SCOPE OF WORK
FOR SUBSURFACE INVESTIGATION
At

PORT OF PASCO BIG INDUSTRIAL PARK LAGOONS
SE Road 36/East Ainsworth Avenue
Pasco, Washington 99361
Cleanup Site ID: 15433
Fac. Site ID# 88749
VCP Project ID: EA0362

April 24, 2023

Prepared for:

Mr. Ted Uecker
ERO Toxics Cleanup Program
State of Washington Department of Ecology
Eastern Region Office
4601 North Monroe Street
Spokane, WA 999205-1295

And

Mr. Randy Hayden
Port of Pasco
PO Box 769
Pasco, WA 99301

Prepared by:

Blue Mountain Environmental and Consulting Co., Inc.
PO Box 545/125 Main St.
Waitsburg, WA 99361
509-520-4416

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1.0 INTRODUCTION

This scope of work (SOW), prepared by Blue Mountain Environmental & Consulting Co., Inc. (BMEC) for Mr. Randy Hayden of the Port of Pasco (the Client), as well as the State of Washington Department of Ecology (Ecology), describes the proposed field activities that BMEC proposes for the property located at the Port of Pasco Big Industrial Park Lagoons at SE Road 36/East Ainsworth Avenue in Pasco, Washington 99361 (Site). A Site Vicinity Map is included as **Figure 1**. A Site Location Map is included as **Figure 2**. A Proposed Sample Location Map is included as **Figure 3**.

Per the *Further Action* letter written by Ecology and dated January 6, 2023, BMEC proposes to further characterize subsurface media (biosolids, soil, and groundwater) at the Site for the following contaminants of concern (COCs): Resource Conservation and Recovery Act (RCRA) 8 Metals per EPA Method 6061D/6020B/7471B; dioxins and furans per EPA Method 1613; and polybrominated diphenyl ethers (PDBEs) per EPA Method 1614.

The basic components of this SOW consist of the following activities and are driven by conversations and directives established by the January 6, 2023 Ecology *Further Action* letter:

- Advance approximately nine soil borings via Geoprobe® at the Site to better delineate the aforementioned COCs in subsurface sludge and soils;
- Advance 4 additional borings via Geoprobe® and complete the four borings as monitoring wells;
- Collect soil samples from the nine soil borings and groundwater samples from the four monitoring wells. Submit the soil and groundwater samples from the aforementioned analyses.
- Collect groundwater samples and depth-to-water information from the four monitoring wells to better assess the COC concentrations in the underlying shallow aquifer, as well as confirm groundwater flow direction; and
- Document all field activities and sample results in a report.

1.1 Site Information

The Site is located at the southeast intersection of East Ainsworth Street and SE Road 36 in Pasco, Washington. The Site consists of two former wastewater treatment lagoons which no longer contain surface water, but have been backfilled, compacted and leveled, and are currently not being used but may be used for parking in the future. The north and south lagoons have an approximate sludge volume of 32,130 cubic feet and 62,400 cubic feet of sludge, respectively. Depth to groundwater below the lagoons has not been determined and groundwater flow direction is inferred to be to the south toward the Columbia River which is less than ¼-mile from the Site. Port of Pasco facility operations exist to the immediate northwest, west, southwest, and south. The Sacajawea State Park exists to the southeast and vacant land owned by the Port of Pasco exists to the northeast and north. The Site is located on Parcel 112420028, in the south half of Section 33, in Township 9 N., Range 30 E.W.M., and the northwest quarter of Section 3, in Township 8 N., and Range 30 E.W.M.

1.2 Site History

On January 12, 2021, BMEC personnel conducted sampling of biosolids in the two lagoons at the Site. Seven discrete sludge column samples were collected from each of the two lagoons and analyzed for fecal coliform. One composite sample was developed for each lagoon and analyzed for organochlorine pesticides, RCRA 8 metals, nitrates, nitrogen, ammonia, dioxins, furans, PAHs, PCBs, and PBDEs. Cadmium exceeded the MTCA Method A soil cleanup level in the south lagoon sample, while the dioxin and furan toxicity equivalency (TEQ) exceeded the MTCA Method B soil cleanup level. The organochlorine DDE and PBDEs were detected in this same south lagoon sample below their respective soil cleanup levels. There was no detection of any COCs above cleanup screening levels in the North Lagoon. Soil below the lagoon sludge column has not been characterized to date.

For a detailed description of past environmental activities and results conducted at the Site, please refer to the following documents:

- Ecology, Environmental Covenant 1966700, September 26, 2022.
- Blue Mountain Environmental and Consulting Co., Inc., CSID No. 15433 Big Pasco. Industrial Park Lagoons, Operation and Maintenance Plan, March 15, 2022.
- Coho Environmental, Terrestrial Ecological Evaluation, Port of Pasco, Big Pasco Industrial Center Lagoons, Pasco, WA, June 28, 2021.
- Blue Mountain Environmental and Consulting Co., Inc., Biosolids Sample Analysis Report at Big Pasco Industrial Center, Pasco, Washington, February 25, 2021.
- Blue Mountain Environmental and Consulting Co., Inc., Port of Pasco Big Industrial Park Lagoons, Sampling and Analysis Plan, December 11, 2020.
- GN Northern, Inc., Geotechnical Site Investigation Report, GNN Project No. 219-1119, May 20, 2020.

These documents are accessible in electronic form from the Site webpage.The complete records are stored in the Central Files of the Eastern Regional Office of Ecology (ERO) for review by appointment only.

2.0 PROPOSED SCOPE OF WORK

BMEC proposes to advance nine soil borings via Geoprobe® at the Site to properly characterize the lagoon sludge and the underlying native soil. Four additional borings will be completed as 2-inch diameter, flush-mounted groundwater monitoring wells. Each of the nine soil borings shall be backfilled with bentonite pellets, then hydrated with potable water. The proposed locations of

the nine borings and four monitoring wells are illustrated in **Figure 3: Proposed Sample Location Map**.

BMEC proposes to advance the nine soil borings via Geoprobe® methodology. One sludge sample and one soil sample from the underlying native soils shall be collected from each of the nine soil borings. No soil samples shall be collected from the overlying backfill.

As previously mentioned, four additional borings shall be completed as monitoring wells. Each of the monitoring wells shall be completed as 2-inch diameter, flush-mounted wells with a lock and cap. Each of the monitoring wells shall be advanced to approximately 25 feet below ground surface (bgs) and completed with 15 – 20 feet of Schedule 40 polyvinylchloride (PVC) screen and 5 – 10 feet of PVC riser. The screened PVC shall be 0.010-inch slotted material.

Each of the monitoring wells shall be developed via a dedicated bailer and rope, or peristaltic pump and dedicated tubing, or via submersible pump with dedicated tubing. Well development shall be conducted via surging the screened interval with a surge block and either purging the groundwater with a dedicated bailer, peristaltic pump and dedicated tubing, or submersible pump with dedicated tubing. Groundwater parameters (pH, temperature, conductivity, turbidity, and dissolved oxygen) shall be measured and recorded on groundwater sample field data sheets. Well development shall be deemed completed subsequent to stabilization of the groundwater parameters and after 10 well volumes have been purged. Groundwater sampling will be allowed to ensue immediately after well development is completed. BMEC shall wait a minimum of 48 hours after well installation prior to development. Groundwater samples from each of the monitoring wells shall be collected immediately subsequent to well development completion. Each of the sludge, soil, and groundwater samples shall be shipped to OnSite Environmental in Redmond, Washington for the analyses listed above in Section 1.0.

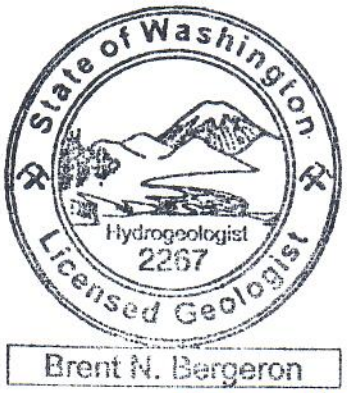
3.0 INVESTIGATION-DERIVED WASTE DISPOSAL

All investigation-derived waste (IDW) shall be containerized in 55-gallon drums. The various waste streams of IDW anticipated include sludge and soil cuttings derived from the Geoprobing® activities, all purged groundwater removed from the subsurface during monitoring well development and groundwater sampling activities, and decontamination water. The 55-gallon drums shall be properly staged on-site at a location preferred by the property owner. All standard waste (i.e., nitrile gloves, paper towels, rope, bailers, and peristaltic pump tubing) shall be placed in plastic trash bags and hauled offsite.

4.0 MONITORING WELL SURVEY

A Professional Licensed Surveyor (PLS) shall be hired to survey the PVC top of casing for all of the newly installed monitoring wells. The monitoring wells shall be surveyed per North American vertical datum1988 (NAVD88), in addition to northing and easting data.

If you have any questions regarding the content of this SOW, please feel free to contact me at (503) 913-7870, or Mr. Peter Trabusiner at (509) 521-6531.



Brent N. Bergeron, LHG

5.0 REFERENCES

Blue Mountain Environmental Consulting & Company Inc., BIOSOLIDS SAMPLE ANALYSIS REPORT at Big Pasco Industrial Center Pasco, Washington, February 25, 2021.

Google Maps, 2023.

Washington State Department of Ecology, Further Action Letter, January 6, 2023.

Washington State Department of Ecology, Model Toxics Control Act Statute and Regulation, November 2007.

Cleanup Site ID: 15433 **Facility/Site ID: 88749** **VCP Project ID: EA0362**	**FIGURE 1 – SITE VICINITY MAP**	**Port of Pasco** **Big Industrial Park Lagoons** **SE Road 36/East Ainsworth Avenue** **Pasco, Washington**

Cleanup Site ID: 15433 **Facility/Site ID: 88749** **VCP Project ID: EA0362**	**FIGURE 2 – SITE LOCATION MAP**	**Port of Pasco** **Big Industrial Park Lagoons** **SE Road 36/East Ainsworth Avenue** **Pasco, Washington**

Cleanup Site ID: 15433 **Facility/Site ID: 88749** **VCP Project ID: EA0362**	**FIGURE 3 – PROPOSED SAMPLE LOCATION MAP**	**Port of Pasco** **Big Industrial Park Lagoons** **SE Road 36/East Ainsworth Avenue** **Pasco, Washington 99301**