

Memorandum

To: Mohsen Kourehdar, Washington State Department of Ecology
Copies: Dan Silver, B&L Woodwaste Custodial Trust
From: Brett Beaulieu
Date: October 19, 2017
Project No: B&L O&M 1507
Re: **B&L Woodwaste Compliance Monitoring Plan Addendum**

This memorandum serves as an addendum to the Compliance Monitoring Plan (CMP) for the B&L Woodwaste Site, which was submitted as Appendix B of the B&L Woodwaste Site Operations, Maintenance, and Monitoring Plan (Floyd|Snider/AMEC 2013a). The monitoring program described in the CMP is intended to support long-term compliance monitoring following implementation of remedy specified in the 2008 Cleanup Action Plan (CAP). The goal of this memorandum is to update the groundwater monitoring program for current conditions at the B&L Woodwaste Site.

In particular, there have been two changes to the remediation program effective September 2017, that affect the data needs of the monitoring program. These are the shutdown of the groundwater recovery and treatment program and the in situ treatment of the Agricultural Field Plume and an area of the Wetlands Plume near PD-141 (refer to Figure 1). The corresponding changes to the groundwater monitoring program include:

1. Increasing the frequency to quarterly and sampling additional wells in the vicinity of the southwest corner, the area with the greatest potential for leachate to migrate beyond the barrier in the absence of hydraulic containment.
2. Increasing the frequency to quarterly and sampling additional wells in the agricultural field in situ treatment area, which is downgradient of the southwest corner.
3. Changing the semiannual spring event from a site-wide event to a more limited event focused on the southwest corner, the in situ treatment areas, and monitoring wells that may indicate potential arsenic rebound in the wetlands plume. Site-wide sampling, including surface water monitoring, monitoring of the landfill property, and monitoring of the lower aquifer away from the aquitard gaps, is reserved for the annual fall monitoring event.

The specific monitoring wells to be sampled are summarized in the following table.

Event/Timing	Monitoring Wells and Surface Water Sampling Locations	Data Objectives
Quarterly: January and July	Upper Aquifer: D-8A, PD-214, PZ-3A, PZ-4A, PZ-5A, MW-33, MW-34, R-15, W-1 Lower Aquifer: MW-40B, D-8B	Monitor for leachate in southwest corner and downgradient of southwest corner. Monitor agricultural field remediation performance.
Semiannual: April	Upper Aquifer: D-8A, PD-214, PZ-3A, PZ-4A, PZ-5A, MW-33, MW-34, R-15, W-1, D-5U, D-7A, MW-13, MW-15, PD-141 Lower Aquifer: MW-40B, D-8B	Monitor for potential wetlands plume rebound.
Annual: October	Upper Aquifer: D-8A, PD-214, PZ-3A, PZ-4A, PZ-5A, MW-33, MW-34, R-15, W-1, D-5U, D-7A, MW-13, MW-15, PD-141, D-6A, D-9A, D-10A, MW-30, MW-31A, MW-35 Lower Aquifer: MW-40B, D-8B, D-5L, D-6B, D-7B Surface Water: SW-2, SW-3, SW-5	Monitor site-wide conditions, including throughout wetlands plume, on landfill property, lower aquifer, and surface water.

OTHER COMPLIANCE MONITORING PLAN CHANGES

Compliance monitoring will be conducted in accordance with the procedures described in the CMP, except where noted.

Water Level Measurements

Water level measurements, previously collected from monitoring wells and piezometers located throughout a broad area surrounding the landfill, will instead be collected from the monitoring wells sampled during each event. Manual water level measurements will also be collected annually from landfill perimeter piezometers, to validate pressure transducer measurements.

Purge Water Disposal

Purge water from compliance monitoring wells generated during sampling will be collected in containers, transported to the secure area at the groundwater treatment plant, and transferred to a U.S. Department of Transportation-approved 55-gallon container. Purge water will be stored onsite until transported and disposed of off-site at an appropriate facility.

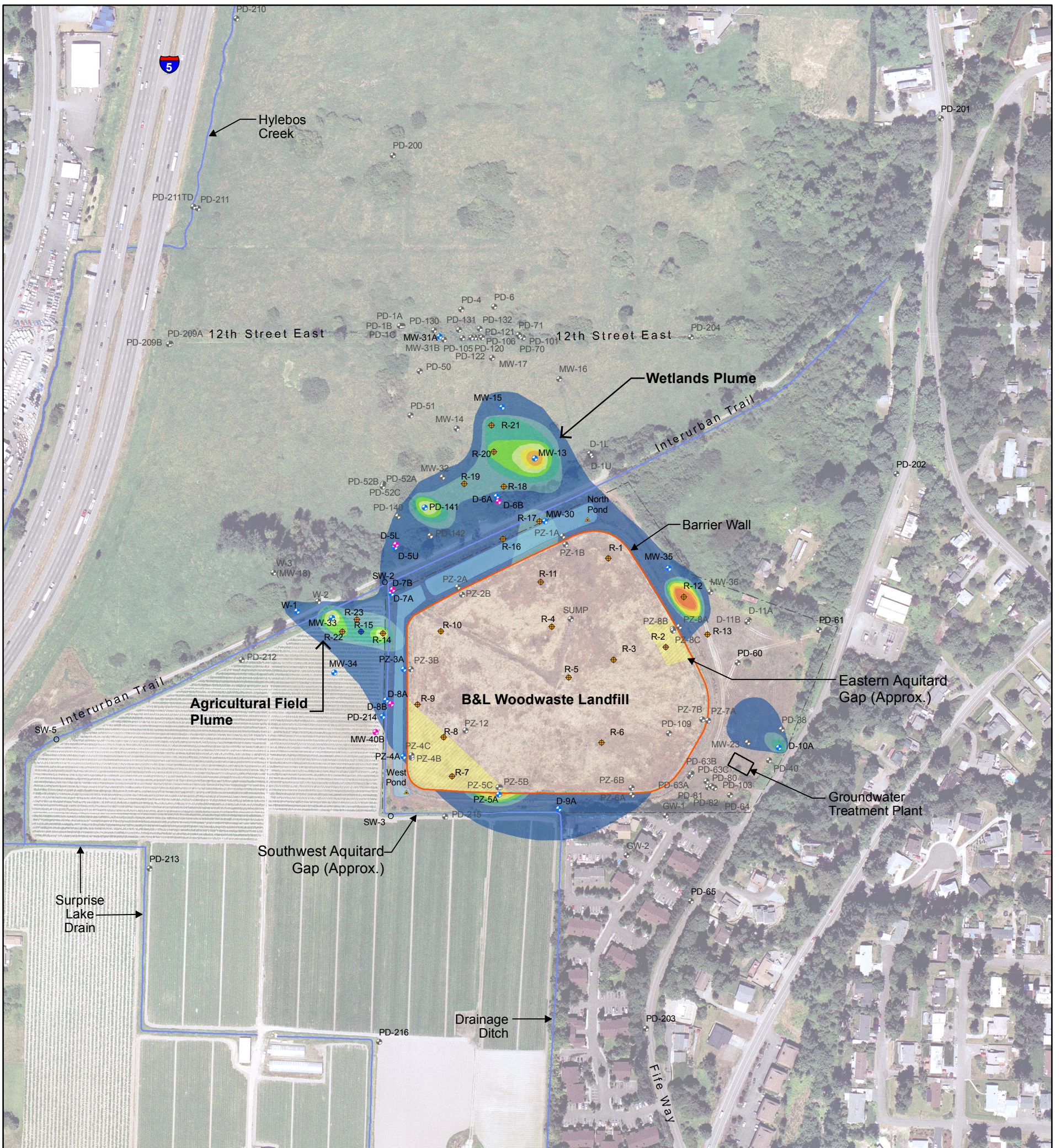
Reporting

Compliance monitoring reports will consist of the following:

- **Quarterly Reports:** Groundwater arsenic results table, analytical laboratory reports.
- **Semiannual Reports:** Groundwater arsenic results table, groundwater arsenic results figure, analytical laboratory reports.
- **Annual Reports:** Groundwater elevations and head difference table, groundwater arsenic results table, surface water arsenic results table, groundwater and surface water arsenic results figure, upper aquifer potentiometric contours, lower aquifer potentiometric contours, time concentration plots, analytical laboratory reports.

LIST OF ATTACHMENTS

Figure 1 Compliance Monitoring Locations



Legend

- w-1 Upper Sand Aquifer Monitoring Location
- D-7B Lower Sand Aquifer Monitoring Location
- SW-5 Compliance Surface Water Monitoring Location
- PD-216 Monitoring Well or Piezometer
- R-10 Recovery Well Location
- West Pond Pond Staff Gage Location
- Conditional Point of Compliance (Barrier Wall)
- Property Boundary from Tax Parcel Data
- Stormwater Pond
- Surface Drainage Feature
- Aquitard Gaps

Inferred Arsenic Concentration, Upper Sand Aquifer in µg/L (October 2016)

- | | |
|---------|-----------|
| 5-100 | 501-600 |
| 101-200 | 601-700 |
| 201-300 | 701-800 |
| 301-400 | 801-900 |
| 401-500 | 901-1,000 |

Notes:

- Orthoimage provided by USGS and dated June-July 2005.
- Hylebos Creek and other surface drainage feature locations shown were digitized from the 2005 orthoimage cited above.
- Black and white reproduction of this color figure may affect interpretation of the results.

Abbreviation:

µg/L = Micrograms per liter

