CONSTRUCTION COMPLETION REPORT

RAILROAD AVENUE

Prepared for
PORT OF RIDGEFIELD
RIDGEFIELD, WA
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MAUL FOSTER ALONGI

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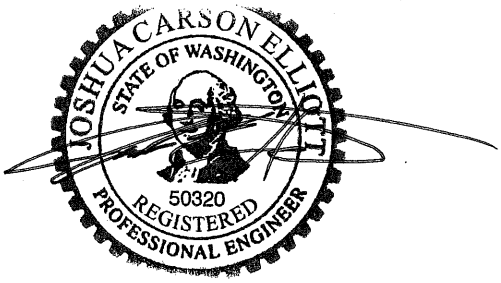
Railroad Avenue

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

MAUL FOSTER & ALONGI, INC.



Joshua Elliott, PE
Project Engineer

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ACRONYMS AND ABBREVIATIONS

CAP	cleanup action plan
City	City of Ridgefield
DAR	daily activity report
dioxins	dibenzo-p-dioxins and dibenzofurans
Ecology	Washington State Department of Ecology
LRIS	Lake River Industrial Site
MFA	Maul Foster & Alongi, Inc.
MGS	Minister & Glaeser Surveying, Inc.
MTCA	Model Toxics Control Act
Port	Port of Ridgefield
RI/FS	remedial investigation and feasibility study
ROW	right-of-way
Smith & Smith	Smith & Smith Excavation, Inc.
site	Railroad Avenue remedial action site
WAC	Washington Administrative Code

1 INTRODUCTION

Maul Foster & Alongi, Inc. (MFA) has prepared this report on behalf of the Port of Ridgefield (Port) describing the completion of remedial actions on the Port-owned Railroad Avenue property and adjacent City of Ridgefield (City) rights-of-way (ROWs) (collectively referred to in this report as the site) near the Port's Lake River Industrial Site (LRIS) in Ridgefield, Washington. This document has been prepared under the authority of Consent Decree No. 13-2-03830-1 between the Port and the Washington State Department of Ecology (Ecology) to satisfy the requirements of Exhibit C (Project Schedule) of the Consent Decree and the Model Toxics Control Act (MTCA) and to address the substantive requirements of Washington Administrative Code (WAC) 173-340.

The remedial action generally consisted of regrading site soils and placement of a minimum 2-foot-thick engineered clean soil cap over the Railroad Avenue property and City ROW. Smith & Smith Excavation, Inc. (Smith & Smith), of Vancouver, Washington, performed the remedial action tasks, with oversight from MFA, from August 2013 to October 2013. The remedial actions on the site are complete and were performed in full accordance with the requirements of the Consent Decree, the remedial action requirements provided in the MTCA, WAC 173-340, and the Ecology-approved engineering design report (MFA, 2013c).

1.1 Site Location and History

The site consists of two Port-owned parcels located within the Ridgefield city limits at 325 Railroad Avenue, Ridgefield, Washington 98642 and the associated City ROWs to the north and east of these two parcels (see Figure 1-1). The site is located in the northwest quarter of the northeast quarter of section 24, township 4 north, range 1 west of the Willamette Meridian. The Clark County Property Identification Number is 67991003. The site is oriented north-south and is bordered by the Burlington Northern Santa Fe Railroad to the west, Railroad Avenue to the east, Mill Street to the south, and Division Street to the north. Railroad Avenue, Mill Street, and Division Street are City ROWs. The site is approximately 0.94 acre, and the remedy covers approximately 0.32 acre of City ROW and 0.62 acre of Port-owned property.

Historical property uses were primarily residential and agricultural. A single-family residence occupied the southern portion of the site as recently as 2008. A train depot was located immediately to the south of the property in the early 1900's. During initial site investigations, a concrete building foundation was found in the central portion of the site. Abandoned power and sewer lines that apparently served the site at one time were uncovered during construction. The site is used occasionally as overflow parking for vehicles and boat trailers from the Port-owned marina to the south.

1.2 Project Purpose and Need

On September 24, 2001, the Port entered into Agreed Order No. 01TCPSR-3119 with Ecology to conduct a remedial investigation and feasibility study (RI/FS) at the LRIS. The RI/FS report was finalized in July 2013 (MFA, 2013b) and indicated that dioxins in soil at the Port-owned Railroad Avenue properties and associated City ROWs could cause unacceptable risk to human health and the environment. A remedial action was selected by Ecology, based on the final RI/FS report in accordance with WAC 173-340-380, and documented in the cleanup action plan (CAP) (Ecology, 2013). Engineering and design documents for implementation of the CAP at the site were prepared in an engineering design report that was reviewed and approved by Ecology (MFA, 2013c).

2 PROJECT TEAM AND ORGANIZATION

2.1 Project Team

The construction project team consisted of the following members:

- Owner—Port of Ridgefield. Ms. Laurie Olin served as the Port's project manager.
- Engineer & Environmental/Civil Construction Oversight—MFA. Responsible for project design and overall project conformance to the approved design. Mr. Joshua Elliott, PE, served as MFA's project manager; Mr. Michael Reiter, EIT, Ms. Lindsey Crosby, EIT, and Ms. Lia Ovelar, EIT, served as MFA field engineers.
- Geotechnical Construction Oversight—GeoDesign, Inc. Responsible for construction quality assurance of subgrade and fill compaction. Mr. Nick Paveglio, PE, served as GeoDesign's project manager and inspector.
- General Contractor—Smith & Smith Excavation, Inc. Responsible for construction project management and site construction. Mr. Steve Smith served as construction project manager and Mr. Mark Jones served as construction superintendent.
- Subcontractor—Fox Erosion Control (hydroseeding).
- Surveying—Minister & Glaeser Surveying, Inc. (MGS).

2.2 Project Schedule

The project went out for bid on July 25, 2013, with the final award notification going to Smith & Smith on August 22, 2013. Smith & Smith mobilized construction equipment to the site the week of August 26, 2013, and immediately started to implement the remedial action.

2.3 Construction Oversight

2.3.1 Construction Submittals

Technical submittals were submitted by the contractor (Smith & Smith) before and during construction, consistent with the project specifications. Submittals were received and reviewed by the engineer (MFA).

An approval-for-use determination was returned to the contractor for submittals not requiring corrective action. Submittals that were not in compliance with the specifications were notated regarding deficiencies and returned for revision and resubmittal by the contractor. Submittal documents are kept on file by the engineer.

2.3.2 Construction Meetings

Coordination meetings were held on site; attendees included the contractor, the engineer, and the owner (the Port). The meetings were held to discuss schedule, outstanding issues, and other topics raised by attendees. Meetings typically were held on Thursday mornings.

2.3.3 Daily Activity Reports

Daily activity reports (DARs) and field book entries were completed by the engineer. Records were made for each day when the engineer was on site to note observations regarding site conditions, contractor activities, construction issues, and construction progress. The DARs also included two photographs from the day's construction activities.

DARs and field notes are kept on file by the engineer. A sample DAR can be found in Appendix A.

3 REMEDIAL ACTION SUMMARY

3.1 Site Preparation

Initial site preparation tasks began the week of August 26 and consisted of equipment mobilization to the site, erosion control best management practice installation, construction staking, utility locates, and clearing and grubbing activities. A variety of equipment was delivered to the site to perform the work, including two excavators, two dozers, one loader, one roller compactor, one on-road haul truck, and one water truck. Silt fence, storm drain inlet protection, and construction security fencing were installed on the site in the locations indicated on the construction drawings. Gravel construction entrances were installed in two locations along the project haul pattern at locations approved by MFA. On August 29, MGS staked subgrade elevations over the entire site.

Various underground and aboveground utilities were known to exist on the site before construction and were identified on the construction drawings. These include: overhead power lines owned by Clark Public Utilities immediately north and south of the site; potable water, stormwater, and sanitary sewer lines owned by the City at the northeast perimeter of the site; and a gas line owned by Northwest Natural Gas under the northeast corner of the site. Utility locates were performed at the beginning of the project, and all of the abovementioned utilities were marked in the field. Two monitoring wells on site, MW-15 and MW-16, were protected and maintained during the project.

Some abandoned utilities were discovered during construction. A previously unknown storm drain traveling perpendicularly across the central portion of the site was located by City staff during the initial phases of construction. A short section of this concrete drain was uncovered during grading operations and was retained and protected. During subgrade preparation activities, an abandoned polyvinyl chloride power conduit and a clay sanitary sewer pipe were discovered running toward the old building foundation. These utilities were removed and disposed of.

Clearing and grubbing were performed within the limits of grading in accordance with the construction drawings and specifications. Existing vegetation was pulverized and mixed thoroughly into the subgrade throughout the site. Seven coniferous trees at the northwest corner of the site were felled and de-limbed. Root balls were cleaned of all soil, in accordance with the specifications, before being taken from the site for disposal. Root balls, small to mid-size limbs, and slash were hauled off site and disposed of. Large, intact trunks and limbs were retained by the Port and placed as barricades along the shoulders of Division Street toward the public kayak launch to control vehicle access to Cells 2 and 3 of the LRIS.

Substantial moisture conditioning work was conducted on the clean soil cap material stockpile in Cell 4 of the LRIS. The stockpiled clean fill used to construct the cap was provided by the Port, and was obtained from the Washington State Department of Transportation construction of the interchange on Interstate 5 at 269th Street and the mitigation site at 289th. This fill was analyzed in accordance with the Ecology-approved soil acceptance plan and was determined acceptable for use as a clean soil cap and fill on the 2012 interim action at the LRIS. The stockpiled material suffered from high moisture content at the beginning of construction activities. Substantial "land-farming" was performed by Smith & Smith to spread the material and promote drying and aeration to reach the optimum moisture content necessary for compaction. Significant improvement in moisture content was achieved before the clean fill was hauled to the site and used to construct the cap.

3.2 Subgrade Preparation

Smith & Smith began grading the site to the lines and grades shown on the plans during the week of September 2. Subgrade material generally was excavated from the southern portion of the site and placed on the northern portion of the site. No soil was removed from the site. Subgrade adjacent to Railroad Avenue was cut away from the pavement section to a depth of approximately 2 feet and gently sloped toward the west to create a bench. Cut material was used to construct a minimum slope of 3:1 from the west extent of the property up to the newly constructed bench. The subgrade compaction was approved by GeoDesign on September 10. A copy of the field report verifying compaction results is included as Appendix B.

During initial grading operations, it was discovered that the southern portion of the site contained significant amounts of concrete, timber, plastic, and metal debris. All timber, plastic, and metal debris was separated, washed to remove soil, and hauled off site for disposal. Concrete debris larger than 6 inches was separated and hauled off site for disposal; concrete debris smaller than 6 inches was incorporated into the subgrade. The concrete building foundation at the central portion of the site was encountered, but was below design subgrade elevation. The structure was left in place during construction.

Two subgrade surveys were performed before MFA authorized Smith & Smith to begin constructing the clean soil cap. A topographic survey of the subgrade was first performed by MGS on September 11 and was submitted to MFA on September 12. After reviewing this initial survey, MFA determined that the subgrade was not in sufficient accordance with the lines, grades, and cross sections shown on the construction drawings. Smith & Smith performed additional earthwork over the next four days to excavate high areas, soften steep slopes, and eliminate depressions to provide positive drainage to the west. The second subgrade survey was performed by MGS on September 13. MFA approved the survey and authorized Smith & Smith to place demarcation fabric and proceed with construction of the clean soil cap on September 14.

3.3 Engineered Clean Soil Cap

Installation of the clean soil cap began at the south end of the site and proceeded to the north, and was completed over the course of two weeks. Demarcation fabric was first placed over the entire site in accordance with the construction drawings and specifications. Demarcation fabric product information was submitted to MFA and approved prior to use. Approximately 3,100 cubic yards of clean material stockpiled in Cell 4 was loaded and hauled to the site, where it was placed in 12-inch lifts and compacted with a vibratory roller. Moisture conditioning of the clean fill stockpile in Cell 4 continued throughout hauling operations, drying and aerating the material to promote compaction. Compaction testing of the clean soil cap was performed and approved by GeoDesign, Inc. A copy of the field report verifying compaction results is included in Appendix B.

Isolated areas of the clean soil cap final grading were adjusted in the field to protect the previously unknown storm drain exposed during subgrade preparation. Cap elevation was increased slightly around the pipe to ensure a 2-foot-thick minimum cover over the existing drain.

Two surveys of the finished grade were performed before MFA approved the cap and authorized Smith & Smith to begin hydroseeding. A topographic survey of finished grade was first performed by MGS and was submitted to MFA on September 20. After reviewing this initial survey, MFA determined that the minimum cap thickness of 2 feet had not been achieved in all areas of the site. Smith & Smith performed additional earthwork over the next week to regrade the cap and bring additional material from Cell 4 to achieve the specified cap thickness. The final finished grade survey was performed by MGS and was submitted to MFA on September 27. MFA approved the survey and authorized Smith & Smith to begin hydroseeding activities on September 28. As-built drawings showing final grade are included as Appendix C. The cap will be inspected and maintained in accordance with the soil management and cap maintenance plan (MFA, 2013a).

3.4 Seeding

Hydroseeding of the site and the disturbed area in Cell 4 was performed on October 7 by Fox Erosion Control in accordance with the specifications. Seed was applied from two directions to ensure establishment and growth. Seed, fertilizer, and mulch product information was submitted to MFA and the products were approved prior to use.

3.5 Ancillary Items

Various ancillary activities were performed within the course of this remedial action to facilitate remedy construction and improve the LRIS. Cell 4 was moderately disturbed from clean fill stockpile land-farming activities, so the cell was hydroseeded after capping work was completed on the site. A section of hard trail connecting Cell 2 and Cell 4, constructed during the Cells 1 and 2 Interim Action, served as a portion of the haul route during this remedial action. This section of the hard trail was left unpaved during the Cells 1 and 2 Interim Action to facilitate work on Carty Lake in 2014. An 8-inch-thick section of crushed rock was placed on the roadbed by Smith & Smith during this remedial action to serve until paving begins. In order to haul the cap material from Cell 4 to the site, approximately 150 feet of new access road was constructed to connect the existing Cell 2 access road to the improved roadbed.

4 FINAL INSPECTION

A final site walk took place on October 8, 2013. Attending the inspection were Mr. Steve Smith and Mr. Mark Jones of Smith & Smith and Mr. Joshua Elliott, PE, of MFA. The engineer gave verbal notice of substantial completion to the contractor at the conclusion of the final site inspection.

5 CERTIFICATION STATEMENT

The construction oversight and project engineering services described in this report were performed by the engineer on behalf of the Port of Ridgefield for the Railroad Avenue Remedial Action. Based on the observations made during construction, geotechnical testing results, and final product constructed on the site, it is the opinion of the engineer that the Railroad Avenue Remedial Action has been constructed in substantial compliance with the plans, specifications, and related documents.

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. Cleanup action plan, former Pacific Wood Treating Co. site. Washington State Department of Ecology. October.

MFA. 2013a. Soil management and cap maintenance plan. Prepared for Port of Ridgefield. Maul Foster & Alongi, Inc. Vancouver, Washington. May 31.

MFA. 2013b. Former PWT site remedial investigation and feasibility study report. Prepared for Port of Ridgefield. Maul Foster & Alongi, Inc. Vancouver, Washington. July 1.

MFA. 2013c. Engineering design report. Prepared for Port of Ridgefield. Maul Foster & Alongi, Inc. Vancouver, Washington. August 5.

FIGURE

APPENDIX A

SAMPLE MFA DAILY ACTIVITY REPORT

APPENDIX B

GEODESIGN FIELD REPORTS

APPENDIX C

TOPOGRAPHIC SURVEYS/AS-BUILT DRAWINGS