Client Project ID: A760405	Received Temp: 2.6 °C Acceptable: Y / N
Chain of Custody Relinquished by signed?	Y / N
Custody Seals? Present?	Y / N
Intact?	Y / N
NA:	NA
Unlabeled / Illegible Samples	Y / N
Proper Containers:	Y / N
Preservation Acceptable (Chemical or Temperature)?	Y / N
Drinking Water, Sodium Thiosulfate present?	Y / N / NA
Residual Cl?	Y / N
Aqueous sample pH: NR	
List COC discrepancies: 7/20/17	
List Damaged Samples: 7/20/17	

Section VII: Qualifiers/Abbreviations

J	Concentration found below the lower quantitation limit but greater than zero.
B	Analyte present in the associated Method Blank.
E	Concentration found exceeds the Calibration range of the HRGC/HRMS.
D	This analyte concentration was calculated from a dilution.
X	The concentration found is the estimated maximum possible concentration due to chlorinated diphenyl ethers present in the sample.
H	Recovery limits exceeded. See cover letter.
*****	Results taken from dilution.
I	Interference. See cover letter.
Conc.	Concentration Found
DL	Calculated Detection Limit
ND	Non-Detect
% Rec.	Percent Recovery

Apex Labs

12232 S.W. Garden Place
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Monday, June 5, 2017

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / 9003.01.39

Enclosed are the results of analyses for work order A7E0815, which was received by the laboratory on 5/25/2017 at 12:03:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-052417-50	A7E0815-01	Soil	05/25/17 11:15	05/25/17 12:03
SS-052417-30	A7E0815-02	Soil	05/25/17 11:30	05/25/17 12:03

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01)			**Matrix: Soil**		**Batch: 7051101**			
Diesel	ND	15.0	30.0	mg/kg dry	1	05/25/17 23:33	NWTPH-Dx/SG	
Oil	**115**	30.0	60.1	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
SS-052417-30 (A7E0815-02)			**Matrix: Soil**		**Batch: 7051101**			
Diesel	ND	16.3	32.5	mg/kg dry	1	05/25/17 23:56	NWTPH-Dx/SG	
Oil	**92.9**	32.5	65.1	"	"	"	"	F-03
Surrogate: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01)			**Matrix: Soil**		**Batch: 7051087**			**C-07**
Aroclor 1016	ND	5.97	11.9	ug/kg dry	1	05/26/17 15:53	EPA 8082A	
Aroclor 1221	ND	5.97	11.9	"	"	"	"	
Aroclor 1232	ND	5.97	11.9	"	"	"	"	
Aroclor 1242	ND	5.97	11.9	"	"	"	"	
Aroclor 1248	ND	5.97	11.9	"	"	"	"	
Aroclor 1254	ND	5.97	11.9	"	"	"	"	
Aroclor 1260	ND	5.97	11.9	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 91 %*	*Limits: 72-126 %*	"	"	"	
SS-052417-30 (A7E0815-02)			**Matrix: Soil**		**Batch: 7051087**			**C-07**
Aroclor 1016	ND	6.67	13.3	ug/kg dry	1	05/26/17 16:28	EPA 8082A	
Aroclor 1221	ND	6.67	13.3	"	"	"	"	
Aroclor 1232	ND	6.67	13.3	"	"	"	"	
Aroclor 1242	ND	6.67	13.3	"	"	"	"	
Aroclor 1248	ND	6.67	13.3	"	"	"	"	
Aroclor 1254	ND	6.67	13.3	"	"	"	"	
Aroclor 1260	ND	6.67	13.3	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 83 %*	*Limits: 72-126 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01RE1)			**Matrix: Soil**		**Batch: 7051137**			**C-05**
Aldrin	ND	1.06	2.12	ug/kg dry	1	05/31/17 11:31	EPA 8081B	
alpha-BHC	ND	1.06	2.12	"	"	"	"	
beta-BHC	ND	2.12	2.12	"	"	"	"	
delta-BHC	ND	1.06	2.12	"	"	"	"	
gamma-BHC (Lindane)	ND	1.06	2.12	"	"	"	"	
cis-Chlordane	ND	2.12	2.12	"	"	"	"	
trans-Chlordane	ND	1.06	2.12	"	"	"	"	
4,4'-DDD	ND	2.12	2.12	"	"	"	"	
4,4'-DDE	**10.3**	1.06	2.12	"	"	"	"	
4,4'-DDT	**5.98**	1.06	2.12	"	"	"	"	
Dieldrin	**2.22**	1.06	2.12	"	"	"	"	
Endosulfan I	ND	1.06	2.12	"	"	"	"	
Endosulfan II	ND	1.06	2.12	"	"	"	"	
Endosulfan sulfate	ND	2.12	2.12	"	"	"	"	
Endrin	ND	2.12	2.12	"	"	"	"	
Endrin Aldehyde	ND	2.12	2.12	"	"	"	"	
Endrin ketone	ND	1.06	2.12	"	"	"	"	
Heptachlor	ND	1.06	2.12	"	"	"	"	
Heptachlor epoxide	ND	1.06	2.12	"	"	"	"	
Methoxychlor	ND	6.37	6.37	"	"	"	"	
Chlordane (Technical)	ND	31.8	63.7	"	"	"	"	
Toxaphene (Total)	ND	31.8	63.7	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 82 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*85 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-30 (A7E0815-02RE1)			**Matrix: Soil**		**Batch: 7051137**			**C-05**
Aldrin	ND	1.22	2.43	ug/kg dry	1	05/31/17 12:06	EPA 8081B	
alpha-BHC	ND	1.22	2.43	"	"	"	"	
beta-BHC	ND	2.80	2.80	"	"	"	"	R-02
delta-BHC	ND	2.43	2.43	"	"	"	"	
gamma-BHC (Lindane)	ND	1.22	2.43	"	"	"	"	
cis-Chlordane	ND	2.43	2.43	"	"	"	"	
trans-Chlordane	ND	1.22	2.43	"	"	"	"	
4,4'-DDD	ND	2.43	2.43	"	"	"	"	
4,4'-DDE	**3.23**	1.22	2.43	"	"	"	"	
4,4'-DDT	ND	2.43	2.43	"	"	"	"	
Dieldrin	**2.97**	1.22	2.43	"	"	"	"	
Endosulfan I	ND	1.22	2.43	"	"	"	"	
Endosulfan II	ND	1.22	2.43	"	"	"	"	
Endosulfan sulfate	ND	1.22	2.43	"	"	"	"	
Endrin	ND	2.43	2.43	"	"	"	"	
Endrin Aldehyde	ND	2.43	2.43	"	"	"	"	
Endrin ketone	ND	1.22	2.43	"	"	"	"	
Heptachlor	ND	1.22	2.43	"	"	"	"	
Heptachlor epoxide	ND	1.22	2.43	"	"	"	"	
Methoxychlor	ND	3.65	7.30	"	"	"	"	
Chlordane (Technical)	ND	36.5	73.0	"	"	"	"	
Toxaphene (Total)	ND	36.5	73.0	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 70 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*75 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01RE1)			**Matrix: Soil**		**Batch: 7051104**			
Acenaphthene	ND	16.2	32.6	ug/kg dry	10	05/26/17 15:17	EPA 8270D	
Acenaphthylene	ND	16.2	32.6	"	"	"	"	
Anthracene	ND	16.2	32.6	"	"	"	"	
Benz(a)anthracene	**17.8**	16.2	32.6	"	"	"	"	J
Benzo(a)pyrene	**34.1**	24.4	48.8	"	"	"	"	J
Benzo(b)fluoranthene	**46.8**	24.4	48.8	"	"	"	"	J
Benzo(k)fluoranthene	ND	24.4	48.8	"	"	"	"	
Benzo(g,h,i)perylene	**18.2**	16.2	32.6	"	"	"	"	J
Chrysene	**27.8**	16.2	32.6	"	"	"	"	J
Dibenz(a,h)anthracene	ND	16.2	32.6	"	"	"	"	
Fluoranthene	**54.9**	16.2	32.6	"	"	"	"	
Fluorene	ND	16.2	32.6	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	16.2	32.6	"	"	"	"	
1-Methylnaphthalene	ND	32.6	65.0	"	"	"	"	
2-Methylnaphthalene	ND	32.6	65.0	"	"	"	"	
Naphthalene	ND	32.6	65.0	"	"	"	"	
Phenanthrene	**43.3**	16.2	32.6	"	"	"	"	
Pyrene	**47.0**	16.2	32.6	"	"	"	"	
Carbazole	ND	24.4	48.8	"	"	"	"	
Dibenzofuran	ND	16.2	32.6	"	"	"	"	
4-Chloro-3-methylphenol	ND	162	326	"	"	"	"	
2-Chlorophenol	ND	81.4	162	"	"	"	"	
2,4-Dichlorophenol	ND	81.4	162	"	"	"	"	
2,4-Dimethylphenol	ND	81.4	162	"	"	"	"	
2,4-Dinitrophenol	ND	406	814	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	406	814	"	"	"	"	
2-Methylphenol	ND	40.6	81.4	"	"	"	"	
3+4-Methylphenol(s)	ND	40.6	81.4	"	"	"	"	
2-Nitrophenol	ND	162	326	"	"	"	"	
4-Nitrophenol	ND	162	326	"	"	"	"	
Pentachlorophenol (PCP)	**164**	162	326	"	"	"	"	J
Phenol	**44.8**	32.6	65.0	"	"	"	"	J
2,3,4,6-Tetrachlorophenol	ND	81.4	162	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	81.4	162	"	"	"	"	
2,4,5-Trichlorophenol	ND	81.4	162	"	"	"	"	
2,4,6-Trichlorophenol	ND	81.4	162	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	244	488	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01RE1)			**Matrix: Soil**		**Batch: 7051104**			
Butyl benzyl phthalate	ND	162	326	ug/kg dry	10	"	EPA 8270D	
Diethylphthalate	ND	162	326	"	"	"	"	
Dimethylphthalate	ND	162	326	"	"	"	"	
Di-n-butylphthalate	ND	162	326	"	"	"	"	
Di-n-octyl phthalate	ND	162	326	"	"	"	"	
N-Nitrosodimethylamine	ND	40.6	81.4	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	40.6	81.4	"	"	"	"	
N-Nitrosodiphenylamine	ND	40.6	81.4	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	40.6	81.4	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	81.4	81.4	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	40.6	81.4	"	"	"	"	
Hexachlorobenzene	ND	16.2	32.6	"	"	"	"	
Hexachlorobutadiene	ND	40.6	81.4	"	"	"	"	
Hexachlorocyclopentadiene	ND	81.4	162	"	"	"	"	
Hexachloroethane	ND	40.6	81.4	"	"	"	"	
2-Chloronaphthalene	ND	16.2	32.6	"	"	"	"	
1,2-Dichlorobenzene	ND	40.6	81.4	"	"	"	"	
1,3-Dichlorobenzene	ND	40.6	81.4	"	"	"	"	
1,4-Dichlorobenzene	ND	40.6	81.4	"	"	"	"	
1,2,4-Trichlorobenzene	ND	40.6	81.4	"	"	"	"	
4-Bromophenyl phenyl ether	ND	40.6	81.4	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	40.6	81.4	"	"	"	"	
Aniline	ND	81.4	162	"	"	"	"	
4-Chloroaniline	ND	40.6	81.4	"	"	"	"	
2-Nitroaniline	ND	326	650	"	"	"	"	
3-Nitroaniline	ND	326	650	"	"	"	"	
4-Nitroaniline	ND	326	650	"	"	"	"	
Nitrobenzene	ND	162	326	"	"	"	"	
2,4-Dinitrotoluene	ND	162	326	"	"	"	"	
2,6-Dinitrotoluene	ND	162	326	"	"	"	"	
Benzoic acid	ND	2040	4060	"	"	"	"	
Benzyl alcohol	ND	81.4	162	"	"	"	"	
Isophorone	ND	40.6	81.4	"	"	"	"	
Azobenzene (1,2-DPH)	ND	40.6	81.4	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	406	814	"	"	"	"	
3,3'-Dichlorobenzidine	ND	162	326	"	"	"	"	
1,2-Dinitrobenzene	ND	406	814	"	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01RE1)			**Matrix: Soil**		**Batch: 7051104**			
1,3-Dinitrobenzene	ND	406	814	ug/kg dry	10	"	EPA 8270D	
1,4-Dinitrobenzene	ND	406	814	"	"	"	"	
Pyridine	ND	81.4	162	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 73 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*91 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*64 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*99 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*72 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*136 %*	*Limits: 39-132 %*	"	"	"	*Q-41, S-06*
SS-052417-30 (A7E0815-02RE1)			**Matrix: Soil**		**Batch: 7051104**			
Acenaphthene	ND	17.8	35.8	ug/kg dry	10	05/26/17 16:28	EPA 8270D	
Acenaphthylene	ND	17.8	35.8	"	"	"	"	
Anthracene	ND	17.8	35.8	"	"	"	"	
Benz(a)anthracene	ND	17.8	35.8	"	"	"	"	
Benzo(a)pyrene	**27.3**	26.8	53.6	"	"	"	"	J
Benzo(b)fluoranthene	**35.7**	26.8	53.6	"	"	"	"	J
Benzo(k)fluoranthene	ND	26.8	53.6	"	"	"	"	
Benzo(g,h,i)perylene	ND	17.8	35.8	"	"	"	"	
Chrysene	ND	17.8	35.8	"	"	"	"	
Dibenz(a,h)anthracene	ND	17.8	35.8	"	"	"	"	
Fluoranthene	**24.3**	17.8	35.8	"	"	"	"	J
Fluorene	ND	17.8	35.8	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	17.8	35.8	"	"	"	"	
1-Methylnaphthalene	ND	35.8	71.4	"	"	"	"	
2-Methylnaphthalene	ND	35.8	71.4	"	"	"	"	
Naphthalene	ND	35.8	71.4	"	"	"	"	
Phenanthrene	**18.4**	17.8	35.8	"	"	"	"	J
Pyrene	**20.9**	17.8	35.8	"	"	"	"	J
Carbazole	ND	26.8	53.6	"	"	"	"	
Dibenzofuran	ND	17.8	35.8	"	"	"	"	
4-Chloro-3-methylphenol	ND	178	358	"	"	"	"	
2-Chlorophenol	ND	89.4	178	"	"	"	"	
2,4-Dichlorophenol	ND	89.4	178	"	"	"	"	
2,4-Dimethylphenol	ND	89.4	178	"	"	"	"	
2,4-Dinitrophenol	ND	446	894	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	446	894	"	"	"	"	
2-Methylphenol	ND	44.6	89.4	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-30 (A7E0815-02RE1)			**Matrix: Soil**		**Batch: 7051104**			
3+4-Methylphenol(s)	**80.4**	44.6	89.4	ug/kg dry	10	"	EPA 8270D	J
2-Nitrophenol	ND	178	358	"	"	"	"	
4-Nitrophenol	ND	178	358	"	"	"	"	
Pentachlorophenol (PCP)	ND	178	358	"	"	"	"	
Phenol	ND	35.8	71.4	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	89.4	178	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	89.4	178	"	"	"	"	
2,4,5-Trichlorophenol	ND	89.4	178	"	"	"	"	
2,4,6-Trichlorophenol	ND	89.4	178	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	268	536	"	"	"	"	
Butyl benzyl phthalate	ND	178	358	"	"	"	"	
Diethylphthalate	ND	178	358	"	"	"	"	
Dimethylphthalate	ND	178	358	"	"	"	"	
Di-n-butylphthalate	ND	178	358	"	"	"	"	
Di-n-octyl phthalate	ND	178	358	"	"	"	"	
N-Nitrosodimethylamine	ND	44.6	89.4	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	44.6	89.4	"	"	"	"	
N-Nitrosodiphenylamine	ND	44.6	89.4	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	44.6	89.4	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	44.6	89.4	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	44.6	89.4	"	"	"	"	
Hexachlorobenzene	ND	17.8	35.8	"	"	"	"	
Hexachlorobutadiene	ND	44.6	89.4	"	"	"	"	
Hexachlorocyclopentadiene	ND	89.4	178	"	"	"	"	Q-42
Hexachloroethane	ND	44.6	89.4	"	"	"	"	
2-Chloronaphthalene	ND	17.8	35.8	"	"	"	"	
1,2-Dichlorobenzene	ND	44.6	89.4	"	"	"	"	
1,3-Dichlorobenzene	ND	44.6	89.4	"	"	"	"	
1,4-Dichlorobenzene	ND	44.6	89.4	"	"	"	"	
1,2,4-Trichlorobenzene	ND	44.6	89.4	"	"	"	"	
4-Bromophenyl phenyl ether	ND	44.6	89.4	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	44.6	89.4	"	"	"	"	
Aniline	ND	89.4	178	"	"	"	"	
4-Chloroaniline	ND	44.6	89.4	"	"	"	"	
2-Nitroaniline	ND	358	714	"	"	"	"	
3-Nitroaniline	ND	358	714	"	"	"	"	
4-Nitroaniline	ND	358	714	"	"	"	"	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-30 (A7E0815-02RE1)			**Matrix: Soil**		**Batch: 7051104**			
Nitrobenzene	ND	178	358	ug/kg dry	10	"	EPA 8270D	
2,4-Dinitrotoluene	ND	178	358	"	"	"	"	
2,6-Dinitrotoluene	ND	178	358	"	"	"	"	
Benzoic acid	ND	2240	4460	"	"	"	"	
Benzyl alcohol	**183**	89.4	178	"	"	"	"	
Isophorone	ND	44.6	89.4	"	"	"	"	
Azobenzene (1,2-DPH)	ND	44.6	89.4	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	446	894	"	"	"	"	Q-42
3,3'-Dichlorobenzidine	ND	178	358	"	"	"	"	Q-42
1,2-Dinitrobenzene	ND	446	894	"	"	"	"	
1,3-Dinitrobenzene	ND	446	894	"	"	"	"	
1,4-Dinitrobenzene	ND	446	894	"	"	"	"	
Pyridine	ND	89.4	178	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 76 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*90 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*79 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*94 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*79 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*144 %*	*Limits: 39-132 %*	"	"	"	*Q-41, S-06*

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01)			**Matrix: Soil**					
Batch: 7051077								
Arsenic	**2.65**	0.673	1.35	mg/kg dry	10	05/30/17 16:04	EPA 6020A	
Cadmium	**0.323**	0.135	0.269	"	"	"	"	
Chromium	**12.4**	0.673	1.35	"	"	"	"	
Copper	**18.2**	0.673	1.35	"	"	"	"	
Lead	**10.9**	0.135	0.269	"	"	"	"	
Mercury	ND	0.0539	0.108	"	"	"	"	
Nickel	**12.4**	0.673	1.35	"	"	"	"	
Selenium	ND	0.673	1.35	"	"	"	"	
Silver	ND	0.135	0.269	"	"	"	"	
Zinc	**73.4**	2.69	5.39	"	"	"	"	
SS-052417-30 (A7E0815-02)			**Matrix: Soil**					
Batch: 7051077								
Arsenic	**2.75**	0.699	1.40	mg/kg dry	10	05/30/17 16:07	EPA 6020A	
Cadmium	**0.307**	0.140	0.279	"	"	"	"	
Chromium	**13.1**	0.699	1.40	"	"	"	"	
Copper	**18.6**	0.699	1.40	"	"	"	"	
Lead	**10.6**	0.140	0.279	"	"	"	"	
Mercury	ND	0.0559	0.112	"	"	"	"	
Nickel	**11.4**	0.699	1.40	"	"	"	"	
Selenium	ND	0.699	1.40	"	"	"	"	
Silver	ND	0.140	0.279	"	"	"	"	
Zinc	**69.8**	2.79	5.59	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-052417-50 (A7E0815-01)			**Matrix: Soil**		**Batch: 7051100**			
% Solids	**80.7**	1.00	1.00	% by Weight	1	05/26/17 07:37	EPA 8000C	
SS-052417-30 (A7E0815-02)			**Matrix: Soil**		**Batch: 7051100**			
% Solids	**72.9**	1.00	1.00	% by Weight	1	05/26/17 07:37	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051101 - EPA 3546 w/SG+Acid (NWTPH)							**Soil**					
Blank (7051101-BLK1)					Prepared: 05/25/17 14:37		Analyzed: 05/25/17 22:48					
NWTPH-Dx/SG												
Diesel	ND	11.4	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	22.7	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 102 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (7051101-BS1)					Prepared: 05/25/17 14:37		Analyzed: 05/25/17 23:10					
NWTPH-Dx/SG												
Diesel	131	12.5	25.0	mg/kg wet	1	125	---	104	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (7051101-DUP1)					Prepared: 05/25/17 14:37		Analyzed: 05/26/17 00:18					
QC Source Sample: SS-052417-30 (A7E0815-02)												
NWTPH-Dx/SG												
Diesel	ND	16.4	32.9	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**88.5**	32.9	65.7	"	"	---	92.9	---	---	5	30%	F-03
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051087 - EPA 3546							**Soil**					
Blank (7051087-BLK1)					Prepared: 05/25/17 10:19		Analyzed: 05/26/17 13:31					C-07
EPA 8082A												
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (7051087-BS1)					Prepared: 05/25/17 10:19		Analyzed: 05/26/17 13:49					C-07
EPA 8082A												
Aroclor 1016	183	5.00	10.0	ug/kg wet	1	250	---	73	47-134%	---	---	
Aroclor 1260	211	5.00	10.0	"	"	"	---	84	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (7051087-DUP1)					Prepared: 05/25/17 10:19		Analyzed: 05/26/17 14:42					C-07
QC Source Sample: Other (A7E0780-01)												
EPA 8082A												
Aroclor 1016	ND	5.16	10.3	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	5.16	10.3	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	5.16	10.3	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	5.16	10.3	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	5.16	10.3	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	5.16	10.3	"	"	---	ND	---	---	---	30%	
Aroclor 1260	**10.2**	5.16	10.3	"	"	---	8.57	---	---	17	30%	J
Surr: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Matrix Spike (7051087-MS1)					Prepared: 05/25/17 10:19		Analyzed: 05/26/17 15:17					C-07
QC Source Sample: Other (A7E0780-01)												
EPA 8082A												
Aroclor 1016	161	5.16	10.3	ug/kg dry	1	258	ND	62	47-134%	---	---	
Aroclor 1260	216	5.16	10.3	"	"	"	8.57	80	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*	*Limits: 72-126 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051137 - EPA 3546/3640A (GPC)							**Soil**					
Blank (7051137-BLK1)					Prepared: 05/26/17 07:07		Analyzed: 05/31/17 10:56					C-05
EPA 8081B												
Aldrin	ND	0.833	1.67	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.833	1.67	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.833	1.67	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 77 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*84 %*	*65-151 %*			*"*					
LCS (7051137-BS1)					Prepared: 05/26/17 07:07		Analyzed: 05/31/17 11:14					C-05
EPA 8081B												
Aldrin	45.7	1.00	2.00	ug/kg wet	1	50.0	---	91	45-136%	---	---	
alpha-BHC	46.8	1.00	2.00	"	"	"	---	94	45-137%	---	---	
beta-BHC	46.3	1.00	2.00	"	"	"	---	93	50-136%	---	---	
delta-BHC	48.9	1.00	2.00	"	"	"	---	98	47-139%	---	---	
gamma-BHC (Lindane)	48.7	1.00	2.00	"	"	"	---	97	49-135%	---	---	
cis-Chlordane	48.4	1.00	2.00	"	"	"	---	97	54-133%	---	---	
trans-Chlordane	48.1	1.00	2.00	"	"	"	---	96	53-135%	---	---	
4,4'-DDD	55.8	1.00	2.00	"	"	"	---	112	56-139%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051137 - EPA 3546/3640A (GPC)							**Soil**					
LCS (7051137-BS1)					Prepared: 05/26/17 07:07		Analyzed: 05/31/17 11:14					C-05
EPA 8081B												
4,4'-DDE	50.3	1.00	2.00	ug/kg wet	"	"	---	101	56-134%	---	---	
4,4'-DDT	62.8	1.00	2.00	"	"	"	---	126	50-141%	---	---	
Dieldrin	51.0	1.00	2.00	"	"	"	---	102	56-136%	---	---	
Endosulfan I	49.0	1.00	2.00	"	"	"	---	98	52-132%	---	---	
Endosulfan II	50.5	1.00	2.00	"	"	"	---	101	53-134%	---	---	
Endosulfan sulfate	51.6	1.00	2.00	"	"	"	---	103	55-136%	---	---	
Endrin	61.4	1.00	2.00	"	"	"	---	123	56-140%	---	---	Q-41
Endrin Aldehyde	44.3	1.00	2.00	"	"	"	---	89	35-137%	---	---	
Endrin ketone	57.4	1.00	2.00	"	"	"	---	115	55-136%	---	---	
Heptachlor	54.5	1.00	2.00	"	"	"	---	109	47-136%	---	---	
Heptachlor epoxide	47.9	1.00	2.00	"	"	"	---	96	52-136%	---	---	
Methoxychlor	69.4	3.00	6.00	"	"	"	---	139	52-143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 87 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*92 %*		*65-151 %*			*"*				
Duplicate (7051137-DUP1)					Prepared: 05/26/17 07:07		Analyzed: 05/31/17 11:48					C-05
QC Source Sample: SS-052417-50 (A7E0815-01RE1)												
EPA 8081B												
Aldrin	ND	1.06	2.12	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	1.06	2.12	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	1.06	2.12	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
trans-Chlordane	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
4,4'-DDD	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
4,4'-DDE	**9.57**	1.06	2.12	"	"	---	10.3	---	---	7	30%	
4,4'-DDT	**6.77**	1.06	2.12	"	"	---	5.98	---	---	12	30%	
Dieldrin	**2.23**	1.06	2.12	"	"	---	2.22	---	---	0.6	30%	
Endosulfan I	ND	1.06	2.12	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
Endrin	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051137 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (7051137-DUP1)					Prepared: 05/26/17 07:07	Analyzed: 05/31/17 11:48						C-05
QC Source Sample: SS-052417-50 (A7E0815-01RE1)												
EPA 8081B												
Endrin ketone	ND	2.23	2.23	ug/kg dry	"	---	ND	---	---	---	30%	R-02
Heptachlor	ND	2.12	2.12	"	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	1.06	2.12	"	"	---	ND	---	---	---	30%	
Methoxychlor	ND	8.39	8.39	"	"	---	ND	---	---	---	30%	R-02
Chlordane (Technical)	ND	31.9	63.7	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	31.9	63.7	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*88 %*	*65-151 %*			*"*					
Matrix Spike (7051137-MS1)					Prepared: 05/26/17 07:07	Analyzed: 05/31/17 14:42						C-05
QC Source Sample: Other (A7E0823-05RE1)												
EPA 8081B												
Aldrin	42.4	1.05	2.09	ug/kg dry	1	52.3	ND	81	45-136%	---	---	
alpha-BHC	42.3	1.05	2.09	"	"	"	ND	81	45-137%	---	---	
beta-BHC	42.7	1.05	2.09	"	"	"	ND	82	50-136%	---	---	
delta-BHC	34.9	1.05	2.09	"	"	"	ND	67	47-139%	---	---	
gamma-BHC (Lindane)	43.7	1.05	2.09	"	"	"	ND	84	49-135%	---	---	
cis-Chlordane	42.4	1.05	2.09	"	"	"	ND	81	54-133%	---	---	
trans-Chlordane	43.9	1.05	2.09	"	"	"	ND	84	53-135%	---	---	
4,4'-DDD	54.7	1.05	2.09	"	"	"	ND	105	56-139%	---	---	
4,4'-DDE	49.2	1.05	2.09	"	"	"	ND	94	56-134%	---	---	
4,4'-DDT	64.0	1.05	2.09	"	"	"	ND	122	50-141%	---	---	Q-41
Dieldrin	45.9	1.05	2.09	"	"	"	ND	88	56-136%	---	---	
Endosulfan I	38.9	1.05	2.09	"	"	"	ND	74	52-132%	---	---	
Endosulfan II	32.6	1.05	2.09	"	"	"	ND	62	53-134%	---	---	
Endosulfan sulfate	49.1	1.05	2.09	"	"	"	ND	94	55-136%	---	---	
Endrin	58.8	1.05	2.09	"	"	"	ND	112	56-140%	---	---	
Endrin Aldehyde	42.3	1.05	2.09	"	"	"	ND	81	35-137%	---	---	
Endrin ketone	56.6	1.05	2.09	"	"	"	ND	108	55-136%	---	---	Q-41
Heptachlor	54.2	1.05	2.09	"	"	"	ND	104	47-136%	---	---	Q-41
Heptachlor epoxide	43.5	1.05	2.09	"	"	"	ND	83	52-136%	---	---	
Methoxychlor	73.2	3.14	6.28	"	"	"	ND	140	52-143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 83 %*	*Limits: 42-129 %*			*Dilution: 1x*					

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Philip Nerenberg, Lab Director

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051137 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (7051137-MS1)					Prepared: 05/26/17 07:07		Analyzed: 05/31/17 14:42					C-05
QC Source Sample: Other (A7E0823-05RE1)												
EPA 8081B												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 65-151 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Blank (7051104-BLK1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 12:17					
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Blank (7051104-BLK1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 12:17					
EPA 8270D												
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Blank (7051104-BLK1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 12:17					
EPA 8270D												
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 88 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*95 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*86 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*88 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*84 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*106 %*		*39-132 %*		*"*					*Q-41*
LCS (7051104-BS1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 12:52					
EPA 8270D												
Acenaphthene	457	1.33	2.67	ug/kg wet	1	533	---	86	40-122%	---	---	
Acenaphthylene	443	1.33	2.67	"	"	"	---	83	32-132%	---	---	
Anthracene	476	1.33	2.67	"	"	"	---	89	47-123%	---	---	
Benz(a)anthracene	493	1.33	2.67	"	"	"	---	92	49-126%	---	---	
Benzo(a)pyrene	493	2.00	4.00	"	"	"	---	92	45-129%	---	---	
Benzo(b)fluoranthene	510	2.00	4.00	"	"	"	---	96	45-132%	---	---	
Benzo(k)fluoranthene	506	2.00	4.00	"	"	"	---	95	47-132%	---	---	
Benzo(g,h,i)perylene	545	1.33	2.67	"	"	"	---	102	43-134%	---	---	
Chrysene	519	1.33	2.67	"	"	"	---	97	50-124%	---	---	
Dibenz(a,h)anthracene	536	1.33	2.67	"	"	"	---	101	45-134%	---	---	
Fluoranthene	507	1.33	2.67	"	"	"	---	95	50-127%	---	---	
Fluorene	422	1.33	2.67	"	"	"	---	79	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	515	1.33	2.67	"	"	"	---	97	45-133%	---	---	
1-Methylnaphthalene	448	2.67	5.33	"	"	"	---	84	40-120%	---	---	
2-Methylnaphthalene	456	2.67	5.33	"	"	"	---	85	38-122%	---	---	
Naphthalene	452	2.67	5.33	"	"	"	---	85	35-123%	---	---	
Phenanthrene	454	1.33	2.67	"	"	"	---	85	50-121%	---	---	

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
LCS (7051104-BS1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 12:52					
EPA 8270D												
Pyrene	511	1.33	2.67	ug/kg wet	"	"	---	96	47-127%	---	---	
Carbazole	508	2.00	4.00	"	"	"	---	95	50-122%	---	---	
Dibenzofuran	456	1.33	2.67	"	"	"	---	86	44-120%	---	---	
4-Chloro-3-methylphenol	473	13.3	26.7	"	"	"	---	89	45-122%	---	---	
2-Chlorophenol	500	6.67	13.3	"	"	"	---	94	34-121%	---	---	
2,4-Dichlorophenol	541	6.67	13.3	"	"	"	---	101	40-122%	---	---	
2,4-Dimethylphenol	499	6.67	13.3	"	"	"	---	94	30-127%	---	---	
2,4-Dinitrophenol	700	33.3	66.7	"	"	"	---	131	5-137%	---	---	Q-41
4,6-Dinitro-2-methylphenol	656	33.3	66.7	"	"	"	---	123	29-132%	---	---	Q-41
2-Methylphenol	467	3.33	6.67	"	"	"	---	88	32-122%	---	---	
3+4-Methylphenol(s)	446	3.33	6.67	"	"	"	---	84	34-120%	---	---	
2-Nitrophenol	568	13.3	26.7	"	"	"	---	107	36-123%	---	---	
4-Nitrophenol	537	13.3	26.7	"	"	"	---	101	30-132%	---	---	
Pentachlorophenol (PCP)	526	13.3	26.7	"	"	"	---	99	25-133%	---	---	
Phenol	498	2.67	5.33	"	"	"	---	93	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	546	6.67	13.3	"	"	"	---	102	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	519	6.67	13.3	"	"	"	---	97	40-120%	---	---	
2,4,5-Trichlorophenol	526	6.67	13.3	"	"	"	---	99	41-124%	---	---	
2,4,6-Trichlorophenol	515	6.67	13.3	"	"	"	---	97	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	509	20.0	40.0	"	"	"	---	95	51-133%	---	---	
Butyl benzyl phthalate	525	13.3	26.7	"	"	"	---	99	48-132%	---	---	
Diethylphthalate	479	13.3	26.7	"	"	"	---	90	50-124%	---	---	
Dimethylphthalate	500	13.3	26.7	"	"	"	---	94	48-124%	---	---	
Di-n-butylphthalate	523	13.3	26.7	"	"	"	---	98	51-128%	---	---	
Di-n-octyl phthalate	507	13.3	26.7	"	"	"	---	95	44-140%	---	---	
N-Nitrosodimethylamine	440	3.33	6.67	"	"	"	---	82	23-120%	---	---	
N-Nitroso-di-n-propylamine	393	3.33	6.67	"	"	"	---	74	36-120%	---	---	
N-Nitrosodiphenylamine	454	3.33	6.67	"	"	"	---	85	38-127%	---	---	
Bis(2-Chloroethoxy) methane	435	3.33	6.67	"	"	"	---	82	36-121%	---	---	
Bis(2-Chloroethyl) ether	446	3.33	6.67	"	"	"	---	84	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	382	3.33	6.67	"	"	"	---	72	33-131%	---	---	
Hexachlorobenzene	458	1.33	2.67	"	"	"	---	86	44-122%	---	---	
Hexachlorobutadiene	500	3.33	6.67	"	"	"	---	94	32-123%	---	---	
Hexachlorocyclopentadiene	612	6.67	13.3	"	"	"	---	115	5-140%	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
LCS (7051104-BS1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 12:52					
EPA 8270D												
Hexachloroethane	478	3.33	6.67	ug/kg wet	"	"	---	90	28-120%	---	---	
2-Chloronaphthalene	460	1.33	2.67	"	"	"	---	86	41-120%	---	---	
1,2-Dichlorobenzene	449	3.33	6.67	"	"	"	---	84	33-120%	---	---	
1,3-Dichlorobenzene	461	3.33	6.67	"	"	"	---	86	30-120%	---	---	
1,4-Dichlorobenzene	456	3.33	6.67	"	"	"	---	86	31-120%	---	---	
1,2,4-Trichlorobenzene	472	3.33	6.67	"	"	"	---	88	34-120%	---	---	
4-Bromophenyl phenyl ether	484	3.33	6.67	"	"	"	---	91	46-124%	---	---	
4-Chlorophenyl phenyl ether	457	3.33	6.67	"	"	"	---	86	45-121%	---	---	
Aniline	349	6.67	13.3	"	"	"	---	65	7-120%	---	---	
4-Chloroaniline	303	3.33	6.67	"	"	"	---	57	16-120%	---	---	
2-Nitroaniline	535	26.7	53.3	"	"	"	---	100	44-127%	---	---	
3-Nitroaniline	427	26.7	53.3	"	"	"	---	80	33-120%	---	---	
4-Nitroaniline	472	26.7	53.3	"	"	"	---	88	35-120%	---	---	
Nitrobenzene	424	13.3	26.7	"	"	"	---	79	34-122%	---	---	
2,4-Dinitrotoluene	501	13.3	26.7	"	"	"	---	94	48-126%	---	---	
2,6-Dinitrotoluene	532	13.3	26.7	"	"	"	---	100	46-124%	---	---	
Benzoic acid	880	167	333	"	"	1070	---	82	5-140%	---	---	Q-31
Benzyl alcohol	453	6.67	13.3	"	"	533	---	85	29-122%	---	---	
Isophorone	441	3.33	6.67	"	"	"	---	83	30-122%	---	---	
Azobenzene (1,2-DPH)	409	3.33	6.67	"	"	"	---	77	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	516	33.3	66.7	"	"	"	---	97	60-121%	---	---	
3,3'-Dichlorobenzidine	947	13.3	26.7	"	"	1070	---	89	22-121%	---	---	
1,2-Dinitrobenzene	489	33.3	66.7	"	"	533	---	92	44-120%	---	---	
1,3-Dinitrobenzene	547	33.3	66.7	"	"	"	---	102	42-127%	---	---	
1,4-Dinitrobenzene	556	33.3	66.7	"	"	"	---	104	37-132%	---	---	
Pyridine	269	6.67	13.3	"	"	"	---	50	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 82 %*	*Limits: 37-122 %*	*Dilution: 1x*	
2-Fluorobiphenyl (Surr)	*91 %*	*44-115 %*	*"*	
Phenol-d6 (Surr)	*97 %*	*33-122 %*	*"*	
p-Terphenyl-d14 (Surr)	*100 %*	*54-127 %*	*"*	
2-Fluorophenol (Surr)	*100 %*	*35-115 %*	*"*	
2,4,6-Tribromophenol (Surr)	*110 %*	*39-132 %*	*"*	*Q-41*

Duplicate (7051104-DUP1) Prepared: 05/25/17 15:08 Analyzed: 05/26/17 15:53

QC Source Sample: SS-052417-50 (A7E0815-01RE1)

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Duplicate (7051104-DUP1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 15:53					
QC Source Sample: SS-052417-50 (A7E0815-01RE1)												
EPA 8270D												
Acenaphthene	ND	16.2	32.4	ug/kg dry	10	---	ND	---	---	---	30%	
Acenaphthylene	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
Anthracene	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
Benz(a)anthracene	**21.5**	16.2	32.4	"	"	---	17.8	---	---	19	30%	J
Benzo(a)pyrene	**35.3**	24.3	48.6	"	"	---	34.1	---	---	3	30%	J
Benzo(b)fluoranthene	**44.0**	24.3	48.6	"	"	---	46.8	---	---	6	30%	J
Benzo(k)fluoranthene	ND	24.3	48.6	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	**18.1**	16.2	32.4	"	"	---	18.2	---	---	0.1	30%	J
Chrysene	**31.4**	16.2	32.4	"	"	---	27.8	---	---	12	30%	J
Dibenz(a,h)anthracene	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
Fluoranthene	**62.8**	16.2	32.4	"	"	---	54.9	---	---	13	30%	
Fluorene	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	32.4	64.8	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	32.4	64.8	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	32.4	64.8	"	"	---	ND	---	---	---	30%	
Phenanthrene	**47.3**	16.2	32.4	"	"	---	43.3	---	---	9	30%	
Pyrene	**54.9**	16.2	32.4	"	"	---	47.0	---	---	15	30%	
Carbazole	ND	24.3	48.6	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	162	324	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	81.1	162	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	81.1	162	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	81.1	162	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	405	811	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	405	811	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
2-Nitrophenol	ND	162	324	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	162	324	"	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	**165**	162	324	"	"	---	164	---	---	0.3	30%	J
Phenol	ND	32.4	64.8	"	"	---	44.8	---	---		30%	
2,3,4,6-Tetrachlorophenol	ND	81.1	162	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Duplicate (7051104-DUP1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 15:53					
QC Source Sample: SS-052417-50 (A7E0815-01RE1)												
EPA 8270D												
2,3,5,6-Tetrachlorophenol	ND	81.1	162	ug/kg dry	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	81.1	162	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	81.1	162	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	243	486	"	"	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	162	324	"	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	162	324	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	162	324	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	162	324	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	162	324	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	81.1	162	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	16.2	32.4	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Aniline	ND	162	162	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	324	648	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	324	648	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	324	648	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	162	324	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	162	324	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Duplicate (7051104-DUP1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 15:53					
QC Source Sample: SS-052417-50 (A7E0815-01RE1)												
EPA 8270D												
2,6-Dinitrotoluene	ND	162	324	ug/kg dry	"	---	ND	---	---	---	30%	
Benzoic acid	ND	2030	4050	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	81.1	162	"	"	---	ND	---	---	---	30%	
Isophorone	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	40.5	81.1	"	"	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	405	811	"	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	162	324	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	405	811	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	405	811	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	405	811	"	"	---	ND	---	---	---	30%	
Pyridine	ND	81.1	162	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 80 %*		*Limits: 37-122 %*		*Dilution: 10x*					
2-Fluorobiphenyl (Surr)			*95 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*74 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*102 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*79 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*147 %*		*39-132 %*		*"*					*Q-41, S-06*
Matrix Spike (7051104-MS1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 17:04					
QC Source Sample: SS-052417-30 (A7E0815-02RE1)												
EPA 8270D												
Acenaphthene	699	17.8	35.8	ug/kg dry	10	715	ND	98	40-122%	---	---	
Acenaphthylene	722	17.8	35.8	"	"	"	ND	101	32-132%	---	---	
Anthracene	819	17.8	35.8	"	"	"	ND	115	47-123%	---	---	
Benz(a)anthracene	697	17.8	35.8	"	"	"	ND	97	49-126%	---	---	
Benzo(a)pyrene	801	26.8	53.6	"	"	"	27.3	108	45-129%	---	---	
Benzo(b)fluoranthene	826	26.8	53.6	"	"	"	35.7	110	45-132%	---	---	
Benzo(k)fluoranthene	834	26.8	53.6	"	"	"	ND	117	47-132%	---	---	
Benzo(g,h,i)perylene	753	17.8	35.8	"	"	"	ND	105	43-134%	---	---	
Chrysene	748	17.8	35.8	"	"	"	ND	105	50-124%	---	---	
Dibenz(a,h)anthracene	803	17.8	35.8	"	"	"	ND	112	45-134%	---	---	
Fluoranthene	801	17.8	35.8	"	"	"	24.3	109	50-127%	---	---	
Fluorene	716	17.8	35.8	"	"	"	ND	100	43-125%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Matrix Spike (7051104-MS1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 17:04					
QC Source Sample: SS-052417-30 (A7E0815-02RE1)												
EPA 8270D												
Indeno(1,2,3-cd)pyrene	676	17.8	35.8	ug/kg dry	"	"	ND	94	45-133%	---	---	
1-Methylnaphthalene	687	35.8	71.5	"	"	"	ND	96	40-120%	---	---	
2-Methylnaphthalene	693	35.8	71.5	"	"	"	ND	97	38-122%	---	---	
Naphthalene	674	35.8	71.5	"	"	"	ND	94	35-123%	---	---	
Phenanthrene	761	17.8	35.8	"	"	"	18.4	104	50-121%	---	---	
Pyrene	823	17.8	35.8	"	"	"	20.9	112	47-127%	---	---	
Carbazole	804	26.8	53.6	"	"	"	ND	112	50-122%	---	---	
Dibenzofuran	726	17.8	35.8	"	"	"	ND	102	44-120%	---	---	
4-Chloro-3-methylphenol	638	178	358	"	"	"	ND	89	45-122%	---	---	
2-Chlorophenol	716	89.4	178	"	"	"	ND	100	34-121%	---	---	
2,4-Dichlorophenol	737	89.4	178	"	"	"	ND	103	40-122%	---	---	
2,4-Dimethylphenol	673	89.4	178	"	"	"	ND	94	30-127%	---	---	
2,4-Dinitrophenol	562	446	446	"	"	"	ND	79	5-137%	---	---	
4,6-Dinitro-2-methylphenol	813	446	446	"	"	"	ND	114	29-132%	---	---	
2-Methylphenol	701	44.6	89.4	"	"	"	ND	98	32-122%	---	---	
3+4-Methylphenol(s)	749	44.6	89.4	"	"	"	80.4	94	34-120%	---	---	
2-Nitrophenol	839	178	358	"	"	"	ND	117	36-123%	---	---	
4-Nitrophenol	741	178	358	"	"	"	ND	104	30-132%	---	---	
Pentachlorophenol (PCP)	884	178	358	"	"	"	ND	124	25-133%	---	---	
Phenol	685	35.8	71.5	"	"	"	ND	96	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	836	89.4	178	"	"	"	ND	117	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	748	89.4	178	"	"	"	ND	105	40-120%	---	---	
2,4,5-Trichlorophenol	814	89.4	178	"	"	"	ND	114	41-124%	---	---	
2,4,6-Trichlorophenol	825	89.4	178	"	"	"	ND	115	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	864	268	536	"	"	"	ND	121	51-133%	---	---	
Butyl benzyl phthalate	803	178	358	"	"	"	ND	112	48-132%	---	---	
Diethylphthalate	768	178	358	"	"	"	ND	107	50-124%	---	---	
Dimethylphthalate	740	178	358	"	"	"	ND	104	48-124%	---	---	
Di-n-butylphthalate	875	178	358	"	"	"	ND	122	51-128%	---	---	
Di-n-octyl phthalate	940	178	358	"	"	"	ND	131	44-140%	---	---	
N-Nitrosodimethylamine	394	44.6	89.4	"	"	"	ND	55	23-120%	---	---	
N-Nitroso-di-n-propylamine	628	44.6	89.4	"	"	"	ND	88	36-120%	---	---	
N-Nitrosodiphenylamine	795	44.6	89.4	"	"	"	ND	111	38-127%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Matrix Spike (7051104-MS1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 17:04					
QC Source Sample: SS-052417-30 (A7E0815-02RE1)												
EPA 8270D												
Bis(2-Chloroethoxy) methane	569	44.6	89.4	ug/kg dry	"	"	ND	80	36-121%	---	---	
Bis(2-Chloroethyl) ether	592	44.6	89.4	"	"	"	ND	83	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	651	44.6	89.4	"	"	"	ND	91	33-131%	---	---	
Hexachlorobenzene	744	17.8	35.8	"	"	"	ND	104	44-122%	---	---	
Hexachlorobutadiene	660	44.6	89.4	"	"	"	ND	92	32-123%	---	---	
Hexachlorocyclopentadiene	ND	89.4	178	"	"	"	ND		5-140%	---	---	Q-01
Hexachloroethane	489	44.6	89.4	"	"	"	ND	68	28-120%	---	---	
2-Chloronaphthalene	720	17.8	35.8	"	"	"	ND	101	41-120%	---	---	
1,2-Dichlorobenzene	599	44.6	89.4	"	"	"	ND	84	33-120%	---	---	
1,3-Dichlorobenzene	558	44.6	89.4	"	"	"	ND	78	30-120%	---	---	
1,4-Dichlorobenzene	566	44.6	89.4	"	"	"	ND	79	31-120%	---	---	
1,2,4-Trichlorobenzene	658	44.6	89.4	"	"	"	ND	92	34-120%	---	---	
4-Bromophenyl phenyl ether	738	44.6	89.4	"	"	"	ND	103	46-124%	---	---	
4-Chlorophenyl phenyl ether	700	44.6	89.4	"	"	"	ND	98	45-121%	---	---	
Aniline	415	89.4	178	"	"	"	ND	58	7-120%	---	---	
4-Chloroaniline	285	44.6	89.4	"	"	"	ND	40	16-120%	---	---	
2-Nitroaniline	823	358	715	"	"	"	ND	115	44-127%	---	---	
3-Nitroaniline	302	134	134	"	"	"	ND	42	33-120%	---	---	
4-Nitroaniline	307	134	134	"	"	"	ND	43	35-120%	---	---	
Nitrobenzene	611	178	358	"	"	"	ND	85	34-122%	---	---	
2,4-Dinitrotoluene	747	178	358	"	"	"	ND	104	48-126%	---	---	
2,6-Dinitrotoluene	782	178	358	"	"	"	ND	109	46-124%	---	---	
Benzoic acid	1440	1340	1340	"	"	1430	ND	101	5-140%	---	---	
Benzyl alcohol	670	89.4	178	"	"	715	183	68	29-122%	---	---	
Isophorone	598	44.6	89.4	"	"	"	ND	84	30-122%	---	---	
Azobenzene (1,2-DPH)	731	44.6	89.4	"	"	"	ND	102	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	920	446	894	"	"	"	ND	129	60-121%	---	---	Q-01
3,3'-Dichlorobenzidine	131	67.0	67.0	"	"	1430	ND	0.4	22-121%	---	---	Q-01
1,2-Dinitrobenzene	713	446	446	"	"	715	ND	100	44-120%	---	---	
1,3-Dinitrobenzene	731	446	446	"	"	"	ND	102	42-127%	---	---	
1,4-Dinitrobenzene	645	446	446	"	"	"	ND	90	37-132%	---	---	
Pyridine	483	89.4	178	"	"	"	ND	67	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr) *Recovery: 82 %* *Limits: 37-122 %* *Dilution: 10x*

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051104 - EPA 3546							**Soil**					
Matrix Spike (7051104-MS1)					Prepared: 05/25/17 15:08		Analyzed: 05/26/17 17:04					
QC Source Sample: SS-052417-30 (A7E0815-02RE1)												
EPA 8270D												
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 99 %*	*Limits: 44-115 %*			*Dilution: 10x*					
Phenol-d6 (Surr)			*90 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*101 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*86 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*142 %*	*39-132 %*			*"*					*Q-41, S-06*

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051077 - EPA 3051A							**Soil**					
Blank (7051077-BLK1)					Prepared: 05/26/17 11:15		Analyzed: 05/30/17 13:03					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (7051077-BS1)					Prepared: 05/26/17 11:15		Analyzed: 05/30/17 13:09					
EPA 6020A												
Arsenic	51.2	0.500	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Cadmium	51.7	0.100	0.200	"	"	"	---	103	"	---	---	
Chromium	52.4	0.500	1.00	"	"	"	---	105	"	---	---	
Copper	53.9	0.500	1.00	"	"	"	---	108	"	---	---	
Lead	55.2	0.100	0.200	"	"	"	---	110	"	---	---	
Mercury	1.05	0.0400	0.0800	"	"	1.00	---	105	"	---	---	
Nickel	52.8	0.500	1.00	"	"	50.0	---	106	"	---	---	
Selenium	27.5	0.500	1.00	"	"	25.0	---	110	"	---	---	
Silver	26.2	0.100	0.200	"	"	"	---	105	"	---	---	
Zinc	51.5	2.00	4.00	"	"	50.0	---	103	"	---	---	
Duplicate (7051077-DUP1)					Prepared: 05/26/17 11:15		Analyzed: 05/30/17 13:57					
QC Source Sample: Other (A7E0802-06)												
EPA 6020A												
Arsenic	**2.02**	0.632	1.26	mg/kg dry	10	---	2.70	---	---	29	40%	
Cadmium	**0.581**	0.126	0.253	"	"	---	0.589	---	---	1	40%	
Chromium	**15.3**	0.632	1.26	"	"	---	22.0	---	---	36	40%	
Copper	**39.8**	0.632	1.26	"	"	---	40.6	---	---	2	40%	
Lead	**53.7**	0.126	0.253	"	"	---	53.1	---	---	1	40%	
Mercury	**0.0560**	0.0505	0.101	"	"	---	0.0540	---	---	4	40%	J
Nickel	**14.3**	0.632	1.26	"	"	---	18.4	---	---	25	40%	
Selenium	ND	0.632	1.26	"	"	---	ND	---	---	---	40%	

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051077 - EPA 3051A							**Soil**					
Duplicate (7051077-DUP1)					Prepared: 05/26/17 11:15		Analyzed: 05/30/17 13:57					
QC Source Sample: Other (A7E0802-06)												
EPA 6020A												
Silver	ND	0.126	0.253	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**157**	2.53	5.05	"	"	---	159	---	---	1	40%	
Matrix Spike (7051077-MS1)					Prepared: 05/26/17 11:15		Analyzed: 05/30/17 14:00					
QC Source Sample: Other (A7E0802-06)												
EPA 6020A												
Arsenic	61.8	0.621	1.24	mg/kg dry	10	62.1	2.70	95	75-125%	---	---	
Cadmium	61.9	0.124	0.248	"	"	"	0.589	99	"	---	---	
Chromium	81.0	0.621	1.24	"	"	"	22.0	95	"	---	---	
Copper	99.2	0.621	1.24	"	"	"	40.6	94	"	---	---	
Lead	108	0.124	0.248	"	"	"	53.1	88	"	---	---	
Mercury	1.22	0.0497	0.0994	"	"	1.24	0.0540	94	"	---	---	
Nickel	78.5	0.621	1.24	"	"	62.1	18.4	97	"	---	---	
Selenium	30.4	0.621	1.24	"	"	31.0	ND	98	"	---	---	
Silver	30.9	0.124	0.248	"	"	"	ND	100	"	---	---	
Zinc	200	2.48	4.97	"	"	62.1	159	67	"	---	---	Q-03
Matrix Spike (7051077-MS2)					Prepared: 05/26/17 11:15		Analyzed: 05/30/17 14:09					
QC Source Sample: Other (A7E0846-01)												
EPA 6020A												
Arsenic	81.0	0.781	1.56	mg/kg dry	10	78.1	4.23	98	75-125%	---	---	
Cadmium	80.0	0.156	0.312	"	"	"	0.415	102	"	---	---	
Chromium	104	0.781	1.56	"	"	"	23.8	103	"	---	---	
Copper	111	0.781	1.56	"	"	"	30.9	103	"	---	---	
Lead	90.4	0.156	0.312	"	"	"	11.7	101	"	---	---	
Mercury	1.60	0.0625	0.125	"	"	1.56	ND	102	"	---	---	
Nickel	101	0.781	1.56	"	"	78.1	22.9	100	"	---	---	
Selenium	40.8	0.781	1.56	"	"	39.0	ND	105	"	---	---	
Silver	40.1	0.156	0.312	"	"	"	ND	103	"	---	---	
Zinc	149	3.12	6.25	"	"	78.1	73.1	97	"	---	---	

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7051100 - Total Solids (Dry Weight)							**Soil**					
Duplicate (7051100-DUP1)					Prepared: 05/25/17 13:18		Analyzed: 05/26/17 07:37					
QC Source Sample: Other (A7E0757-03)												
EPA 8000C												
% Solids	**97.6**	1.00	1.00	% by Weight	1	---	97.6	---	---	0.02	10%	
Duplicate (7051100-DUP3)					Prepared: 05/25/17 16:22		Analyzed: 05/26/17 07:37					
QC Source Sample: Other (A7E0820-01)												
EPA 8000C												
% Solids	**98.5**	1.00	1.00	% by Weight	1	---	98.4	---	---	0.008	10%	
Duplicate (7051100-DUP4)					Prepared: 05/25/17 16:22		Analyzed: 05/26/17 07:37					
QC Source Sample: Other (A7E0823-05)												
EPA 8000C												
% Solids	**75.6**	1.00	1.00	% by Weight	1	---	81.9	---	---	8	10%	
Duplicate (7051100-DUP5)					Prepared: 05/25/17 19:31		Analyzed: 05/26/17 07:37					
QC Source Sample: Other (A7E0830-01)												
EPA 8000C												
% Solids	**82.8**	1.00	1.00	% by Weight	1	---	81.4	---	---	2	10%	
Duplicate (7051100-DUP6)					Prepared: 05/25/17 19:32		Analyzed: 05/26/17 07:37					
QC Source Sample: Other (A7E0837-01)												
EPA 8000C												
% Solids	**64.1**	1.00	1.00	% by Weight	1	---	63.8	---	---	0.5	10%	
Duplicate (7051100-DUP7)					Prepared: 05/25/17 19:32		Analyzed: 05/26/17 07:37					
QC Source Sample: Other (A7E0845-02)												
EPA 8000C												
% Solids	**79.4**	1.00	1.00	% by Weight	1	---	79.4	---	---	0.04	10%	

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Prep: EPA 3546 w/SG+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7051101							
A7E0815-01	Soil	NWTPH-Dx/SG	05/25/17 11:15	05/25/17 14:37	10.31g/5mL	10g/5mL	0.97
A7E0815-02	Soil	NWTPH-Dx/SG	05/25/17 11:30	05/25/17 14:37	10.54g/5mL	10g/5mL	0.95

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7051087							
A7E0815-01	Soil	EPA 8082A	05/25/17 11:15	05/25/17 14:22	10.38g/5mL	10g/5mL	0.96
A7E0815-02	Soil	EPA 8082A	05/25/17 11:30	05/25/17 14:22	10.29g/5mL	10g/5mL	0.97

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7051137							
A7E0815-01RE1	Soil	EPA 8081B	05/25/17 11:15	05/26/17 07:07	11.67g/10mL	10g/5mL	1.71
A7E0815-02RE1	Soil	EPA 8081B	05/25/17 11:30	05/26/17 07:07	11.27g/10mL	10g/5mL	1.77

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7051104							
A7E0815-01RE1	Soil	EPA 8270D	05/25/17 11:15	05/25/17 15:08	15.23g/2mL	15g/2mL	0.99
A7E0815-02RE1	Soil	EPA 8270D	05/25/17 11:30	05/25/17 15:08	15.36g/2mL	15g/2mL	0.98

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7051077							
A7E0815-01	Soil	EPA 6020A	05/25/17 11:15	05/26/17 11:15	0.46g/50mL	0.5g/50mL	1.09
A7E0815-02	Soil	EPA 6020A	05/25/17 11:30	05/26/17 11:15	0.491g/50mL	0.5g/50mL	1.02

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SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7051100							
A7E0815-01	Soil	EPA 8000C	05/25/17 11:15	05/25/17 16:22	1N/A/1N/A	1N/A/1N/A	NA
A7E0815-02	Soil	EPA 8000C	05/25/17 11:30	05/25/17 16:22	1N/A/1N/A	1N/A/1N/A	NA

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Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-06	Surrogate recovery is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

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--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

APEX LABS **CHAIN OF CUSTODY** Lab # A7E0815 COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: Name MFA | Project Mgr: Phil Wiescher | Project Name: Port of Ridgefield OPP | Project #/PO# 9003.01.39

Address: 2001 NW 19th Ave Suite 200, Portland, OR | Phone: (503) 5015209 | Fax: | Email: pwiescher@maulfoster.com

Sampled by:

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Totall Metals EPA 6020 (see comments)	Organochlorine pesticides EPA 8081B	Low Level 8082 PCB Aroclors	Low Level 8270D SVOCs	Dioxins/furrans EPA 1613B	TPH-Dx (NWTPH-D/Dx) w/ Silica Gel Cleanup
SS-052417-50		5/25	11:15	S	2	X	X	X	X	X	X
SS-052417-30		5/25	11:30	S	2	X	X	X	X	X	X

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle) 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS:

Metlas: As, Cd, Cr, Pb, Hg, Ni, Se, Ag, Zn, Cu. Please report MDLs.

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 5/25	Signature: [signature] Date: 5-25-17	Signature: Date:	Signature: Date:
Printed Name: Lindsey Crosby Time: 12:00	Printed Name: Michael Mackay Time: 1203	Printed Name: Time:	Printed Name: Time:
Company: MFA	Company: Apex Labs	Company:	Company:

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/05/17 14:32

APEX LABS COOLER RECEIPT FORM

Client: MFA Element WO#: A7 E0815

Project/Project #: Port of Ridgefield 000/9003.01.39

Delivery info:

Date/Time Received: 5-25-17 @ 1203 By: MA

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: MA : 5-25-17 @ 1245

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	4.6						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: [illegible] : 5/25/17 @ 1320

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes ___ No X Comments: Cont. read SS-052517-50 and SS-052517-30

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: [illegible] Witness: [illegible] Cooler Inspected by: [illegible] See Project Contact Form: Y

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Thursday, June 8, 2017

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / 9003.01.39

Enclosed are the results of analyses for work order A7F0016, which was received by the laboratory on 6/1/2017 at 12:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-060117 Swanson	A7F0016-01	Soil	06/01/17 09:10	06/01/17 12:00

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Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01)			**Matrix: Soil**		**Batch: 7060257**			
Diesel	ND	14.6	29.2	mg/kg dry	1	06/01/17 22:09	NWTPH-Dx/SG	
Oil	**104**	29.2	58.3	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01RE1)			**Matrix: Soil**		**Batch: 7060268**			**C-07**
Aroclor 1016	ND	5.83	11.7	ug/kg dry	1	06/05/17 12:28	EPA 8082A	
Aroclor 1221	ND	5.83	11.7	"	"	"	"	
Aroclor 1232	ND	11.7	11.7	"	"	"	"	
Aroclor 1242	ND	5.83	11.7	"	"	"	"	
Aroclor 1248	ND	5.83	11.7	"	"	"	"	
Aroclor 1254	**9.13**	5.83	11.7	"	"	"	"	J
Aroclor 1260	ND	5.83	11.7	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 72-126 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01RE1)			**Matrix: Soil**		**Batch: 7060293**			**C-05**
Aldrin	ND	1.06	2.12	ug/kg dry	1	06/05/17 13:13	EPA 8081B	
alpha-BHC	ND	1.06	2.12	"	"	"	"	
beta-BHC	ND	1.06	2.12	"	"	"	"	
delta-BHC	ND	1.06	2.12	"	"	"	"	
gamma-BHC (Lindane)	ND	1.06	2.12	"	"	"	"	
cis-Chlordane	ND	1.06	2.12	"	"	"	"	
trans-Chlordane	ND	1.06	2.12	"	"	"	"	
4,4'-DDD	ND	2.12	2.12	"	"	"	"	
4,4'-DDE	**2.19**	1.06	2.12	"	"	"	"	
4,4'-DDT	ND	2.44	2.44	"	"	"	"	R-02
Dieldrin	ND	1.06	2.12	"	"	"	"	
Endosulfan I	ND	1.06	2.12	"	"	"	"	
Endosulfan II	ND	1.06	2.12	"	"	"	"	
Endosulfan sulfate	ND	1.06	2.12	"	"	"	"	
Endrin	ND	1.06	2.12	"	"	"	"	
Endrin Aldehyde	ND	1.06	2.12	"	"	"	"	
Endrin ketone	ND	1.06	2.12	"	"	"	"	
Heptachlor	ND	1.06	2.12	"	"	"	"	
Heptachlor epoxide	ND	1.06	2.12	"	"	"	"	
Methoxychlor	ND	6.37	6.37	"	"	"	"	
Chlordane (Technical)	ND	31.9	63.7	"	"	"	"	
Toxaphene (Total)	ND	31.9	63.7	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 65 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*97 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01RE1)			**Matrix: Soil**		**Batch: 7060267**			
Acenaphthene	ND	31.6	63.4	ug/kg dry	20	06/02/17 20:46	EPA 8270D	
Acenaphthylene	ND	31.6	63.4	"	"	"	"	
Anthracene	ND	31.6	63.4	"	"	"	"	
Benz(a)anthracene	**36.7**	31.6	63.4	"	"	"	"	J
Benzo(a)pyrene	**48.8**	47.5	95.0	"	"	"	"	J
Benzo(b)fluoranthene	**58.4**	47.5	95.0	"	"	"	"	J
Benzo(k)fluoranthene	ND	47.5	95.0	"	"	"	"	
Benzo(g,h,i)perylene	ND	31.6	63.4	"	"	"	"	
Chrysene	**35.4**	31.6	63.4	"	"	"	"	J
Dibenz(a,h)anthracene	ND	31.6	63.4	"	"	"	"	
Fluoranthene	**123**	31.6	63.4	"	"	"	"	
Fluorene	**37.4**	31.6	63.4	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	31.6	63.4	"	"	"	"	
1-Methylnaphthalene	ND	63.4	127	"	"	"	"	
2-Methylnaphthalene	ND	63.4	127	"	"	"	"	
Naphthalene	ND	63.4	127	"	"	"	"	
Phenanthrene	**146**	31.6	63.4	"	"	"	"	
Pyrene	**96.1**	31.6	63.4	"	"	"	"	
Carbazole	ND	47.5	95.0	"	"	"	"	
Dibenzofuran	ND	31.6	63.4	"	"	"	"	
4-Chloro-3-methylphenol	ND	316	634	"	"	"	"	
2-Chlorophenol	ND	158	316	"	"	"	"	
2,4-Dichlorophenol	ND	158	316	"	"	"	"	
2,4-Dimethylphenol	ND	158	316	"	"	"	"	
2,4-Dinitrophenol	ND	791	1580	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	791	1580	"	"	"	"	
2-Methylphenol	ND	79.1	158	"	"	"	"	
3+4-Methylphenol(s)	ND	79.1	158	"	"	"	"	
2-Nitrophenol	ND	316	634	"	"	"	"	
4-Nitrophenol	ND	316	634	"	"	"	"	
Pentachlorophenol (PCP)	ND	316	634	"	"	"	"	
Phenol	ND	63.4	127	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	158	316	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	158	316	"	"	"	"	
2,4,5-Trichlorophenol	ND	158	316	"	"	"	"	
2,4,6-Trichlorophenol	ND	158	316	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	475	950	"	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01RE1)			**Matrix: Soil**		**Batch: 7060267**			
Butyl benzyl phthalate	ND	316	634	ug/kg dry	20	"	EPA 8270D	Q-42
Diethylphthalate	ND	316	634	"	"	"	"	
Dimethylphthalate	ND	316	634	"	"	"	"	
Di-n-butylphthalate	ND	316	634	"	"	"	"	
Di-n-octyl phthalate	ND	316	634	"	"	"	"	
N-Nitrosodimethylamine	ND	79.1	158	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	79.1	158	"	"	"	"	
N-Nitrosodiphenylamine	ND	79.1	158	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	79.1	158	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	79.1	158	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	79.1	158	"	"	"	"	
Hexachlorobenzene	ND	31.6	63.4	"	"	"	"	
Hexachlorobutadiene	ND	79.1	158	"	"	"	"	
Hexachlorocyclopentadiene	ND	158	316	"	"	"	"	
Hexachloroethane	ND	79.1	158	"	"	"	"	
2-Chloronaphthalene	ND	31.6	63.4	"	"	"	"	
1,2-Dichlorobenzene	ND	79.1	158	"	"	"	"	
1,3-Dichlorobenzene	ND	79.1	158	"	"	"	"	
1,4-Dichlorobenzene	ND	79.1	158	"	"	"	"	
1,2,4-Trichlorobenzene	ND	79.1	158	"	"	"	"	
4-Bromophenyl phenyl ether	ND	79.1	158	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	79.1	158	"	"	"	"	
Aniline	ND	158	316	"	"	"	"	
4-Chloroaniline	ND	79.1	158	"	"	"	"	
2-Nitroaniline	ND	634	1270	"	"	"	"	
3-Nitroaniline	ND	634	1270	"	"	"	"	
4-Nitroaniline	ND	634	1270	"	"	"	"	
Nitrobenzene	ND	316	634	"	"	"	"	
2,4-Dinitrotoluene	ND	316	634	"	"	"	"	
2,6-Dinitrotoluene	ND	316	634	"	"	"	"	
Benzoic acid	ND	3960	7910	"	"	"	"	Q-42
Benzyl alcohol	ND	158	316	"	"	"	"	
Isophorone	ND	79.1	158	"	"	"	"	
Azobenzene (1,2-DPH)	ND	79.1	158	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	791	1580	"	"	"	"	Q-42
3,3'-Dichlorobenzidine	ND	316	634	"	"	"	"	Q-42
1,2-Dinitrobenzene	ND	791	1580	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01RE1)			**Matrix: Soil**		**Batch: 7060267**			
1,3-Dinitrobenzene	ND	791	1580	ug/kg dry	20	"	EPA 8270D	
1,4-Dinitrobenzene	ND	791	1580	"	"	"	"	
Pyridine	ND	158	316	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 73 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*79 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*79 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*87 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*76 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*120 %*	*Limits: 39-132 %*	"	"	"	*Q-41*

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01)			**Matrix: Soil**					
Batch: 7060275								
Arsenic	**2.41**	0.603	1.21	mg/kg dry	10	06/05/17 15:01	EPA 6020A	
Cadmium	**0.181**	0.121	0.241	"	"	"	"	J
Chromium	**12.7**	0.603	1.21	"	"	"	"	
Copper	**31.3**	0.603	1.21	"	"	"	"	
Lead	**8.51**	0.121	0.241	"	"	"	"	
Mercury	ND	0.0482	0.0964	"	"	"	"	
Nickel	**13.6**	0.603	1.21	"	"	"	"	
Selenium	ND	0.603	1.21	"	"	"	"	
Silver	ND	0.121	0.241	"	"	"	"	
Zinc	**46.7**	2.41	4.82	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-060117 Swanson (A7F0016-01)			**Matrix: Soil**		**Batch: 7060279**			
% Solids	**83.5**	1.00	1.00	% by Weight	1	06/05/17 07:37	EPA 8000C	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060257 - EPA 3546 w/SG+Acid (NWTPH)							**Soil**					
Blank (7060257-BLK1)					Prepared: 06/01/17 18:17		Analyzed: 06/01/17 21:29					
NWTPH-Dx/SG												
Diesel	ND	11.4	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	22.7	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 106 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (7060257-BS1)					Prepared: 06/01/17 18:17		Analyzed: 06/01/17 21:49					
NWTPH-Dx/SG												
Diesel	126	12.5	25.0	mg/kg wet	1	125	---	100	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 107 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (7060257-DUP1)					Prepared: 06/01/17 18:17		Analyzed: 06/01/17 22:30					
QC Source Sample: SS-060117 Swanson (A7F0016-01)												
NWTPH-Dx/SG												
Diesel	ND	14.7	29.3	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**125**	29.3	58.7	"	"	---	104	---	---	18	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060268 - EPA 3546							**Soil**					
Blank (7060268-BLK1)					Prepared: 06/02/17 10:05		Analyzed: 06/02/17 15:28					C-07
EPA 8082A												
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 96 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (7060268-BS1)					Prepared: 06/02/17 10:05		Analyzed: 06/02/17 15:46					C-07
EPA 8082A												
Aroclor 1016	184	5.00	10.0	ug/kg wet	1	250	---	74	47-134%	---	---	
Aroclor 1260	215	5.00	10.0	"	"	"	---	86	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 99 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (7060268-DUP1)					Prepared: 06/02/17 10:05		Analyzed: 06/02/17 16:39					C-07
QC Source Sample: Other (A7F0005-01)												
EPA 8082A												
Aroclor 1016	ND	5.26	10.5	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	5.26	10.5	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	5.26	10.5	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	5.26	10.5	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	5.26	10.5	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	5.26	10.5	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	5.26	10.5	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 96 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Matrix Spike (7060268-MS1)					Prepared: 06/02/17 10:05		Analyzed: 06/02/17 17:15					C-07
QC Source Sample: Other (A7F0005-06)												
EPA 8082A												
Aroclor 1016	180	5.38	10.8	ug/kg dry	1	269	ND	67	47-134%	---	---	
Aroclor 1260	221	5.38	10.8	"	"	"	ND	82	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 89 %*	*Limits: 72-126 %*			*Dilution: 1x*					*Q-41*

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060293 - EPA 3546/3640A (GPC)							**Soil**					
Blank (7060293-BLK1)					Prepared: 06/01/17 16:04		Analyzed: 06/05/17 12:21					C-05
EPA 8081B												
Aldrin	ND	0.833	1.67	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.833	1.67	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.833	1.67	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.833	1.67	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.833	1.67	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.833	1.67	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*98 %*	*65-151 %*			*"*					
LCS (7060293-BS1)					Prepared: 06/01/17 16:04		Analyzed: 06/05/17 12:38					C-05
EPA 8081B												
Aldrin	42.5	1.00	2.00	ug/kg wet	1	50.0	---	85	45-136%	---	---	
alpha-BHC	45.7	1.00	2.00	"	"	"	---	91	45-137%	---	---	
beta-BHC	45.4	1.00	2.00	"	"	"	---	91	50-136%	---	---	
delta-BHC	48.3	1.00	2.00	"	"	"	---	97	47-139%	---	---	
gamma-BHC (Lindane)	47.2	1.00	2.00	"	"	"	---	94	49-135%	---	---	
cis-Chlordane	50.2	1.00	2.00	"	"	"	---	100	54-133%	---	---	
trans-Chlordane	50.6	1.00	2.00	"	"	"	---	101	53-135%	---	---	
4,4'-DDD	58.8	1.00	2.00	"	"	"	---	118	56-139%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060293 - EPA 3546/3640A (GPC)							**Soil**					
LCS (7060293-BS1)					Prepared: 06/01/17 16:04		Analyzed: 06/05/17 12:38					C-05
EPA 8081B												
4,4'-DDE	54.6	1.00	2.00	ug/kg wet	"	"	---	109	56-134%	---	---	
4,4'-DDT	67.5	1.00	2.00	"	"	"	---	135	50-141%	---	---	
Dieldrin	52.5	1.00	2.00	"	"	"	---	105	56-136%	---	---	
Endosulfan I	51.4	1.00	2.00	"	"	"	---	103	52-132%	---	---	
Endosulfan II	51.3	1.00	2.00	"	"	"	---	103	53-134%	---	---	
Endosulfan sulfate	58.0	1.00	2.00	"	"	"	---	116	55-136%	---	---	
Endrin	62.3	1.00	2.00	"	"	"	---	125	56-140%	---	---	Q-41
Endrin Aldehyde	47.7	1.00	2.00	"	"	"	---	95	35-137%	---	---	
Endrin ketone	63.4	1.00	2.00	"	"	"	---	127	55-136%	---	---	Q-41
Heptachlor	51.3	1.00	2.00	"	"	"	---	103	47-136%	---	---	Q-41
Heptachlor epoxide	47.8	1.00	2.00	"	"	"	---	96	52-136%	---	---	
Methoxychlor	73.4	3.00	6.00	"	"	"	---	147	52-143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 77 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*102 %*	*65-151 %*			*"*					
Duplicate (7060293-DUP1)					Prepared: 06/01/17 16:04		Analyzed: 06/05/17 13:30					C-05
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8081B												
Aldrin	ND	1.07	2.13	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
4,4'-DDD	ND	2.13	2.13	"	"	---	ND	---	---	---	30%	
4,4'-DDE	**1.93**	1.07	2.13	"	"	---	2.19	---	---	12	30%	J
4,4'-DDT	ND	2.13	2.13	"	"	---	ND	---	---	---	30%	
Dieldrin	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
Endosulfan I	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
Endrin	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	2.13	2.13	"	"	---	ND	---	---	---	30%	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060293 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (7060293-DUP1)					Prepared: 06/01/17 16:04	Analyzed: 06/05/17 13:30						C-05
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8081B												
Endrin ketone	ND	2.13	2.13	ug/kg dry	"	---	ND	---	---	---	30%	
Heptachlor	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	1.07	2.13	"	"	---	ND	---	---	---	30%	
Methoxychlor	ND	6.40	6.40	"	"	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	32.0	64.0	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	32.0	64.0	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*102 %*	*65-151 %*			*"*					
Matrix Spike (7060293-MS1)					Prepared: 06/01/17 16:04	Analyzed: 06/05/17 13:48						C-05
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8081B												
Aldrin	45.5	1.07	2.14	ug/kg dry	1	53.4	ND	85	45-136%	---	---	
alpha-BHC	47.5	1.07	2.14	"	"	"	ND	89	45-137%	---	---	
beta-BHC	49.3	1.07	2.14	"	"	"	ND	92	50-136%	---	---	
delta-BHC	51.7	1.07	2.14	"	"	"	ND	97	47-139%	---	---	
gamma-BHC (Lindane)	49.6	1.07	2.14	"	"	"	ND	93	49-135%	---	---	
cis-Chlordane	50.2	1.07	2.14	"	"	"	ND	94	54-133%	---	---	
trans-Chlordane	49.6	1.07	2.14	"	"	"	ND	93	53-135%	---	---	
4,4'-DDD	62.3	1.07	2.14	"	"	"	ND	114	56-139%	---	---	
4,4'-DDE	58.9	1.07	2.14	"	"	"	2.19	106	56-134%	---	---	
4,4'-DDT	75.4	1.07	2.14	"	"	"	ND	137	50-141%	---	---	Q-41
Dieldrin	53.3	1.07	2.14	"	"	"	ND	100	56-136%	---	---	
Endosulfan I	53.0	1.07	2.14	"	"	"	ND	99	52-132%	---	---	
Endosulfan II	54.7	1.07	2.14	"	"	"	ND	102	53-134%	---	---	
Endosulfan sulfate	59.7	1.07	2.14	"	"	"	ND	112	55-136%	---	---	
Endrin	68.6	1.07	2.14	"	"	"	ND	128	56-140%	---	---	Q-41
Endrin Aldehyde	52.6	1.07	2.14	"	"	"	ND	98	35-137%	---	---	
Endrin ketone	68.3	1.07	2.14	"	"	"	ND	128	55-136%	---	---	Q-41
Heptachlor	59.9	1.07	2.14	"	"	"	ND	112	47-136%	---	---	Q-41
Heptachlor epoxide	51.8	1.07	2.14	"	"	"	ND	97	52-136%	---	---	
Methoxychlor	92.9	3.20	6.41	"	"	"	ND	165	52-143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 72 %*	*Limits: 42-129 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060293 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (7060293-MS1)						Prepared: 06/01/17 16:04	Analyzed: 06/05/17 13:48					C-05
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8081B												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*	*Limits: 65-151 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Blank (7060267-BLK2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 14:47					
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Blank (7060267-BLK2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 14:47					
EPA 8270D												
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Blank (7060267-BLK2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 14:47					
EPA 8270D												
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 91 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*91 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*89 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*86 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*82 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*109 %*		*39-132 %*		*"*					*Q-41*
LCS (7060267-BS2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 15:22					
EPA 8270D												
Acenaphthene	698	2.00	4.00	ug/kg wet	1	800	---	87	40-122%	---	---	
Acenaphthylene	677	2.00	4.00	"	"	"	---	85	32-132%	---	---	
Anthracene	722	2.00	4.00	"	"	"	---	90	47-123%	---	---	
Benz(a)anthracene	749	2.00	4.00	"	"	"	---	94	49-126%	---	---	
Benzo(a)pyrene	759	3.00	6.00	"	"	"	---	95	45-129%	---	---	
Benzo(b)fluoranthene	791	3.00	6.00	"	"	"	---	99	45-132%	---	---	
Benzo(k)fluoranthene	763	3.00	6.00	"	"	"	---	95	47-132%	---	---	
Benzo(g,h,i)perylene	830	2.00	4.00	"	"	"	---	104	43-134%	---	---	
Chrysene	788	2.00	4.00	"	"	"	---	98	50-124%	---	---	
Dibenz(a,h)anthracene	823	2.00	4.00	"	"	"	---	103	45-134%	---	---	
Fluoranthene	767	2.00	4.00	"	"	"	---	96	50-127%	---	---	
Fluorene	651	2.00	4.00	"	"	"	---	81	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	782	2.00	4.00	"	"	"	---	98	45-133%	---	---	
1-Methylnaphthalene	674	4.00	8.00	"	"	"	---	84	40-120%	---	---	
2-Methylnaphthalene	687	4.00	8.00	"	"	"	---	86	38-122%	---	---	
Naphthalene	690	4.00	8.00	"	"	"	---	86	35-123%	---	---	
Phenanthrene	687	2.00	4.00	"	"	"	---	86	50-121%	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
LCS (7060267-BS2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 15:22					
EPA 8270D												
Pyrene	749	2.00	4.00	ug/kg wet	"	"	---	94	47-127%	---	---	
Carbazole	753	3.00	6.00	"	"	"	---	94	50-122%	---	---	
Dibenzofuran	696	2.00	4.00	"	"	"	---	87	44-120%	---	---	
4-Chloro-3-methylphenol	733	20.0	40.0	"	"	"	---	92	45-122%	---	---	
2-Chlorophenol	789	10.0	20.0	"	"	"	---	99	34-121%	---	---	
2,4-Dichlorophenol	831	10.0	20.0	"	"	"	---	104	40-122%	---	---	
2,4-Dimethylphenol	773	10.0	20.0	"	"	"	---	97	30-127%	---	---	
2,4-Dinitrophenol	1090	50.0	100	"	"	"	---	136	5-137%	---	---	Q-41
4,6-Dinitro-2-methylphenol	1000	50.0	100	"	"	"	---	125	29-132%	---	---	Q-41
2-Methylphenol	738	5.00	10.0	"	"	"	---	92	32-122%	---	---	
3+4-Methylphenol(s)	716	5.00	10.0	"	"	"	---	89	34-120%	---	---	
2-Nitrophenol	861	20.0	40.0	"	"	"	---	108	36-123%	---	---	Q-41
4-Nitrophenol	865	20.0	40.0	"	"	"	---	108	30-132%	---	---	Q-41
Pentachlorophenol (PCP)	811	20.0	40.0	"	"	"	---	101	25-133%	---	---	
Phenol	767	4.00	8.00	"	"	"	---	96	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	840	10.0	20.0	"	"	"	---	105	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	798	10.0	20.0	"	"	"	---	100	40-120%	---	---	
2,4,5-Trichlorophenol	805	10.0	20.0	"	"	"	---	101	41-124%	---	---	
2,4,6-Trichlorophenol	797	10.0	20.0	"	"	"	---	100	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	767	30.0	60.0	"	"	"	---	96	51-133%	---	---	
Butyl benzyl phthalate	800	20.0	40.0	"	"	"	---	100	48-132%	---	---	
Diethylphthalate	747	20.0	40.0	"	"	"	---	93	50-124%	---	---	
Dimethylphthalate	767	20.0	40.0	"	"	"	---	96	48-124%	---	---	
Di-n-butylphthalate	796	20.0	40.0	"	"	"	---	99	51-128%	---	---	
Di-n-octyl phthalate	778	20.0	40.0	"	"	"	---	97	44-140%	---	---	
N-Nitrosodimethylamine	660	5.00	10.0	"	"	"	---	83	23-120%	---	---	
N-Nitroso-di-n-propylamine	642	5.00	10.0	"	"	"	---	80	36-120%	---	---	
N-Nitrosodiphenylamine	691	5.00	10.0	"	"	"	---	86	38-127%	---	---	
Bis(2-Chloroethoxy) methane	660	5.00	10.0	"	"	"	---	83	36-121%	---	---	
Bis(2-Chloroethyl) ether	690	5.00	10.0	"	"	"	---	86	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	602	5.00	10.0	"	"	"	---	75	33-131%	---	---	
Hexachlorobenzene	718	2.00	4.00	"	"	"	---	90	44-122%	---	---	
Hexachlorobutadiene	761	5.00	10.0	"	"	"	---	95	32-123%	---	---	
Hexachlorocyclopentadiene	893	10.0	20.0	"	"	"	---	112	5-140%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
LCS (7060267-BS2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 15:22					
EPA 8270D												
Hexachloroethane	726	5.00	10.0	ug/kg wet	"	"	---	91	28-120%	---	---	
2-Chloronaphthalene	701	2.00	4.00	"	"	"	---	88	41-120%	---	---	
1,2-Dichlorobenzene	689	5.00	10.0	"	"	"	---	86	33-120%	---	---	
1,3-Dichlorobenzene	703	5.00	10.0	"	"	"	---	88	30-120%	---	---	
1,4-Dichlorobenzene	702	5.00	10.0	"	"	"	---	88	31-120%	---	---	
1,2,4-Trichlorobenzene	722	5.00	10.0	"	"	"	---	90	34-120%	---	---	
4-Bromophenyl phenyl ether	746	5.00	10.0	"	"	"	---	93	46-124%	---	---	
4-Chlorophenyl phenyl ether	699	5.00	10.0	"	"	"	---	87	45-121%	---	---	
Aniline	605	10.0	20.0	"	"	"	---	76	7-120%	---	---	
4-Chloroaniline	430	5.00	10.0	"	"	"	---	54	16-120%	---	---	
2-Nitroaniline	817	40.0	80.0	"	"	"	---	102	44-127%	---	---	
3-Nitroaniline	638	40.0	80.0	"	"	"	---	80	33-120%	---	---	
4-Nitroaniline	657	40.0	80.0	"	"	"	---	82	35-120%	---	---	
Nitrobenzene	671	20.0	40.0	"	"	"	---	84	34-122%	---	---	
2,4-Dinitrotoluene	769	20.0	40.0	"	"	"	---	96	48-126%	---	---	
2,6-Dinitrotoluene	814	20.0	40.0	"	"	"	---	102	46-124%	---	---	
Benzoic acid	1540	250	500	"	"	1600	---	96	5-140%	---	---	
Benzyl alcohol	730	10.0	20.0	"	"	800	---	91	29-122%	---	---	
Isophorone	677	5.00	10.0	"	"	"	---	85	30-122%	---	---	
Azobenzene (1,2-DPH)	616	5.00	10.0	"	"	"	---	77	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	785	50.0	100	"	"	"	---	98	60-121%	---	---	
3,3'-Dichlorobenzidine	1370	20.0	40.0	"	"	1600	---	85	22-121%	---	---	Q-31
1,2-Dinitrobenzene	755	50.0	100	"	"	800	---	94	44-120%	---	---	
1,3-Dinitrobenzene	834	50.0	100	"	"	"	---	104	42-127%	---	---	
1,4-Dinitrobenzene	858	50.0	100	"	"	"	---	107	37-132%	---	---	
Pyridine	585	10.0	20.0	"	"	"	---	73	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 86 %*	*Limits: 37-122 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*90 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*100 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*97 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*100 %*	*35-115 %*	*"*
2,4,6-Tribromophenol (Surr)	*109 %*	*39-132 %*	*"*

Q-41

Duplicate (7060267-DUP2) Prepared: 06/02/17 10:03 Analyzed: 06/02/17 21:22 T-03

QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Duplicate (7060267-DUP2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 21:22					T-03
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8270D												
Acenaphthene	ND	31.6	63.3	ug/kg dry	20	---	ND	---	---	---	30%	
Acenaphthylene	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
Anthracene	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
Benz(a)anthracene	**41.3**	31.6	63.3	"	"	---	36.7	---	---	12	30%	J
Benzo(a)pyrene	**54.7**	47.5	94.9	"	"	---	48.8	---	---	12	30%	J
Benzo(b)fluoranthene	**65.5**	47.5	94.9	"	"	---	58.4	---	---	11	30%	J
Benzo(k)fluoranthene	ND	47.5	94.9	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
Chrysene	**33.3**	31.6	63.3	"	"	---	35.4	---	---	6	30%	J
Dibenz(a,h)anthracene	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
Fluoranthene	**133**	31.6	63.3	"	"	---	123	---	---	8	30%	
Fluorene	**43.7**	31.6	63.3	"	"	---	37.4	---	---	15	30%	J
Indeno(1,2,3-cd)pyrene	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	63.3	126	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	63.3	126	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	63.3	126	"	"	---	ND	---	---	---	30%	
Phenanthrene	**174**	31.6	63.3	"	"	---	146	---	---	17	30%	
Pyrene	**108**	31.6	63.3	"	"	---	96.1	---	---	12	30%	
Carbazole	ND	47.5	94.9	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	316	633	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	158	316	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	158	316	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	158	316	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	790	1580	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	790	1580	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	79.0	158	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	79.0	158	"	"	---	ND	---	---	---	30%	
2-Nitrophenol	ND	316	633	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	633	633	"	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	316	633	"	"	---	ND	---	---	---	30%	
Phenol	ND	63.3	126	"	"	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	158	316	"	"	---	ND	---	---	---	30%	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Duplicate (7060267-DUP2)					Prepared: 06/02/17 10:03		Analyzed: 06/02/17 21:22					T-03
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8270D												
2,3,5,6-Tetrachlorophenol	ND	158	316	ug/kg dry	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	158	316	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	158	316	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	475	949	"	"	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	316	633	"	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	316	633	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	316	633	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	316	633	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	316	633	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	79.0	158	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	79.0	158	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	158	316	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	79.0	158	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	31.6	63.3	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	79.0	158	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	79.0	158	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	79.0	158	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	79.0	158	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	79.0	158	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Aniline	ND	158	316	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	79.0	158	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	633	1260	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	633	1260	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	633	1260	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	316	633	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	316	633	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Duplicate (7060267-DUP2)					Prepared: 06/02/17 10:03	Analyzed: 06/02/17 21:22						T-03
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8270D												
2,6-Dinitrotoluene	ND	316	633	ug/kg dry	"	---	ND	---	---	---	30%	
Benzoic acid	ND	3960	7900	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	158	316	"	"	---	ND	---	---	---	30%	
Isophorone	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	79.0	158	"	"	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	790	1580	"	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	316	633	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	790	1580	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	790	1580	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	790	1580	"	"	---	ND	---	---	---	30%	
Pyridine	ND	158	316	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 85 %*		*Limits: 37-122 %*		*Dilution: 20x*					
2-Fluorobiphenyl (Surr)			*88 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*90 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*96 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*80 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*132 %*		*39-132 %*		*"*					*Q-41*
Matrix Spike (7060267-MS2)					Prepared: 06/02/17 10:03	Analyzed: 06/05/17 10:42						
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8270D												
Acenaphthene	602	31.5	63.3	ug/kg dry	20	632	ND	95	40-122%	---	---	
Acenaphthylene	543	31.5	63.3	"	"	"	ND	86	32-132%	---	---	
Anthracene	631	31.5	63.3	"	"	"	ND	100	47-123%	---	---	
Benz(a)anthracene	593	31.5	63.3	"	"	"	36.7	88	49-126%	---	---	
Benzo(a)pyrene	636	47.4	94.8	"	"	"	48.8	93	45-129%	---	---	
Benzo(b)fluoranthene	610	47.4	94.8	"	"	"	58.4	87	45-132%	---	---	
Benzo(k)fluoranthene	603	47.4	94.8	"	"	"	ND	95	47-132%	---	---	
Benzo(g,h,i)perylene	616	31.5	63.3	"	"	"	ND	97	43-134%	---	---	
Chrysene	631	31.5	63.3	"	"	"	35.4	94	50-124%	---	---	
Dibenz(a,h)anthracene	594	31.5	63.3	"	"	"	ND	94	45-134%	---	---	
Fluoranthene	733	31.5	63.3	"	"	"	123	97	50-127%	---	---	
Fluorene	606	31.5	63.3	"	"	"	37.4	90	43-125%	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Matrix Spike (7060267-MS2)					Prepared: 06/02/17 10:03		Analyzed: 06/05/17 10:42					
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8270D												
Indeno(1,2,3-cd)pyrene	549	31.5	63.3	ug/kg dry	"	"	ND	87	45-133%	---	---	
1-Methylnaphthalene	545	63.3	126	"	"	"	ND	86	40-120%	---	---	
2-Methylnaphthalene	532	63.3	126	"	"	"	ND	84	38-122%	---	---	
Naphthalene	513	63.3	126	"	"	"	ND	81	35-123%	---	---	
Phenanthrene	740	31.5	63.3	"	"	"	146	94	50-121%	---	---	
Pyrene	686	31.5	63.3	"	"	"	96.1	93	47-127%	---	---	
Carbazole	671	47.4	94.8	"	"	"	ND	106	50-122%	---	---	
Dibenzofuran	594	31.5	63.3	"	"	"	ND	94	44-120%	---	---	
4-Chloro-3-methylphenol	585	315	315	"	"	"	ND	93	45-122%	---	---	
2-Chlorophenol	558	158	315	"	"	"	ND	88	34-121%	---	---	
2,4-Dichlorophenol	528	158	315	"	"	"	ND	83	40-122%	---	---	
2,4-Dimethylphenol	513	158	315	"	"	"	ND	81	30-127%	---	---	
2,4-Dinitrophenol	566	237	237	"	"	"	ND	89	5-137%	---	---	
4,6-Dinitro-2-methylphenol	674	237	237	"	"	"	ND	107	29-132%	---	---	
2-Methylphenol	656	79.0	158	"	"	"	ND	104	32-122%	---	---	
3+4-Methylphenol(s)	689	79.0	158	"	"	"	ND	109	34-120%	---	---	
2-Nitrophenol	460	315	315	"	"	"	ND	73	36-123%	---	---	
4-Nitrophenol	562	315	315	"	"	"	ND	89	30-132%	---	---	
Pentachlorophenol (PCP)	546	315	315	"	"	"	ND	86	25-133%	---	---	Q-31
Phenol	621	63.3	126	"	"	"	ND	98	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	562	158	315	"	"	"	ND	89	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	522	158	315	"	"	"	ND	83	40-120%	---	---	
2,4,5-Trichlorophenol	535	158	315	"	"	"	ND	85	41-124%	---	---	
2,4,6-Trichlorophenol	526	158	315	"	"	"	ND	83	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	752	474	474	"	"	"	ND	119	51-133%	---	---	
Butyl benzyl phthalate	886	315	633	"	"	"	ND	140	48-132%	---	---	Q-01
Diethylphthalate	648	315	633	"	"	"	ND	103	50-124%	---	---	
Dimethylphthalate	581	315	315	"	"	"	ND	92	48-124%	---	---	
Di-n-butylphthalate	702	315	633	"	"	"	ND	111	51-128%	---	---	
Di-n-octyl phthalate	864	315	633	"	"	"	ND	137	44-140%	---	---	
N-Nitrosodimethylamine	359	79.0	158	"	"	"	ND	57	23-120%	---	---	
N-Nitroso-di-n-propylamine	578	79.0	158	"	"	"	ND	91	36-120%	---	---	
N-Nitrosodiphenylamine	623	79.0	158	"	"	"	ND	99	38-127%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060267 - EPA 3546							**Soil**					
Matrix Spike (7060267-MS2)					Prepared: 06/02/17 10:03		Analyzed: 06/05/17 10:42					
QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)												
EPA 8270D												
Bis(2-Chloroethoxy) methane	551	79.0	158	ug/kg dry	"	"	ND	87	36-121%	---	---	
Bis(2-Chloroethyl) ether	458	79.0	158	"	"	"	ND	72	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	524	79.0	158	"	"	"	ND	83	33-131%	---	---	
Hexachlorobenzene	536	31.5	63.3	"	"	"	ND	85	44-122%	---	---	
Hexachlorobutadiene	489	79.0	158	"	"	"	ND	77	32-123%	---	---	
Hexachlorocyclopentadiene	48.0	47.4	47.4	"	"	"	ND	8	5-140%	---	---	
Hexachloroethane	419	79.0	158	"	"	"	ND	66	28-120%	---	---	
2-Chloronaphthalene	531	31.5	63.3	"	"	"	ND	84	41-120%	---	---	
1,2-Dichlorobenzene	451	79.0	158	"	"	"	ND	71	33-120%	---	---	
1,3-Dichlorobenzene	419	79.0	158	"	"	"	ND	66	30-120%	---	---	
1,4-Dichlorobenzene	433	79.0	158	"	"	"	ND	69	31-120%	---	---	
1,2,4-Trichlorobenzene	483	79.0	158	"	"	"	ND	76	34-120%	---	---	
4-Bromophenyl phenyl ether	562	79.0	158	"	"	"	ND	89	46-124%	---	---	
4-Chlorophenyl phenyl ether	579	79.0	158	"	"	"	ND	92	45-121%	---	---	
Aniline	468	158	315	"	"	"	ND	74	7-120%	---	---	
4-Chloroaniline	350	79.0	158	"	"	"	ND	55	16-120%	---	---	
2-Nitroaniline	564	237	237	"	"	"	ND	89	44-127%	---	---	
3-Nitroaniline	358	237	237	"	"	"	ND	57	33-120%	---	---	
4-Nitroaniline	457	237	237	"	"	"	ND	72	35-120%	---	---	
Nitrobenzene	552	315	315	"	"	"	ND	87	34-122%	---	---	
2,4-Dinitrotoluene	486	315	315	"	"	"	ND	77	48-126%	---	---	
2,6-Dinitrotoluene	583	315	315	"	"	"	ND	92	46-124%	---	---	
Benzoic acid	2460	2370	2370	"	"	1260	ND	195	5-140%	---	---	Q-01
Benzyl alcohol	593	158	315	"	"	632	ND	94	29-122%	---	---	
Isophorone	537	79.0	158	"	"	"	ND	85	30-122%	---	---	
Azobenzene (1,2-DPH)	617	79.0	158	"	"	"	ND	98	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	775	237	237	"	"	"	ND	123	60-121%	---	---	Q-01
3,3'-Dichlorobenzidine	215	213	213	"	"	1260	ND	-0.6	22-121%	---	---	Q-01
1,2-Dinitrobenzene	480	237	237	"	"	632	ND	76	44-120%	---	---	
1,3-Dinitrobenzene	480	237	237	"	"	"	ND	76	42-127%	---	---	
1,4-Dinitrobenzene	424	237	237	"	"	"	ND	67	37-132%	---	---	
Pyridine	444	158	315	"	"	"	ND	70	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr) *Recovery: 76 %* *Limits: 37-122 %* *Dilution: 20x*

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 7060267 - EPA 3546 — **Soil**

Matrix Spike (7060267-MS2) — Prepared: 06/02/17 10:03 Analyzed: 06/05/17 10:42

QC Source Sample: SS-060117 Swanson (A7F0016-01RE1)

EPA 8270D

Surr:	*2-Fluorobiphenyl (Surr)*	*Recovery:*	*76 %*	*Limits:*	*44-115 %*	*Dilution:* *20x*
	Phenol-d6 (Surr)		*86 %*		*33-122 %*	*"*
	p-Terphenyl-d14 (Surr)		*87 %*		*54-127 %*	*"*
	2-Fluorophenol (Surr)		*75 %*		*35-115 %*	*"*
	2,4,6-Tribromophenol (Surr)		*79 %*		*39-132 %*	*"*

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060275 - EPA 3051A							**Soil**					
Blank (7060275-BLK1)					Prepared: 06/02/17 11:16		Analyzed: 06/05/17 14:05					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (7060275-BS1)					Prepared: 06/02/17 11:16		Analyzed: 06/05/17 14:09					
EPA 6020A												
Arsenic	51.1	0.500	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Cadmium	50.8	0.100	0.200	"	"	"	---	102	"	---	---	
Chromium	52.0	0.500	1.00	"	"	"	---	104	"	---	---	
Copper	53.7	0.500	1.00	"	"	"	---	107	"	---	---	
Lead	54.3	0.100	0.200	"	"	"	---	109	"	---	---	
Mercury	1.04	0.0400	0.0800	"	"	1.00	---	104	"	---	---	
Nickel	51.9	0.500	1.00	"	"	50.0	---	104	"	---	---	
Selenium	27.4	0.500	1.00	"	"	25.0	---	110	"	---	---	
Silver	26.1	0.100	0.200	"	"	"	---	105	"	---	---	
Zinc	50.6	2.00	4.00	"	"	50.0	---	101	"	---	---	
Duplicate (7060275-DUP1)					Prepared: 06/02/17 11:16		Analyzed: 06/05/17 14:28					
QC Source Sample: Other (A7F0026-01)												
EPA 6020A												
Arsenic	**9.03**	0.710	1.42	mg/kg dry	10	---	3.32	---	---	92	40%	Q-04
Cadmium	**0.341**	0.142	0.284	"	"	---	0.347	---	---	2	40%	
Chromium	**27.4**	0.710	1.42	"	"	---	15.7	---	---	54	40%	Q-04
Copper	**22.1**	0.710	1.42	"	"	---	20.3	---	---	9	40%	
Lead	**9.98**	0.142	0.284	"	"	---	8.53	---	---	16	40%	
Mercury	ND	0.0568	0.114	"	"	---	ND	---	---	---	40%	
Nickel	**17.7**	0.710	1.42	"	"	---	16.0	---	---	10	40%	
Selenium	ND	0.710	1.42	"	"	---	ND	---	---	---	40%	

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060275 - EPA 3051A							**Soil**					
Duplicate (7060275-DUP1)					Prepared: 06/02/17 11:16		Analyzed: 06/05/17 14:28					
QC Source Sample: Other (A7F0026-01)												
EPA 6020A												
Silver	ND	0.142	0.284	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**210**	2.84	5.68	"	"	---	187	---	---	11	40%	
Matrix Spike (7060275-MS1)					Prepared: 06/02/17 11:16		Analyzed: 06/05/17 14:40					
QC Source Sample: Other (A7F0026-01)												
EPA 6020A												
Arsenic	73.1	0.682	1.36	mg/kg dry	10	68.2	3.32	102	75-125%	---	---	
Cadmium	71.6	0.136	0.273	"	"	"	0.347	104	"	---	---	
Chromium	90.0	0.682	1.36	"	"	"	15.7	109	"	---	---	
Copper	90.1	0.682	1.36	"	"	"	20.3	102	"	---	---	
Lead	80.8	0.136	0.273	"	"	"	8.53	106	"	---	---	
Mercury	1.39	0.0545	0.109	"	"	1.36	ND	102	"	---	---	
Nickel	86.4	0.682	1.36	"	"	68.2	16.0	103	"	---	---	
Selenium	36.1	0.682	1.36	"	"	34.1	ND	106	"	---	---	
Silver	35.3	0.136	0.273	"	"	"	ND	104	"	---	---	
Zinc	268	2.73	5.45	"	"	68.2	187	118	"	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060279 - Total Solids (Dry Weight)							**Soil**					
Duplicate (7060279-DUP1)					Prepared: 06/02/17 12:04		Analyzed: 06/05/17 07:37					
QC Source Sample: Other (A7F0005-01)												
EPA 8000C												
% Solids	**93.1**	1.00	1.00	% by Weight	1	---	93.3	---	---	0.2	10%	
Duplicate (7060279-DUP2)					Prepared: 06/02/17 12:04		Analyzed: 06/05/17 07:37					
QC Source Sample: Other (A7F0047-03)												
EPA 8000C												
% Solids	**82.5**	1.00	1.00	% by Weight	1	---	82.5	---	---	0.08	10%	
Duplicate (7060279-DUP3)					Prepared: 06/02/17 14:56		Analyzed: 06/05/17 07:37					
QC Source Sample: Other (A7F0058-01)												
EPA 8000C												
% Solids	**89.9**	1.00	1.00	% by Weight	1	---	90.2	---	---	0.3	10%	
Duplicate (7060279-DUP4)					Prepared: 06/02/17 17:09		Analyzed: 06/05/17 07:37					
QC Source Sample: Other (A7F0074-01)												
EPA 8000C												
% Solids	**81.8**	1.00	1.00	% by Weight	1	---	82.8	---	---	1	10%	
Duplicate (7060279-DUP5)					Prepared: 06/02/17 18:14		Analyzed: 06/05/17 07:37					
QC Source Sample: Other (A7F0079-02)												
EPA 8000C												
% Solids	**72.8**	1.00	1.00	% by Weight	1	---	72.8	---	---	0.09	10%	

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Prep: EPA 3546 w/SG+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7060257							
A7F0016-01	Soil	NWTPH-Dx/SG	06/01/17 09:10	06/01/17 18:17	10.27g/5mL	10g/5mL	0.97

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7060268							
A7F0016-01RE1	Soil	EPA 8082A	06/01/17 09:10	06/02/17 10:05	10.27g/5mL	10g/5mL	0.97

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7060293							
A7F0016-01RE1	Soil	EPA 8081B	06/01/17 09:10	06/01/17 16:04	11.28g/10mL	10g/5mL	1.77

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7060267							
A7F0016-01RE1	Soil	EPA 8270D	06/01/17 09:10	06/02/17 10:03	15.14g/2mL	15g/2mL	0.99

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7060275							
A7F0016-01	Soil	EPA 6020A	06/01/17 09:10	06/02/17 11:16	0.497g/50mL	0.5g/50mL	1.01

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7060279							

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A7F0016-01	Soil	EPA 8000C	06/01/17 09:10	06/02/17 12:04	1N/A/1N/A	1N/A/1N/A	NA

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
T-03	This sample was analyzed outside of the method specified 12 hour tune window. Results are estimated.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

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--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A1F0016 COC 1 of 1

Company: Maul Foster & Alongi, Inc. | Project Mgr: Phil Wiescher | Project Name: Port of Ridgefield OPP | Project #/PO# 9003.01.39

Address: 2001 NW 19th Ave Suite 200, Portland, OR | Phone: (503) 5015209 | Fax: | Email: pwiescher@maulfoster.com

Sampled by: Lindsey Crosby

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Total Metals EPA 6020 (see comments)	Organochlorine pesticides EPA 8081B	Low Level 8082 PCB Aroclors	Low Level 8270D SVOCs	Dioxins/furans EPA 1613B	TPH-Dx (NWTPH-D/Dx) w/ Silica Gel Cleanup
SS 060117		6/1/17	0910	S	2	X	X	X	X	X	X
Swanson											

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS:

Metlas: As, Cd, Cr, Pb, Hg, Ni, Se, Ag, Zn, Cu. Please report MDLs.

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	6/1	0915	Signature:	6/1/17	1200
Printed Name: Lindsey Crosby			Printed Name: Charles Hafner		
Company: Maul Foster Alongi			Company: Apex		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

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2001 NW 19th Ave, STE 200	Project Number: 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	06/08/17 16:55

APEX LABS COOLER RECEIPT FORM

Client: MFA Element WO#: A7 F0016

Project/Project #: Port of Ridgefield OPP 9003.01.39

Delivery info:

Date/Time Received: 6/1/17 @ 1200 By: CFH

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: CFH : 6/1/17 @ 1329

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No —

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	5.4						
Ice Type: (Gel/Real/Other)							
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: AKK : 6/1/17 @ 1435

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes ___ No X Comments: ID Mads SS-060117

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: AB Witness: Cooler Inspected by: AKK See Project Contact Form: Y

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Monday, July 24, 2017

Phil Wiescher
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: Port of Ridgefield 9003.01.39 / Port of Ridgefield 9003.01.

Enclosed are the results of analyses for work order A7G0405, which was received by the laboratory on 7/14/2017 at 3:52:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-071417-30	A7G0405-01	Soil	07/14/17 11:45	07/14/17 15:52
SS-071417-Swanson	A7G0405-02	Soil	07/14/17 11:55	07/14/17 15:52

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01)			**Matrix: Soil**		**Batch: 7070648**			
Diesel	ND	12.3	25.0	mg/kg dry	1	07/18/17 22:25	NWTPH-Dx/SG	
Oil	**73.4**	24.5	50.0	"	"	"	"	F-03
Surrogate: o-Terphenyl (Surr)			*Recovery: 105 %*	*Limits: 50-150 %*	"	"	"	
SS-071417-Swanson (A7G0405-02)			**Matrix: Soil**		**Batch: 7070648**			
Diesel	ND	12.9	25.7	mg/kg dry	1	07/18/17 23:11	NWTPH-Dx/SG	
Oil	**229**	25.7	51.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01)			**Matrix: Soil**		**Batch: 7070639**			**C-07**
Aroclor 1016	ND	6.08	12.2	ug/kg dry	1	07/18/17 15:50	EPA 8082A	
Aroclor 1221	ND	6.08	12.2	"	"	"	"	
Aroclor 1232	ND	12.2	12.2	"	"	"	"	
Aroclor 1242	ND	6.08	12.2	"	"	"	"	
Aroclor 1248	ND	6.08	12.2	"	"	"	"	
Aroclor 1254	ND	6.08	12.2	"	"	"	"	
Aroclor 1260	ND	6.08	12.2	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 92 %*	*Limits: 72-126 %*	"	"	"	
SS-071417-Swanson (A7G0405-02)			**Matrix: Soil**		**Batch: 7070639**			**C-07**
Aroclor 1016	ND	12.9	12.9	ug/kg dry	1	07/18/17 15:14	EPA 8082A	
Aroclor 1221	ND	6.47	12.9	"	"	"	"	
Aroclor 1232	ND	12.9	12.9	"	"	"	"	
Aroclor 1242	ND	12.9	12.9	"	"	"	"	
Aroclor 1248	ND	12.9	12.9	"	"	"	"	
Aroclor 1254	ND	6.47	12.9	"	"	"	"	
Aroclor 1260	ND	6.47	12.9	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 84 %*	*Limits: 72-126 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01RE1)			**Matrix: Soil**		**Batch: 7070656**			**C-05**
Aldrin	ND	1.25	2.50	ug/kg dry	1	07/19/17 13:56	EPA 8081B	
alpha-BHC	ND	1.25	2.50	"	"	"	"	
beta-BHC	ND	2.50	2.50	"	"	"	"	
delta-BHC	ND	2.50	2.50	"	"	"	"	
gamma-BHC (Lindane)	ND	1.25	2.50	"	"	"	"	
cis-Chlordane	ND	2.50	2.50	"	"	"	"	
trans-Chlordane	ND	2.50	2.50	"	"	"	"	
4,4'-DDD	ND	2.50	2.50	"	"	"	"	
4,4'-DDE	ND	2.74	2.74	"	"	"	"	R-02
4,4'-DDT	ND	2.62	2.62	"	"	"	"	R-02
Dieldrin	ND	2.50	2.50	"	"	"	"	
Endosulfan I	ND	1.25	2.50	"	"	"	"	
Endosulfan II	ND	2.50	2.50	"	"	"	"	
Endosulfan sulfate	ND	2.50	2.50	"	"	"	"	
Endrin	ND	2.50	2.50	"	"	"	"	
Endrin Aldehyde	ND	2.50	2.50	"	"	"	"	
Endrin ketone	ND	2.50	2.50	"	"	"	"	
Heptachlor	ND	1.25	2.50	"	"	"	"	
Heptachlor epoxide	ND	1.25	2.50	"	"	"	"	
Methoxychlor	ND	8.23	8.23	"	"	"	"	R-02
Chlordane (Technical)	ND	37.4	74.9	"	"	"	"	
Toxaphene (Total)	ND	37.4	74.9	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 81 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*78 %*	*Limits: 65-151 %*	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-Swanson (A7G0405-02RE1)			**Matrix: Soil**		**Batch: 7070656**			**C-05**
Aldrin	ND	5.11	5.11	ug/kg dry	1	07/19/17 14:13	EPA 8081B	
alpha-BHC	ND	2.56	5.11	"	"	"	"	
beta-BHC	ND	11.3	11.3	"	"	"	"	R-02
delta-BHC	ND	5.11	5.11	"	"	"	"	
gamma-BHC (Lindane)	ND	6.65	6.65	"	"	"	"	R-02
cis-Chlordane	ND	5.11	5.11	"	"	"	"	
trans-Chlordane	ND	5.11	5.11	"	"	"	"	
4,4'-DDD	ND	5.88	5.88	"	"	"	"	R-02
4,4'-DDE	ND	5.88	5.88	"	"	"	"	R-02
4,4'-DDT	ND	7.42	7.42	"	"	"	"	R-02
Dieldrin	ND	5.11	5.11	"	"	"	"	
Endosulfan I	ND	5.11	5.11	"	"	"	"	
Endosulfan II	ND	5.11	5.11	"	"	"	"	
Endosulfan sulfate	ND	7.42	7.42	"	"	"	"	R-02
Endrin	ND	5.37	5.37	"	"	"	"	R-02
Endrin Aldehyde	ND	8.44	8.44	"	"	"	"	R-02
Endrin ketone	ND	5.63	5.63	"	"	"	"	R-02
Heptachlor	ND	5.11	5.11	"	"	"	"	
Heptachlor epoxide	ND	5.11	5.11	"	"	"	"	
Methoxychlor	ND	26.3	26.3	"	"	"	"	R-02
Chlordane (Technical)	ND	76.7	153	"	"	"	"	
Toxaphene (Total)	ND	76.7	153	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 80 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*85 %*	*Limits: 65-151 %*	"	"	"	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01RE1)			**Matrix: Soil**		**Batch: 7070632**			**R-04**
Acenaphthene	ND	66.9	134	ug/kg dry	40	07/18/17 23:56	EPA 8270D	
Acenaphthylene	ND	66.9	134	"	"	"	"	
Anthracene	ND	66.9	134	"	"	"	"	
Benz(a)anthracene	ND	66.9	134	"	"	"	"	
Benzo(a)pyrene	ND	101	201	"	"	"	"	
Benzo(b)fluoranthene	**103**	101	201	"	"	"	"	J
Benzo(k)fluoranthene	ND	101	201	"	"	"	"	
Benzo(g,h,i)perylene	ND	66.9	134	"	"	"	"	
Chrysene	ND	66.9	134	"	"	"	"	
Dibenz(a,h)anthracene	ND	66.9	134	"	"	"	"	
Fluoranthene	**103**	66.9	134	"	"	"	"	J
Fluorene	ND	66.9	134	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	66.9	134	"	"	"	"	
1-Methylnaphthalene	ND	134	268	"	"	"	"	
2-Methylnaphthalene	ND	134	268	"	"	"	"	
Naphthalene	ND	134	268	"	"	"	"	
Phenanthrene	**73.3**	66.9	134	"	"	"	"	J
Pyrene	**80.2**	66.9	134	"	"	"	"	J
Carbazole	ND	101	201	"	"	"	"	
Dibenzofuran	ND	66.9	134	"	"	"	"	
4-Chloro-3-methylphenol	ND	669	1340	"	"	"	"	
2-Chlorophenol	ND	336	669	"	"	"	"	
2,4-Dichlorophenol	ND	336	669	"	"	"	"	
2,4-Dimethylphenol	ND	336	669	"	"	"	"	
2,4-Dinitrophenol	ND	1680	3360	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1680	3360	"	"	"	"	
2-Methylphenol	ND	168	336	"	"	"	"	
3+4-Methylphenol(s)	ND	168	336	"	"	"	"	
2-Nitrophenol	ND	669	1340	"	"	"	"	
4-Nitrophenol	ND	669	1340	"	"	"	"	
Pentachlorophenol (PCP)	ND	669	1340	"	"	"	"	
Phenol	ND	134	268	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	336	669	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	336	669	"	"	"	"	
2,4,5-Trichlorophenol	ND	336	669	"	"	"	"	
2,4,6-Trichlorophenol	ND	336	669	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	1010	2010	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01RE1)			**Matrix: Soil**		**Batch: 7070632**			**R-04**
Butyl benzyl phthalate	ND	669	1340	ug/kg dry	40	"	EPA 8270D	
Diethylphthalate	ND	669	1340	"	"	"	"	
Dimethylphthalate	ND	669	1340	"	"	"	"	
Di-n-butylphthalate	ND	669	1340	"	"	"	"	
Di-n-octyl phthalate	ND	669	1340	"	"	"	"	
N-Nitrosodimethylamine	ND	168	336	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	168	336	"	"	"	"	
N-Nitrosodiphenylamine	ND	168	336	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	168	336	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	168	336	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	168	336	"	"	"	"	
Hexachlorobenzene	ND	66.9	134	"	"	"	"	
Hexachlorobutadiene	ND	168	336	"	"	"	"	
Hexachlorocyclopentadiene	ND	336	669	"	"	"	"	
Hexachloroethane	ND	168	336	"	"	"	"	
2-Chloronaphthalene	ND	66.9	134	"	"	"	"	
1,2-Dichlorobenzene	ND	168	336	"	"	"	"	
1,3-Dichlorobenzene	ND	168	336	"	"	"	"	
1,4-Dichlorobenzene	ND	168	336	"	"	"	"	
1,2,4-Trichlorobenzene	ND	168	336	"	"	"	"	
4-Bromophenyl phenyl ether	ND	168	336	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	168	336	"	"	"	"	
Aniline	ND	336	669	"	"	"	"	
4-Chloroaniline	ND	168	336	"	"	"	"	
2-Nitroaniline	ND	1340	2680	"	"	"	"	
3-Nitroaniline	ND	1340	2680	"	"	"	"	
4-Nitroaniline	ND	1340	2680	"	"	"	"	
Nitrobenzene	ND	669	1340	"	"	"	"	
2,4-Dinitrotoluene	ND	669	1340	"	"	"	"	
2,6-Dinitrotoluene	ND	669	1340	"	"	"	"	
Benzoic acid	ND	8400	16800	"	"	"	"	
Benzyl alcohol	ND	336	669	"	"	"	"	
Isophorone	ND	168	336	"	"	"	"	
Azobenzene (1,2-DPH)	ND	168	336	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	1680	3360	"	"	"	"	
3,3'-Dichlorobenzidine	ND	669	1340	"	"	"	"	
1,2-Dinitrobenzene	ND	1680	3360	"	"	"	"	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01RE1)			**Matrix: Soil**		**Batch: 7070632**			**R-04**
1,3-Dinitrobenzene	ND	1680	3360	ug/kg dry	40	"	EPA 8270D	
1,4-Dinitrobenzene	ND	1680	3360	"	"	"	"	
Pyridine	ND	336	669	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 82 %*	*Limits: 37-122 %*	"	"	"	*S-05*
2-Fluorobiphenyl (Surr)			*67 %*	*Limits: 44-115 %*	"	"	"	*S-05*
Phenol-d6 (Surr)			*70 %*	*Limits: 33-122 %*	"	"	"	*S-05*
p-Terphenyl-d14 (Surr)			*90 %*	*Limits: 54-127 %*	"	"	"	*S-05*
2-Fluorophenol (Surr)			*68 %*	*Limits: 35-115 %*	"	"	"	*S-05*
2,4,6-Tribromophenol (Surr)			*92 %*	*Limits: 39-132 %*	"	"	"	*S-05*
SS-071417-Swanson (A7G0405-02)			**Matrix: Soil**		**Batch: 7070632**			
Acenaphthene	ND	69.6	140	ug/kg dry	40	07/18/17 17:18	EPA 8270D	
Acenaphthylene	ND	69.6	140	"	"	"	"	
Anthracene	ND	69.6	140	"	"	"	"	
Benz(a)anthracene	**77.1**	69.6	140	"	"	"	"	J
Benzo(a)pyrene	ND	105	209	"	"	"	"	
Benzo(b)fluoranthene	ND	105	209	"	"	"	"	
Benzo(k)fluoranthene	ND	105	209	"	"	"	"	
Benzo(g,h,i)perylene	ND	69.6	140	"	"	"	"	
Chrysene	**69.6**	69.6	140	"	"	"	"	J
Dibenz(a,h)anthracene	ND	69.6	140	"	"	"	"	
Fluoranthene	**221**	69.6	140	"	"	"	"	
Fluorene	ND	69.6	140	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	69.6	140	"	"	"	"	
1-Methylnaphthalene	ND	140	279	"	"	"	"	
2-Methylnaphthalene	ND	140	279	"	"	"	"	
Naphthalene	ND	140	279	"	"	"	"	
Phenanthrene	**82.0**	69.6	140	"	"	"	"	J
Pyrene	**157**	69.6	140	"	"	"	"	
Carbazole	ND	105	209	"	"	"	"	
Dibenzofuran	ND	69.6	140	"	"	"	"	
4-Chloro-3-methylphenol	ND	696	1400	"	"	"	"	
2-Chlorophenol	ND	349	696	"	"	"	"	
2,4-Dichlorophenol	ND	349	696	"	"	"	"	
2,4-Dimethylphenol	ND	349	696	"	"	"	"	
2,4-Dinitrophenol	ND	1740	3490	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1740	3490	"	"	"	"	
2-Methylphenol	ND	174	349	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-Swanson (A7G0405-02)			**Matrix: Soil**		**Batch: 7070632**			
3+4-Methylphenol(s)	ND	174	349	ug/kg dry	40	"	EPA 8270D	
2-Nitrophenol	ND	696	1400	"	"	"	"	
4-Nitrophenol	ND	696	1400	"	"	"	"	
Pentachlorophenol (PCP)	ND	696	1400	"	"	"	"	
Phenol	ND	140	279	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	349	696	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	349	696	"	"	"	"	
2,4,5-Trichlorophenol	ND	349	696	"	"	"	"	
2,4,6-Trichlorophenol	ND	349	696	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	1050	2090	"	"	"	"	
Butyl benzyl phthalate	ND	696	1400	"	"	"	"	
Diethylphthalate	ND	696	1400	"	"	"	"	
Dimethylphthalate	ND	696	1400	"	"	"	"	
Di-n-butylphthalate	ND	696	1400	"	"	"	"	
Di-n-octyl phthalate	ND	696	1400	"	"	"	"	
N-Nitrosodimethylamine	ND	174	349	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	174	349	"	"	"	"	
N-Nitrosodiphenylamine	ND	174	349	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	174	349	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	349	349	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	174	349	"	"	"	"	
Hexachlorobenzene	ND	69.6	140	"	"	"	"	
Hexachlorobutadiene	ND	174	349	"	"	"	"	
Hexachlorocyclopentadiene	ND	349	696	"	"	"	"	
Hexachloroethane	ND	174	349	"	"	"	"	
2-Chloronaphthalene	ND	69.6	140	"	"	"	"	
1,2-Dichlorobenzene	ND	174	349	"	"	"	"	
1,3-Dichlorobenzene	ND	174	349	"	"	"	"	
1,4-Dichlorobenzene	ND	174	349	"	"	"	"	
1,2,4-Trichlorobenzene	ND	174	349	"	"	"	"	
4-Bromophenyl phenyl ether	ND	174	349	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	174	349	"	"	"	"	
Aniline	ND	2300	2300	"	"	"	"	R-02
4-Chloroaniline	ND	174	349	"	"	"	"	
2-Nitroaniline	ND	1400	2790	"	"	"	"	
3-Nitroaniline	ND	1400	2790	"	"	"	"	
4-Nitroaniline	ND	1400	2790	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-Swanson (A7G0405-02)			**Matrix: Soil**		**Batch: 7070632**			
Nitrobenzene	ND	696	1400	ug/kg dry	40	"	EPA 8270D	
2,4-Dinitrotoluene	ND	696	1400	"	"	"	"	
2,6-Dinitrotoluene	ND	696	1400	"	"	"	"	
Benzoic acid	ND	8740	17400	"	"	"	"	
Benzyl alcohol	ND	349	696	"	"	"	"	
Isophorone	ND	174	349	"	"	"	"	
Azobenzene (1,2-DPH)	ND	174	349	"	"	"	"	
Bis(2-Ethylhexyl) adipate	ND	1740	3490	"	"	"	"	
3,3'-Dichlorobenzidine	ND	696	1400	"	"	"	"	
1,2-Dinitrobenzene	ND	1740	3490	"	"	"	"	
1,3-Dinitrobenzene	ND	1740	3490	"	"	"	"	
1,4-Dinitrobenzene	ND	1740	3490	"	"	"	"	
Pyridine	ND	349	696	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 77 %*	*Limits: 37-122 %*	"	"	"	*S-05*
2-Fluorobiphenyl (Surr)			*89 %*	*Limits: 44-115 %*	"	"	"	*S-05*
Phenol-d6 (Surr)			*59 %*	*Limits: 33-122 %*	"	"	"	*S-05*
p-Terphenyl-d14 (Surr)			*85 %*	*Limits: 54-127 %*	"	"	"	*S-05*
2-Fluorophenol (Surr)			*58 %*	*Limits: 35-115 %*	"	"	"	*S-05*
2,4,6-Tribromophenol (Surr)			*86 %*	*Limits: 39-132 %*	"	"	"	*S-05*

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01)			**Matrix: Soil**					
Batch: 7070631								
Arsenic	**2.79**	0.628	1.26	mg/kg dry	10	07/19/17 17:56	EPA 6020A	
Cadmium	**0.314**	0.126	0.251	"	"	"	"	
Chromium	**11.8**	0.628	1.26	"	"	"	"	
Copper	**57.8**	0.628	1.26	"	"	"	"	
Lead	**9.08**	0.126	0.251	"	"	"	"	
Mercury	ND	0.0502	0.100	"	"	"	"	
Nickel	**11.4**	0.628	1.26	"	"	"	"	
Selenium	ND	0.628	1.26	"	"	"	"	
Silver	ND	0.126	0.251	"	"	"	"	
Zinc	**78.8**	2.51	5.02	"	"	"	"	
SS-071417-Swanson (A7G0405-02)			**Matrix: Soil**					
Batch: 7070631								
Arsenic	**1.93**	0.731	1.46	mg/kg dry	10	07/19/17 17:59	EPA 6020A	
Cadmium	**0.190**	0.146	0.293	"	"	"	"	J
Chromium	**8.13**	0.731	1.46	"	"	"	"	
Copper	**39.7**	0.731	1.46	"	"	"	"	
Lead	**13.5**	0.146	0.293	"	"	"	"	
Mercury	ND	0.0585	0.117	"	"	"	"	
Nickel	**7.18**	0.731	1.46	"	"	"	"	
Selenium	ND	0.731	1.46	"	"	"	"	
Silver	ND	0.146	0.293	"	"	"	"	
Zinc	**64.8**	2.93	5.85	"	"	"	"	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SS-071417-30 (A7G0405-01)			**Matrix: Soil**		**Batch: 7070658**			
% Solids	**78.4**	1.00	1.00	% by Weight	1	07/19/17 07:25	EPA 8000C	
SS-071417-Swanson (A7G0405-02)			**Matrix: Soil**		**Batch: 7070658**			
% Solids	**75.8**	1.00	1.00	% by Weight	1	07/19/17 07:25	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070648 - EPA 3546 w/SG+Acid (NWTPH)							**Soil**					
Blank (7070648-BLK1)					Prepared: 07/18/17 13:40		Analyzed: 07/18/17 21:40					
NWTPH-Dx/SG												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 111 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (7070648-BS1)					Prepared: 07/18/17 13:40		Analyzed: 07/18/17 22:03					
NWTPH-Dx/SG												
Diesel	123	10.0	25.0	mg/kg wet	1	125	---	98	76-115	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 120 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (7070648-DUP1)					Prepared: 07/18/17 13:40		Analyzed: 07/18/17 22:48					
QC Source Sample: SS-071417-30 (A7G0405-01)												
NWTPH-Dx/SG												
Diesel	ND	12.3	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**82.4**	24.6	50.0	"	"	---	73.4	---	---	12	30%	F-03
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070639 - EPA 3546							**Soil**					
Blank (7070639-BLK1)					Prepared: 07/18/17 10:17		Analyzed: 07/18/17 15:14					C-07
EPA 8082A												
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 100 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (7070639-BS1)					Prepared: 07/18/17 10:17		Analyzed: 07/18/17 15:32					C-07
EPA 8082A												
Aroclor 1016	153	5.00	10.0	ug/kg wet	1	250	---	61	47-134	---	---	
Aroclor 1260	200	5.00	10.0	"	"	"	---	80	53-140	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 93 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (7070639-DUP1)					Prepared: 07/18/17 10:52		Analyzed: 07/18/17 16:25					C-07
QC Source Sample: SS-071417-30 (A7G0405-01)												
EPA 8082A												
Aroclor 1016	ND	6.19	12.4	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	6.19	12.4	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	12.4	12.4	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	6.19	12.4	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	6.19	12.4	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	6.19	12.4	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	6.19	12.4	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 87 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Matrix Spike (7070639-MS1)					Prepared: 07/18/17 10:52		Analyzed: 07/18/17 15:50					C-07
QC Source Sample: SS-071417-Swanson (A7G0405-02)												
EPA 8082A												
Aroclor 1016	189	6.44	12.9	ug/kg dry	1	322	ND	59	47-134	---	---	
Aroclor 1260	242	6.44	12.9	"	"	"	ND	75	53-140	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 80 %*	*Limits: 72-126 %*			*Dilution: 1x*					

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070656 - EPA 3546/3640A (GPC)							**Soil**					
Blank (7070656-BLK1)					Prepared: 07/18/17 10:13		Analyzed: 07/19/17 11:54					C-05
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.909	1.82	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Methoxychlor	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	27.3	54.5	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 75 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*80 %*	*65-151 %*			*"*					
LCS (7070656-BS1)					Prepared: 07/18/17 10:13		Analyzed: 07/19/17 12:11					C-05
EPA 8081B												
Aldrin	39.9	1.00	2.00	ug/kg wet	1	50.0	---	80	45-136	---	---	
alpha-BHC	39.7	1.00	2.00	"	"	"	---	79	45-137	---	---	
beta-BHC	41.0	1.00	2.00	"	"	"	---	82	50-136	---	---	
delta-BHC	39.6	1.00	2.00	"	"	"	---	79	47-139	---	---	
gamma-BHC (Lindane)	40.0	1.00	2.00	"	"	"	---	80	49-135	---	---	
cis-Chlordane	42.0	1.00	2.00	"	"	"	---	84	54-133	---	---	
trans-Chlordane	41.9	1.00	2.00	"	"	"	---	84	53-135	---	---	
4,4'-DDD	44.1	1.00	2.00	"	"	"	---	88	56-139	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070656 - EPA 3546/3640A (GPC)							**Soil**					
LCS (7070656-BS1)					Prepared: 07/18/17 10:13		Analyzed: 07/19/17 12:11					C-05
EPA 8081B												
4,4'-DDE	45.0	1.00	2.00	ug/kg wet	"	"	---	90	56-134	---	---	
4,4'-DDT	57.3	1.00	2.00	"	"	"	---	115	50-141	---	---	
Dieldrin	44.7	1.00	2.00	"	"	"	---	89	56-136	---	---	
Endosulfan I	44.4	1.00	2.00	"	"	"	---	89	52-132	---	---	
Endosulfan II	48.6	1.00	2.00	"	"	"	---	97	53-134	---	---	
Endosulfan sulfate	49.0	1.00	2.00	"	"	"	---	98	55-136	---	---	
Endrin	49.4	1.00	2.00	"	"	"	---	99	56-140	---	---	
Endrin Aldehyde	46.0	1.00	2.00	"	"	"	---	92	35-137	---	---	
Endrin ketone	43.8	1.00	2.00	"	"	"	---	88	55-136	---	---	
Heptachlor	44.1	1.00	2.00	"	"	"	---	88	47-136	---	---	
Heptachlor epoxide	41.2	1.00	2.00	"	"	"	---	82	52-136	---	---	
Methoxychlor	61.8	3.00	6.00	"	"	"	---	124	52-143	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 81 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*88 %*	*65-151 %*			*"*					
Duplicate (7070656-DUP1)					Prepared: 07/18/17 10:13		Analyzed: 07/19/17 12:46					C-05
QC Source Sample: Other (A7G0363-01RE1)												
EPA 8081B												
Aldrin	ND	1.25	2.49	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	2.49	2.49	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	46.1	46.1	"	"	---	ND	---	---	---	30%	R-02
gamma-BHC (Lindane)	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
cis-Chlordane	**13.5**	1.25	2.49	"	"	---	17.5	---	---	26	30%	P-11
trans-Chlordane	**8.90**	1.25	2.49	"	"	---	11.7	---	---	27	30%	
4,4'-DDD	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
4,4'-DDE	ND	2.49	2.49	"	"	---	ND	---	---	---	30%	
4,4'-DDT	ND	3.24	3.24	"	"	---	ND	---	---	---	30%	R-02
Dieldrin	**11.3**	1.25	2.49	"	"	---	12.7	---	---	11	30%	
Endosulfan I	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
Endrin	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	2.99	2.99	"	"	---	ND	---	---	---	30%	R-02

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070656 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (7070656-DUP1)					Prepared: 07/18/17 10:13		Analyzed: 07/19/17 12:46					C-05
QC Source Sample: Other (A7G0363-01RE1)												
EPA 8081B												
Endrin ketone	ND	1.25	2.49	ug/kg dry	"	---	ND	---	---	---	30%	
Heptachlor	ND	1.25	2.49	"	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	3.11	3.11	"	"	---	ND	---	---	---	30%	R-02
Methoxychlor	ND	7.48	7.48	"	"	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	74.8	74.8	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	37.4	74.8	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 74 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*68 %*	*65-151 %*			*"*					
Matrix Spike (7070656-MS1)					Prepared: 07/18/17 10:13		Analyzed: 07/19/17 14:31					C-05
QC Source Sample: SS-071417-Swanson (A7G0405-02RE1)												
EPA 8081B												
Aldrin	48.8	2.57	5.13	ug/kg dry	1	64.2	ND	71	45-136	---	---	
alpha-BHC	47.9	2.57	5.13	"	"	"	ND	75	45-137	---	---	
beta-BHC	55.8	2.57	5.13	"	"	"	ND	70	50-136	---	---	
delta-BHC	50.9	2.57	5.13	"	"	"	ND	74	47-139	---	---	
gamma-BHC (Lindane)	52.0	2.57	5.13	"	"	"	ND	71	49-135	---	---	
cis-Chlordane	48.6	2.57	5.13	"	"	"	ND	70	54-133	---	---	
trans-Chlordane	48.6	2.57	5.13	"	"	"	ND	70	53-135	---	---	
4,4'-DDD	57.5	2.57	5.13	"	"	"	ND	81	56-139	---	---	
4,4'-DDE	57.3	2.57	5.13	"	"	"	ND	80	56-134	---	---	
4,4'-DDT	69.2	2.57	5.13	"	"	"	ND	97	50-141	---	---	
Dieldrin	50.3	2.57	5.13	"	"	"	ND	72	56-136	---	---	
Endosulfan I	50.1	2.57	5.13	"	"	"	ND	73	52-132	---	---	
Endosulfan II	56.3	2.57	5.13	"	"	"	ND	81	53-134	---	---	
Endosulfan sulfate	58.4	2.57	5.13	"	"	"	ND	80	55-136	---	---	
Endrin	62.0	2.57	5.13	"	"	"	ND	89	56-140	---	---	
Endrin Aldehyde	58.8	2.57	5.13	"	"	"	ND	79	35-137	---	---	
Endrin ketone	55.3	2.57	5.13	"	"	"	ND	78	55-136	---	---	
Heptachlor	58.3	2.57	5.13	"	"	"	ND	85	47-136	---	---	
Heptachlor epoxide	49.6	2.57	5.13	"	"	"	ND	72	52-136	---	---	
Methoxychlor	107	7.70	15.4	"	"	"	ND	126	52-143	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 71 %*	*Limits: 42-129 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070656 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (7070656-MS1)					Prepared: 07/18/17 10:13		Analyzed: 07/19/17 14:31					C-05
QC Source Sample: SS-071417-Swanson (A7G0405-02RE1)												
EPA 8081B												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 65-151 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
Blank (7070632-BLK2)					Prepared: 07/18/17 09:37		Analyzed: 07/18/17 15:28					
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
Blank (7070632-BLK2)						Prepared: 07/18/17 09:37	Analyzed: 07/18/17 15:28					
EPA 8270D												
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

Apex Labs

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
Blank (7070632-BLK2)					Prepared: 07/18/17 09:37		Analyzed: 07/18/17 15:28					
EPA 8270D												
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 95 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*89 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*84 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*97 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*86 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*93 %*		*39-132 %*		*"*					
LCS (7070632-BS2)					Prepared: 07/18/17 09:37		Analyzed: 07/18/17 16:05					Q-18
EPA 8270D												
Acenaphthene	468	1.33	2.67	ug/kg wet	1	533	---	88	40-122	---	---	
Acenaphthylene	469	1.33	2.67	"	"	"	---	88	32-132	---	---	
Anthracene	487	1.33	2.67	"	"	"	---	91	47-123	---	---	
Benz(a)anthracene	501	1.33	2.67	"	"	"	---	94	49-126	---	---	
Benzo(a)pyrene	526	2.00	4.00	"	"	"	---	99	45-129	---	---	
Benzo(b)fluoranthene	499	2.00	4.00	"	"	"	---	93	45-132	---	---	
Benzo(k)fluoranthene	504	2.00	4.00	"	"	"	---	95	47-132	---	---	
Benzo(g,h,i)perylene	558	1.33	2.67	"	"	"	---	105	43-134	---	---	
Chrysene	535	1.33	2.67	"	"	"	---	100	50-124	---	---	
Dibenz(a,h)anthracene	533	1.33	2.67	"	"	"	---	100	45-134	---	---	
Fluoranthene	505	1.33	2.67	"	"	"	---	95	50-127	---	---	
Fluorene	470	1.33	2.67	"	"	"	---	88	43-125	---	---	
Indeno(1,2,3-cd)pyrene	528	1.33	2.67	"	"	"	---	99	45-133	---	---	
1-Methylnaphthalene	451	2.67	5.33	"	"	"	---	85	40-120	---	---	
2-Methylnaphthalene	452	2.67	5.33	"	"	"	---	85	38-122	---	---	
Naphthalene	451	2.67	5.33	"	"	"	---	85	35-123	---	---	
Phenanthrene	464	1.33	2.67	"	"	"	---	87	50-121	---	---	

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Philip Nerenberg, Lab Director

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
LCS (7070632-BS2)					Prepared: 07/18/17 09:37		Analyzed: 07/18/17 16:05					Q-18
EPA 8270D												
Pyrene	498	1.33	2.67	ug/kg wet	"	"	---	93	47-127	---	---	
Carbazole	502	2.00	4.00	"	"	"	---	94	50-122	---	---	
Dibenzofuran	466	1.33	2.67	"	"	"	---	87	44-120	---	---	
4-Chloro-3-methylphenol	541	13.3	26.7	"	"	"	---	101	45-122	---	---	
2-Chlorophenol	474	6.67	13.3	"	"	"	---	89	34-121	---	---	
2,4-Dichlorophenol	550	6.67	13.3	"	"	"	---	103	40-122	---	---	
2,4-Dimethylphenol	517	6.67	13.3	"	"	"	---	97	30-127	---	---	
2,4-Dinitrophenol	460	33.3	66.7	"	"	"	---	86	5-137	---	---	
4,6-Dinitro-2-methylphenol	535	33.3	66.7	"	"	"	---	100	29-132	---	---	
2-Methylphenol	457	3.33	6.67	"	"	"	---	86	32-122	---	---	
3+4-Methylphenol(s)	475	3.33	6.67	"	"	"	---	89	34-120	---	---	
2-Nitrophenol	494	13.3	26.7	"	"	"	---	93	36-123	---	---	
4-Nitrophenol	558	13.3	26.7	"	"	"	---	105	30-132	---	---	
Pentachlorophenol (PCP)	517	13.3	26.7	"	"	"	---	97	25-133	---	---	
Phenol	446	2.67	5.33	"	"	"	---	84	34-120	---	---	
2,3,4,6-Tetrachlorophenol	532	6.67	13.3	"	"	"	---	100	44-125	---	---	
2,3,5,6-Tetrachlorophenol	525	6.67	13.3	"	"	"	---	98	40-120	---	---	
2,4,5-Trichlorophenol	495	6.67	13.3	"	"	"	---	93	41-124	---	---	
2,4,6-Trichlorophenol	499	6.67	13.3	"	"	"	---	94	39-126	---	---	
Bis(2-ethylhexyl)phthalate	588	20.0	40.0	"	"	"	---	110	51-133	---	---	
Butyl benzyl phthalate	535	13.3	26.7	"	"	"	---	100	48-132	---	---	
Diethylphthalate	488	13.3	26.7	"	"	"	---	91	50-124	---	---	
Dimethylphthalate	479	13.3	26.7	"	"	"	---	90	48-124	---	---	
Di-n-butylphthalate	508	13.3	26.7	"	"	"	---	95	51-128	---	---	
Di-n-octyl phthalate	524	13.3	26.7	"	"	"	---	98	44-140	---	---	
N-Nitrosodimethylamine	476	3.33	6.67	"	"	"	---	89	23-120	---	---	
N-Nitroso-di-n-propylamine	445	3.33	6.67	"	"	"	---	83	36-120	---	---	
N-Nitrosodiphenylamine	484	3.33	6.67	"	"	"	---	91	38-127	---	---	
Bis(2-Chloroethoxy) methane	459	3.33	6.67	"	"	"	---	86	36-121	---	---	
Bis(2-Chloroethyl) ether	440	3.33	6.67	"	"	"	---	82	31-120	---	---	
Bis(2-Chloroisopropyl) ether	431	3.33	6.67	"	"	"	---	81	33-131	---	---	
Hexachlorobenzene	455	1.33	2.67	"	"	"	---	85	44-122	---	---	
Hexachlorobutadiene	470	3.33	6.67	"	"	"	---	88	32-123	---	---	
Hexachlorocyclopentadiene	525	6.67	13.3	"	"	"	---	98	5-140	---	---	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
LCS (7070632-BS2)					Prepared: 07/18/17 09:37		Analyzed: 07/18/17 16:05					Q-18
EPA 8270D												
Hexachloroethane	509	3.33	6.67	ug/kg wet	"	"	---	95	28-120	---	---	
2-Chloronaphthalene	461	1.33	2.67	"	"	"	---	86	41-120	---	---	
1,2-Dichlorobenzene	440	3.33	6.67	"	"	"	---	83	33-120	---	---	
1,3-Dichlorobenzene	447	3.33	6.67	"	"	"	---	84	30-120	---	---	
1,4-Dichlorobenzene	452	3.33	6.67	"	"	"	---	85	31-120	---	---	
1,2,4-Trichlorobenzene	452	3.33	6.67	"	"	"	---	85	34-120	---	---	
4-Bromophenyl phenyl ether	477	3.33	6.67	"	"	"	---	89	46-124	---	---	
4-Chlorophenyl phenyl ether	469	3.33	6.67	"	"	"	---	88	45-121	---	---	
Aniline	432	6.67	13.3	"	"	"	---	81	7-120	---	---	
4-Chloroaniline	235	3.33	6.67	"	"	"	---	44	16-120	---	---	
2-Nitroaniline	536	26.7	53.3	"	"	"	---	101	44-127	---	---	
3-Nitroaniline	474	26.7	53.3	"	"	"	---	89	33-120	---	---	
4-Nitroaniline	593	26.7	53.3	"	"	"	---	111	35-120	---	---	
Nitrobenzene	479	13.3	26.7	"	"	"	---	90	34-122	---	---	
2,4-Dinitrotoluene	547	13.3	26.7	"	"	"	---	102	48-126	---	---	
2,6-Dinitrotoluene	510	13.3	26.7	"	"	"	---	96	46-124	---	---	
Benzoic acid	190	167	167	"	"	1070	---	18	5-140	---	---	
Benzyl alcohol	486	6.67	13.3	"	"	533	---	91	29-122	---	---	
Isophorone	485	3.33	6.67	"	"	"	---	91	30-122	---	---	
Azobenzene (1,2-DPH)	468	3.33	6.67	"	"	"	---	88	39-125	---	---	
Bis(2-Ethylhexyl) adipate	532	33.3	66.7	"	"	"	---	100	60-121	---	---	
3,3'-Dichlorobenzidine	1500	13.3	26.7	"	"	1070	---	141	22-121	---	---	Q-29
1,2-Dinitrobenzene	545	33.3	66.7	"	"	533	---	102	44-120	---	---	
1,3-Dinitrobenzene	521	33.3	66.7	"	"	"	---	98	42-127	---	---	
1,4-Dinitrobenzene	529	33.3	66.7	"	"	"	---	99	37-132	---	---	
Pyridine	418	6.67	13.3	"	"	"	---	78	5-120	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 79 %*	*Limits: 37-122 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*78 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*76 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*89 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*76 %*	*35-115 %*	*"*
2,4,6-Tribromophenol (Surr)	*87 %*	*39-132 %*	*"*

Duplicate (7070632-DUP2) Prepared: 07/18/17 09:37 Analyzed: 07/19/17 00:32 R-04

QC Source Sample: SS-071417-30 (A7G0405-01RE1)

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
Duplicate (7070632-DUP2)					Prepared: 07/18/17 09:37		Analyzed: 07/19/17 00:32					R-04
QC Source Sample: SS-071417-30 (A7G0405-01RE1)												
EPA 8270D												
Acenaphthene	ND	66.8	134	ug/kg dry	40	---	ND	---	---	---	30%	
Acenaphthylene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Anthracene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Benzo(a)pyrene	**110**	100	201	"	"	---	ND	---	---	---	30%	J
Benzo(b)fluoranthene	**119**	100	201	"	"	---	103	---	---	15	30%	J
Benzo(k)fluoranthene	ND	100	201	"	"	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Chrysene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Fluoranthene	**91.4**	66.8	134	"	"	---	103	---	---	12	30%	J
Fluorene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	134	268	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	134	268	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	134	268	"	"	---	ND	---	---	---	30%	
Phenanthrene	ND	66.8	134	"	"	---	73.3	---	---		30%	
Pyrene	**86.3**	66.8	134	"	"	---	80.2	---	---	7	30%	J
Carbazole	ND	100	201	"	"	---	ND	---	---	---	30%	
Dibenzofuran	ND	66.8	134	"	"	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	668	1340	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	335	668	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	335	668	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	335	668	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	1670	3350	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	1670	3350	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	167	335	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	167	335	"	"	---	ND	---	---	---	30%	
2-Nitrophenol	ND	668	1340	"	"	---	ND	---	---	---	30%	
4-Nitrophenol	ND	668	1340	"	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	668	1340	"	"	---	ND	---	---	---	30%	
Phenol	ND	134	268	"	"	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	335	668	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
Duplicate (7070632-DUP2)					Prepared: 07/18/17 09:37	Analyzed: 07/19/17 00:32						R-04
QC Source Sample: SS-071417-30 (A7G0405-01RE1)												
EPA 8270D												
2,3,5,6-Tetrachlorophenol	ND	335	668	ug/kg dry	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	335	668	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	335	668	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	1000	2010	"	"	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	668	1340	"	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	668	1340	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	668	1340	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	668	1340	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	668	1340	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	167	335	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	167	335	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	167	335	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	167	335	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	167	335	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	167	335	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	167	335	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	335	668	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	167	335	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	66.8	134	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	167	335	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	167	335	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	167	335	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	167	335	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	167	335	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	167	335	"	"	---	ND	---	---	---	30%	
Aniline	ND	335	668	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	167	335	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	1340	2680	"	"	---	ND	---	---	---	30%	
3-Nitroaniline	ND	1340	2680	"	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	1340	2680	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	668	1340	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	668	1340	"	"	---	ND	---	---	---	30%	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070632 - EPA 3546							**Soil**					
Duplicate (7070632-DUP2)					Prepared: 07/18/17 09:37		Analyzed: 07/19/17 00:32					R-04
QC Source Sample: SS-071417-30 (A7G0405-01RE1)												
EPA 8270D												
2,6-Dinitrotoluene	ND	668	1340	ug/kg dry	"	---	ND	---	---	---	30%	
Benzoic acid	ND	8390	16700	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	335	668	"	"	---	ND	---	---	---	30%	
Isophorone	ND	167	335	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	167	335	"	"	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	1670	3350	"	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	668	1340	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	1670	3350	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	1670	3350	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	1670	3350	"	"	---	ND	---	---	---	30%	
Pyridine	ND	335	668	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 81 %*		*Limits: 37-122 %*		*Dilution: 40x*					*S-05*
2-Fluorobiphenyl (Surr)			*73 %*		*44-115 %*		*"*					*S-05*
Phenol-d6 (Surr)			*71 %*		*33-122 %*		*"*					*S-05*
p-Terphenyl-d14 (Surr)			*86 %*		*54-127 %*		*"*					*S-05*
2-Fluorophenol (Surr)			*73 %*		*35-115 %*		*"*					*S-05*
2,4,6-Tribromophenol (Surr)			*88 %*		*39-132 %*		*"*					*S-05*

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Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070631 - EPA 3051A							**Soil**					
Blank (7070631-BLK1)					Prepared: 07/18/17 09:23		Analyzed: 07/19/17 16:34					
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (7070631-BS1)					Prepared: 07/18/17 09:23		Analyzed: 07/19/17 16:37					
EPA 6020A												
Arsenic	51.1	0.500	1.00	mg/kg wet	10	50.0	---	102	80-120	---	---	
Cadmium	50.4	0.100	0.200	"	"	"	---	101	"	---	---	
Chromium	51.2	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	53.6	0.500	1.00	"	"	"	---	107	"	---	---	
Lead	53.1	0.100	0.200	"	"	"	---	106	"	---	---	
Mercury	0.989	0.0400	0.0800	"	"	1.00	---	99	"	---	---	
Nickel	53.6	0.500	1.00	"	"	50.0	---	107	"	---	---	
Selenium	27.3	0.500	1.00	"	"	25.0	---	109	"	---	---	
Silver	25.8	0.100	0.200	"	"	"	---	103	"	---	---	
Zinc	51.4	2.00	4.00	"	"	50.0	---	103	"	---	---	
Duplicate (7070631-DUP1)					Prepared: 07/18/17 09:23		Analyzed: 07/19/17 17:02					
QC Source Sample: Other (A7G0135-02)												
EPA 6020A												
Arsenic	**5.94**	0.557	1.11	mg/kg dry	10	---	7.01	---	---	16	40%	
Cadmium	**0.445**	0.111	0.223	"	"	---	0.425	---	---	5	40%	
Chromium	**25.2**	0.557	1.11	"	"	---	28.3	---	---	12	40%	
Copper	**25.3**	0.557	1.11	"	"	---	28.2	---	---	11	40%	
Lead	**11.0**	0.111	0.223	"	"	---	11.4	---	---	4	40%	
Mercury	ND	0.0445	0.0890	"	"	---	ND	---	---	---	40%	
Nickel	**22.6**	0.557	1.11	"	"	---	25.3	---	---	11	40%	
Selenium	ND	0.557	1.11	"	"	---	ND	---	---	---	40%	

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2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070631 - EPA 3051A							**Soil**					
Duplicate (7070631-DUP1)					Prepared: 07/18/17 09:23		Analyzed: 07/19/17 17:02					
QC Source Sample: Other (A7G0135-02)												
EPA 6020A												
Silver	ND	0.111	0.223	mg/kg dry	"	---	ND	---	---	---	40%	
Zinc	**72.3**	2.23	4.45	"	"	---	80.7	---	---	11	40%	
Matrix Spike (7070631-MS1)					Prepared: 07/18/17 09:23		Analyzed: 07/19/17 17:06					
QC Source Sample: Other (A7G0135-02)												
EPA 6020A												
Arsenic	60.7	0.587	1.17	mg/kg dry	10	58.7	7.01	91	75-125	---	---	
Cadmium	59.4	0.117	0.235	"	"	"	0.425	100	"	---	---	
Chromium	78.2	0.587	1.17	"	"	"	28.3	85	"	---	---	
Copper	81.5	0.587	1.17	"	"	"	28.2	91	"	---	---	
Lead	68.9	0.117	0.235	"	"	"	11.4	98	"	---	---	
Mercury	1.14	0.0470	0.0939	"	"	1.17	ND	97	"	---	---	
Nickel	79.4	0.587	1.17	"	"	58.7	25.3	92	"	---	---	
Selenium	28.6	0.587	1.17	"	"	29.3	ND	98	"	---	---	
Silver	29.8	0.117	0.235	"	"	"	ND	102	"	---	---	
Zinc	125	2.35	4.70	"	"	58.7	80.7	75	"	---	---	
Matrix Spike (7070631-MS2)					Prepared: 07/18/17 09:23		Analyzed: 07/19/17 18:09					
QC Source Sample: Other (A7G0424-02)												
EPA 6020A												
Arsenic	75.2	0.549	1.10	mg/kg dry	10	54.9	7.20	124	75-125	---	---	
Cadmium	54.7	0.110	0.220	"	"	"	1.28	97	"	---	---	
Chromium	110	0.549	1.10	"	"	"	26.1	152	"	---	---	Q-04
Copper	127	0.549	1.10	"	"	"	62.3	117	"	---	---	
Lead	884	0.110	0.220	"	"	"	759	229	"	---	---	Q-03
Mercury	1.22	0.0439	0.0878	"	"	1.10	0.113	100	"	---	---	
Nickel	70.1	0.549	1.10	"	"	54.9	14.1	102	"	---	---	
Selenium	27.3	0.549	1.10	"	"	27.4	ND	100	"	---	---	
Silver	27.3	0.110	0.220	"	"	"	0.330	98	"	---	---	
Zinc	562	2.20	4.39	"	"	54.9	469	169	"	---	---	Q-03

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Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070658 - Total Solids (Dry Weight)							**Soil**					
Duplicate (7070658-DUP1)					Prepared: 07/18/17 14:57		Analyzed: 07/19/17 07:25					
QC Source Sample: Other (A7G0347-01)												
EPA 8000C												
% Solids	**77.5**	1.00	1.00	% by Weight	1	---	76.1	---	---	2	10%	
Duplicate (7070658-DUP2)					Prepared: 07/18/17 14:57		Analyzed: 07/19/17 07:25					
QC Source Sample: SS-071417-Swanson (A7G0405-02)												
EPA 8000C												
% Solids	**73.6**	1.00	1.00	% by Weight	1	---	75.8	---	---	3	10%	
Duplicate (7070658-DUP3)					Prepared: 07/18/17 19:32		Analyzed: 07/19/17 07:25					
QC Source Sample: Other (A7G0467-01)												
EPA 8000C												
% Solids	**76.9**	1.00	1.00	% by Weight	1	---	77.3	---	---	0.6	10%	
Duplicate (7070658-DUP4)					Prepared: 07/18/17 19:32		Analyzed: 07/19/17 07:25					
QC Source Sample: Other (A7G0476-04)												
EPA 8000C												
% Solids	**81.1**	1.00	1.00	% by Weight	1	---	81.1	---	---	0.007	10%	

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Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Prep: EPA 3546 w/SG+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070648							
A7G0405-01	Soil	NWTPH-Dx/SG	07/14/17 11:45	07/18/17 13:40	10.4g/5mL	10g/5mL	0.96
A7G0405-02	Soil	NWTPH-Dx/SG	07/14/17 11:55	07/18/17 13:40	10.26g/5mL	10g/5mL	0.98

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070639							
A7G0405-01	Soil	EPA 8082A	07/14/17 11:45	07/18/17 10:17	10.49g/5mL	10g/5mL	0.95
A7G0405-02	Soil	EPA 8082A	07/14/17 11:55	07/18/17 10:17	10.2g/5mL	10g/5mL	0.98

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070656							
A7G0405-01RE	Soil	EPA 8081B	07/14/17 11:45	07/18/17 10:13	10.23g/10mL	10g/5mL	1.96
A7G0405-02RE	Soil	EPA 8081B	07/14/17 11:55	07/18/17 10:13	10.32g/20mL	10g/5mL	3.88

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070632							
A7G0405-01RE	Soil	EPA 8270D	07/14/17 11:45	07/18/17 09:37	15.22g/2mL	15g/2mL	0.99
A7G0405-02	Soil	EPA 8270D	07/14/17 11:55	07/18/17 09:37	15.12g/2mL	15g/2mL	0.99

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070631							
A7G0405-01	Soil	EPA 6020A	07/14/17 11:45	07/18/17 09:23	0.508g/50mL	0.5g/50mL	0.98
A7G0405-02	Soil	EPA 6020A	07/14/17 11:55	07/18/17 09:23	0.451g/50mL	0.5g/50mL	1.11

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SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070658							
A7G0405-01	Soil	EPA 8000C	07/14/17 11:45	07/18/17 14:57	1N/A/1N/A	1N/A/1N/A	NA
A7G0405-02	Soil	EPA 8000C	07/14/17 11:55	07/18/17 14:57	1N/A/1N/A	1N/A/1N/A	NA

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Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
P-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
R-04	Reporting levels elevated due to dilution necessary for analysis.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

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--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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APEX LABS **CHAIN OF CUSTODY** Lab # A7G0405 COC 1 of 1

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Company: **Maul Foster & Alongi, Inc.** Project Mgr: Phil Wiescher Project Name: Port of Ridgefield OPP Project #/PO# 9003.01.39

Address: 2001 NW 19th Ave Suite 200, Portland, OR Phone: (503) 5015209 Fax: Email: pwiescher@maulfoster.com

Sampled by: Brooke Harmon

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	Total Metals EPA 6020 (see comments)	Organochlorine pesticides EPA 8081B	Low Level 8082 PCB Aroclors	Low Level 8270D SVOCs	Dioxins/furrans EPA 1613B	TPH-Dx (NWTPH-D/Dx) w/ Silica Gel Cleanup
SS-071417-30		2017 14-Jul	11:45	S	2	X	X	X	X	X	X
SS-071417-SWANSON		2017 14-Jul	11:55	S	2	X	X	X	X	X	X

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle) 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS:
Metlas: As, Cd, Cr, Pb, Hg, Ni, Se, Ag, Zn, Cu. Please report MDLs.

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Brooke Harmon	Signature: [signature]	Signature:	Signature:
Date:	Date: 7/14/17	Date:	Date:
Printed Name: Brooke Harmon	Printed Name: Christy Hoffman	Printed Name:	Printed Name:
Time:	Time: 1552	Time:	Time:
Company:	Company: Apex Labs	Company:	Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **Port of Ridgefield 9003.01.39**	
2001 NW 19th Ave, STE 200	Project Number: Port of Ridgefield 9003.01.39	**Reported:**
Portland, OR 97209	Project Manager: Phil Wiescher	07/24/17 14:45

APEX LABS COOLER RECEIPT FORM

Client: MFA Element WO#: A7 G0405

Project/Project #: Port of Ridgefield OPP 9003.01.39

Delivery info:

Date/Time Received: 7/14/17 @ 1552 By: CFH

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: CFH : 7/14/17 @ 1738

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No —

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	3.4						
Ice Type: (Ge/Real/Other)							
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: MS : 7/17/17 @ 11:50

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments: ___

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: MS Witness: AKE Cooler Inspected by: CFH See Project Contact Form: Y

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

June 02, 2017

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Dioxin & PCB's subcontract
Work Order: 10843
SDG: A7E0815

Dear Mr. Thomas:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 26, 2017. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

SUBCONTRACT ORDER

Apex Laboratories

A7E0815

RN

CFA WO# 10843

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
3306 Kitty Hawk Rd Suite 120
Wilmington, NC 28405
Phone :(910) 795-0421
Fax: -

Cont. reads SS-052517-50

Sample Name: SS-052417-50 **Soil** **Sampled: 05/25/17 11:15** (A7E0815-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	06/05/17 17:00	11/21/17 11:15	

Cont. reads SS-052517-30

Sample Name: SS-052417-30 **Soil** **Sampled: 05/25/17 11:30** (A7E0815-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	06/05/17 17:00	11/21/17 11:30	

5 Day TAT

1.7°C

Released By	Date	Received By	Date
Fed Ex (Shipper)	5/25/17	Fed Ex (Shipper)	
Fed Ex (Shipper)	26MAY17@1000	Andrea J Spell	26MAY17@1000
Released By	Date	Received By	Date

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 10843
Shipping Company: FedEx	Date/Time Received: 26MAY17 @ 1000

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: NA

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 1.6°C + 0.1°C = 1.7°C
4	Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: #2-8oz clear glass
11	COC form is properly signed in relinquished/received sections?	✓			no time, only date

Comments:

Checklist performed by: Initials: AS Date: 26MAY17

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A7E0815
Work Order 10843

Method/Analysis Information

Product:	**Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3540C
Analytical Batch Number:	34690
Clean Up Batch Number:	34689
Extraction Batch Number:	34688

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
10843001	SS-052417-50
10843002	SS-052417-30
12018676	Method Blank (MB)
12018677	Laboratory Control Sample (LCS)
12018678	Laboratory Control Sample Duplicate (LCSD)
12018679	10843001(SS-052417-50) Matrix Spike (MS)
12018680	10843001(SS-052417-50) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 10843001 (SS-052417-50)- Batch 34690 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike/Duplicate (MS/MSD) Recovery Statement
One MS recovery for this SDG was not within the acceptance limits. The failure confirms in the matrix spike duplicate and is attributed to matrix interference. 12018679 (SS-052417-50) and 12018680 (SS-052417-50)- Batch 34690.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A7E0815 CFA Work Order: 10843

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
J	Value is estimated
K	Estimated Maximum Possible Concentration
U	Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 02 JUN 2017 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**10843001**	**Date Collected:**	**05/25/2017 11:15**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**05/26/2017 10:00**	**%Moisture:**	**18.2**
Client ID:	**SS-052417-50**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 10:05**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-4**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**13.63 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.276	pg/g	0.276	0.897
40321-76-4	1,2,3,7,8-PeCDD	JK	1.15	pg/g	0.240	4.48
39227-28-6	1,2,3,4,7,8-HxCDD	J	2.72	pg/g	0.556	4.48
57653-85-7	1,2,3,6,7,8-HxCDD		7.34	pg/g	0.507	4.48
19408-74-3	1,2,3,7,8,9-HxCDD		5.32	pg/g	0.541	4.48
35822-46-9	1,2,3,4,6,7,8-HpCDD		281	pg/g	1.86	4.48
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2850	pg/g	3.10	8.97
51207-31-9	2,3,7,8-TCDF	U	0.402	pg/g	0.402	0.897
57117-41-6	1,2,3,7,8-PeCDF	JK	0.597	pg/g	0.197	4.48
57117-31-4	2,3,4,7,8-PeCDF	J	1.36	pg/g	0.176	4.48
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.66	pg/g	0.402	4.48
57117-44-9	1,2,3,6,7,8-HxCDF	JK	1.48	pg/g	0.391	4.48
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.68	pg/g	0.391	4.48
72918-21-9	1,2,3,7,8,9-HxCDF	JK	0.758	pg/g	0.588	4.48
67562-39-4	1,2,3,4,6,7,8-HpCDF		36.8	pg/g	0.403	4.48
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.12	pg/g	0.617	4.48
39001-02-0	1,2,3,4,6,7,8,9-OCDF		144	pg/g	0.920	8.97
41903-57-5	Total TeCDD		1.63	pg/g	0.276	0.897
36088-22-9	Total PeCDD	K	8.41	pg/g	0.240	4.48
34465-46-8	Total HxCDD	K	59.7	pg/g	0.507	4.48
37871-00-4	Total HpCDD		603	pg/g	1.86	4.48
30402-14-3	Total TeCDF	K	4.13	pg/g	0.402	0.897
30402-15-4	Total PeCDF	K	18.1	pg/g	0.0608	4.48
55684-94-1	Total HxCDF	K	53.1	pg/g	0.391	4.48
38998-75-3	Total HpCDF	K	129	pg/g	0.403	4.48
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		7.98	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		8.14	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		147	179	pg/g	81.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	179	pg/g	96.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		133	179	pg/g	74.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		154	179	pg/g	85.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		141	179	pg/g	78.5	(23%-140%)
13C-OCDD		273	359	pg/g	76.1	(17%-157%)
13C-2,3,7,8-TCDF		147	179	pg/g	81.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		175	179	pg/g	97.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	179	pg/g	98.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		137	179	pg/g	76.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	179	pg/g	79.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	179	pg/g	83.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		147	179	pg/g	81.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**10843001**	**Date Collected:**	**05/25/2017 11:15**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**05/26/2017 10:00**	**%Moisture:**	**18.2**
Client ID:	**SS-052417-50**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 10:05**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-4**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**13.63 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		142	179	pg/g	79.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		138	179	pg/g	76.9	(26%-138%)
37Cl-2,3,7,8-TCDD		14.6	17.9	pg/g	81.7	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**10843002**	**Date Collected:**	**05/25/2017 11:30**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**05/26/2017 10:00**	**%Moisture:**	**26.3**
Client ID:	**SS-052417-30**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 12:28**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-7**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**14.13 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.244	pg/g	0.244	0.960
40321-76-4	1,2,3,7,8-PeCDD	J	0.705	pg/g	0.215	4.80
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.09	pg/g	0.401	4.80
57653-85-7	1,2,3,6,7,8-HxCDD	J	3.60	pg/g	0.380	4.80
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.19	pg/g	0.399	4.80
35822-46-9	1,2,3,4,6,7,8-HpCDD		136	pg/g	1.57	4.80
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1380	pg/g	2.82	9.60
51207-31-9	2,3,7,8-TCDF	JK	0.517	pg/g	0.495	0.960
57117-41-6	1,2,3,7,8-PeCDF	JK	0.374	pg/g	0.244	4.80
57117-31-4	2,3,4,7,8-PeCDF	J	1.06	pg/g	0.190	4.80
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.61	pg/g	0.188	4.80
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.874	pg/g	0.194	4.80
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.35	pg/g	0.196	4.80
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.543	pg/g	0.273	4.80
67562-39-4	1,2,3,4,6,7,8-HpCDF		15.3	pg/g	0.338	4.80
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.28	pg/g	0.549	4.80
39001-02-0	1,2,3,4,6,7,8,9-OCDF		40.3	pg/g	0.828	9.60
41903-57-5	Total TeCDD	K	1.28	pg/g	0.244	0.960
36088-22-9	Total PeCDD	K	5.39	pg/g	0.215	4.80
34465-46-8	Total HxCDD		31.1	pg/g	0.380	4.80
37871-00-4	Total HpCDD		278	pg/g	1.57	4.80
30402-14-3	Total TeCDF	K	3.67	pg/g	0.495	0.960
30402-15-4	Total PeCDF	K	10.7	pg/g	0.0684	4.80
55684-94-1	Total HxCDF	K	25.3	pg/g	0.188	4.80
38998-75-3	Total HpCDF		49.7	pg/g	0.338	4.80
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		4.16	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		4.28	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	192	pg/g	85.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		194	192	pg/g	101	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	192	pg/g	80.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	192	pg/g	83.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		146	192	pg/g	76.2	(23%-140%)
13C-OCDD		266	384	pg/g	69.2	(17%-157%)
13C-2,3,7,8-TCDF		160	192	pg/g	83.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		191	192	pg/g	99.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		199	192	pg/g	103	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		146	192	pg/g	76.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		159	192	pg/g	83.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		161	192	pg/g	83.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	192	pg/g	86.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**10843002**	**Date Collected:**	**05/25/2017 11:30**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**05/26/2017 10:00**	**%Moisture:**	**26.3**
Client ID:	**SS-052417-30**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 12:28**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-7**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**14.13 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		147	192	pg/g	76.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		141	192	pg/g	73.7	(26%-138%)
37Cl-2,3,7,8-TCDD		16.4	19.2	pg/g	85.3	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A7E0815

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12018677	LCS for batch 34688	13C-2,3,7,8-TCDD		79.6	(20%-175%)
		13C-1,2,3,7,8-PeCDD		102	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		75.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		85.2	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		79.3	(22%-166%)
		13C-OCDD		70.4	(13%-199%)
		13C-2,3,7,8-TCDF		83.3	(22%-152%)
		13C-1,2,3,7,8-PeCDF		99.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		109	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		73.6	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		76.5	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		80.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		83.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		78.9	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		78.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		84.8	(31%-191%)
12018678	LCSD for batch 34688	13C-2,3,7,8-TCDD		89.2	(20%-175%)
		13C-1,2,3,7,8-PeCDD		103	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		86.5	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		87.1	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		81.7	(22%-166%)
		13C-OCDD		69.7	(13%-199%)
		13C-2,3,7,8-TCDF		88.1	(22%-152%)
		13C-1,2,3,7,8-PeCDF		99.6	(21%-192%)
		13C-2,3,4,7,8-PeCDF		107	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		81.2	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		83.5	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		86.5	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		86.8	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		83.9	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		78.0	(20%-186%)
		37Cl-2,3,7,8-TCDD		89.7	(31%-191%)
12018676	MB for batch 34688	13C-2,3,7,8-TCDD		72.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		67.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		66.2	(23%-140%)
		13C-OCDD		51.0	(17%-157%)
		13C-2,3,7,8-TCDF		72.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		68.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		63.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		74.1	(35%-197%)
10843001	SS-052417-50	13C-2,3,7,8-TCDD		81.9	(25%-164%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A7E0815

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10843001	SS-052417-50	13C-1,2,3,7,8-PeCDD		96.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.5	(23%-140%)
		13C-OCDD		76.1	(17%-157%)
		13C-2,3,7,8-TCDF		81.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		98.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.7	(35%-197%)
12018679	SS-052417-50(10843001MS)	13C-2,3,7,8-TCDD		84.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		101	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		79.5	(23%-140%)
		13C-OCDD		77.6	(17%-157%)
		13C-2,3,7,8-TCDF		84.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		102	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		77.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.1	(35%-197%)
12018680	SS-052417-50(10843001MSD)	13C-2,3,7,8-TCDD		80.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		101	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		77.2	(23%-140%)
		13C-OCDD		70.5	(17%-157%)
		13C-2,3,7,8-TCDF		78.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		99.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		104	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		80.8	(35%-197%)
10843002	SS-052417-30	13C-2,3,7,8-TCDD		85.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		101	(25%-181%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A7E0815

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10843002	SS-052417-30	13C-1,2,3,4,7,8-HxCDD		80.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		76.2	(23%-140%)
		13C-OCDD		69.2	(17%-157%)
		13C-2,3,7,8-TCDF		83.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		99.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		103	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		83.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		86.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		85.3	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: **A7E0815**
Client ID: **LCS for batch 34688**
Lab Sample ID: **12018677**
Instrument: **HRP750**
Analyst: **CLP**

Sample Type: **Laboratory Control Sample**
Matrix: **SOIL**
Analysis Date: **05/31/2017 07:42**
Dilution: **1**
Prep Batch ID: **34688**
Batch ID: **34690**

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	20.8	104	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	106	106	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	107	107	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	108	108	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	111	111	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	104	104	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	214	107	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.0	105	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	104	104	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	102	102	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	104	104	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	107	107	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	105	105	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	104	104	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	101	101	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	105	105	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	210	105	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: **A7E0815**
Client ID: **LCSD for batch 34688**
Lab Sample ID: **12018678**
Instrument: **HRP750**
Analyst: **CLP**

Sample Type: **Laboratory Control Sample Duplicate**
Matrix: **SOIL**
Analysis Date: **05/31/2017 08:29**
Dilution: **1**
Prep Batch ID: **34688**
Batch ID: **34690**

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	21.1	106	67-158	1.43	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	107	107	70-142	1.01	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	109	109	70-164	1.67	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	108	108	76-134	0.509	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	114	114	64-162	2.36	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	107	107	70-140	3.12	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	215	107	78-144	0.215	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.1	105	75-158	0.400	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	107	107	80-134	3.56	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	106	106	68-160	2.95	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	108	108	72-134	4.14	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	103	103	84-130	3.02	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	106	106	70-156	1.07	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	108	108	78-130	3.93	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	103	103	82-122	1.65	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	105	105	78-138	0.270	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	213	106	63-170	1.58	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A7E0815**	**Sample Type:**	**Matrix Spike**	
Client ID:	**SS-052417-50(10843001MS)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12018679**	**%Moisture:**	**18.2**	
Instrument:	**HRP750**	**Analysis Date:**	**05/31/2017 10:52**	**Dilution: 1**
Analyst:	**CLP**	**Prep Batch ID:**	**34688**	
		Batch ID:	**34690**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	17.9	U	18.7	105	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	89.3	JK	93.9	104	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	89.3	J	96.9	105	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	89.3		103	107	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	89.3		108	115	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	89.3		388	119	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	179		3090	131 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	17.9	U	18.9	106	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	89.3	JK	94.5	105	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	89.3	J	92.3	102	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	89.3	J	94.2	102	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	89.3	JK	93.1	103	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	89.3	J	93.6	102	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	89.3	JK	94.3	105	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	89.3		132	106	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	89.3	J	96.9	105	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	179		363	123	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**A7E0815**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**SS-052417-50(10843001MSD)**	**Matrix:**	**SOIL**	
Lab Sample ID:	**12018680**	**%Moisture:**	**18.2**	
Instrument:	**HRP750**	**Analysis Date:**	**05/31/2017 11:40**	**Dilution: 1**
Analyst:	**CLP**	**Prep Batch ID:**	**34688**	
		Batch ID:	**34690**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	18.0	U	18.6	104	70-130	0.475	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	89.8	JK	95.0	105	70-130	1.17	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	89.8	J	100	108	70-130	3.23	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	89.8		101	105	70-130	1.09	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	89.8		101	106	70-130	6.78	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	89.8		384	114	70-130	0.984	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	180		2770	-45.4 *	70-130	10.8	0-20
51207-31-9	MSD	2,3,7,8-TCDF	18.0	U	19.5	109	70-130	3.47	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	89.8	JK	93.4	103	70-130	1.15	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	89.8	J	95.4	105	70-130	3.30	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	89.8	J	96.7	105	70-130	2.58	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	89.8	JK	96.3	106	70-130	3.31	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	89.8	J	96.3	104	70-130	2.83	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	89.8	JK	96.0	106	70-130	1.79	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	89.8		133	107	70-130	0.944	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	89.8	J	95.3	103	70-130	1.64	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	180		332	105	70-130	8.75	0-20

Method Blank Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 34688**	**Instrument ID:**	**HRP750**	**Data File:**	**A26MAY17C_13-3**
Lab Sample ID:	**12018676**	**Prep Date:**	**26-MAY-17**	**Analyzed:**	**05/31/17 09:17**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 34688	12018677	A26MAY17C_13-1	05/31/17	0742
02	LCSD for batch 34688	12018678	A26MAY17C_13-2	05/31/17	0829
03	SS-052417-50	10843001	A26MAY17C_13-4	05/31/17	1005
04	SS-052417-50(10843001MS)	12018679	A26MAY17C_13-5	05/31/17	1052
05	SS-052417-50(10843001MSD)	12018680	A26MAY17C_13-6	05/31/17	1140
06	SS-052417-30	10843002	A26MAY17C_13-7	05/31/17	1228

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018676**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34688**				
Client ID:	**MB for batch 34688**			**Prep Basis:**	**As Received**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 09:17**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-3**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.218	pg/g	0.218	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.11	pg/g	0.110	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.169	pg/g	0.169	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.152	pg/g	0.152	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.164	pg/g	0.164	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.199	pg/g	0.199	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	0.282	pg/g	0.282	10.0
51207-31-9	2,3,7,8-TCDF	U	0.25	pg/g	0.250	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	0.121	pg/g	0.121	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	0.103	pg/g	0.103	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0902	pg/g	0.0902	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0842	pg/g	0.0842	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0854	pg/g	0.0854	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.127	pg/g	0.127	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK	0.134	pg/g	0.0842	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.131	pg/g	0.131	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.388	pg/g	0.388	10.0
41903-57-5	Total TeCDD	U	0.218	pg/g	0.218	1.00
36088-22-9	Total PeCDD	U	0.11	pg/g	0.110	5.00
34465-46-8	Total HxCDD	U	0.152	pg/g	0.152	5.00
37871-00-4	Total HpCDD	U	0.199	pg/g	0.199	5.00
30402-14-3	Total TeCDF	U	0.25	pg/g	0.250	1.00
30402-15-4	Total PeCDF	U	0.077	pg/g	0.077	5.00
55684-94-1	Total HxCDF	U	0.0842	pg/g	0.0842	5.00
38998-75-3	Total HpCDF	JK	0.134	pg/g	0.0842	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.00134	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.240	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		146	200	pg/g	72.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		174	200	pg/g	87.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		135	200	pg/g	67.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		155	200	pg/g	77.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		132	200	pg/g	66.2	(23%-140%)
13C-OCDD		204	400	pg/g	51.0	(17%-157%)
13C-2,3,7,8-TCDF		146	200	pg/g	72.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	200	pg/g	84.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		177	200	pg/g	88.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		134	200	pg/g	67.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		142	200	pg/g	70.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	200	pg/g	74.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		146	200	pg/g	73.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018676**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34688**				
Client ID:	**MB for batch 34688**			**Prep Basis:**	**As Received**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 09:17**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-3**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		137	200	pg/g	68.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		127	200	pg/g	63.7	(26%-138%)
37Cl-2,3,7,8-TCDD		14.8	20.0	pg/g	74.1	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018677**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34688**				
Client ID:	**LCS for batch 34688**			**Prep Basis:**	**As Received**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 07:42**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-1**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.8	pg/g	0.258	1.00
40321-76-4	1,2,3,7,8-PeCDD		106	pg/g	0.390	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		107	pg/g	0.836	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		108	pg/g	0.772	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		111	pg/g	0.820	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		104	pg/g	0.894	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		214	pg/g	1.84	10.0
51207-31-9	2,3,7,8-TCDF		21.0	pg/g	0.348	1.00
57117-41-6	1,2,3,7,8-PeCDF		104	pg/g	0.488	5.00
57117-31-4	2,3,4,7,8-PeCDF		102	pg/g	0.390	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		104	pg/g	0.938	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		107	pg/g	0.884	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	0.908	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		104	pg/g	1.20	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	0.714	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		105	pg/g	1.09	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		210	pg/g	1.57	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	200	pg/g	79.6	(20%-175%)
13C-1,2,3,7,8-PeCDD		203	200	pg/g	102	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		151	200	pg/g	75.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		170	200	pg/g	85.2	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		159	200	pg/g	79.3	(22%-166%)
13C-OCDD		281	400	pg/g	70.4	(13%-199%)
13C-2,3,7,8-TCDF		167	200	pg/g	83.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		198	200	pg/g	99.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		217	200	pg/g	109	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		147	200	pg/g	73.6	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		153	200	pg/g	76.5	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		162	200	pg/g	80.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		167	200	pg/g	83.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		158	200	pg/g	78.9	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		157	200	pg/g	78.3	(20%-186%)
37Cl-2,3,7,8-TCDD		17.0	20.0	pg/g	84.8	(31%-191%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018678**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34688**				
Client ID:	**LCSD for batch 34688**			**Prep Basis:**	**As Received**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 08:29**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-2**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.1	pg/g	0.248	1.00
40321-76-4	1,2,3,7,8-PeCDD		107	pg/g	0.310	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		109	pg/g	0.622	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		108	pg/g	0.554	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		114	pg/g	0.600	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		107	pg/g	0.752	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		215	pg/g	1.52	10.0
51207-31-9	2,3,7,8-TCDF		21.1	pg/g	0.230	1.00
57117-41-6	1,2,3,7,8-PeCDF		107	pg/g	0.388	5.00
57117-31-4	2,3,4,7,8-PeCDF		106	pg/g	0.308	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		108	pg/g	0.782	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		103	pg/g	0.730	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		106	pg/g	0.756	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		108	pg/g	1.11	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		103	pg/g	0.522	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		105	pg/g	0.808	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		213	pg/g	1.41	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		178	200	pg/g	89.2	(20%-175%)
13C-1,2,3,7,8-PeCDD		206	200	pg/g	103	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		173	200	pg/g	86.5	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		174	200	pg/g	87.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		163	200	pg/g	81.7	(22%-166%)
13C-OCDD		279	400	pg/g	69.7	(13%-199%)
13C-2,3,7,8-TCDF		176	200	pg/g	88.1	(22%-152%)
13C-1,2,3,7,8-PeCDF		199	200	pg/g	99.6	(21%-192%)
13C-2,3,4,7,8-PeCDF		213	200	pg/g	107	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		162	200	pg/g	81.2	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		167	200	pg/g	83.5	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		173	200	pg/g	86.5	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		174	200	pg/g	86.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		168	200	pg/g	83.9	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		156	200	pg/g	78.0	(20%-186%)
37Cl-2,3,7,8-TCDD		17.9	20.0	pg/g	89.7	(31%-191%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018679**	**Date Collected:**	**05/25/2017 11:15**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34688**	**Date Received:**	**05/26/2017 10:00**	**%Moisture:**	**18.2**
Client ID:	**SS-052417-50(10843001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 10:52**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-5**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**13.68 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.7	pg/g	0.273	0.893
40321-76-4	1,2,3,7,8-PeCDD		93.9	pg/g	0.252	4.47
39227-28-6	1,2,3,4,7,8-HxCDD		96.9	pg/g	0.672	4.47
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	0.618	4.47
19408-74-3	1,2,3,7,8,9-HxCDD		108	pg/g	0.659	4.47
35822-46-9	1,2,3,4,6,7,8-HpCDD		388	pg/g	1.66	4.47
3268-87-9	1,2,3,4,6,7,8,9-OCDD		3090	pg/g	2.75	8.93
51207-31-9	2,3,7,8-TCDF		18.9	pg/g	0.409	0.893
57117-41-6	1,2,3,7,8-PeCDF		94.5	pg/g	0.413	4.47
57117-31-4	2,3,4,7,8-PeCDF		92.3	pg/g	0.352	4.47
70648-26-9	1,2,3,4,7,8-HxCDF		94.2	pg/g	0.902	4.47
57117-44-9	1,2,3,6,7,8-HxCDF		93.1	pg/g	0.816	4.47
60851-34-5	2,3,4,6,7,8-HxCDF		93.6	pg/g	0.841	4.47
72918-21-9	1,2,3,7,8,9-HxCDF		94.3	pg/g	1.24	4.47
67562-39-4	1,2,3,4,6,7,8-HpCDF		132	pg/g	0.695	4.47
55673-89-7	1,2,3,4,7,8,9-HpCDF		96.9	pg/g	1.05	4.47
39001-02-0	1,2,3,4,6,7,8,9-OCDF		363	pg/g	1.43	8.93

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	179	pg/g	84.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		180	179	pg/g	101	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		147	179	pg/g	82.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		149	179	pg/g	83.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		142	179	pg/g	79.5	(23%-140%)
13C-OCDD		277	357	pg/g	77.6	(17%-157%)
13C-2,3,7,8-TCDF		151	179	pg/g	84.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		174	179	pg/g	97.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		182	179	pg/g	102	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		139	179	pg/g	77.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		147	179	pg/g	82.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	179	pg/g	83.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		149	179	pg/g	83.2	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		142	179	pg/g	79.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		138	179	pg/g	77.0	(26%-138%)
37Cl-2,3,7,8-TCDD		15.9	17.9	pg/g	89.1	(35%-197%)

Comments:

K Estimated Maximum Possible Concentration

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7E0815**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018680**	**Date Collected:**	**05/25/2017 11:15**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34688**	**Date Received:**	**05/26/2017 10:00**	**%Moisture:**	**18.2**
Client ID:	**SS-052417-50(10843001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34690**	**Method:**	**EPA Method 1613B**		
Run Date:	**05/31/2017 11:40**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A26MAY17C_13-6**			**Dilution:**	**1**
Prep Batch:	**34688**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**26-MAY-17**	**Prep Aliquot:**	**13.61 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.6	pg/g	0.321	0.898
40321-76-4	1,2,3,7,8-PeCDD		95.0	pg/g	0.259	4.49
39227-28-6	1,2,3,4,7,8-HxCDD		100	pg/g	0.930	4.49
57653-85-7	1,2,3,6,7,8-HxCDD		101	pg/g	0.887	4.49
19408-74-3	1,2,3,7,8,9-HxCDD		101	pg/g	0.930	4.49
35822-46-9	1,2,3,4,6,7,8-HpCDD		384	pg/g	1.71	4.49
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2770	pg/g	3.79	8.98
51207-31-9	2,3,7,8-TCDF		19.5	pg/g	0.411	0.898
57117-41-6	1,2,3,7,8-PeCDF		93.4	pg/g	0.573	4.49
57117-31-4	2,3,4,7,8-PeCDF		95.4	pg/g	0.478	4.49
70648-26-9	1,2,3,4,7,8-HxCDF		96.7	pg/g	0.822	4.49
57117-44-9	1,2,3,6,7,8-HxCDF		96.3	pg/g	0.788	4.49
60851-34-5	2,3,4,6,7,8-HxCDF		96.3	pg/g	0.835	4.49
72918-21-9	1,2,3,7,8,9-HxCDF		96.0	pg/g	1.17	4.49
67562-39-4	1,2,3,4,6,7,8-HpCDF		133	pg/g	0.625	4.49
55673-89-7	1,2,3,4,7,8,9-HpCDF		95.3	pg/g	0.962	4.49
39001-02-0	1,2,3,4,6,7,8,9-OCDF		332	pg/g	1.28	8.98

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		144	180	pg/g	80.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		182	180	pg/g	101	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		141	180	pg/g	78.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	180	pg/g	82.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		139	180	pg/g	77.2	(23%-140%)
13C-OCDD		253	359	pg/g	70.5	(17%-157%)
13C-2,3,7,8-TCDF		142	180	pg/g	78.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		179	180	pg/g	99.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	180	pg/g	104	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		141	180	pg/g	78.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	180	pg/g	77.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	180	pg/g	81.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		153	180	pg/g	85.3	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		142	180	pg/g	79.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		135	180	pg/g	75.4	(26%-138%)
37Cl-2,3,7,8-TCDD		14.5	18.0	pg/g	80.8	(35%-197%)

Comments:

K **Estimated Maximum Possible Concentration**

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

June 08, 2017

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Dioxin & PCB's subcontract
Work Order: 10860
SDG: A7F0016

Dear Mr. Nerenberg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 02, 2017. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

WO#10860

SUBCONTRACT ORDER

Apex Laboratories

A7F0016

CK PN

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
3306 Kitty Hawk Rd Suite 120
Wilmington, NC 28405
Phone :(910) 795-0421
Fax: -

Cont. reads SS-060117

Sample Name: SS-060117 Swanson **Soil** **Sampled: 06/01/17 09:10** (A7F0016-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	06/08/17 17:00	11/28/17 09:10	

5 Day TAT

3.0°C

6/1/17

Released By Date Received By Date

Fed Ex (Shipper)

Fed Ex (Shipper) 02JUN17@0947 @ CFA 02JUN17@0947

Released By Date Received By Date

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 10860
Shipping Company: FedEx	Date/Time Received: 02JUN17 @ 0947

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: NA

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 2.9°C + 0.1°C = 3.0°C
4	Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: #1-8oz glass
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

sample good, intact

Checklist performed by: Initials: AK Date: 02JUN17

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A7F0016
Work Order 10860

Method/Analysis Information

Product:	**Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3540C
Analytical Batch Number:	34732
Clean Up Batch Number:	34718
Extraction Batch Number:	34717

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
10860001	SS-060117
12018703	Method Blank (MB)
12018704	Laboratory Control Sample (LCS)
12018705	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A7F0016 CFA Work Order: 10860

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
J	Value is estimated
K	Estimated Maximum Possible Concentration
U	Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 08 JUN 2017 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7F0016**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**10860001**	**Date Collected:**	**06/01/2017 09:10**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**06/02/2017 09:47**	**%Moisture:**	**11.2**
Client ID:	**SS-060117**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34732**	**Method:**	**EPA Method 1613B**		
Run Date:	**06/06/2017 19:21**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A06JUN17A-12**			**Dilution:**	**1**
Prep Batch:	**34717**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**04-JUN-17**	**Prep Aliquot:**	**12.1 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.171	pg/g	0.171	0.930
40321-76-4	1,2,3,7,8-PeCDD	J	0.428	pg/g	0.165	4.65
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.707	pg/g	0.275	4.65
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.37	pg/g	0.268	4.65
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.64	pg/g	0.279	4.65
35822-46-9	1,2,3,4,6,7,8-HpCDD		152	pg/g	1.38	4.65
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1830	pg/g	1.56	9.30
51207-31-9	2,3,7,8-TCDF	JK	0.249	pg/g	0.238	0.930
57117-41-6	1,2,3,7,8-PeCDF	J	0.357	pg/g	0.184	4.65
57117-31-4	2,3,4,7,8-PeCDF	J	0.925	pg/g	0.168	4.65
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.25	pg/g	0.268	4.65
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.774	pg/g	0.247	4.65
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.08	pg/g	0.270	4.65
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.521	pg/g	0.348	4.65
67562-39-4	1,2,3,4,6,7,8-HpCDF		14.5	pg/g	0.218	4.65
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.04	pg/g	0.326	4.65
39001-02-0	1,2,3,4,6,7,8,9-OCDF		40.1	pg/g	0.528	9.30
41903-57-5	Total TeCDD	K	1.56	pg/g	0.171	0.930
36088-22-9	Total PeCDD	JK	3.80	pg/g	0.165	4.65
34465-46-8	Total HxCDD	K	25.4	pg/g	0.268	4.65
37871-00-4	Total HpCDD		315	pg/g	1.38	4.65
30402-14-3	Total TeCDF	K	3.22	pg/g	0.238	0.930
30402-15-4	Total PeCDF	K	9.87	pg/g	0.0313	4.65
55684-94-1	Total HxCDF		25.0	pg/g	0.247	4.65
38998-75-3	Total HpCDF		50.0	pg/g	0.218	4.65
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		4.01	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		4.10	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	186	pg/g	87.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	186	pg/g	98.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		164	186	pg/g	88.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		154	186	pg/g	82.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		146	186	pg/g	78.4	(23%-140%)
13C-OCDD		291	372	pg/g	78.1	(17%-157%)
13C-2,3,7,8-TCDF		164	186	pg/g	87.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		183	186	pg/g	98.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	186	pg/g	100	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	186	pg/g	80.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		145	186	pg/g	77.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		152	186	pg/g	81.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	186	pg/g	87.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7F0016**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**10860001**	**Date Collected:**	**06/01/2017 09:10**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**06/02/2017 09:47**	**%Moisture:**	**11.2**
Client ID:	**SS-060117**			**Prep Basis:**	**Dry Weight**
Batch ID:	**34732**	**Method:**	**EPA Method 1613B**		
Run Date:	**06/06/2017 19:21**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A06JUN17A-12**			**Dilution:**	**1**
Prep Batch:	**34717**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**04-JUN-17**	**Prep Aliquot:**	**12.1 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		140	186	pg/g	75.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		137	186	pg/g	73.6	(26%-138%)
37Cl-2,3,7,8-TCDD		17.3	18.6	pg/g	92.9	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A7F0016

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12018704	LCS for batch 34717	13C-2,3,7,8-TCDD		83.6	(20%-175%)
		13C-1,2,3,7,8-PeCDD		97.0	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		76.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		83.0	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		70.7	(22%-166%)
		13C-OCDD		60.8	(13%-199%)
		13C-2,3,7,8-TCDF		87.5	(22%-152%)
		13C-1,2,3,7,8-PeCDF		96.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		98.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		69.7	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		73.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		77.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		81.6	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		68.1	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		68.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		91.3	(31%-191%)
12018705	LCSD for batch 34717	13C-2,3,7,8-TCDD		81.9	(20%-175%)
		13C-1,2,3,7,8-PeCDD		95.3	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		72.3	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		76.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		65.8	(22%-166%)
		13C-OCDD		56.8	(13%-199%)
		13C-2,3,7,8-TCDF		85.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		92.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		95.7	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		66.1	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		69.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		71.9	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		77.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		64.5	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		62.6	(20%-186%)
		37Cl-2,3,7,8-TCDD		93.5	(31%-191%)
12018703	MB for batch 34717	13C-2,3,7,8-TCDD		77.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		71.7	(23%-140%)
		13C-OCDD		60.7	(17%-157%)
		13C-2,3,7,8-TCDF		79.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		69.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		70.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		69.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.4	(35%-197%)
10860001	SS-060117	13C-2,3,7,8-TCDD		87.1	(25%-164%)

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: A7F0016

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10860001	SS-060117	13C-1,2,3,7,8-PeCDD		98.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		88.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.4	(23%-140%)
		13C-OCDD		78.1	(17%-157%)
		13C-2,3,7,8-TCDF		87.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		98.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		100	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.9	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: **A7F0016**
Client ID: **LCS for batch 34717**
Lab Sample ID: **12018704**
Instrument: **HRP750**
Analyst: **CLP**

Sample Type: **Laboratory Control Sample**
Matrix: **SOIL**
Analysis Date: **06/06/2017 11:24**
Dilution: **1**
Prep Batch ID: **34717**
Batch ID: **34732**

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	22.1	111	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	102	102	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	103	103	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	101	101	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	113	113	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	104	104	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	206	103	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	20.3	102	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	100	100	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	98.8	98.8	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	98.6	98.6	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	99.2	99.2	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	98.7	98.7	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	97.4	97.4	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	98.7	98.7	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	96.1	96.1	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	205	102	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: **A7F0016**
Client ID: **LCSD for batch 34717**
Lab Sample ID: **12018705**
Instrument: **HRP750**
Analyst: **CLP**

Sample Type: **Laboratory Control Sample Duplicate**
Matrix: **SOIL**
Analysis Date: **06/06/2017 12:11**
Dilution: **1**
Prep Batch ID: **34717**
Batch ID: **34732**

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	23.2	116	67-158	4.77	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	103	103	70-142	1.35	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	101	101	70-164	1.70	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	101	101	76-134	0.166	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	111	111	64-162	1.84	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	105	105	70-140	0.839	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	200	100	78-144	2.91	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	20.5	102	75-158	0.853	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	101	101	80-134	0.773	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	98.8	98.8	68-160	0.0547	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	98.9	98.9	72-134	0.306	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	99.5	99.5	84-130	0.223	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	96.3	96.3	70-156	2.44	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	101	101	78-130	3.94	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	97.0	97	82-122	1.71	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	96.3	96.3	78-138	0.218	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	197	98.7	63-170	3.67	0-20

Method Blank Summary

SDG Number:	**A7F0016**	**Client:**	**APEX001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 34717**	**Instrument ID:**	**HRP750**	**Data File:**	**A06JUN17A-4**
Lab Sample ID:	**12018703**	**Prep Date:**	**04-JUN-17**	**Analyzed:**	**06/06/17 12:58**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 34717	12018704	A06JUN17A-2	06/06/17	1124
02	LCSD for batch 34717	12018705	A06JUN17A-3	06/06/17	1211
03	SS-060117	10860001	A06JUN17A-12	06/06/17	1921

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7F0016**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018703**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34717**				
Client ID:	**MB for batch 34717**			**Prep Basis:**	**As Received**
Batch ID:	**34732**	**Method:**	**EPA Method 1613B**		
Run Date:	**06/06/2017 12:58**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A06JUN17A-4**			**Dilution:**	**1**
Prep Batch:	**34717**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**04-JUN-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.15	pg/g	0.150	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.0782	pg/g	0.0782	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.113	pg/g	0.113	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.106	pg/g	0.106	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.112	pg/g	0.112	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.142	pg/g	0.142	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	0.212	pg/g	0.212	10.0
51207-31-9	2,3,7,8-TCDF	U	0.118	pg/g	0.118	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	0.0852	pg/g	0.0852	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	0.075	pg/g	0.075	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0878	pg/g	0.0878	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0816	pg/g	0.0816	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0896	pg/g	0.0896	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.115	pg/g	0.115	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	0.057	pg/g	0.057	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0854	pg/g	0.0854	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.268	pg/g	0.268	10.0
41903-57-5	Total TeCDD	U	0.15	pg/g	0.150	1.00
36088-22-9	Total PeCDD	U	0.0782	pg/g	0.0782	5.00
34465-46-8	Total HxCDD	U	0.106	pg/g	0.106	5.00
37871-00-4	Total HpCDD	U	0.142	pg/g	0.142	5.00
30402-14-3	Total TeCDF	U	0.118	pg/g	0.118	1.00
30402-15-4	Total PeCDF	U	0.0434	pg/g	0.0434	5.00
55684-94-1	Total HxCDF	U	0.0816	pg/g	0.0816	5.00
38998-75-3	Total HpCDF	U	0.057	pg/g	0.057	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.00	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.169	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	200	pg/g	77.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		180	200	pg/g	89.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	200	pg/g	77.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		143	200	pg/g	71.7	(23%-140%)
13C-OCDD		243	400	pg/g	60.7	(17%-157%)
13C-2,3,7,8-TCDF		159	200	pg/g	79.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		182	200	pg/g	91.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	200	pg/g	92.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		140	200	pg/g	69.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		145	200	pg/g	72.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		150	200	pg/g	75.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		165	200	pg/g	82.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7F0016**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018703**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34717**				
Client ID:	**MB for batch 34717**			**Prep Basis:**	**As Received**
Batch ID:	**34732**	**Method:**	**EPA Method 1613B**		
Run Date:	**06/06/2017 12:58**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A06JUN17A-4**			**Dilution:**	**1**
Prep Batch:	**34717**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**04-JUN-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		141	200	pg/g	70.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		138	200	pg/g	69.0	(26%-138%)
37Cl-2,3,7,8-TCDD		17.9	20.0	pg/g	89.4	(35%-197%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7F0016**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018704**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34717**				
Client ID:	**LCS for batch 34717**			**Prep Basis:**	**As Received**
Batch ID:	**34732**	**Method:**	**EPA Method 1613B**		
Run Date:	**06/06/2017 11:24**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A06JUN17A-2**			**Dilution:**	**1**
Prep Batch:	**34717**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**04-JUN-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		22.1	pg/g	0.230	1.00
40321-76-4	1,2,3,7,8-PeCDD		102	pg/g	0.264	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		103	pg/g	0.450	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		101	pg/g	0.390	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		113	pg/g	0.428	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		104	pg/g	0.746	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		206	pg/g	1.87	10.0
51207-31-9	2,3,7,8-TCDF		20.3	pg/g	0.193	1.00
57117-41-6	1,2,3,7,8-PeCDF		100	pg/g	0.440	5.00
57117-31-4	2,3,4,7,8-PeCDF		98.8	pg/g	0.358	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		98.6	pg/g	0.690	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		99.2	pg/g	0.632	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		98.7	pg/g	0.658	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		97.4	pg/g	0.876	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		98.7	pg/g	0.630	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		96.1	pg/g	0.858	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		205	pg/g	1.20	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	200	pg/g	83.6	(20%-175%)
13C-1,2,3,7,8-PeCDD		194	200	pg/g	97.0	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		152	200	pg/g	76.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		166	200	pg/g	83.0	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		141	200	pg/g	70.7	(22%-166%)
13C-OCDD		243	400	pg/g	60.8	(13%-199%)
13C-2,3,7,8-TCDF		175	200	pg/g	87.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		192	200	pg/g	96.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		197	200	pg/g	98.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		139	200	pg/g	69.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		147	200	pg/g	73.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		156	200	pg/g	77.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		163	200	pg/g	81.6	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		136	200	pg/g	68.1	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		137	200	pg/g	68.7	(20%-186%)
37Cl-2,3,7,8-TCDD		18.3	20.0	pg/g	91.3	(31%-191%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A7F0016**	**Client:**	**APEX001**	**Project:**	**APEX00111**
Lab Sample ID:	**12018705**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 34717**				
Client ID:	**LCSD for batch 34717**			**Prep Basis:**	**As Received**
Batch ID:	**34732**	**Method:**	**EPA Method 1613B**		
Run Date:	**06/06/2017 12:11**	**Analyst:**	**CLP**	**Instrument:**	**HRP750**
Data File:	**A06JUN17A-3**			**Dilution:**	**1**
Prep Batch:	**34717**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**04-JUN-17**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		23.2	pg/g	0.254	1.00
40321-76-4	1,2,3,7,8-PeCDD		103	pg/g	0.202	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		101	pg/g	0.684	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		101	pg/g	0.610	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		111	pg/g	0.660	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		105	pg/g	0.836	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		200	pg/g	1.06	10.0
51207-31-9	2,3,7,8-TCDF		20.5	pg/g	0.280	1.00
57117-41-6	1,2,3,7,8-PeCDF		101	pg/g	0.348	5.00
57117-31-4	2,3,4,7,8-PeCDF		98.8	pg/g	0.308	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		98.9	pg/g	0.764	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		99.5	pg/g	0.762	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		96.3	pg/g	0.766	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		101	pg/g	1.04	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		97.0	pg/g	0.640	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		96.3	pg/g	0.968	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		197	pg/g	1.17	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	200	pg/g	81.9	(20%-175%)
13C-1,2,3,7,8-PeCDD		191	200	pg/g	95.3	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		145	200	pg/g	72.3	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		154	200	pg/g	76.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		132	200	pg/g	65.8	(22%-166%)
13C-OCDD		227	400	pg/g	56.8	(13%-199%)
13C-2,3,7,8-TCDF		170	200	pg/g	85.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		186	200	pg/g	92.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		191	200	pg/g	95.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		132	200	pg/g	66.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		139	200	pg/g	69.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		144	200	pg/g	71.9	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		155	200	pg/g	77.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		129	200	pg/g	64.5	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		125	200	pg/g	62.6	(20%-186%)
37Cl-2,3,7,8-TCDD		18.7	20.0	pg/g	93.5	(31%-191%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

APPENDIX E

DATA VALIDATION MEMORANDUM

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 9003.01.39 | APRIL 4, 2018 | PORT OF RIDGEFIELD

Maul Foster & Alongi, Inc. conducted an independent review of the quality of analytical results for topsoil screening soil samples collected for use in the Port of Ridgefield Off-Property Portion Remedial Action. The samples were collected on May 25, June 1, and July 14, 2017.

Apex Laboratories (Apex), Cape Fear Analytical, LLC (CFA), and Ceres Analytical Laboratory, Inc. (CAL) performed the analyses. Apex report numbers A7E0815, A7F0016, and A7G0405; CAL report number 11526; and CFA report numbers WO10843 and WO10860 were reviewed. Samples were subcontracted from Apex to CAL or CFA for dioxin/furan analysis. The analyses performed and samples analyzed are listed below.

Analysis	Reference
Diesel and Lube-Oil Range Hydrocarbons with Silica-Gel Cleanup	NWTPH-Dx
Dioxins/Furans	USEPA 1613B
Polychlorinated Biphenyls as Aroclors	USEPA 8082A
Organochlorine Pesticides	USEPA 8081B
Semivolatile Organic Compounds	USEPA 8270D
Total Metals	USEPA 6020A

USEPA = U.S. Environmental Protection Agency.

Samples Analyzed		
Report A7E0815/WO10843	**Report A7F0016/WO10860**	**Report A7G0405/11526**
SS-052417-50	SS-060117 Swanson	SS-071417-30
SS-052417-30	--	SS-071417-Swanson

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2014; 2016; 2017a,b) and appropriate laboratory and method-specific guidelines (Apex, 2015; CAL, 2017; CFA, 2016; USEPA, 1986).

Data validation procedures were modified, as appropriate, to accommodate quality-control requirements for methods not specifically addressed by the USEPA procedures (e.g., NWTPH-Dx).

In reports A7E0815 and A7G0405, the NWTPH-Dx lube-oil results for samples SS-052417-30 and SS071417-30 were flagged by Apex due to the presence of individual analyte peaks in the lube-oil range that did not match the pattern of lube oil. Qualification was not required.

USEPA Method 1613B results qualified by the laboratory as estimated maximum potential concentrations (EMPCs) results were qualified by the reviewer with "U" as non-detect at the reported sample concentration. Total homolog results flagged as EMPCs by the laboratory were qualified by the reviewer with "UJ" as estimated, not detected, at the reported concentration when all associated congeners were reported by the laboratory as either EMPCs or not-detected. However, when one or more associated congener was reported as a detection without an EMPC qualifier, the total homolog result was qualified by the reviewer with "J" as estimated. Total homolog results already reported as estimated due to detection below the reporting limit were not additionally qualified. The following results were qualified:

Report	Sample	Component	Original Sample Result (Pg/g)	Qualified Sample Result (Pg/g)
WO10843	SS-052417-50	1,2,3,7,8-PeCDD	1.15 JK	1.15 UJ
		1,2,3,7,8-PeCDF	0.597 JK	0.597 UJ
		1,2,3,6,7,8-HxCDF	1.48 JK	1.48 UJ
		1,2,3,7,8,9-HxCDF	0.758 JK	0.758 UJ
		Total PeCDD	8.41 K	8.41 UJ
		Total HxCDD	59.7 K	59.7 J
		Total TeCDF	4.13 K	4.13 UJ
		Total PeCDF	18.1 K	18.1 J
		Total HxCDF	53.1 K	53.1 J
		Total HpCDF	129 K	129 J
	SS-052417-30	2,3,7,8-TCDF	0.517 JK	0.517 UJ
		1,2,3,7,8-PeCDF	0.374 JK	0.374 UJ
		Total TeCDD	1.28 K	1.28 UJ
		Total PeCDD	5.39 K	5.39 J
		Total TeCDF	3.67 K	3.67 UJ
		Total PeCDF	10.7 K	10.7 J
		Total HxCDF	25.3 K	25.3 J
WO10860	SS-060117 Swanson	1,2,3,4,7,8-HxCDD	0.707 JK	0.707 UJ
		2,3,7,8-TCDF	0.249 JK	0.249 UJ
		Total TeCDD	1.56 K	1.56 UJ
		Total PeCDD	3.80 JK	3.80 J
		Total HxCDD	25.4 K	25.4 J
		Total TeCDF	3.22 K	3.22 UJ
		Total PeCDF	9.87 K	9.87 J
11526	S-071417-Swanson	Total PeCDF	4.07	4.07 J

J = Result is estimated.
JK = Result is estimated and an EMPC.
K = Result is an EMPC.
Pg/g = picograms per gram.
UJ = Result is estimated and non-detect.

Positive identification of 2,3,7,8-TCDF cannot be achieved using typical USEPA Method 1613B columns; therefore, any detections above the reporting limit are confirmed and quantified using a secondary column or method.

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the method blanks were associated with all samples prepared in the analytical batch.

For USEPA Method 1613B method blank evaluation, where an analyte was detected in the sample and the associated method blank, the sample result was qualified if the concentration was less than five times the method blank concentration. Sample results were also qualified when the associated method blank result was an EMPC. Sample results between the estimated detection limit (EDL) and the method reporting limit (MRL), with concentrations less than five times the method blank concentration, were qualified with "U" as non-detect at the sample result value.

In report WO10843, the USEPA Method 1613B method blank had detections of 1,2,3,4,6,7,8-HpCDF and total HpCDF below the reporting limit at 0.134 Pg/g. The method blank detections were also flagged by CFA as EMPCs. The associated sample results were detected at concentrations greater than five times the method blank concentrations; thus, no results were qualified.

The remaining laboratory method blanks were non-detect.

Trip Blanks

Trip blanks were not required for this sampling event.

Equipment Rinsate Blanks

Equipment rinsate blanks were not required for this sampling event, as all samples were collected using dedicated, single-use equipment.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. The laboratory appropriately documented and qualified surrogate outliers. Associated batch quality assurance/quality control for samples with surrogate outliers was within acceptance limits.

In report A7E0815, the USEPA Method 8270D surrogate 2,4,6-tribromophenol was above the upper percent recovery acceptance limit of 132 percent, at 136 percent for sample SS-052417-50 and at 144 percent for sample SS-052417-30. The batch matrix spike (MS) (7051104-MS1) also had a high percent recovery at 142 percent. Apex noted that the associated continuing calibration verification standards also had a high bias for the same surrogate. The remaining five surrogates had acceptable percent recovery and all associate phenol detections were qualified as estimated due to detection below the reporting limit; no qualification was required.

All remaining surrogate recoveries were within acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

MS/matrix spike duplicate (MSD) results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency.

In report A7E0815, the USEPA Method 8270D MS (7051104-MS1) had a non-detect result for hexachlorocyclopentadiene and a 0.4 percent result for 3,3'-dichlorobenzidine. The associated batch laboratory control sample had acceptable percent recoveries. The MS percent recovery exceedances are likely due to matrix interference. The sample used to prepare the MS and the remaining reported sample are presumed to have similar matrices; thus, both samples were qualified by the reviewer with "R" as rejected.

Report	Sample	Component	Original Result (ug/kg)	Qualified Result (ug/kg)
A7E0815	SS-052417-50	Hexachlorocyclopentadiene	81.4 U	81.4 R
A7E0815	SS-052417-50	3,3'-Dichlorobenzidine	162 U	162 R
A7E0815	SS-052417-30	Hexachlorocyclopentadiene	17.8 U	17.8 R
A7E0815	SS-052417-30	3,3'-Dichlorobenzidine	178 U	178 R

NOTES:
R = Result is rejected.
U = Result is non-detect.
ug/kg = micrograms per kilogram.

In report A7E0815, the USEPA Method 8270D MS (7051104-MS1) result for bis(2-ethylhexyl)adipate was above the upper percent recovery acceptance limit of 121 percent, at 129 percent. Associated sample results were non-detect; thus, no results were qualified.

In report A7E0815, the USEPA Method 6020A MS (7051077-MS1) had a result for total zinc above the upper percent recovery acceptance limit of 125 percent, at 159 percent. The associated batch laboratory control sample (LCS) and remaining MS had acceptable percent recovery, and the MS was prepared with a sample from an unrelated project; thus, no results were qualified.

In report WO10843, the USEPA Method 1613B MS/MSD prepared with sample SS-052417-50 exceeded the percent recovery acceptance limits of 70-130 percent for 1,2,3,4,6,7,8-OCDD due to high concentrations of analyte present in the sample. The associated results were not qualified by the reviewer.

In report A7F0016, the USEPA Method 8081B MS result for methoxychlor was above the upper percent recovery acceptance limit of 143 percent, at 168 percent. The associated sample was non-detect for methoxychlor; thus, no results were qualified.

In report A7F0016, the USEPA Method 8270D MS (7060267-MS2) results for butyl benzyl phthalate, benzoic acid, and bis(2-ethylhexyl)adipate were above the upper percent recovery acceptance limit, and the result for 3,3'-dichlorobenzidine was below the lower percent recovery acceptance limit. The MS was diluted 1:20; thus, no results were qualified by the reviewer. Associated batch LCS had acceptable percent recovery. The sample used to prepare the MS was qualified by the reviewer with "R" as rejected.

In report A7G0405, a USEPA Method 6020A batch 7070631 MS (7070631-MS2) result for chromium was above the upper percent recovery acceptance limit of 125 percent, at 152 percent. Apex noted that the exceedance was due to a non-homogenous matrix. The MS was prepared with a sample from an unrelated project, and a second batch 7070631 MS had acceptable percent recovery; thus, no results were qualified.

All remaining MS/MSD results were within acceptance limits for percent recovery and RPDs.

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. Laboratory duplicate results within five times the MRL were not evaluated for precision.

In report A7F0016, the USEPA Method 6020A laboratory duplicate arsenic and chromium RPDs exceeded the control limit of 40 percent, at 92 percent and 54 percent, respectively. The laboratory duplicate was prepared with a sample from an unrelated project, and the MS prepared with the same sample had acceptable percent recovery; thus, no results were qualified.

All remaining laboratory duplicate RPDs were within acceptance limits.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

A laboratory control sample/laboratory control sample duplicate (LCSD) is spiked with target analytes to provide information on laboratory precision and accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency.

In report A7F0016, the USEPA Method 8081B LCS result for methoxychlor was above the upper percent recovery acceptance limit of 143 percent, at 147 percent. The associated sample was non-detect for methoxychlor; thus, no results were qualified.

In report A7G0405, the USEPA Method 8270D batch 7070632 LCS result for 3,3'-dichlorobenzidine was above the upper percent recovery acceptance limit of 121 percent, at 141 percent. The associated sample result was non-detect; thus, no results were qualified.

All remaining LCS/LCSD results were within acceptance limits for percent recovery and RPD.

FIELD DUPLICATE RESULTS

Field duplicate samples measure both field and laboratory precision. Field duplicate samples were not submitted for analysis.

INITIAL/CONTINUING CALIBRATION VERIFICATION RESULTS

Initial calibration verification (ICV) and continuing calibration verification (CCV) results are used to demonstrate instrument precision and accuracy following instrument calibration and through the end of the sample batch. CCV results were not reported by Apex. CF noted in the case narrative that ICV and CCV results met acceptance criteria. Batch quality control results that were flagged due to CCV exceedances were not qualified when the quality control results were within acceptance limits.

REPORTING LIMITS

Apex reported results to method detection limits (MDLs). CFA and CAL reported results to EDLs. The reviewer confirmed that sample-specific detection limits reported by CAL were EDLs. Some reporting limits were raised by Apex due to matrix interference and were appropriately flagged by the laboratory. Results between the MDL or EDL and the reporting limit were qualified by the laboratories with "J" as estimated.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies.

Apex and CFA noted that sample names recorded on containers did not match the chain of custody; the date portion of the sample name was recorded as "052417" on the chain of custody and "052517" on the containers. The sample names that were reported were based on the chain of custody.

USEPA Method 8082A sample extracts were processed with sulfuric acid cleanup by USEPA Method 3660B and florisil cleanup by USEPA Method 3620B to reduce matrix interference. No action was required.

USEPA Method 8081B sample extracts were processed with USEPA Method 3640A gel-permeation cleanup. Sample MDLs and MRLs were raised due to dilutions necessary for the cleanup. No action was required.

In report WO10860, sample SS-060117 Swanson was reported by CFA as SS-060117. The report included the subcontract order which references the full sample ID. No action was required.

No additional issues were found.

Apex. 2016. Quality systems manual. Revision 5. Apex Laboratories, LLC., Tigard, Oregon. April 1.

CAL. 2017. Laboratory quality systems manual. Revision 10. Ceres Analytical Laboratory. El Dorado Hills, California. June 15.

CF. 2016. Quality assurance plan. Revision 14. Cape Fear Analytical, LLC, Wilmington, North Carolina. May 6.

USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA-530/SW-846. Update V. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (revision 1, July 2014).

USEPA. 2014. R10 data validation and review guidelines for polychlorinated dibenzo-p-dioxin and polychlorinated dibenzofuran data (PCDD/PCDF) using Method 1613B and SW846 Method 8290A. EPA-910-R-14-003. U.S. Environmental Protection Agency, Office of Environmental Assessment. May.

USEPA. 2016. USEPA contract laboratory program, national functional guidelines for high resolution Superfund methods data review. EPA 542-B-16-001. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. April.

USEPA. 2017a. USEPA contract laboratory program, national functional guidelines for inorganic Superfund methods data review. EPA 540-R-2017-001. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. January.

USEPA. 2017b. USEPA contract laboratory program, national functional guidelines for Superfund organic methods data review. EPA 540-R-2017-002. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. January.

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 9003.01.39 | APRIL 6, 2017 | PORT OF RIDGEFIELD

Maul Foster & Alongi, Inc. (MFA) conducted an independent review of the quality of analytical results for soil samples collected from clean fill sources for the Port of Ridgefield boundary soil assessment. The samples were collected in July and August 2016.

Apex Laboratories, LLC (Apex); Maxxam Analytics International Corporation (Maxxam); and Cape Fear Analytical, LLC (CFA) performed the analyses. Samples were subcontracted from Apex to Maxxam or CFA for dioxins/furans analysis. Subcontracted reports are listed with parent reports in the "samples analyzed" table below. The following Apex reports were reviewed:

A6G0259 APEXCOC-160502 All QC FINAL 07 22 16 1558 (A6G0259)
A6G0572 APEXCOC-160502 All QC FINAL 07 22 16 1655 (A6G0572)
A6H0119 APEXCOC-160502 All QC FINAL 08 10 16 1638 (A6H0119)
A6H0222 APEXCOC-160502 All QC FINAL 08 16 16 1149 (A6H0222)
A6H0354 APEXCOC-160502 All QC FINAL 08 16 16 1149 (A6H0354)
A6H0642 APEXCOC-160831 All QC FINAL 09 01 16 1609 (A6H0642)

The following Maxxam reports were reviewed:

B6E1743V1-R2016-07-20_17-00-32_R006 (B6E1743)
B6E8269V1-R2016-07-30_18-17-21_R006 (B6E8269)

The following CFA reports were reviewed:

WO9571 Level 2—APEX A6H0119 (WO9571)
WO9586 Level 2—APEX A6H0222 (WO9586)
WO9616 Level 2—APEX A6H0354 (WO9616)
WO9658 Level 2—APEX A6H0642 (WO9658)

The analyses performed and samples analyzed are listed below.

Analysis	Reference
Diesel and Lube Oil/Diesel and Lube Oil with Silica Gel Cleanup	NWTPH-Dx/NWTPH-Dx/SG
Dioxins/Furans	USEPA 1613B Modified
Organochlorine Pesticides	USEPA 8081B
Polychlorinated Biphenyls	USEPA 8082A
Semivolatile Organic Compounds	USEPA 8270D
Total Metals	USEPA 6020A

NWTPH = Northwest Total Petroleum Hydrocarbons.
USEPA = U.S. Environmental Protection Agency.

Samples Analyzed			
Report A6G0259/B6E1743	**Report A6G0572/B6E8269**	**Report A6H0119/WO9571**	**Report A6H0222/WO9586**
Topsoil 3	7/13 Compost-1	8.3.16-H&H BLEND-1	Top Soil 5
Topsoil 4	7/13 Compost-2	8.3.16-MCF-BLEND-1	-
-	7/15 Sandy Loam-1	-	-
-	7/15 Sandy Loam-2	-	-
Report A6H0354/WO9616	**Report A6H0642/ WO9658**	-	-
8.10.16-Top Soil 1	8.17.16-Topsoil-1	-	-
-	8.17.16-Topsoil-3	-	-

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2011; 2014a,b,c; 2016), appropriate laboratory and method-specific guidelines (Apex, 2015; USEPA, 1986), and the dioxin rules memorandum developed by MFA and approved by the Washington State Department of Ecology (MFA, 2012).

In reports A6G0259 and A6G0572, most NWTPH-Dx oil hydrocarbon results were flagged by Apex as containing individual analyte peaks that are not representative of the oil fuel pattern. The results were qualified by the reviewer with "J" as estimated.

Report	Sample	Analysis	Original Result (mg/kg)	Qualified Result (mg/kg)
A6G0259	Topsoil 3	Oil	163	163 J
A6G0259	Topsoil 4	Oil	146	146 J
A6G0572	7/13 Compost-1	Oil	477	477 J
A6G0572	7/13 Compost-2	Oil	269	269 J

mg/kg = milligrams per kilogram.

In report A6G0572, the USEPA Method 8082A Aroclor 1254 result for sample 7/13 Compost-2 was flagged as estimated by Apex because of matrix interference. The result has been qualified by the reviewer with "J" as estimated.

Report	Sample	Analysis	Original Result (ug/kg)	Qualified Result (ug/kg)
A6G0572	7/13 Compost-2	Aroclor 1254	5.54	5.54 J

ug/kg = micrograms per kilogram.

In report A6G0572, some USEPA Method 8270D results for sample 7/15 Sandy Loam-2 were flagged as estimated by Apex because of matrix interference. The results have been qualified by the reviewer with "J" as estimated.

Report	Sample	Analysis	Original Result (ug/kg)	Qualified Result (ug/kg)
A6G0572	7/15 Sandy Loam-2	Benz(a)anthracene	18.2	18.2 J
A6G0572	7/15 Sandy Loam-2	Benzo(b)fluoranthene	36.9	36.9 J
A6G0572	7/15 Sandy Loam-2	Chrysene	27.7	27.7 J

In report A6H0222, the USEPA 8081B 4,4'-DDE result for sample Top Soil 5 was flagged by the laboratory because the confirmation column did not meet acceptance criteria. The result was qualified by the reviewer with "J" as estimated.

Report	Sample	Analysis	Original Result (ug/kg)	Qualified Result (ug/kg)
A6H0222	Top Soil 5	4,4'-DDE	3.88	3.88 J

Detections of 2,3,7,8-TCDF were not confirmed by USEPA Method 8290A when the result was below the reporting detection limit (RDL). Detections above the RDL were confirmed by the laboratory and confirmation results were used as final reported values.

USEPA Method 1613B detected results that were reported as an estimated maximum potential concentration or with diphenyl ether interference were assigned a "U" qualifier (non-detect) at the reported value by the laboratory. No qualification was required.

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the method blanks were associated with all samples prepared in the analytical batch. If an analyte was detected in a sample and in the associated method blank at a concentration of less than five times the method blank concentration, the sample result was qualified. Method reporting limits (MRLs) were elevated to the concentration detected in the samples, and results were qualified as not detected, "U," at the elevated MRL.

As stated in report B6E1743, the USEPA Method 1613B method blank had several detections above the estimated detection limit (EDL). The following results were qualified by the reviewer with "U."

Report	Sample	Analysis	Original Result (pg/g)	Qualified Result (pg/g)
B6E1743	Topsoil 3	1,2,3,6,7,8-HxCDF	0.165 J	0.165 U
B6E1743	Topsoil 3	2,3,4,6,7,8-HxCDF	0.252 J	0.252 U
B6E1743	Topsoil 4	1,2,3,4,7,8-HxCDF	0.300 J	0.300 U
B6E1743	Topsoil 4	1,2,3,6,7,8-HxCDF	0.200 J	0.200 U
B6E1743	Topsoil 4	2,3,4,6,7,8-HxCDF	0.219 J	0.219 U
B6E1743	Topsoil 4	1,2,3,4,7,8,9-HpCDF	0.234 J	0.234 U

pg/g = picograms per gram.

Report WO9616 states that the USEPA Method 1613B method blank had several detections between the EDL and reporting limit. Associated sample results that were below the reporting limit and less than five times the method blank concentrations were qualified by the reviewer with "U" as non-detect at the reporting limit. Sample results that were non-detect, above the reporting limit, or greater than five times the method blank concentrations were not qualified. The following results were qualified by the reviewer with "U."

Report	Sample	Analysis	Original Result (pg/g)	Qualified Result (pg/g)
WO9616	Topsoil 1	1,2,3,6,7,8-HxCDF	0.643 J	0.643 U
WO9616	Topsoil 1	1,2,3,7,8,9-HxCDF	0.336 J	0.336 U

Report B6E8269 states that the USEPA Method 1613B method blank had detections of octa-chloro-dibenzo-p-dioxin (OCDD) above the EDL, at 0.359 pg/g. All associated samples had results greater than ten times the method blank concentration; thus, no results were qualified.

As shown in report WO9571, the USEPA Method 1613B method blank had a detection of 1,2,3,4,6,7,8,9-OCDD below the reporting limit, at 6.10 pg/g. Associated sample results were greater than ten times the method blank concentration; thus, no results were qualified.

Report WO9658 states that the USEPA 1613B method blank had a detection of 1,2,3,4,6,7,8,9-OCDD between the EDL and reporting limit. Associated sample results were greater than five times the detected concentration; thus, no results were qualified.

All remaining method blanks were non-detect for all target analytes.

Trip Blanks

Trip blanks were not required for this sampling event.

Equipment Rinsate Blanks

Equipment rinsate blanks were not required for this sampling event, as all samples were collected using dedicated, single-use equipment.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. Sample results associated with continuing calibration verification (CCV) percent recovery exceedances in batch quality control samples were not qualified when the batch quality control results were within percent recovery acceptance limits.

As stated in report A6G0572, the USEPA Method 8270D surrogate 2,4,6-tribromophenol had a result above the upper percent recovery acceptance limit of 132 percent, at 142 percent for sample 7/13 Compost-1 and at 144 percent for sample 7/13 Compost-2. The exceedances were minor and remaining surrogate results were within percent recovery acceptance limits; thus, no results were qualified.

As shown in report A6H0119, the USEPA Method 8081B surrogate 2,4,5,6-tetrachloro-m-xylene (TCMX) result was below the lower percent recovery acceptance limit of 42 percent, at 31 percent. Apex reanalyzed the sample, with similar percent recovery. The 2,4,5,6-TCMX recovery was above 30 percent and the remaining surrogate had acceptable percent recovery; thus, no results were qualified.

Report A6H0222 states that the USEPA Method 8270D surrogate 2,4,6-tribromophenol result exceeded the upper percent recovery acceptance limit of 132 percent, at 145 percent, for sample Top Soil 5. The exceedance was minor and the remaining surrogate results were within percent recovery acceptance limits; thus, no results were qualified.

All remaining surrogate recoveries were within acceptance limits.

LABELED ANALOG RECOVERY RESULTS

USEPA Method 1613B samples were spiked with carbon-13 (C13) labeled standards to quantify the relative response of analytes in each sample. All C13 labeled analog standard recoveries were within acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

Matrix spike/matrix spike duplicate (MS/MSD) results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency.

Report A6G0259 states that the USEPA Method 8270D MS results for 2,3,4,6-tetrachlorophenol, 2,3,5,6-tetrachlorophenol, 2,4,5-trichlorophenol were above the upper percent recovery acceptance limit. The associated sample was non-detect for these analytes; thus, no results were qualified.

As stated in report A6G0259, the USEPA Method 8270D MS results for 3,3'-dichlorobenzidine were below the method detection limit (MDL) of 319 ug/kg. The batch laboratory control sample (LCS) had recoveries above the upper percent recovery acceptance limit of 121 percent, at 153 percent. The sample used to prepare the MS was non-detect and was qualified by the reviewer with "J" as estimated. The remaining sample was not qualified.

Report	Sample	Analysis	Original Result (ug/kg)	Qualified Result (ug/kg)
A6G0259	Topsoil 4	3,3'-dichlorobenzidine	316 U	316 UJ

As stated in report A6G0572, the USEPA Method 8270D MS results for 1-methylnaphthalene, 2-methylnaphthalene, phenanthrene, N-nitrosodiphenylamine, and 2,4-dinitrotoluene were below lower percent recovery acceptance limits. The MS was prepared with a sample from an unrelated project, and the LCS had acceptable recoveries; thus, no results were qualified.

AS shown in report A6G0572, the USEPA Method 8270D MS result for 3,3'-dichlorobenzidine was above the upper percent recovery acceptance limit of 121 percent, at 150 percent. The LCS recovery also exceeded the upper percent recovery acceptance limit. Associated samples were non-detect; thus, no results were qualified.

Report A6H0119 states that the USEPA Method 8081B MS result for Aroclor 1016 was below the lower percent recovery acceptance limit of 47 percent, at 40 percent. The associated LCS had acceptable percent recovery. The sample used to prepare the MS was non-detect and was qualified by the reviewer with "J" as estimated.

Report	Sample	Analysis	Original Result (ug/kg)	Qualified Result (ug/kg)
A6H0119	8.3.16-H&H BLEND-1	Aroclor 1016	1.54 U	1.54 UJ

According to report A6H0119, the USEPA Method 8270D MS results for hexachlorocyclopentadiene, 4-chloroaniline, 3-nitroaniline, 4-nitroaniline, and 3,3'-dichlorobenzidine were non-detect at the MDL. The associated LCS had acceptable percent recoveries for all analytes except 3,3'-dichlorobenzidine, which was above the upper percent recovery acceptance limit. The laboratory noted that MS results were low, likely because of matrix interference. The sample used to prepare the MS was qualified by the reviewer with "J" as estimated.

Report	Sample	Analysis	Original Result (ug/kg)	Qualified Result (ug/kg)
A6H0119	8.13.16-MCF-BLEND-1	Hexachlorocyclopentadiene	76.7 U	76.7 UJ
A6H0119	8.13.16-MCF-BLEND-1	4-Chloroaniline	38.3 U	38.3 UJ
A6H0119	8.13.16-MCF-BLEND-1	3-Nitroaniline	307 U	307 UJ
A6H0119	8.13.16-MCF-BLEND-1	4-Nitroaniline	307 U	307 UJ
A6H0119	8.13.16-MCF-BLEND-1	3,3'-Dichlorobenzidine	765 U	765 UJ

Report WO9586 states that the USEPA Method 1613B 1,2,3,4,6,7,8,9-OCDD MS/MSD results exceeded acceptance criteria at 366 percent and 323 percent, respectively. In addition, the MSD results for 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, and 1,2,3,4,6,7,8,9-OCDF exceeded acceptance criteria at 160 percent, 138 percent, and 151 percent, respectively. The MS/MSD relative percent difference (RPD) for 1,2,3,4,6,7,8-HpCDD exceeded acceptance criteria at 21.3 percent. The laboratory indicated that the exceedances were due to matrix interference. The associated batch LCS met all percent recovery acceptance criteria. The percent recovery exceedance for 1,2,3,4,6,7,8-HpCDF was considered minor and was not

qualified by the reviewer. The remaining exceedances in the sample used to prepare the MS/MSD are qualified by the reviewer in the following table:

Report	Sample	Analysis	Original Result (pg/g)	Qualified Result (pg/g)
WO9586	Top Soil 5	1,2,3,4,6,7,8,9-OCDD	683	683 J
WO9586	Top Soil 5	1,2,3,4,6,7,8-HpCDD	59.3	59.3 J
WO9586	Top Soil 5	1,2,3,4,6,7,8,9-OCDF	36.0	36.0 J

Report A6H0354 states that the USEPA Method 8082A Aroclor 1016 and Aroclor 1260 MS results were below the lower acceptance criteria for percent recovery of 47 percent and 53 percent, at 41 percent and 52 percent, respectively. These exceedances are minor and the batch LCS had acceptable percent recoveries; thus, no results were qualified.

As stated in report WO9616, the USEPA Method 1613B MS/MSD results for 1,2,3,4,6,7,8-HpCDD were below the lower percent recovery acceptance limit of 70 percent, at 63.5 percent and 64.5 percent, respectively. These exceedances were considered minor; thus, no results were qualified. The MS/MSD results for 1,2,3,4,6,7,8,9-OCDD were below the lower percent recovery acceptance limit and less than the original sample result. The sample used to prepare the MS/MSD was qualified as follows:

Report	Sample	Analysis	Original Result (pg/g)	Qualified Result (pg/g)
WO9616	Top Soil 1	1,2,3,4,6,7,8,9-OCDD	749	749 J

According to report A6H0642, the USEPA Method 8081B MS (6080817-MS2) exceeded the upper percent recovery acceptance limit of 43 percent for methoxychlor, at 158 percent. Methoxychlor was not reported for the sample; thus, no results were qualified.

Report A6H0642 states that some USEPA Method 8270D MS (6080741-MS2) results were below lower percent recovery acceptance limits. The sample used to prepare the MS was qualified by the reviewer with "UJ" as estimated for non-detect results.

Report	Sample	Analysis	Original Result (ug/kg)	Qualified Result (ug/kg)
A6H0642	8.17.16-Topsoil-3	4-Chloroaniline	40.3 U	40.3 UJ
		3-Nitroaniline	323 U	323 UJ
		4-Nitroaniline	323 U	323 UJ
		Benzoic acid	2020 U	2020 UJ
		3,3'-Dichlorobenzidine	161 U	161 UJ

According to report WO9658, the USEPA Method 1613B MSD results for 1,2,3,4,6,7,8-HpCDD and 1,2,3,4,6,7,8,9-OCDD exceeded the upper percent recovery acceptance limit of 130 percent, at 135 percent and 181 percent, respectively. In addition, the MS/MSD RPD exceeded the 20 percent acceptance limit for both analytes at 20.4 percent and 22.3 percent, respectively. The MS percent recoveries were within percent recovery acceptance limits and the RPD exceedances were minor; thus, no results were qualified.

All remaining MS/MSD results were within acceptance limits for percent recovery and RPDs.

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. Laboratory duplicate RPD exceedances were not qualified when laboratory duplicate results were detected at concentrations of less than five times the reporting limit.

As stated in report A6G0572, the NWTPH-Dx laboratory duplicate (6070561-DUP1) RPD exceeded the acceptance limit of 30 percent, at 74 percent. The laboratory duplicate was prepared with a sample from an unrelated project; thus, no results were qualified. A second laboratory duplicate (6070561-DUP2) prepared with sample 7/15-Sandy Loam-2 also exceeded the RPD control limit; however, the result was less than the reporting limit. No results were qualified.

Report A6H0222 states that the USEPA Method 8081B laboratory duplicate (6080358-DUP1) RPD exceeded the acceptance limit of 30 percent, at 31 percent. This exceedance is minor and the result has already been qualified (see the qualification section above). Additional qualification was not required.

Report A6H0354 states that the USEPA Method 6020A laboratory duplicate exceeded the 40 percent RPD acceptance limit for lead, at 45 percent. The remaining batch quality control met acceptance criteria for lead, and the laboratory duplicate was prepared with a sample from an unrelated project; thus, no results were qualified.

All remaining laboratory duplicate RPDs were within acceptance limits.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

LCSs/laboratory control sample duplicates (LCSDs) are spiked with target analytes to provide information on laboratory precision and accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency.

Report A6G0259 states that the USEPA Method 8270D LCS result for benzoic acid was below the MDL of 333 ug/kg. The batch MS prepared with sample Topsoil 4 had acceptable recovery at 113 percent; thus, no results were qualified.

As stated in reports A6G0259, A6G0572, A6H0119, and A6H0222, the USEPA Method 8270D LCS/LCSD result for 3,3'-dichlorobenzidine exceeded the upper percent recovery acceptance limit of 121 percent, from 124 percent to 153 percent. The laboratory indicated that the results may be biased high because of CCV exceedance. The associated samples were non-detect; thus, no results were qualified.

Report A6H0222 states that the USEPA Method 6020A LCS exceeded the upper percent recovery acceptance limit for total selenium, at 124 percent. The exceedance was minor; thus, no results were qualified.

Report A6H0642 states that the USEPA Method 8270D LCS result for hexachlorobenzene exceeded the upper percent recovery acceptance limit of 122 percent, at 123 percent. The exceedance was minor; thus, no results were qualified. The 3,3'-dichlorobenzidine result also exceeded the upper percent recovery acceptance limit of 121 percent, at 149 percent. The associated sample results were non-detect; thus, no results were qualified.

All remaining LCS/LCSD analytes were within acceptance limits for percent recovery and RPD.

CONTINUING CALIBRATION VERIFICATION RESULTS

CCV results are used to demonstrate instrument precision and accuracy through the end of the sample batch. LCS and MS results associated with CCV percent recovery exceedances were not qualified when the LCS and MS results were within percent recovery acceptance limits.

According to reports A6G0259, A6G0572, and A6H0119, the USEPA Method 8270D surrogate 2,4,6-tribromophenol was flagged because of association with a CCV that exceeded upper control limits. The surrogate results provided in reports A6G0259 and A6H0119 were within percent recovery acceptance limits; thus, no results were qualified. The surrogate results presented in report A6G0572 exceeded upper percent recovery acceptance limits of 132 percent at for samples 7/13 Compost-1 (142%), 7/13 Compost-2 (144%), 7/15 Sandy Loam-1 (137%), and 7/15 Sandy Loam-2 (134%). The exceedances were minor; thus, no results were qualified.

All remaining CCVs were within acceptance limits for percent recovery.

REPORTING LIMITS

Apex reported results to MDLs. Results reported between MDLs and reporting limits were qualified by the laboratory with "J" as estimated. Reporting limits and MDLs were raised for samples requiring dilutions because of high analyte concentrations and/or matrix interferences. Some reporting limits and MDLs were raised further because of matrix interference.

Maxxam and CFA reported non-detect USEPA Method 1613B results to EDLs. Results detected between EDLs and MRLs were qualified by the reviewer as estimated.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies.

In reports A6H0119 and WO9571, the sample name for 8.3.16-H&H BLEND-1 was incorrectly reported as 8.13.16-H&H BLEND-1. The correct name is used in this validation report.

No additional issues were found.

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CFA. 2016. Quality assurance plan. CF-QS-B-001. Cape Fear Analytical, LLC, Wilmington, North Carolina.

Maxxam. 2015. Quality manual. Maxxam Analytics International Corporation, Mississauga, Ontario, Canada.

MFA. 2012. Dioxin and furan analysis, data validation, and TEQ calculation rules. Maul Foster & Alongi, Inc. December.

USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA-530/SW-846 Update V. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (revision 1, July 2014).

USEPA. 2011. USEPA contract laboratory program, national functional guidelines for chlorinated dibenzo-p-dioxins (CDDs) and chlorinated dibenzofurans (CDFs) data review. EPA-540-R-11-016. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. September.

USEPA. 2014a. R10 data validation and review guidelines for polychlorinated dibenzo-p-dioxin and polychlorinated dibenzofuran data (PCDD/PCDF) using Method 1613B and SW846 Method 8290A. EPA-910-R-14-003. U.S. Environmental Protection Agency, Office of Environmental Assessment. May.

USEPA. 2014b. USEPA contract laboratory program, national functional guidelines for inorganic Superfund data review. EPA 540/R-013/001. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. August.

USEPA. 2014c. USEPA contract laboratory program, national functional guidelines for Superfund organic methods data review. EPA 540/R-014/002. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. August.

USEPA. 2016. National functional guidelines for high resolution Superfund methods data review. EPA 542-B-16-001. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. April.

APPENDIX F

FILL MATERIAL DATA SUMMARY

Table F-1
2016 Approved Clean Fill Summary
Former PWT Site
Ridgefield, Washington

Sample	Topsoil 3/4 WRQ	Topsoil 1/2 ECM-H&H	Topsoil 3 ECM-H&H	Topsoil 4 ECM-H&H	Topsoil 5 ECM-H&H	Topsoil 6 ECM-H&H
Source	Puyallup	Vancouver	Vancouver	Vancouver	Vancouver	Vancouver
Type	Premixed	Mixed Sample Calculation	Premixed	Premixed	Premixed	Premixed
Import Designation (CY)	0–1000	0–1000	1000–2000	2000–3000	3000–4000	4000–5000
Decision	Approved	Approved	Approved	Approved	Approved	Approved

NOTES:

CY = cubic yard(s).

ECM-H&H = East County Materials-H&H Wood Recyclers.

PWT = Pacific Wood Treating Co.

WRQ = Washington Rock Quarries.

Table F-2
Puyallup Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

		Sample	Topsoil 3 WRQ	Topsoil 4 WRQ	Topsoil 3/4 WRQ	Topsoil 5 WRQ
		Sample ID	Topsoil 3	Topsoil 4	--	Top Soil 5
		Type	Premixed sample	Premixed sample	Premixed sample average	Premixed sample
		Date Collected	07/06/2016	07/06/2016	--	08/05/2016
		Clean Fill Decision	--	--	Approved	Approved
		Import Designation (CY)	--	--	0-1000	--
Analyte	Clean Fill Criteria	Criteria Basis				
Total Metals (mg/kg)						
Arsenic	5.81	Background	3.97	3.48	3.73	3.34
Cadmium	2	MTCA A	0.146 J	0.13 J	0.14	0.114 J
Chromium	26.57	Background	20.2	17.3	18.75	16.4
Copper	3200	MTCA B	25.4	22.7	24.05	21.3
Lead	250	MTCA A	7.33	8.74	8.04	9.89
Mercury	2	MTCA A	0.097 U	0.10 U	ND	0.0788 J
Nickel	1600	MTCA B	24.2	21.5	22.85	18.8
Selenium	400	MTCA B	1.21 U	1.3 U	ND	0.568 U
Silver	400	MTCA B	0.243 U	0.25 U	ND	0.114 U
Zinc	24000	MTCA B	46.4	48.4	47.40	47.1
Organochlorine Pesticides (ug/kg)						
4,4'-DDD	4200	MTCA B	2.2 U	2.4 U	ND	2.26 U
4,4'-DDE	2900	MTCA B	2.43	1.6 J	2.04	3.88 J
4,4'-DDT	2900	MTCA B	2.2 U	2.4 U	ND	2.26 U
Dieldrin	62.5	MTCA B	1.8 J	2.4 U	2.06	3.01
Beta-Hexachlorocyclohexane	560	MTCA B	2.2 U	2.4 U	ND	1.13 U
Lindane	10	MTCA A	2.2 U	2.4 U	ND	1.13 U

Table F-2
Puyallup Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

		Sample	Topsoil 3 WRQ	Topsoil 4 WRQ	Topsoil 3/4 WRQ	Topsoil 5 WRQ
		Sample ID	Topsoil 3	Topsoil 4	--	Top Soil 5
		Type	Premixed sample	Premixed sample	Premixed sample average	Premixed sample
		Date Collected	07/06/2016	07/06/2016	--	08/05/2016
Dioxins (ng/kg)						
Dioxin TEQ (U=1/2)	5	Project	1.06	1.14	1.10	2.21 J
PCBs (ug/kg)						
Aroclor 1016	5600	MTCA B	1.54 U	1.62 U	ND	1.5 U
Aroclor 1221	--	--	1.54 U	1.62 U	ND	0.756 U
Aroclor 1232	--	--	1.62 U	1.62 U	ND	3.5 U
Aroclor 1242	--	--	1.54 U	1.62 U	ND	1.69 U
Aroclor 1248	--	--	1.54 U	1.62 U	ND	2.37 U
Aroclor 1254	500	MTCA B	1.54 U	1.62 U	ND	2.71 U
Aroclor 1260	--	--	1.54 U	1.62 U	ND	1.5 U
Total PCB Aroclors	5-50	Project	1.62 U	1.62 U	ND	3.5 U
PAHs (ug/kg)						
1-Methylnaphthalene	34000	MTCA B	23.8 U	25.2 U	ND	45.4 U
2-Methylnaphthalene	320000	MTCA B	23.8 U	25.2 U	ND	45.4 U
Acenaphthene	4800000	MTCA B	8.41 J	9.29 J	8.85	24.1 J
Acenaphthylene	--	--	11.9 U	12.6 U	ND	22.6 U
Anthracene	24000000	MTCA B	11.9 U	6.92 J	9.41	22.6 U
Benzo(a)anthracene	1400	MTCA B	8.48 J	8.69 J	8.59	45.4 U
Benzo(a)pyrene	100	MTCA A	11.1 J	13 J	12.05	34 U
Benzo(b)fluoranthene	1400	MTCA B	14.5 J	18 J	16.25	34 U
Benzo(ghi)perylene	--	--	11.9 U	12.6 U	ND	22.6 U
Benzo(k)fluoranthene	14000	MTCA B	17.9 U	18.9 U	ND	34 U
Chrysene	140000	MTCA B	9.53 J	12.7	11.12	45.4 U
Dibenzo(a,h)anthracene	140	MTCA B	11.9 U	12.6 U	ND	22.6 U
Fluoranthene	3200000	MTCA B	34.1	35.7	34.90	69
Fluorene	3200000	MTCA B	7.68 J	9.27 J	8.48	27.8 J

Table F-2
Puyallup Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

		Sample	Topsoil 3 WRQ	Topsoil 4 WRQ	Topsoil 3/4 WRQ	Topsoil 5 WRQ
		Sample ID	Topsoil 3	Topsoil 4	--	Top Soil 5
		Type	Premixed sample	Premixed sample	Premixed sample average	Premixed sample
		Date Collected	07/06/2016	07/06/2016	--	08/05/2016
Indeno(1,2,3-cd)pyrene	1400	MTCA B	11.9 U	12.6 U	ND	22.6 U
Naphthalene	5000	MTCA A	23.8 U	25.2 U	ND	45.4 U
Phenanthrene	--	--	41.1	45.3	43.20	129
Pyrene	2400	MTCA B	27.7	27.3	27.50	52.1
SVOCs (ug/kg)						
4-Methylphenol	--	--	32.2 C	116 C	74.10	229 C
Benzoic acid	320000000	MTCA B	1490 U	1580 U	ND	4330 J
Bis(2-ethylhexyl)phthalate	71000	MTCA B	69.3 J	189 U	129.15	340 U
Carbazole	--		17.9 U	18.9 U	ND	34 U
Dibenzofuran	80000	MTCA B	11.9 U	7.19 J	9.55	22.6 U
Di-n-butylphthalate	8000000	MTCA B	119 U	126 U	ND	226 U
Di-n-octyl phthalate	800000	MTCA B	119 U	126 U	ND	226 U
Pentachlorophenol	2500	MTCA B	119 U	126 U	ND	226 U
Phenol	24000000	MTCA B	15.3 J	35.7	25.50	369
NWTPH-Dx (mg/kg)						
Diesel	2000	MTCA A	11.3 U	11.3 U	ND	13.9 U
Residual Range	2000	MTCA A	163 J	146 J	154.50	27.8 U

Table F-2
Puyallup Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

NOTES:
-- = not applicable.
C = coeluted result.
CY = cubic yards.
J = estimated concentration.
mg/kg = milligrams per kilogram.
MTCA = Model Toxics Control Act.
ND = non-detect.
ng/kg = nanograms per kilogram.
PAH = polycyclic aromatic hydrocarbon.
PCB = polychlorinated biphenyl.
PWT = Pacific Wood Treating Co.
SVOC = semivolatile organic compound.
TEQ = toxicity equivalent.
U = not detected at or above method detection limit.
ug/kg = micrograms per kilogram.
WRQ = Washington Rock Quarries.

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Table F-3
Vancouver Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

		Sample	Sandy Loam 1 ECM	Sandy Loam 2 ECM	Compost 1 H&H	Compost 2 H&H	Topsoil 1/2 ECM-H&H	Topsoil 3 ECM-H&H	Topsoil 1 ECM-MCF	Topsoil 4 ECM-H&H	Topsoil 5 ECM-H&H	Topsoil 6 ECM-H&H
		Sample ID	7/15 Sandy Loam-1	7/15 Sandy Loam-2	7/13 Compost-1	7/13 Compost-2	--	8.13.16-H&H BLEND-1	8.3.16-MCF-BLEND-1	8.10.16-Top Soil 1	8.17.16-Topsoil-1	8.17.16-Topsoil-3
		Type	Sandy loam sample	Sandy loam sample	Compost sample	Compost sample	Mixed sample calculation[a]	Premixed sample	Premixed sample	Premixed sample	Premixed sample	Premixed sample
		Date Collected	07/15/2016	07/15/2016	07/13/2016	07/13/2016	--	08/03/2016	08/03/2016	08/10/2016	08/17/2016	08/17/2016
		Clean Fill Decision	--	--	--	--	Approved	Approved	Rejected	Approved	Approved	Approved
		Import Designation (CY)	--	--	--	--	0-1000	1000-2000	--	2000-3000	3000-4000	4000-5000
Analyte	Clean Fill Criteria	Criteria Basis										
Total Metals (mg/kg)												
Arsenic	5.81	Background	2.66	2.0	5.45	5.6	2.8	2.36	2.58	2.28	2.72	2.46
Cadmium	2	MTCA A	0.229	0.22	0.399	0.51	0.3	0.204	0.259	0.310	0.294	0.267
Chromium	26.57	Background	16.5	18.1	10.6	14.5	16.6	12.6	14.9	12.3	13	12.4
Copper	3200	MTCA B	17.3	23.1	34.6	46.3	23.2	20.3	22.8	23.5	23.4	25.9
Lead	250	MTCA A	10.3	13.80	18.5	22.60	13.3	12.8	19.2	11.4	9.66	10.5
Mercury	2	MTCA A	0.0458 U	0.05 U	0.0759 U	0.07 U	ND	0.051 U	0.0494 U	0.0539 U	0.0535 U	0.0534 U
Nickel	1600	MTCA B	12.5	13.9	7.5	10.0	12.5	10.4	11.6	10.5	11.7	10.5
Selenium	400	MTCA B	0.596	1.1	0.949 U	0.9 U	0.9	1.28 U	1.23 U	0.673 U	1.47 J	1.42 J
Silver	400	MTCA B	0.115 U	0.13 U	0.19 U	0.19 U	ND	0.128 U	0.123 U	0.135 U	0.134 U	0.134 U
Zinc	24000	MTCA B	70.1	70.9	165	283.0	93.5	68.1	75.1	78.7	74.9	80.3

Table F-3
Vancouver Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

NOTES:
Bold values indicate clean fill criteria exceedances.
-- = not applicable.
C = coeluted result.
CY = cubic yards.
ECM = East County Materials.
H&H = H&H Wood Recyclers.
J = estimated concentration.
MCF = McFarlane's Bark.
mg/kg = milligrams per kilogram.
MTCA = Model Toxics Control Act.
ND = non-detect.
PAH = polycyclic aromatic hydrocarbon.
PCB = polychlorinated biphenyl.
ng/kg = nanograms per kilogram.
PWT = Pacific Wood Treating Co.
SVOC = semivolatile organic compound.
TEQ = toxicity equivalent.
U = not detected at or above method detection limit.
ug/kg = micrograms per kilogram.
[a]Value was calculated assuming 85 percent sandy loam and 15 percent compost ratio. The average value of the two sandy loam and the two compost samples was calculated before calculation of the mixed ratio. Non-detect values were treated as equal to the reporting limit.

Table F-4
2017 Approved Clean Fill Summary
Former PWT Site
Ridgefield, Washington

Sample	SS-052417-30	SS-071417-30
Source	ECM-H&H	ECM-H&H
Type	Topsoil Blend 2	Topsoil Blend 2
Import Designation (CY)	0–1000	1000-2000
Decision	Approved	Approved

NOTES:

CY = cubic yard(s).

ECM-H&H = East County Materials-H&H Wood Recyclers.

PWT = Pacific Wood Treating Co.

Table F-5
2017 Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

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Sample Name	Clean Fill Criteria	Criteria Basis	SS-052417-50	SS-052417-30	SS-060117 Swanson	SS-071417-30	SS-071417-Swanson
Type			Topsoil Blend 1	Topsoil Blend 2	Topsoil Blend 3	Topsoil Blend 2	Topsoil Blend 3
Date Collected			5/25/2017	5/25/2017	6/1/2017	7/14/2017	7/14/2017
Import Designation (CY)			0–1000	0–1000	0–1000	1000-2000	1000-2000
Decision			Rejected	Approved	Approved	Approved	Approved
Total Metals (mg/kg)							
Arsenic	5.81	Background	2.65	2.75	2.41	2.79	1.93
Cadmium	2	MTCA A	0.323	0.307	0.181 J	0.314	0.19 J
Chromium	26.57	Background	12.4	13.1	12.7	11.8	8.13
Copper	3200	MTCA B	18.2	18.6	31.3	57.8	39.7
Lead	250	MTCA A	10.9	10.6	8.51	9.08	13.5
Mercury	2	MTCA A	0.0539 U	0.0559 U	0.0482 U	0.0502 U	0.0585 U
Nickel	1600	MTCA B	12.4	11.4	13.6	11.4	7.18
Selenium	400	MTCA B	0.673 U	0.699 U	0.603 U	0.628 U	0.731 U
Silver	400	MTCA B	0.135 U	0.14 U	0.121 U	0.126 U	0.146 U
Zinc	24000	MTCA B	73.4	69.8	46.7	78.8	64.8
Organochlorine Pesticides (ug/kg)							
beta-Hexachlorocyclohexane	560	MTCA B	2.12 U	2.80 U	1.06 U	2.5 U	11.3 U
Lindane	10	MTCA A	1.06 U	1.22 U	1.06 U	1.25 U	6.65 U
4,4'-DDD	4200	MTCA B	2.12 U	2.43 U	2.12 U	2.5 U	5.88 U
4,4'-DDE	2900	MTCA B	10.30	3.23	2.19	2.74 U	5.88 U
4,4'-DDT	2900	MTCA B	5.98	2.43 U	2.44 U	2.62 U	7.42 U
Dieldrin	62.5	MTCA B	2.22	2.97	1.06 U	2.5 U	5.11 U
Dioxins (pg/g)							
Dioxin TEQ (ND = 0.5)	5	Project	**7.44 J**	4.25 J	4.05 J	4.02 J	2.83 J
PCBs (ug/kg)							
Aroclor 1016	5600	MTCA B	5.97 U	6.67 U	5.83 U	6.08 U	12.9 U
Aroclor 1221	--	--	5.97 U	6.67 U	5.83 U	6.08 U	6.47 U
Aroclor 1232	--	--	5.97 U	6.67 U	11.7 U	12.2 U	12.9 U
Aroclor 1242	--	--	5.97 U	6.67 U	5.83 U	6.08 U	12.9 U
Aroclor 1248	--	--	5.97 U	6.67 U	5.83 U	6.08 U	12.9 U

Table F-5
2017 Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

Sample Name	Clean Fill Criteria	Criteria Basis	SS-052417-50	SS-052417-30	SS-060117 Swanson	SS-071417-30	SS-071417-Swanson
Type			Topsoil Blend 1	Topsoil Blend 2	Topsoil Blend 3	Topsoil Blend 2	Topsoil Blend 3
Date Collected			5/25/2017	5/25/2017	6/1/2017	7/14/2017	7/14/2017
Import Designation (CY)			0–1000	0–1000	0–1000	1000-2000	1000-2000
Decision			Rejected	Approved	Approved	Approved	Approved
Aroclor 1254	500	MTCA B	5.97 U	6.67 U	9.13 J	6.08 U	6.47 U
Aroclor 1260	--	--	5.97 U	6.67 U	5.83 U	6.08 U	6.47 U
Total PCB Aroclors	5-50	Project	5.97 U	6.67 U	9.13 J	12.2 U	12.9 U
SVOCs (ug/kg)							
1-Methylnaphthalene	34000	MTCA B	32.6 U	35.8 U	63.4 U	134 U	140 U
2-Methylnaphthalene	320000	MTCA B	32.6 U	35.8 U	63.4 U	134 U	140 U
Acenaphthene	4800000	MTCA B	16.2 U	17.8 U	31.6 U	66.9 U	69.6 U
Acenaphthylene	--	--	16.2 U	17.8 U	31.6 U	66.9 U	69.6 U
Anthracene	24000000	MTCA B	16.2 U	17.8 U	31.6 U	66.9 U	69.6 U
Benz(a)anthracene	1400	MTCA B	17.8 J	17.8 U	36.7 J	66.9 U	77.1 J
Benzo(a)pyrene	100	MTCA A	34.1 J	27.3 J	48.8 J	101 U	105 U
Benzo(b)fluoranthene	1400	MTCA B	46.8 J	35.7 J	58.4 J	103 J	105 U
Benzo(k)fluoranthene	14000	MTCA B	24.4 U	26.8 U	47.5 U	101 U	105 U
Benzo(g,h,i)perylene	--	--	18.2 J	17.8 U	31.6 U	66.9 U	69.6 U
Chrysene	140000	MTCA B	27.8 J	17.8 U	35.4 J	66.9 U	69.6 J
Dibenz(a,h)anthracene	140	MTCA B	16.2 U	17.8 U	31.6 U	66.9 U	69.6 U
Fluoranthene	3200000	MTCA B	54.9	24.3 J	123	103 J	221 J
Fluorene	3200000	MTCA B	16.2 U	17.8 U	37.4 J	66.9 U	69.6 U
Indeno(1,2,3-cd)pyrene	1400	MTCA B	16.2 U	17.8 U	31.6 U	66.9 U	69.6 U
Naphthalene	5000	MTCA A	32.6 U	35.8 U	63.4 U	134 U	140 U
Phenanthrene	--	--	43.3	18.4 J	146	73.3 J	82 J
Pyrene	2400	MTCA B	47	20.9 J	96.1	80.2 J	157 J
SVOCs (ug/kg)							
3+4-Methylphenol	--	--	40.6 U	80.4 J	79.1 U	168 U	174 U
Benzoic acid	320000000	MTCA B	2040 U	2240 U	3960 U	8400 U	8740 U
Bis(2-ethylhexyl)phthalate	71000	MTCA B	244 U	268 U	475 U	1010 U	1050 U

Table F-5
2017 Clean Fill Analytical Results
Former PWT Site
Ridgefield, Washington

MAUL FOSTER ALONGI

Sample Name	Clean Fill Criteria	Criteria Basis	SS-052417-50	SS-052417-30	SS-060117 Swanson	SS-071417-30	SS-071417-Swanson
Type			Topsoil Blend 1	Topsoil Blend 2	Topsoil Blend 3	Topsoil Blend 2	Topsoil Blend 3
Date Collected			5/25/2017	5/25/2017	6/1/2017	7/14/2017	7/14/2017
Import Designation (CY)			0–1000	0–1000	0–1000	1000-2000	1000-2000
Decision			Rejected	Approved	Approved	Approved	Approved
Carbazole	--	--	24.4 U	26.8 U	47.5 U	101 U	105 U
Dibenzofuran	80000	MTCA B	16.2 U	17.8 U	31.6 U	66.9 U	69.6 U
Di-n-butylphthalate	8000000	MTCA B	162 U	178 U	316 U	669 U	696 U
Di-n-octyl phthalate	800000	MTCA B	162 U	178 U	316 U	669 U	696 U
Pentachlorophenol	2500	MTCA B	164 J	178 U	316 U	669 U	696 U
Phenol	24000000	MTCA B	44.8 J	35.8 U	63.4 U	134 U	140 U
NWTPH-Dx (mg/kg)							
Diesel	2000	MTCA A	15 U	16.3 U	14.6 U	12.3 U	12.9 U
Residual Range	2000	MTCA A	115	92.9	104	73.4	229

NOTES:

Bold values indicate clean fill criteria exceedance. Non-detect results not evaluated against criteria.

-- = no value.

CY = cubic yards.

J = estimated concentration.

mg/kg = milligrams per kilogram.

MTCA = Model Toxics Control Act.

ND = non-detect.

PAH = polycyclic aromatic hydrocarbon.

PCB = polychlorinated biphenyl.

pg/g = picograms per gram.

PWT = Pacific Wood Treating Co.

SVOC = semivolatile organic compound.

TEQ = toxicity equivalent.

TPH = total petroleum hydrocarbon.

U = not detected at or above method detection limit or estimated detection limit.

ug/kg = micrograms per kilogram.

APPENDIX G

ARCHAEOLOGICAL MONITORING AND INADVERTENT DISCOVERY PLAN

Date: **March 23, 2017**

To: **Phil Wiescher, Maul Foster and Alongi, Inc.**

From: **Daniel Gilmour, Breanne Taylor, David V. Ellis**
Archaeologists, WillametteCRA

Subject: **Addendum to Cultural Resources Survey for the Port of Ridgefield's Ridgefield Upland Cleanup Project, Clark County, Washington**

Introduction

The Port of Ridgefield (Port) previously proposed the Ridgefield Upland Cleanup Project (project) to remediate contamination from the Lake River Industrial Site (LRIS) in public rights-of-way (ROW) and on residential properties in the city of Ridgefield, Clark County, Washington. The remediation in residential neighborhoods is due to airborne deposition of dioxin from operation of the Pacific Wood Treating Company from 1964 to 1993. The contaminated area is situated in Donation Land Claims (DLC) 38 and 48, of Township 4 North, Range 1 West, Willamette Meridian (Figure 1). The Port contracted with Maul Foster & Alongi, Inc. (MFA), to conduct the remediation program. The project requires a permit under the State of Washington's State Environmental Policy Act (SEPA). SEPA requires a project proponent to consider potential impacts to archaeological, historic, and cultural resources. To address the provisions of SEPA, MFA contracted with WillametteCRA to conduct an archaeological survey of the project area on behalf of the Port. WillametteCRA conducted a shovel probe survey of 17 privately owned residential lots in the project area in 2016 and identified no archaeological resources within those properties (Gilmour et al. 2016).

During WillametteCRA's 2016 fieldwork, permission to conduct fieldwork on Lot 032 had not been granted by the property owner. The owner has recently granted right of entry. This addendum reports the results of WillametteCRA's archaeological survey of that property (Lot 032) conducted on March 14, 2017 (Figure 2). While there are no previously known archaeological resources on the property, information from the Cowlitz Indian Tribe revealed that the former landowners of Lot 032 had recovered a mortar and pestle from their property (Figure 3). Despite these reported finds of cultural material, WillametteCRA's shovel probing of several of the nearby lots proved sterile of cultural material (Gilmour et al. 2016).

The general project area overlooks the Columbia River floodplain. The landform is a ridge between the deeply incised Gee Creek drainage to the east and the Columbia lowlands to the west. Project lands include three relatively distinct landform elements. The first is the relatively level, higher elevation terrace tread between about 50 and 75 ft. above mean sea level (amsl), on which Lot 032 is located. The second is the moderate slope below the terrace, between 30 and 50 ft. amsl, while the third is the footslopes and back of the Columbia River floodplain below ca. 30 ft. in elevation. The break between the terrace tread and slope is not well defined. In some places, grading for house construction has obscured this topographic break. The lower break between the footslopes and Columbia River floodplain is likewise poorly defined and irregular, but roughly marked by the approximate location of the north-south running Burlington Northern Railroad tracks.

Background information regarding previous archaeological work, native peoples, and historic period land use is available in WillametteCRA's previous report (Gilmour et al. 2016). Historic research indicates that Lot 032 would have been part of the 319-acre DLC (No. 38) of Arthur and Jane Quigley (BLM 2017; GLO 1863a, 1863b). The Quigleys arrived to Ridgefield in 1852. The earliest development within the Lot 032 parcel would have been a dwelling, roughly in the same location as the current house (Figure 4). This building is present on Sanborn Fire Insurance maps beginning in 1920 (Sanborn Map and Publishing Company 1920, 1920-1930).

Field Survey

Contaminant of Concern, PPE, and Decontamination Procedures

Ground-disturbing activities associated with archaeological excavations could potentially expose workers to a hazardous substance, particularly dioxin (Tetrachlorodibenzo-p-dioxin or TCDD). The primary routes of entry for the contaminant of concern while working included inhalation, skin absorption, ingestion, skin and/or eye contact. To minimize these exposure pathways personal protective equipment (PPE) was worn at all times when there was the potential for contact with contaminated soils. Both members of our field crew (Danny Gilmour and Breanne Taylor) have received the 40-hour HAZWOPER training and are current in their certification.

Shovel Probe Methods

WillametteCRA excavated five subsurface shovel probes within Lot 032 (Table 1). The field crew placed two shovel probes in the front yard and three probes in the backyard of the parcel (see Figure 2, Figures 5 and 6). The field director selected locations for probing with the goal of covering the area with shovel probes placed at approximately 10-m intervals. Shovel probes measured at least 40 cm in diameter. We excavated round probes with straight walls (cylindrical rather than conical), in 10-cm arbitrary levels within natural strata. The field crew excavated all probes to a depth of 50 cm below surface (cmbs) as the planned depth of disturbance in Lot 032 will be 1 foot (~30 cm).

Table 1. Summary of Shovel Probe Results

Shovel Probe No.	Excavation Depth (cmbs)	Recovery	Comment
1	50	Sterile	Modern debris including wire nails and plastic throughout.
2	50	Sterile	Brick fragments throughout, coarse brick stain at 50 cmbs.
3	50	Sterile	Modern debris including metal, wire nails, plastic and paper fragments throughout.
4	50	Sterile	None.
5	50	Sterile	Modern debris throughout including wire nails, flat glass, and plastic fragments.

The field crew screened all excavated sediment through ¼-inch mesh. They documented all probes in the field and mapped each location using a tape and compass. The data collected for each shovel probe included the maximum depth of the probe, soil stratigraphy, depth of stratigraphic changes, sediment descriptions, extent of disturbance, depth to impenetrable layer, and presence/absence of cultural material. The field crew backfilled shovel probes and restored the surface to its original state as much as practicable. All PPE was inspected prior to donning. Doffing procedures included washing, rinsing, or dry brushing excess mud or dirt from outer boots and clothing; removing coveralls, boot covers, and nitrile gloves; placing disposable and reusable PPE in designated separate containers; washing face and hands thoroughly prior to eating, drinking, or smoking; and ultimately disposing of PPE in a sanitary landfill.

Decontamination procedures were required for reusable field equipment that was not discarded following use. Field equipment such as shovels and screens were decontaminated shaking or dry brushing excess mud or dirt from equipment; cleaning equipment using paper towels and a deionized water→alconox soap→deionized water rinse procedure; placing electronics such as cell phones and cameras in plastic bags; completing field forms on-site, photographing, and then placing forms in a separate container to be disposed; and ultimately disposing cleaning supplies (e.g., paper towels), plastic bags, and field forms in a sanitary landfill.

Results and Recommendations

WillametteCRA conducted an archaeological survey of Lot 032 on March 14, 2017, for the Ridgefield Upland Cleanup Project. Most of Lot 032 is developed; there was little space available for shovel probing (see aerial photo – Figure 2). The house, concrete slabs, a garage, and multiple outbuildings are present on the property. Despite this, WillametteCRA endeavored to excavate more, rather than fewer, shovel probes given reports of archaeological materials having been previously collected on the property. While the lot measures roughly 0.1 acre in size, only approximately 10 percent of that was undeveloped and available for shovel probing.

Prior to excavating shovel probes, archaeologists executed a systematic survey of the property. No artifacts or features were observed on the ground surface. Thereafter, we excavated a total of five shovel probes to a depth of 50 cmbs. Archaeologists identified no archaeological resources during the excavations; all shovel probes were sterile. The field crew found much of the project area to be heavily disturbed. All of the shovel probes contained fragments of modern materials such as plastic, wire nails, and paper fragments. Many of the probes showed evidence of disturbance throughout the entire profile of the shovel probe.

In conclusion, WillametteCRA has now conducted two archaeological surveys within the project area. We have not identified any archaeological resources. In addition, there are no previously recorded archaeological resources within the project area. However, the former landowners of Lot 032 reported having recovered a bedrock mortar and pestle from their property. In this iteration of fieldwork, WillametteCRA intensively shovel probed Lot 032 and found no evidence of archaeological materials. In addition, shovel probes placed in several of the nearby lots during the previous survey for this project also proved sterile of cultural material. It is our professional opinion that the proposed project is unlikely to affect any archaeological resources. At this time, we recommend no future work. WillametteCRA has prepared an inadvertent discovery plan for the construction phase of the project. It includes monitoring protocols and procedures for the unanticipated discoveries of archaeological or historical resources (Willamette Cultural Resources Associates, Ltd. 2016).

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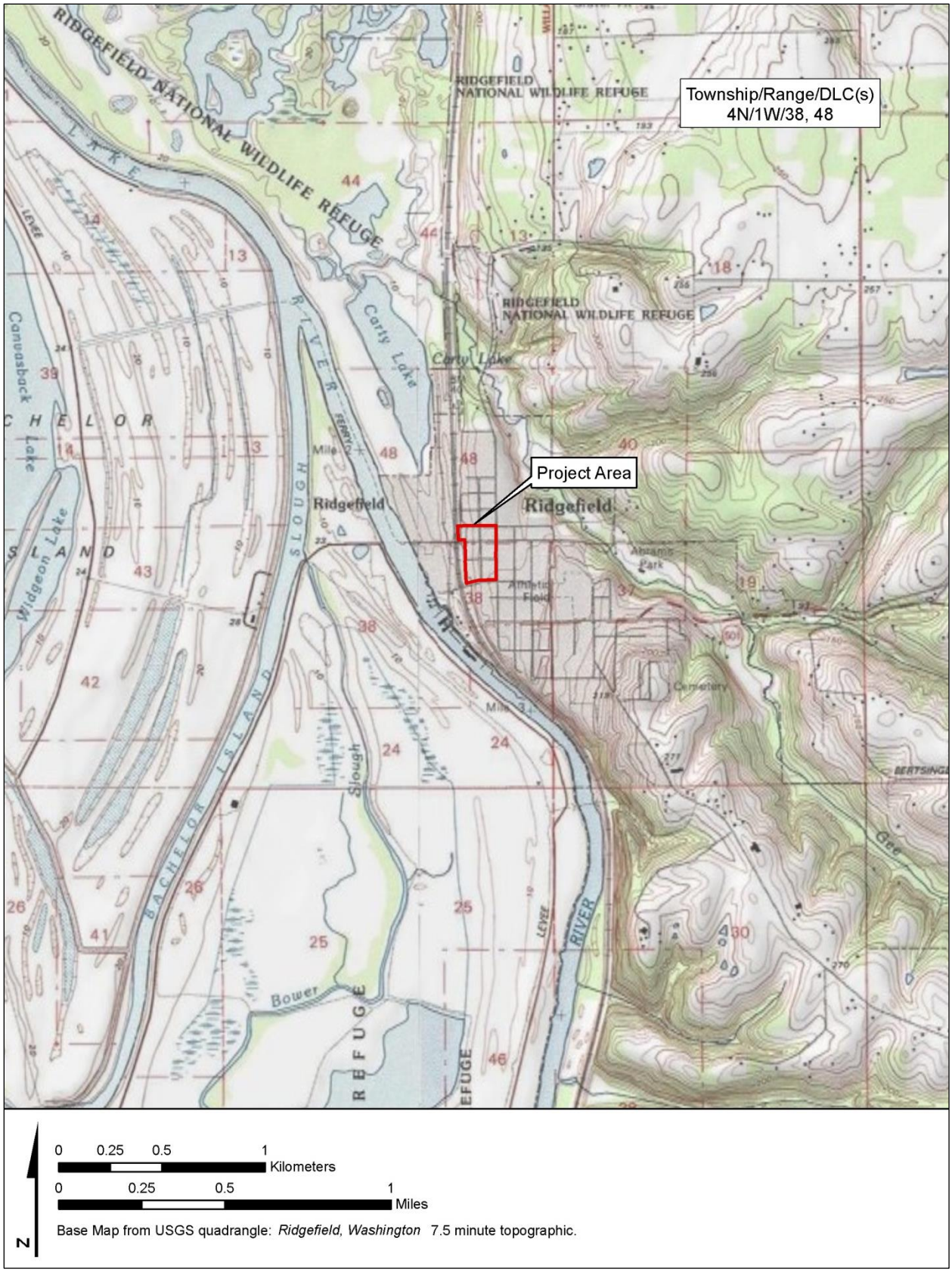

Figure 1. Project location map.

Figure 2. Location of Lot 032 with shovel probes depicted.

Figure 3. Mortar and pestle identified at Lot 032 by previous landowners (photograph courtesy of the Cowlitz Indian Tribe).

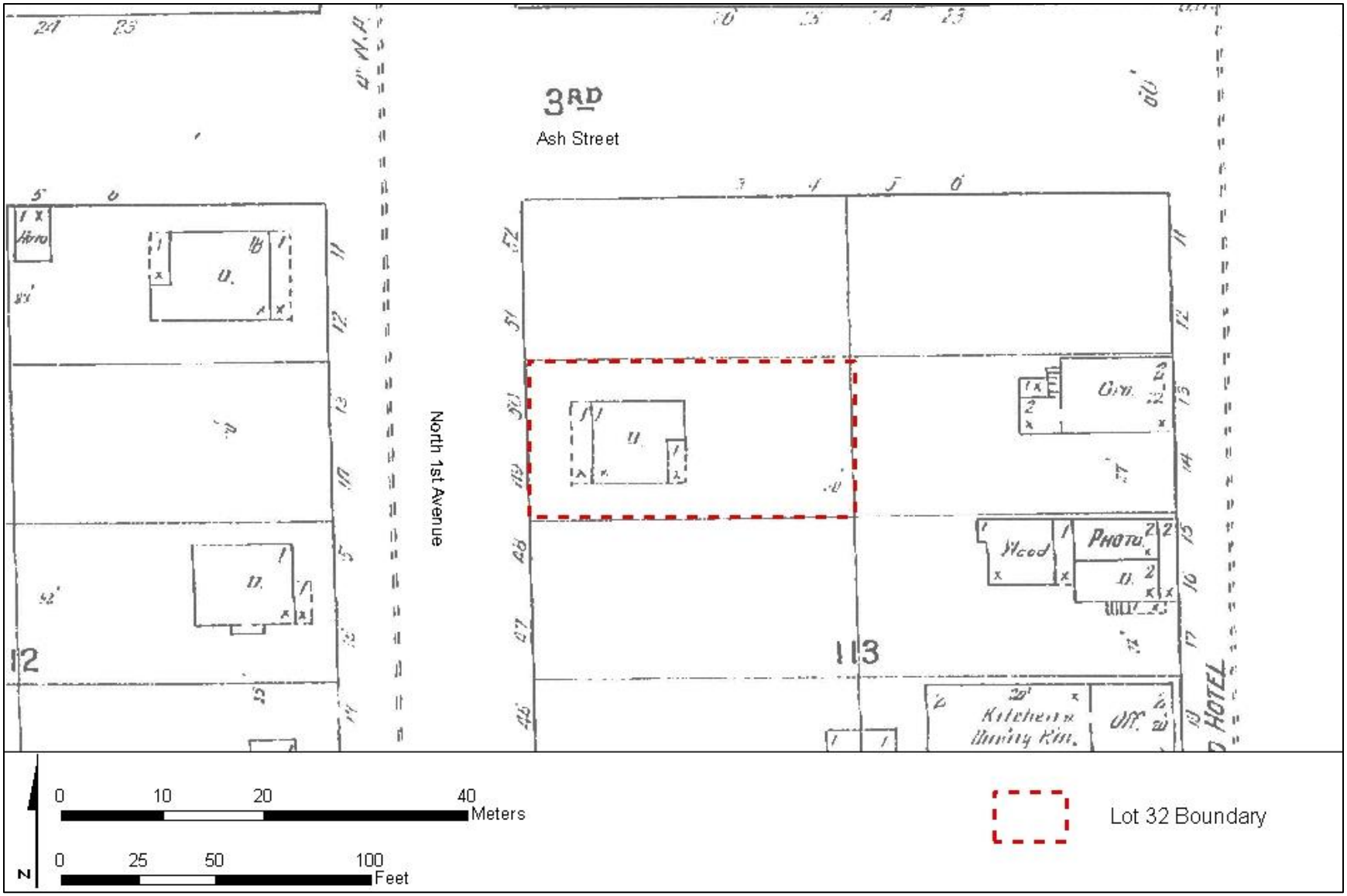

Figure 4. Lot 032 depicted on 1920 Sanborn map.

Figure 5. Overview of Lot 032, with crew at location of SP-1, facing northeast.

Figure 6. Overview of Lot 032 residence/backyard, facing west.

Archaeological Monitoring and Inadvertent Discovery Plan for the Ridgefield Upland Cleanup Project
Clark County, Washington

FINAL

April 2016

Prepared by:
Willamette Cultural Resources Associates, Ltd.
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1. Introduction

The Port of Ridgefield (Port) previously completed the Lake River Industrial Site (LRIS) Remediation Project to clean up hazardous substances deposited by a former wood treatment facility (Goodwin and Paraso 2014). The Port has now proposed the Ridgefield Upland Cleanup Project (project) to remediate contamination in public rights-of-way (ROW) and on residential properties in the city of Ridgefield, Clark County, Washington. The area is known as the former Pacific Wood Treating (PWT) site off property portion and is situated in Donation Land Claims 38 and 48, of Township 4 North, Range 1 West, Willamette Meridian (Figure 1).

The Port contracted Maul Foster & Alongi, Inc. (MFA), to conduct the remediation program. The project requires a permit under the state of Washington's State Environmental Policy Act (SEPA). SEPA requires a project proponent to consider potential impacts to archaeological, historic, and cultural resources. To address the provisions of SEPA, MFA contracted WillametteCRA to conduct an archaeological survey of the project area on behalf of the Port. The Washington Department of Ecology (Ecology) is funding the project. The Washington Department of Archaeology and Historic Preservation (DAHP) has the lead responsibility for ensuring compliance with State laws that protect archaeological resources and Indian graves in Washington (RCW 25-48, 27.44, 27-53, and 68.60).

Forty-two residential lots were initially identified as locations of concern from contamination. MFA was granted access to conduct sampling at all but one of those lots and determined 27 lots exceeded the threshold of acceptable levels of dioxin in the soils. These lots are now scheduled for removal actions beginning the summer of 2016. The proposed cleanup action consists of the removal and replacement of 1-1.5 ft. (~35-46 cm) of contaminated soil from public ROWs (sidewalk strips) and 27 yards (Figure 2). On behalf of WillametteCRA, MFA obtained access to 17 parcels for archaeological investigations. The project area lies immediately north of the Ridgefield business center. The northern and southern boundaries are Maple Street and Mill Street, while Railroad Avenue and North Main Street form the western and eastern boundaries, respectively (see Figure 2). Each of the properties surveyed is privately owned and residential in nature. All areas where soil removal will occur are landscaped with grass or gardens.

In spring 2016, WillametteCRA conducted pedestrian survey and excavation of 49 shovel probes on 17 privately owned parcels (Figure 3). Archaeologists identified no cultural resources during the pedestrian survey and all shovel probes were negative for cultural material. The field crew found much of the project area to be heavily disturbed. Twenty-six of the shovel probes contained fragments of modern materials such as plastic, wire nails, and modern beer bottle fragments. Many of the probes showed evidence of disturbance throughout the entire profile of the shovel probe. In addition, much of the landscape on the western side of the project area seems to have been heavily

modified for the construction of houses. Houses constructed on the terrace riser have had their bases excavated into the hill slope. Based on our observations of differences in stratigraphy in adjoining lots, we assume that there has been substantial ground disturbance (both cutting and filling) along the hillslope and at its base near the railroad tracks.

1.1. Agency and Tribal Consultation and Coordination

Tribal consultation will be at the discretion of Ecology.

1.2. Previous Archaeology

The Ridgefield project area has a high probability for archaeological materials. The area is within the high probability zone as defined by the Department of Archaeology and Historic Preservation (DAHP) predictive model. In order to assess the project's potential to intersect unidentified archaeological materials, WillametteCRA staff reviewed records on file with the DAHP and at the WillametteCRA offices. The project area has not been previously surveyed for archaeological materials, although several surveys have occurred nearby. The nearest archaeological survey to the Ridgefield project area was for a proposed sewer line beneath Maple Street which lies adjacent to the northern boundary of the Ridgefield project area; no archaeological resources were identified during the survey and shovel probing (Smits 2008). No previously recorded archaeological sites are in the project area, but a relatively large number of precontact and historic sites are in the vicinity. One precontact and historic-era site that is directly applicable to the Ridgefield project is in close proximity (45-CL-981, discussed below).

Most nearby precontact sites are immediately west of the project area on the lowlands adjacent to the Columbia River. These sites range from large complex residential sites with house and processing features to small limited-task sites probably related to resource procurement or processing, consisting primarily of lithic artifacts or a narrow range of features. Sparse, widespread artifact scatters are also common. Generally, these lowland sites post-date about 3,000 years ago and most are much younger. These sites are also usually found adjacent to lowland waterways such as Lake River or Carty Lake.

In the uplands, relatively few precontact sites are known nearby. A precontact component was found at 45-CL-981 just south of the project area and is discussed in more detail below. Large, but sparse scatters of choppers and flakes have been found in the terraces adjacent to Gee Creek. At least two small precontact sites with possible cairns, and thin scatters of burned rock, choppers and flakes are recorded in small tributaries east of Gee Creek (Wilson 1997; Woodward 1994). None of these sites are well understood or dated; however, some date to at least 8,000 years ago.

Historic sites are relatively common on the lowlands, but on the uplands commercial and relatively urban residential materials were found at 45-CL-981 (see below). Other historic sites in the

uplands include materials related to early settlement (Daehnke 2010) dating to the later 1800s and early 1900s, as well as farming (Wilson 1997), mostly postdating 1900. Materials seem to be dumps or yard middens which commonly include scatters of glass, ceramic, and metal. Historic-era features such as trash pits or privies are not common.

1.2.1. 45-CL-981

Site 45-CL-981 is located about 200 m south of the project area at the intersection of Pioneer Street and South Main Avenue. This site is in many ways a direct corollary for the Ridgefield project: the site is in close proximity, it has a precontact and a historic component (with commercial and residential aspects), and importantly it occupies some of the same landform elements. Moreover, 45-CL-981 has likely experienced similar historic developments and impacts as the Ridgefield project area. Site 45-CL-981, however, is located along the southern edge of a small drainage dissecting the terrace tread, a landform element not found in the Ridgefield project area.

Site 45-CL-981 was identified during survey for the Overlook Park Ridgefield Welcome Center. Background research revealed the vacant parcel had a bank, warehouse, general store, and residence. These structures were probably built between 1912 and 1920 and demolished by 1930. Precontact artifacts and historic-era items were found on the surface and in four shovel probes during inventory survey for the park's redevelopment (Jenkins et al. 2012). Subsequent evaluative test excavation at the site included two adjoining backhoe trenches focused on one structure's footprint and limited hand excavation of three 50 cm by 50 cm units (total hand excavation is 0.75 m^2 or 0.03% of the site area). Testing revealed the precontact component was contained mostly within the ca. 30 cm thick plowzone, although a few items migrated deeper due to bioturbation. The lithic assemblage (consisting of debitage, a core, and two choppers) included fire-cracked rock (FCR), and trended towards expediency, with tools intensively used (Jenkins et al. 2012). No temporally diagnostic artifacts were found, but hand excavation was minimal. Burned and unburned bone was also found, but could not be definitively assigned to the precontact period. Overall, the precontact assemblage suggested a specialized site, possibly focused on processing plant materials.

Like the precontact component, testing showed nearly all historic materials were within the ca. 30 cm thick plowzone. No historic features were identified (although trenching did not appear geared towards historic feature identification). The historic assemblage consisted of brick and window glass, bottle and jar fragments, a variety of ceramics, wire and machine cut nails as well as undiagnostic metal (Jenkins et al. 2012). Materials dated to between the late 1800 and early 1900s, although modern artifacts were also found. Researchers recommended the precontact component as eligible for listing on the National Register of Historic Places (NRHP).

2. Proposed Cleanup Actions

2.1. Ridgefield

Forty-two residential lots were initially identified as locations of concern from contamination. MFA was granted access to conduct sampling at all but one of those lots and determined 27 lots exceeded the threshold of acceptable levels of dioxin in the soils. These lots are now scheduled for removal actions beginning the summer of 2016. The proposed cleanup actions include the removal and replacement of 1-1.5 ft. (~35-46 cm) of contaminated soil from public ROWs (sidewalk strips) and 27 yards (see Figure 2).

3. Archaeological Monitoring

Based on current information, the cleanup actions proposed at this time would not impact significant archaeological resources.

As described above, WillametteCRA conducted a survey of the current Ridgefield project area in spring 2016. Archaeologists identified no cultural resources during the pedestrian survey and all shovel probes were negative for cultural material (see Figure 3). The field crew found much of the project area to be heavily disturbed. Based on observations of differences in stratigraphy in adjoining lots, we assume that there has been substantial ground disturbance (both cutting and filling) along the hillslope and at its base near the railroad tracks.

It is WillametteCRA's professional opinion that the proposed project is unlikely to affect any archaeological resources. However, information from the Cowlitz Indian Tribe revealed that the former landowners of Lot 032 had recovered a mortar and pestle from their property (see Figure 2). Due to a recent change in ownership of Lot 032, it was not possible to be granted access to that property. However, shovel probes were placed in several of the nearby lots (024, 025, 035, and 036) and all proved sterile of cultural material.

As a result of the report of the mortar and pestle within the project area, WillametteCRA recommends either surveying Lot 032 prior to cleanup or monitoring Lot 032 during cleanup. Any monitoring of Lot 032 will be undertaken within the framework of procedures defined below.

Based on the absence of archaeological materials during survey and shovel probing, WillametteCRA recommends no monitoring for the remainder of the lots. In the event that archaeological materials are encountered during cleanup actions for the remainder of the lots (that is, when no monitor is present), the following procedures will be undertaken within the framework defined below.

The following procedures have been developed to address potential inadvertent discoveries of archaeological objects and sites and Indian and historic graves and human remains to ensure compliance with the relevant federal and Washington archaeological and cultural resource laws and regulations (36 CFR 800, especially 36 CFR 800.13; RCW 27.44, 27.53, and 68.60 and Washington Administrative Code [WAC] 25-48) for cleanup actions on non-federal lands.

3.1. Professional Archaeologist On-Site

The MFA will retain the services of a HAZWOPER certified, professional archaeologist as defined in RCW 27.53.030(8) and who also meets the Professional Qualifications Standards of the Secretary of the Interior's Standards and Guidelines in Archaeology and Historic Preservation. If necessary, the archaeologist will provide on-site monitoring during all activity associated with cleanup actions that would involve potential disturbance of native soils on Lot 032.

3.2. PPE and Decontamination of Artifacts

Ground-disturbing activities associated with cleanup actions could potentially expose workers to a hazardous substance, particularly dioxin (Tetrachlorodibenzo-p-dioxin or TCDD), resulting from the former wood treatment facility. The primary routes of entry for the contaminant of concern while working include dust inhalation, skin absorption, ingestion, skin and/or eye contact. However, the archaeological monitor's direct contact with the soil will be limited. To minimize these exposure pathways the appropriate personal protective equipment (PPE) will be worn at all times when there is the potential for contact with contaminated soils. Personal Protective Equipment worn during archaeological monitoring will consist of the following: long pants or coveralls and a long sleeved shirt; steel-toe, leather, or rubber work boots; and chemical resistant nitrile gloves. The archaeological monitor will also wear a high visibility vest, hardhat, safety glasses, and ear protection (if necessary). Decontamination will be required for all artifacts that will be collected and removed off-site.

3.3. Ridgefield Cleanup

3.3.1. Monitoring of Lot 032

Monitoring of the excavation will employ the following procedures. The archaeological monitor would inspect excavated soils as they are deposited in trucks prior to transport to the disposal facility. Upon discovery of a suspected archaeological object or other evidence of an archaeological resource, the archaeological monitor—at his/her discretion—may temporarily halt the excavation activity. The objective of this halting is to allow the archaeologist to confirm and/or make a preliminary assessment of the discovery. Should the monitoring archaeologist determine that archaeological artifacts are present and that the artifact(s) are in fill or disturbed deposits and intact archaeological deposits are absent, he or she will document the discovery. Precontact artifacts or

possible precontact artifacts and historic artifacts encountered during excavation activity will be recovered and their locations or approximate locations documented in fieldnotes, maps, and photographs. Modern debris would be noted but not collected.

Should the monitoring archaeologist determine that a possible intact cultural resource has been encountered, he or she may direct the immediate cessation of all ground-disturbing activity in the vicinity of the discovery. The monitor will promptly notify the Port who will in turn notify DAHP. In coordination with DAHP, the monitoring archaeologist will work with the Port to determine when and where work can continue. The archaeologist may authorize the Port to proceed with excavations in a different project area while further examination and assessment is made of the discovery. The DAHP, in consultation with other appropriate agencies and Tribes will make the decision whether any finds are significant resources (Attachment A).

At the request of the monitoring archaeologist, the Port will assist in securing access to the location of the discovery and take appropriate measures to protect the location of the discovery from rain, stormwater, and other possible disturbances.

Should it be necessary to undertake systematic excavations to address the discovery, the Port archaeological consultant will apply as soon as possible for an emergency Archaeological Permit. Construction and other ground-disturbing activity in the discovery vicinity may not resume until authorized by the DAHP.

In the event that likely or confirmed human remains are encountered, the monitoring archaeologist will immediately notify the Port who will turn notify the State Physical Anthropologist at the Washington DAHP, Clark County Sheriff's Department, and Clark County Coroner to ensure compliance with RCW 27.44.040. All activity must cease that may cause further disturbance to those remains and the area of the find must be secured and protected from further disturbance and exposure to rain, wind, etc. The remains should not be touched, moved, or further disturbed. Any further ground-disturbing activity in the vicinity of the vicinity may not proceed without authorization from the DAHP.

3.3.2. Discovery During Cleanup of Remaining Lots

Upon discovery of evidence of human remains or intact archaeological deposits or features, all ground-disturbing activity within 5 meters (16 feet) of the find will be immediately halted. A professional archaeologist will be immediately notified of the discovery and will conduct an inspection of the discovery location as soon as possible to confirm and/or make a preliminary assessment of the discovery.

Should the inspecting archaeologist determine that archaeological artifacts are present and that the artifact(s) are in fill or disturbed deposits and intact archaeological deposits are absent, he or she will document the discovery through maps and photographs. Upon completion of the documentation, the examining archaeologist will authorize construction activity to resume.

Should the inspecting archaeologist determine that a possible significant archaeological resource has been encountered, he or she will immediately notify the Port and the Port will in turn notify DAHP. In coordination with DAHP, the inspecting archaeologist will work with the Port to determine when and where work can continue. The archaeologist may authorize the Port to proceed with excavations in a different project area while further examination and assessment is made of the discovery. The DAHP, in consultation with other appropriate agencies and Tribes will make the decision whether any finds are significant resources.

At the request of the examining archaeologist, the Port will assist in securing access to the location of the discovery and take appropriate measures to protect the location of the discovery from rain, stormwater, and other possible disturbances.

Should it be necessary to undertake systematic excavations to address the discovery, the Port archaeological consultant will apply as soon as possible for an emergency Archaeological Permit. Construction and other ground-disturbing activity in the discovery vicinity may not resume until authorized by the DAHP.

In the event that likely or confirmed human remains are encountered during cleanup actions, all ground-disturbing activity in the vicinity of the discovery should be halted immediately and efforts taken to protect such evidence in place. The Port will immediately notify the State Physical Anthropologist at the Washington DAHP, Clark County Sheriff's Department, and Clark County Coroner to ensure compliance with RCW 27.44.040. All activity must cease that may cause further disturbance to those remains and the area of the find must be secured and protected from further disturbance and exposure to rain, wind, etc. The remains should not be touched, moved, or further disturbed. Any further ground-disturbing activity in the vicinity of the remains may not proceed without authorization from the DAHP.

4. Confidentiality

The Port shall make its best efforts, in accordance with state law, to ensure that its personnel and contractors keep the discovery of any found or suspected human remains, other cultural items, and potential historic properties confidential. Contractors and agency personnel are prohibited from contacting the media or any third party or otherwise sharing information regarding the discovery with any member of the public, and to immediately notify the Port and direct any inquiry from the media or public. Prior to any release, the Port, the DAHP, and the Tribes shall concur on the

amount of information, if any, to be released to the public, any third party, and the media and the procedures for such a release, to the extent permitted by law.

5. References

Daehnke, Jon
2010 *Cultural Resources Inventory for the Carty Unit Footbridge and Associated Facilities - Ridgefield National Wildlife Refuge, Washington*. Department of Anthropology, Portland State University. Prepared for U.S. Fish and Wildlife Service.

Goodwin, Matt, and Kanani Paraso
2014 *Archaeological Monitoring of Carty Lake Sediment Remedy Project (NWS- 2013-1209) Ridgefield, Washington, Technical Memorandum*. WillametteCRA Report 12-35. Prepared for Maul Foster & Alongi, Inc.

Jenkins, Sarah L., John L. Fagan, Judith A. Chapman, and Jo Reese
2012 *Cultural Resource Survey and Archaeological Site Evaluation for the Overlook Park – Ridgefield Welcome Center*. Prepared by Archaeological Investigations Northwest. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Smits, Nicholas J.
2006 *Archaeological Survey for the Ridgefield T-7 Sewer Force Main Project*. Prepared by Archaeological Investigations Northwest. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Woodward, John A.
1994 *Archaeological Walk-Over Reconnaissance and Cultural Resource Survey of Heron Ridge, Ridgefield, Washington*. Prepared for J. Simpson McKibbin Company, Vancouver. Woodward and Associates, Portland, Oregon.

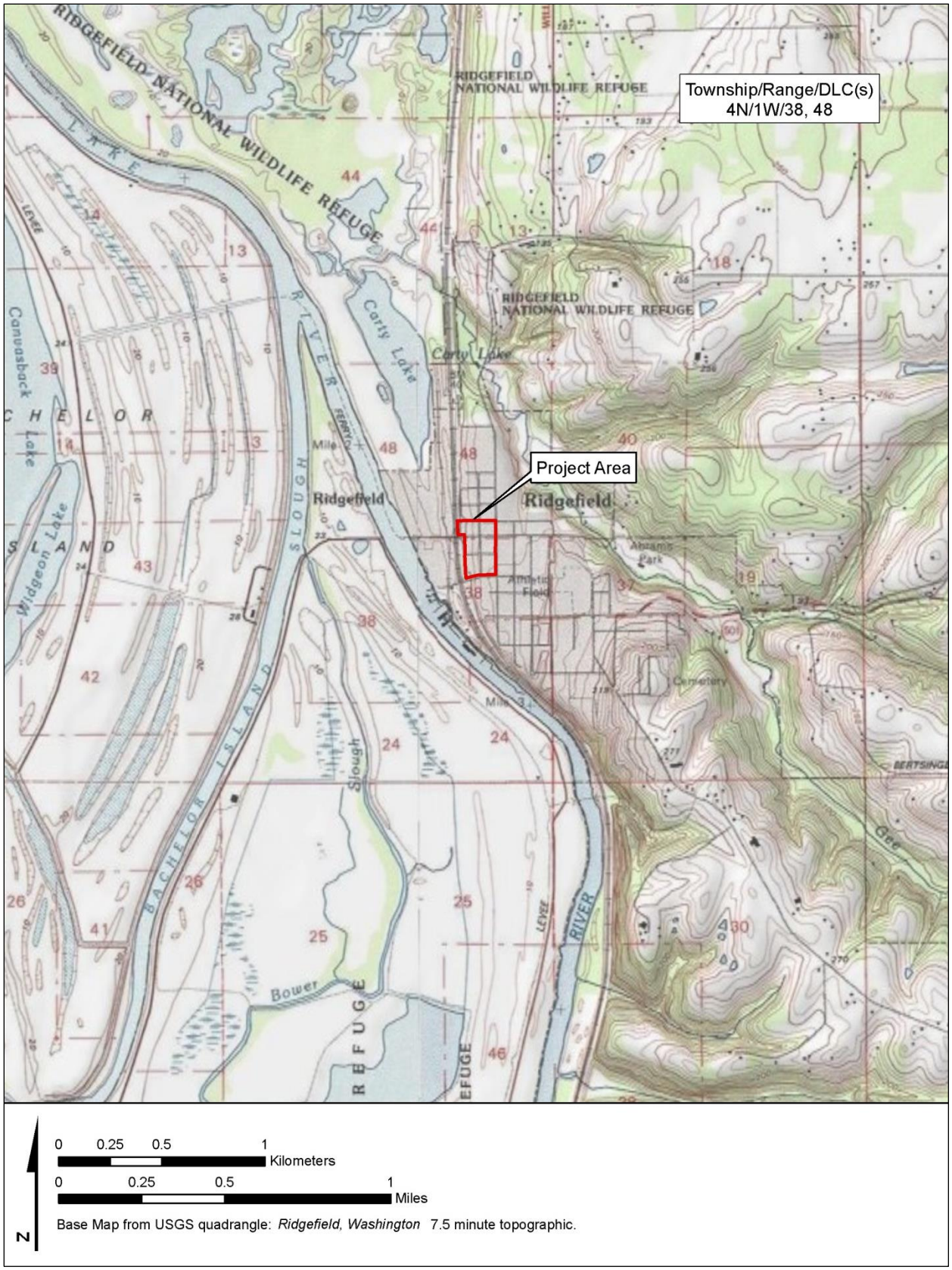


Figure 1. Project location.

Figure 2. Overview of current project area and proposed cleanup areas, depicting lots/parcel numbers.

Figure 3. Overview of current project area showing parcels surveyed and locations of shovel probes. Note: the only parcels that were surveyed are the ones where shovel probes occurred.

Attachment A

Contact Information for Inadvertent Discovery Plan

Name	Affiliation		Phone
Laurie Olin	Port of Ridgefield	Operations Director	360-887-3873
Phil Wiescher	MFA	Project Manager	503-501-5209
Craig Rankine	Washington Department of Ecology	Project Manager	360-690-4795
Rob Whitlam	DAHP	State Archaeologist	360-586-3080
Guy Tasa		State Physical Anthropologist	360-586-3534
Dennis J. Wickham, M.D.	Clark County	Clark County Medical Examiner	360-397-8405
		Clark County Sheriff's Department	360-397-2211
Kate Valdez	Yakama Nation	Tribal Historic Preservation Officer	509-985-7596
Johnson Meninick		Cultural Resources Program Manager	509-865-5121 x4737
Dave Burlingame	Cowlitz Tribe	Cultural Resources Director	360-577-6962
Nathan Reynolds		Ethnoecologist	360-577-8140
Jordan Mercier	Grand Ronde Tribe	Cultural Protection Coordinator	503 879-2185
Tony Johnson	Chinook Indian Nation	Tribal Council Chair	360 875-6670

APPENDIX H

PROPERTY REMEDIATION SUMMARIES

PROPERTY 001
REMEDIATION SUMMARY

Address:	512 North Railroad Avenue, Ridgefield, Washington 98642		
Construction Start Date:	10/20/2016	Yard Cleanup Close-Out Visit Date:	12/14/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Railroad Avenue and Maple Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near retaining wall between Properties 001 and 002, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Yes. Underground telephone line damaged near telephone pole in northeast corner of property, owner notified, and AEC repaired line.

Landscaping was modified in the field. Walkways, pavers, and landscape plants were installed in locations at the direction of the homeowner.

Before

After

PROPERTY 002
REMEDIATION SUMMARY

Address:	5 Maple Street, Ridgefield, Washington 98642		
Construction Start Date:	06/14/2017	Yard Cleanup Close-Out Visit Date:	08/17/2017

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Maple Street ROW.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near retaining wall between Properties 001 and 002, around utilities on property, and in root-protection zones.
Non-located utilities or structures:	Telephone line and irrigation system.

A small retaining wall near the front entry of the house was modified, some landscape plants were exchanged, and river rock around the garden beds was replaced with mulch, per the homeowner's request. Additional blocks were also installed on the west side of the front yard to mitigate erosion concerns.

The existing irrigation system was identified as having been installed by a previous homeowner without proper permitting from the City of Ridgefield. The irrigation system was removed and the water line to the former irrigation system was capped.

The remaining restoration was performed according to the design.

Before

After

PROPERTY 003
REMEDIATION SUMMARY

Address:	7 Maple Street, Ridgefield, Washington 98642		
Construction Start Date:	06/19/2017	Yard Cleanup Close-Out Visit Date:	08/18/2017

Remediation Overview

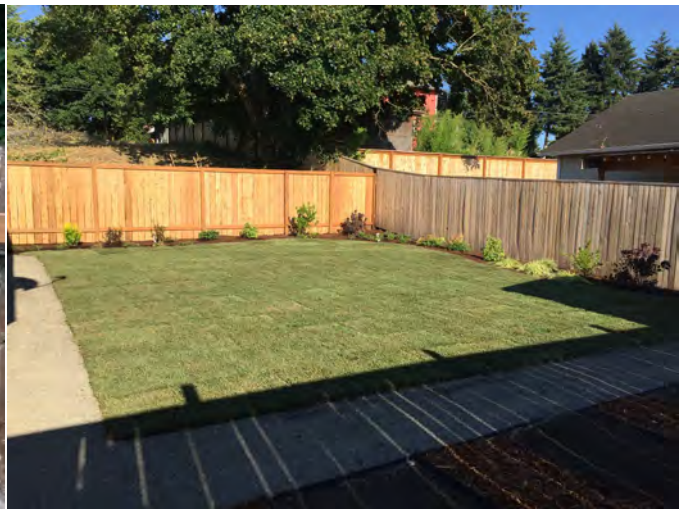
Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Maple Street ROW.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near retaining wall between Properties 002 and 003, around utilities on property.
Non-located utilities or structures:	No.

The existing irrigation system was identified as having been installed by a previous homeowner without proper permitting from the City of Ridgefield. The irrigation system was removed and the water line to the former irrigation system was capped.

A sidewalk and gutter were inadvertently damaged by AEC during excavation and restoration activities. AEC repaired both to the homeowner's satisfaction.

The restoration was performed according to the design.

Before



After

PROPERTY 004
REMEDIATION SUMMARY

Address:	Intersection of North 1st Avenue and Maple Street		
Construction Start Date:	08/15/2017	Yard Cleanup Close-Out Visit Date:	08/29/2017

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue and Maple Street ROWs.
Restricted-access areas:	Adjacent to sidewalk.
Non-located utilities or structures:	No.

Excavation was performed according to the design.

An orange construction fence was installed around the perimeter of the property once excavation was complete, per the homeowner's request.

Before

After

PROPERTY 005
REMEDIATION SUMMARY

Address:	4 West Division Street, Ridgefield, Washington 98642		
Construction Start Date:	07/20/2016	Yard Cleanup Close-Out Visit Date:	09/30/2016

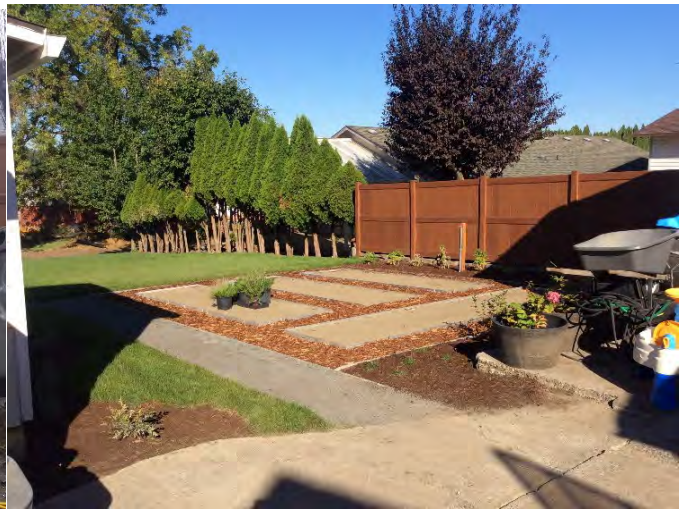
Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Division Street and Railroad Avenue ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway, near retaining wall between Properties 005 and 006, around utilities on property, and in root-protection zones.
Non-located utilities or structures:	Yes—septic tank was checked for structural integrity and owner notified.

A septic tank was encountered during excavation at the west side of the house. The homeowner was unaware of the septic tank, and the tank did not appear to have been properly decommissioned. The septic tank was inspected by the subcontractor to ensure that no damage had been incurred during excavation. The homeowner was notified and advised to have the septic tank properly decommissioned. The active septic line from the house was encountered during excavation. The line was damaged and repaired the same day on two separate occasions.

The final grading for Property 005 was designed to provide the owner with a stable slope that provided more usable yard space. Restoration and landscaping were performed according to the design.

Before



After

PROPERTY 006
REMEDIATION SUMMARY

Address:	8 West Division Street, Ridgefield, Washington 98642		
Construction Start Date:	07/20/2016	Yard Cleanup Close-Out Visit Date:	10/04/2016

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Division Street ROW.
Restricted-access areas:	Near foundation, underneath awning, adjacent to driveway, adjacent to curb, near retaining wall between Properties 005 and 006, around utilities on property, and root-protection zones.
Non-located utilities or structures:	No.

A small and deteriorating retaining wall was removed from between Properties 006 and 007. Grades were connected between the properties via a stable slope. Prior to construction, the owner removed a deck from the NE corner of the house. The grading plan was adjusted to account for the removal of the above-grade deck.

During restoration, weed barrier was placed in planting beds adjacent to the driveway at the request of the homeowner. All other restoration was performed according to design.

Before

After

PROPERTY 007
REMEDIATION SUMMARY

Address:	14 West Division Street, Ridgefield, Washington 98642		
Construction Start Date:	07/26/2016	Yard Cleanup Close-Out Visit Date:	10/04/2016

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Division Street and North 1st Avenue ROWs
Restricted-access areas:	Near foundation, near retaining wall along driveway, around utilities on property, and root-protection zones.
Non-located utilities or structures:	No.

A small and deteriorating retaining wall was removed from between Properties 006 and 007. Grades were connected between the properties via a stable slope.

During construction, the homeowner made several changes to the restoration and planting plan. The following changes were made, with approval from Ecology:

- Ground cover on the north side of the property was changed from plantings and mulch to gravel.
- All plantings on the north side of the property were eliminated.
- Mulch was removed from planting beds on the west side of the property.
- Mulch was removed from planting beds adjacent to the house.
- Plantings from around the property were either relocated or omitted.

The restoration warranty for the property was voided because the homeowner parked on the lawn before the hydroseed was properly established.

Before

After

PROPERTY 012
REMEDIATION SUMMARY

Address:	503 and 505 North Main Street, Ridgefield, Washington 98642		
Construction Start Date:	07/26/2016	Yard Cleanup Close-Out Visit Date:	10/04/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Division Street and Main Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, adjacent to curb, near carport, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Yes—septic tank and abandoned waterline. Tank was checked for structural integrity and marked on survey; owner notified. Waterline was left in place. Apparent septic drainage area encountered at north end of property and apparent dry well drainage area encountered near southwest corner of house.

The northern half of the backyard was backfilled with 6 inches of drain rock to prevent potential surface ponding from an apparent septic drainage area. Nine inches of drain rock was used to backfill the apparent dry well drainage area encountered near the southwest corner of the house to prevent potential future surface ponding. The remainder of the property was restored according to the design.

Before

After

PROPERTY 013
REMEDIATION SUMMARY

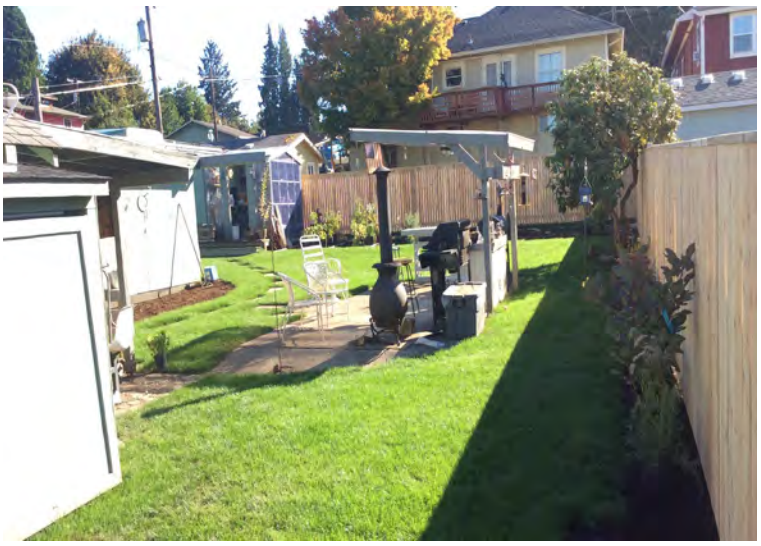
Address:	5 West Division Street, Ridgefield, Washington 98642		
Construction Start Date:	08/04/2016	Yard Cleanup Close-Out Visit Date:	10/04/2016

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Division Street and Railroad Avenue ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near shed, around back patio, around utilities on property, and root-protection zones.
Non-located utilities or structures:	No.

The property was restored according to the design. Existing roses that were removed were not immediately replaced in kind. Roses of the same species were not available at the time of construction, so the owner purchased the roses when they became available in the summer of 2017. The homeowner was reimbursed for the cost of the roses.

Before



After

PROPERTY 014
REMEDIATION SUMMARY

Address:	413 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	08/09/2016	Yard Cleanup Close-Out Visit Date:	10/21/2016

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Division Street and North 1st Avenue ROWs.
Restricted-access areas:	Near foundation, around utilities on property, near sidewalks, and root-protection zones.
Non-located utilities or structures:	Yes—septic tank and dry well were located in the backyard. The tank was checked for structural integrity and marked on the survey; the owner was notified. Dry well lid was damaged during construction and replaced by AEC.

Plants slated for transplant were removed and replaced in kind, with homeowner approval. Walk-on bark was placed around the north and east fence lines in lieu of gravel. The reconstructed retaining wall was shortened to better align with the new block stairs. A section of sidewalk was damaged and replaced by AEC. The remainder of the restoration was performed according to the design.

The warranty associated with the restoration of this property was voided because the owner had allowed pets to damage the lawn area.

Before

After

PROPERTY 015
REMEDIATION SUMMARY

Address:	410 Railroad Avenue, Ridgefield, Washington 98642		
Construction Start Date:	08/05/2016	Yard Cleanup Close-Out Visit Date:	10/04/2016

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Railroad Avenue ROW.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near garage, and around utilities on property.
Non-located utilities or structures:	No.

Restoration and landscaping were performed according to the design.

Before

After

PROPERTY 016
REMEDIATION SUMMARY

Address:	409 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	08/10/2016	Yard Cleanup Close-Out Visit Date:	10/04/2016

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Railroad Avenue ROW.
Restricted-access areas:	Near foundation, adjacent to driveway, near garage, around utilities on property.
Non-located utilities or structures:	Yes—clay lines assumed to be abandoned septic were located and left in place. No septic tank was found.

Along the south side of the Property, small block retaining walls were extended to provide adequate stability along the slope. Planter beds on the south side of the property were extended per homeowner request.

Two small block retaining walls were placed in the ROW to provide parking access.

The remaining restoration and landscaping work was completed according to the design. After restoration was complete, the homeowner discovered a leak in the basement on the north side of the house. AEC conducted a site visit with the homeowner. The restoration grade was verified as completed according to the design. A mole tunnel also discovered along the foundation of the house was likely the source of the water that had leaked into the foundation during heavy rain.

Before

After

PROPERTY 017
REMEDIATION SUMMARY

Address:	6 Ash Street, Ridgefield, Washington 98642		
Construction Start Date:	08/18/2016	Yard Cleanup Close-Out Visit Date:	10/20/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Railroad Avenue and Ash Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near carport, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Yes—a dry well was discovered. The dry well was inspected by a subcontractor to ensure that no damage had been incurred during excavation. The lid of the dry well was cracked, so a new lid was ordered and the old one replaced.

A small concrete pathway from the house to the carport noted to be protected in place was removed and replaced with gravel. A dry well was encountered during excavation at the west side of the house. The homeowner was unaware of the dry well. The dry well was inspected by a subcontractor to ensure that no damage had occurred during excavation. The lid of dry well was cracked, so a new lid was ordered and the old one replaced by the AEC.

Fruit trees on the west side of the property that had been slated for transplant were removed and replaced with in-kind species, as approved by the homeowner.

The remainder of the restoration was performed according to the design.

Before

After

PROPERTY 018
REMEDIATION SUMMARY

Address:	405 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	08/11/2016	Yard Cleanup Close-Out Visit Date:	10/20/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue and Ash Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway, near garage and retaining wall, around utilities on property, and root-protection zones.
Non-located utilities or structures:	No.

Restoration and landscaping were performed according to the design.

Before

After

PROPERTY 019
REMEDIATION SUMMARY

Address:	412 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	08/22/2016	Yard Cleanup Close-Out Visit Date:	10/19/2016

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Division Street and North 1st Avenue ROWs.
Restricted-access areas:	Near foundation, around utilities on property, near shed, and root-protection zones.
Non-located utilities or structures:	No.

At the request of the homeowner, the shed was demolished and removed from the property. This allowed for soil removal from beneath the shed. Walkway gravel was used to backfill the area, and a fence was constructed in the northeast property corner, connecting the east and north fence lines.

The remaining restoration and landscaping were performed according to the design.

Before

After

PROPERTY 020A
REMEDIATION SUMMARY

Address:	413 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	08/23/2016	Yard Cleanup Close-Out Visit Date:	10/19/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue ROW.
Restricted-access areas:	Root-protection zones.
Non-located utilities or structures:	No.

The proposed fence along the south side of the property was protected in place rather than removed and replaced. All other restoration and landscaping was performed according to the design.

Before

After

PROPERTY 020B
REMEDIATION SUMMARY

Address:	411 North Main Avenue, Ridgefield, Washington 98642		
Construction Start Date:	07/17/2017	Yard Cleanup Close-Out Visit Date:	08/24/2017

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue ROW (Main Street ROW completed during 2016)
Restricted-access areas:	Near foundation, adjacent to driveway, near garage, around utilities on property, and root-protection zones.
Non-located utilities or structures:	The homeowner identified a large subsurface tank during the pre-construction site visit.

Some minor modifications to landscape plant locations, additional sapling removal (trees not included in survey, under 6-inch-diameter), and a stump was left in place, at the request of the homeowner.

All remaining restoration and landscaping were performed according to the design.

Before

After

PROPERTY 023
REMEDIATION SUMMARY

Address:	5 Ash Street, Ridgefield, Washington 98642		
Construction Start Date:	06/07/2017	Yard Cleanup Close-Out Visit Date:	08/28/2017

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Railroad Avenue and Ash Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near garage, next to the shed, around utilities on the property, and root-protection zones.
Non-located utilities or structures:	Underground heating oil tank identified during pre-construction meeting; telephone line.

Rotten shed siding was discovered by the contractor; the renter requested that finish grade be left below the siding to prevent further damage and aid repair. Along the south side of the driveway, gravel was substituted for sod at the request of the renter. Additional stump was ground down next to the retaining wall south of the house. Some modifications were made to landscape plant locations, at the request of the renter. The renter also requested that a planter bed, instead of sod, be installed in the sloped section west of the house.

The remaining restoration and landscaping were performed according to the design.

Before

After

PROPERTY 024
REMEDIATION SUMMARY

Address:	327 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	09/19/2016	Yard Cleanup Close-Out Visit Date:	11/29/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue and Ash Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near garage, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Yes—previously unidentified sewer lines along the west property line. New fence installation location was adjusted to avoid the sewer line.

Fruit trees slated for transplant were replaced in kind. Wood mulch in the front of the house (east side) in the play area were replaced with playground wood chips.

All other restoration and landscaping was performed according to the design.

Before

After

PROPERTY 025
REMEDIATION SUMMARY

Address:	319 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	09/19/2016	Yard Cleanup Close-Out Visit Date:	12/14/2016

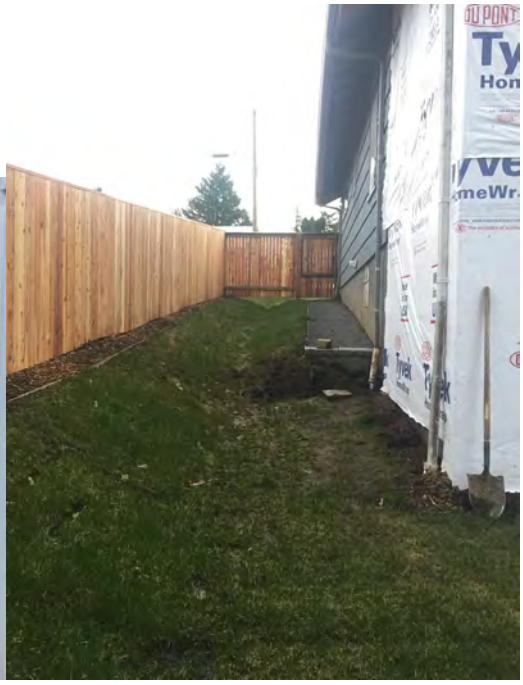
Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue ROW.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalk, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Yes—septic lines were encountered during excavation. No lines were damaged.

Prior to remediation activities, the homeowner began construction of an addition to the west side of the existing house. This construction significantly lowered the grade in the backyard. Changes were made during restoration to accommodate the new grade to ensure proper drainage. This resulted in a steep swale along the north side of the house. The homeowner has assumed responsibility for potential erosion issues in this area, as the grade changes made by the homeowner were outside the agreed contract.

All remaining restoration and landscaping were performed according to the design.

Before



After

PROPERTY 028B
REMEDIATION SUMMARY

Address:	311 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	07/11/2017	Yard Cleanup Close-Out Visit Date:	8/29/2017

Remediation Overview

Excavation depth:	18 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue ROW.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalk, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Septic tank on the north side of the house.

A septic tank was discovered north of the house during excavation. The owner was notified, and the septic tank was backfilled and appropriately documented by AEC. At the request of the homeowner, the east side of the property was graded to accommodate a future sidewalk to connect existing sidewalks on either side of the property. All remaining landscaping and restoration was performed according to the design.

Before

After

PROPERTY 029A
REMEDIATION SUMMARY

Address:	311 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	07/27/2017	Yard Cleanup Close-Out Visit Date:	09/06/2017

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Mill Street and Railroad Avenue ROW.
Restricted-access areas:	Near foundation of cement structure, adjacent to roadways, around utilities on property, and root-protection zones.
Non-located utilities or structures:	No.

Restoration and landscaping were performed according to the design.

Before

After

PROPERTY 029B
REMEDIATION SUMMARY

Address:	311 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	07/24/2017	Yard Cleanup Close-Out Visit Date:	09/06/2017

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent Mill Street and North 1st Avenue ROW.
Restricted-access areas:	Near foundation, adjacent to driveway, around utilities on property, root-protection zones.
Non-located utilities or structures:	Yes, water line on north side east side of property, identified by homeowner during pre-construction meeting.

AEC contracted AK Timber to remove the large tree in the southwest corner of the property. The grade in this corner of the property was also modified, at the request of the homeowner, to ensure proper drainage away from the house; this required a slight modification to the gate and fence location.

All remaining restoration and landscaping were performed according to the design.

Before

After

PROPERTY 032
REMEDIATION SUMMARY

Address:	311 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	07/05/2017	Yard Cleanup Close-Out Visit Date:	08/17/2017

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue ROW.
Restricted-access areas:	Near foundation, adjacent to driveway, around utilities on property, and root-protection zones.
Non-located utilities or structures:	No.

Restoration and landscaping were performed according to the design.

Before

After

PROPERTY 035
REMEDIATION SUMMARY

Address:	313 North Main Street, Ridgefield, Washington 98642		
Construction Start Date:	09/15/2016	Yard Cleanup Close-Out Visit Date:	11/15/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North Main Street ROW.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, near garage, around utilities on property, near pet burial, and root-protection zones.
Non-located utilities or structures:	No.

On the west (backyard) patio, a portion of the concrete pad was removed and replaced with gravel at the homeowner's request.

The remaining restoration and landscaping were performed according to the design.

Before

After

PROPERTY 036
REMEDIATION SUMMARY

Address:	314 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	08/29/2016	Yard Cleanup Close-Out Visit Date:	11/15/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue ROW.
Restricted-access areas:	Near foundation, adjacent to driveway, around utilities on property, around pet burial, and root-protection zones.
Non-located utilities or structures:	Yes—a septic tank and multiple homeowner-installed shallow waterlines. The tank was checked for structural integrity and marked on the survey and the owner notified. The waterline was protected in place.

On the west side of the property (front yard), fence posts and stringers were installed without panels at the homeowner's request. No stairs leading up to the front gate were installed, at the homeowner's request. The small retaining wall was protected in place at the homeowner's request. To assist with roof runoff, a gravel French drain was installed from the northwest corner of the house to the northwest edge of the property.

On the east side of the property (backyard), a new brick deck was installed. The layout of garden beds was altered per the homeowner's request. A small block wall was installed along the back of the brick patio.

The remaining restoration and landscaping was performed according to the design.

Before

After

PROPERTY 037
REMEDIATION SUMMARY

Address:	309 North Main Street, Ridgefield, Washington 98642		
Construction Start Date:	08/31/2016	Yard Cleanup Close-Out Visit Date:	11/18/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North Main Street ROW.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Yes—unknown active sewer line was hit and repaired by the subcontractor; the property owner and Clark County Regional Wastewater inspected the repaired pipe.

The fence line on the east side of the house was altered to preserve a tree, as requested by the homeowner. A trench drain was installed in the southwest corner of the property to facilitate drainage in the area. The location of the fence on the east property line was modified to accommodate an existing shrub.

All other restoration and landscaping was performed according to the design.

Before

After

PROPERTY 038
REMEDIATION SUMMARY

Address:	304 North 1st Avenue, Ridgefield, Washington 98642		
Construction Start Date:	09/02/2016	Yard Cleanup Close-Out Visit Date:	11/29/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North 1st Avenue and Mill Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway, near garage, around utilities on property, and root-protection zones.
Non-located utilities or structures:	No.

Roses in front of the house identified for transplant were protected in place or replaced in kind. A portion of the broken walkway in the backyard was removed during remediation activities.

All other restoration and landscaping was performed according to the design.

Before

After

PROPERTY 039
REMEDIATION SUMMARY

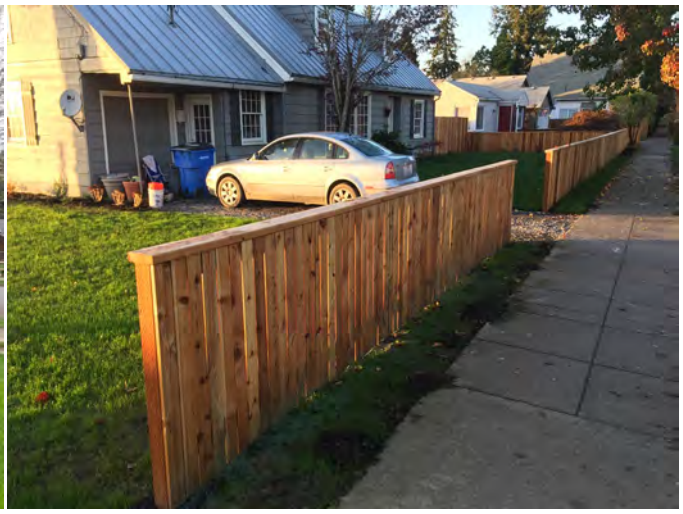
Address:	305 North Main Street, Ridgefield, Washington 98642		
Construction Start Date:	09/02/2016	Yard Cleanup Close-Out Visit Date:	11/18/2016

Remediation Overview

Excavation depth:	12 inches soil excavation; 6 inches in restricted-access areas.
ROW included:	Yes—adjacent North Main Street and Mill Street ROWs.
Restricted-access areas:	Near foundation, adjacent to driveway and sidewalks, around utilities on property, and root-protection zones.
Non-located utilities or structures:	Yes—natural gas line, abandoned waterline, electrical line, and concrete footings. NW Natural called to locate, cut, and foam natural gas line. Waterline and electrical line removed without replacement, per homeowner decision.

Restoration and landscaping were performed according to the design.

Before



After

APPENDIX I

CONSTRUCTION PHOTOGRAPH ARRAY

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 1

Pre-excavation survey. Property 001.

Photo No. 2

Restricting public access; stormwater BMPs. Property 013.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 3

Temporary fencing. ROWs 021 and 022.

Photo No. 4

Removal of large trees identified by arborist as not healthy enough for construction. Property 015.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 5

AEC salvaging large homeowner items for reuse. Property 013.

Photo No. 6

Soil removal with excavator. Property 005.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 7

Soil removal with excavator and including dust control. Property 017.

Photo No. 8

Soil removal with excavator. Property 007.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 9

Soil removal with excavator near roadway. ROW 031.

Photo No. 10

Soil removal with excavator near building foundation. Property 012.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 11

Soil removal with excavator and including dust control. Property 015.

Photo No. 12

Soil removal by hand in restricted areas. Property 038.

CONSTRUCTION PHOTOGRAPHS

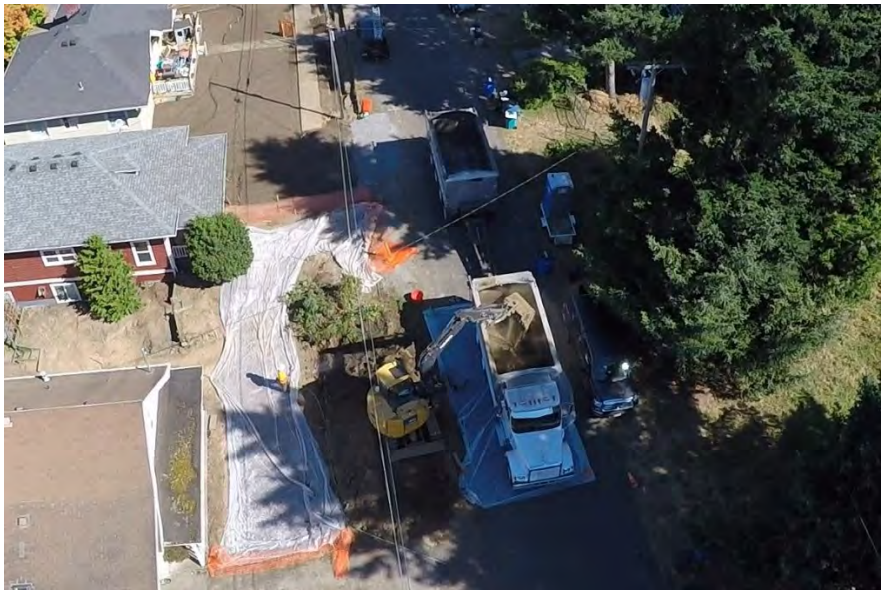
Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 13

Excavation depth grade staking. Property 037.

Photo No. 14

Sediment control while loading truck for soil disposal. Property 018.



CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 15

Plastic sheeting over exposed soil at end of workday. Property 005.

Photo No. 16

Plastic sheeting over temporary stockpile. Property 005.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 17

Wetted canvas matting over exposed root zones. Property 005.

Photo No. 18

Clean backfill placement. Property 020A.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 19

Installation of aluminum edging and mulch beds. Property 018.

Photo No. 20

Aluminum edging installation. Property 038.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 21

New hydroseed. Property 020A.

Photo No. 22

New sod. Property 012.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 23

Restored backyard.
Property 017.

Photo No. 24

Restored right-of-way.
ROW 021.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 25

PBI lawn maintenance. Property 017.

Photo No. 26

Cedar fencing. Property 039.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 27

Block retaining wall structure to maintain parking access. Property 016.

Photo No. 28

Restored block retaining wall and stairs. Property 014.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 29

Repairs to sidewalk that was damaged during construction activities. Property 014.

Photo No. 30

Repairs to sewer pipe that was damaged during construction activities. Property 037.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 31

Soil removal with excavator. Property 020B.

Photo No. 32

Soil removal near structures, using hand tools. Property 023.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 33

Soil removal in root protection zone, with oversight by certified arborist. Property 023.

Photo No. 34

Contaminated-soil excavation. Property 023.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 35

Plastic sheeting over temporary stockpile, temporary fencing, and straw wattles used for erosion control. Property 023.

Photo No. 36

Vegetation removal. Property 002.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 37

Cedar fence and landscaping beds. Property 002.

Photo No. 38

Soil removal with excavator and including dust control. Property 032.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 39

Plastic sheeting being installed over exposed soils at the end of the workday. Property 032.

Photo No. 40

New hydroseed. Mill Street ROW.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 41

New hydroseed and landscaping. Property 023.

Photo No. 42

Contaminated-soil excavation. Property 028B.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 43

Tree removal conducted by AK Timber. Property 029B.

Photo No. 44

Landscape bed and walkway bark installation. Property 020B.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 45

Contaminated-soil excavation. Property 029A.

Photo No. 46

New sod. Property 029B.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 47

Gravel installation. Property 019.

Photo No. 48

Clean soil backfill. Property 029A.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 49

Cedar fence and gate framing. Property 032.

Photo No. 50

Contaminated-soil excavation. Property 003.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 51

Cedar fence installation. Property 003.

Photo No. 52

Tree removal conducted by AK Timber. Property 020B.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 53

Landscape installation. Property 032.

Photo No. 54

Landscape installation. Property 028B.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 55

Landscape and sod installation. Property 028B.

Photo No. 56

Soil removal with excavator and including dust removal. Property 004.

CONSTRUCTION PHOTOGRAPHS

Project Name: Off-Property Portion Interim Action
Project Number: 9003.01.55
Location: Ridgefield, Washington

Photo No. 57

Cedar fence installation. Property 029B.

Photo No. 58

Plastic sheeting and soil excavation. Property 004.