PERIODIC REVIEW

Recomp of Washington

Facility Site ID#: 76245362

1524 Slater Road

Ferndale, Washington

Northwest Regional Office

SOLID WASTE MANAGEMENT PROGRAM

April 2022

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1.0 INTRODUCTION

The Washington Department of Ecology (Ecology) has prepared this periodic review of post-cleanup Site conditions and monitoring data to ensure that human health and the environment are being protected at the Recomp of Washington site (Site).

As described in this review, the Recomp Site was managed under Washington State solid waste regulations, and Ecology subsequently provided a No Further Action (NFA) opinion that considered the cleanup action to be the landfill closure. Ecology required a restrictive covenant under the Model Toxics Control Act (MTCA) that protects the landfill cover and prohibits the release of contamination from the landfill.

The MTCA regulations are provided in Chapter 173-340 of the Washington Administrative Code (WAC). WAC 173-340-420(2) requires that Ecology (also referred to as "the department") conduct a periodic review of a site every five years under the following conditions:

(a) Whenever the department conducts a cleanup action;

(b) Whenever the department approves a cleanup action under an order, agreed order or consent decree;

(c) Or, as resources permit, whenever the department issues a no further action opinion;

(d) And one of the following conditions exists:

1. Where an institutional control and/or financial assurance is required as part of the cleanup action;

2. Where the cleanup level is based on a practical quantitation limit; or

3. Where, in the department's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the Site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

The Recomp Site requires this review because the landfill cover is an engineered control and requires an institutional control.

When evaluating whether human health and the environment are being protected, the factors the department shall consider include [WAC 173-340-420(4)]:

(a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the Site;

(b) New scientific information for individual hazardous substances or mixtures present at the Site;

(c) New applicable state and federal laws for hazardous substances present at the Site;

(d) Current and projected Site and resource uses;

(e) Availability and practicability of more permanent remedies; and

(f) Availability of improved analytical techniques to evaluate compliance with cleanup levels.

The Department shall publish a notice of all periodic reviews in the Site Register and provide an opportunity for public comment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site Description and History

The Recomp Site includes three current parcels at 1524 and 1526 Slater Road, based on a closed ash landfill on one parcel and an upgradient, soil-bentonite slurry wall that extends onto all three parcels. Appendix 6.1 provides vicinity and parcel maps for the Site. Adak Island Adventures, LLC (ADAK) owns Parcel 99458 that contains the landfill and PES Holdings, LLC owns the east adjacent Parcel 173981 (1526 Slater Road) where the slurry wall is constructed. Parberry Environmental Solutions operates Scrap-It recycling services and Stow-It storage container rental solutions (i.e., Scrap-It Stow-It) on these two parcels. Regional Disposal Company owns Parcel 173983 (1524 Slater Road) and operates a material recovery facility and waste transfer station on the parcel. The slurry wall extends east-to-west, south of the waste transfer building. Table 2.1 identifies three adjoining sites near this address.

Table 2.1: Cleanup Sites Associated with 1524 Slater Road, Ferndale, Washington

Cleanup Site Name	Address	Facility Site ID	Cleanup Site ID	Confirmed and Suspected Contaminated Sites List[1]
Recomp of Washington	1524 Slater Road, Ferndale, WA	76245362	378	No
Wilder Landfill	North of 1524 Slater Road, Ferndale, WA	2901	947	Yes
Friese Hide & Tallow	1528 Slater Road, Ferndale, WA	2326838	7470	Yes

Recorded in Ecology's Integrated Site Information System

The Wilder Landfill site shares a common history with the Recomp Site, but the sites are distinct and this periodic review only applies to the Recomp Site. The Friese Hide & Tallow site is potentially collocated with the Wilder Landfill site.

The Recomp of Washington site was originally part of a larger facility owned by Charles V. Wilder Jr. and operated by Thermal Reduction Company, Inc. (TRC). When TRC sold the

[1] https://apps.ecology.wa.gov/cleanupsearch/reports/cleanup/contaminated The Confirmed and Suspected Contaminated Sites List consists of sites that are undergoing cleanup or are awaiting further investigation and cleanup. Sites that receive a No Further Action determination are removed from the Confirmed and Suspected Contaminated Sites List.

property to Recomp in 1990, Charles Wilder Jr. retained ownership of the property north of the access road to the Friese Hide & Tallow Company facility at 1528 Slater Road.

Table 2.2 describes the Site and surrounding parcels, and summarizes solid waste activities performed on those parcels. The Recomp of Washington Site is on Parcel Nos. 99458, 173981, and 173983 and the Wilder Landfill site potentially extends onto Parcel Nos. 99453, 175637, and 175689.

Table 2.2: Site and Surrounding Parcels

Parcel	Owner	Acreage	Location Description	Solid Waste Facility	Cleanup Site
99458 (Site)	Adak Island Adventures, LLC	10.21	Contains ash landfill and leachate storage lagoon. Formerly contained ash storage facility.	Closed ash landfill, metal recycling	Recomp of Washington
173981 (Site)	PES Holdings, L.L.C.	3.85	Adjoins ash landfill parcel to east. Slurry wall for the landfill is primarily on this parcel.	Metal recycling, past mushroom composting operation in building	Recomp of Washington
173983 (Site)	Regional Disposal Company	3.84	Adjoins ash landfill parcel to south and southeast. Slurry wall extends across parcel.	Material recovery facility, solid waste transfer station	Recomp of Washington
172581	TSA Property Investments LLC	1.80	Partially adjoins ash landfill parcel to south	None	None

Parcel	Owner	Acreage	Location Description	Solid Waste Facility	Cleanup Site
175637	Keith B & Katherine A Dewey Aeden & Morgan E D Hunter	2.28	Adjoins ash landfill parcel to north North of access road to former Friese Hide & Tallow facility.	Hazardous waste pit	Wilder Landfill
99453	Bel Pac Trading, Inc.	4.30	Adjoins hazardous waste pit parcel to west North of surface impoundment on ash landfill parcel	Hazardous waste pit impacts not delineated	Wilder Landfill
175689	Whatcom County	39.73	Adjoins hazardous waste pit parcel to north and east Adjoins ash landfill parcel to north	Hazardous waste pit impacts not delineated	Wilder Landfill
	Railroad easement		Adjoins ash landfill parcel to west	None	None

Parcel	Owner	Acreage	Location Description	Solid Waste Facility	Cleanup Site
99444	Washington State	76.42	Adjoins railroad easement to west Contains Brennan Pond	None	None

Whatcom County Tax Parcel Viewer, [2]Whatcom County Tax Parcel Viewer

The Site and surrounding parcels were undeveloped farmland prior to 1974. In 1974, Wilder Construction Company, Inc. (Wilder) prepared an Environmental Impact Statement to develop a 100-ton per day solid waste incinerator and disposal site. Whatcom County Health Department (then the Bellingham Whatcom District Department of Public Health) granted a Solid Waste Handling Permit for the facility. The 100-ton-per-day incinerator generated about 30 tons per day of combined bottom and fly ash.

In approximately 1977, Whatcom County Health Department granted a permit to Thermal Reduction Company (TRC) to operate a hazardous waste landfill on property north of the Friese Hide & Tallow facility access road. This landfill, commonly referred to as the "Wilder landfill hazardous waste pit," was closed in 1979. The hazardous waste pit is part of the Wilder Landfill site and not subject to this periodic review.

Thermal Reduction Company purchased the Site property from Wilder in 1985 and continued to operate the incinerator and ash landfill until Recomp Inc. purchased the property in 1989. Recomp of Washington (Recomp) continued operating the facility with modifications to remain current with the community's solid waste handling needs and the evolving regulatory requirements. Recomp closed the ash landfill and constructed a temporary ash storage facility. Recomp replaced the existing electrostatic precipitator for the incinerator with an acid-gas scrubber and baghouse. Recomp also started a recycling facility that included a material recovery facility and a composting facility. Recomp sold its solid waste transfer station in 1990 to what is now Regional Disposal Company. Regional Disposal Company operates a material recovery facility and waste transfer station on the Site, which are permitted by Whatcom County Health Department.

[2] https://www.whatcomcounty.us/2979/Map-Portal

2.2 Hydrogeological Investigation

Golder Associates (1988) evaluated the hydrogeological setting for the Site. Monitoring wells MW-1 to MW-11 were installed around the landfill in 1987 and 1988, and MW-2 was abandoned during this period. The Site is underlain by the Bellingham Drift formation. The Bellingham Drift is a glaciomarine drift that consists of unsorted and unstratified, gravelly-sandy silt and gravelly clay with occasional shell fragments. The Bellingham Draft has a relatively low permeability, with discontinuous water bearing units. Golder Associates reports that the vertical permeability of three undisturbed soil samples from silt and clay deposits within the Bellingham Drift were about 10^{-8} centimeters per second, which impedes vertical migration of contamination. All but one of the monitoring wells at the Site are screened in the Bellingham Drift formation, and groundwater flows in a westerly direction.

The Sumas Outwash Sand formation overlies the Bellingham Drift on the eastern portions of the Site. The Bellingham Drift was encountered at 32 and 27 feet below ground surface in MW-1 and MW-4. Monitoring well MW-7 is the only well screened in the Sumas Outwash Sand. The Sumas Outwash Sand consists of stratified coarse-to-fine sand and silt with traces of fine gravel and clay. The Sumas Outwash Sand is approximately 30 feet thick on the eastern portion of the Site, but not encountered on the western portion of the Site, west of the ash landfill along the railroad easement. Groundwater discharges in a westerly direction and seeps occur along the contact of the Sumas Outwash Sand and Bellingham Drift formations.

2.3 Hazardous Waste Pit at Adjacent Wilder Landfill

Weston Solutions (2003) prepared a Preliminary Assessment/Site Inspection (PA/SI) report for the Wilder Landfill on behalf of EPA in accordance with regulations under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), sometimes called Superfund. TRC began disposing waste in the hazardous waste pit in the summer of 1976, when they received a permit from Whatcom County Health Department. Waste deposited into the hazardous waste pit included “approximately 1,000 partially-full oil and resin drums, solvents, asbestos, catalyst beads from refineries, lignosite from Georgia-Pacific…, pentathol (sic) from Crossarm and Bailey Lumber” and “insecticide from the highway department.” Lignosite is a wood pulp product that was mixed with metal plating sludge to make a drilling mud additive, with elevated concentrations of chromium. Whatcom County Health Department revoked the disposal permit in the spring of 1979. Waste disposal stopped when the permit was revoked, but other sources indicate the pit was in operation until 1983. Wilder sold the property south of the Friese Hide and Tallow access road to TRC in 1985, but retained ownership of the property with the hazardous waste pit. The PA/SI reports coordinates on current Parcel No. 175689, but Figures 2-1 and 2-2 in the PA/SI report indicates the approximate boundary of the Wilder Landfill extends on Parcels Nos. 175637 and 99453.

Based on their review, EPA (2003) does not anticipate further investigation under the federal Superfund Program. EPA (2003) stated that EPA’s no further action designation does not relieve the facility from complying with appropriate Washington State regulations. The hazardous waste

pit is located on the adjacent Wilder Landfill site and was specifically excluded from the April 23, 2003 NFA request for the Recomp of Washington Site.

2.4 Ash Landfill

Wilder (1974) proposed to build a 100-ton per day incinerator and disposal site on the Recomp Site with a planned construction start date of July 15, 1974. The previous municipal solid waste landfill used by the City of Bellingham at another location was required to close by June 30, 1974 because it did not meet the minimum functional standards for solid waste handling in WAC 173-301 (implemented on October 26, 1972). Solid waste incineration was proposed because of the scarcity of available landfill sites, prevailing high groundwater tables, and public opposition to landfilling. Wilder reported that incinerator ash requires about 10 to 20 percent of the volume of normal landfill disposal.

Wilder (1974) stated the property was divided into two terraces caused by erosion of the Nooksack River, located about 3,000 feet west of the property. The upper terrace elevation on the east side of the property ranged from 43 to 55 feet, while the lower terrace elevation ranged from 16 feet at a pipe invert beneath the railroad along the west property boundary to 30 to 36 feet at the toe of the upper terrace. A topographic map of the Site prior to landfilling is provided in Appendix 6.2 (Wilder, 1974).

Wilder (1974) specified the ash landfill would be constructed on the lower terrace by:

1. "Divert by ditching, the existing surface drainage from surrounding areas around the perimeter of the lower terrace."

2. "Remove sufficient clay from the lower terrace to form a berm along the westerly and northerly boundary of the lower terrace to blanket the sand slope on the east to a depth of four feet, and for use as cover soil of landfill. Removal of clay shall in no case be greater than four feet above the depth at which water seepage occurred in the sample pits. Top elevation of the top of the berm shall be approximately at the same elevation as the railroad tracks along the westerly boundary, and rise easterly along the northerly boundary to equal the elevation of the upper terrace."

3. "The above conditions will form a containing basin with the low point immediately east of the existing culvert outlet[3] where a holding pond will be constructed. From this point, a monitoring system will be installed…"

Washington implemented new minimum functional standards for solid waste handling in WAC 173-304 on November 27, 1985, and repealed WAC 173-301. Washington implemented solid waste regulations in WAC 173-304 that are consistent with the federal Resource Conservation and Recovery Act (RCRA) of 1976, and that provide prescriptive landfill closure standards, post-

[3] Thermal Reduction Company (1989) Figure 2 in Appendix 6.3 shows a 36-inch culvert beneath the railroad line adjoining the southwest corner of the current wastewater lagoon on the northwest corner of the property.

closure care requirements, and financial assurance requirements. WAC 173-304 was subsequently updated on October 4, 1988. Owners and operators that had a landfill closure plan approved by the jurisdictional health department and are closing before November 27, 1989, were not subject to post-closure care and financial assurance requirements (WAC 173-304-400(3)(b)). TRC closed the ash landfill such that Whatcom County Health Department did not require post-closure care or financial assurance in the landfill permit issued under WAC 173-304.

Harper Owes (1989) prepared an engineering report that depicts (Figure 2, Appendix 6.3) a closed ash landfill area in the northwest corner of the property and an active ash landfill area along the west property boundary in the middle of the property (from north-to-south). The two ash landfill areas are in the lower terrace deposits, on the west side of the property. Harper Owes reported that fly ash and bottom ash from the two 50-ton per day incinerators were disposed in the landfill areas and in a temporary ash pile placed on the active landfill area.

Harper Owes reported that the two landfill areas were constructed by excavating material to form pits, and then ash was deposited in the pits to form cells. The native, low-permeability clay soils inhibit the migration of leachate, and a containment berm was constructed around the landfill area to control surface water movement and to prevent leachate from migrating offsite. Leachate generated by precipitation falling directly on the surface was drained to a holding pond at the northwest corner of the property and then pumped to City of Ferndale wastewater collection system.

Harper Owes (1989) proposed landfill improvements to bring the landfill into compliance with WAC 173-304. They planned to remove the ash stored on the active landfill and to regrade the two landfill areas and construct a minimum two-foot compacted clay cover with a permeability of less than 10^{-6} centimeters per second.

Harper Owes (1989) report that several leachate seeps were present along the west side of the ash landfill areas. They proposed to construct a lined cutoff trench with a perforated drainpipe (a French drain) along the west side of the ash landfill areas to collect these seeps and convey the seepage to a leachate storage pond in the northwest corner of the property. Harper Owes stated that the depth of the collection pipe would be below the elevation of the identified seeps such the pipe would collect stored water that is contained in the existing stored ash and discharged via the seeps. Figure 12 in Appendix 6.4 (Recomp, 1996) shows a cross-section with the gravel interceptor trench and 10-inch perforated leachate collection pipe on the west side of the closed ash landfill. Harper Owes (1989) stated the leachate would be discharged to the City of Ferndale wastewater treatment plant.

Although Whatcom County Health Department determined that the ash landfill was not subject to post-closure care requirements in WAC 173-304, Harper Owes' (1990) Plan of Operations included maintenance tasks for the closed ash landfill, including:

- Ensure perforated drain collector along the western edge of the landfill continues to function as necessary.

- Ensure the leachate storage lagoon and pump station continues to function.
- Maintain the landfill liner and grass cover.
- Continue groundwater and surface water monitoring.

Golder (1990) proposed the construction of a soil-bentonite slurry wall to inhibit the lateral migration of groundwater through the ash landfill areas. The proposed slurry wall extends along the west side of Slater Road and ties into existing compacted clay berms on the west and north sides of the ash landfill areas. The proposed slurry wall extends along the north and east boundaries of current Parcel 173981, extends west through current Parcel 173983 south of the former incinerator and waste receiving building, and then extends northwest along the west property boundary of current Parcel 99458 to the southern extent of the closed ash landfill. The slurry wall was designed to divert groundwater in the Sumas Outwash Sand formation around the closed ash landfill and the overlying temporary ash storage facility. The slurry wall was proposed to be three-feet-thick and to extend three feet into the underlying Bellingham Drift formation. The slurry wall was proposed to be constructed of a mixture of Sumas Sand and Bellingham Drift clay, with potential bentonite clay augmentation to achieve a target permeability of 10^{-7} centimeters per second. Figure 2 in Appendix 6.4 (Recomp, 1996) depicts the location of the slurry wall. The area between the compacted clay landfill cover and the slurry wall is currently covered by paved surfaces and buildings. Groundwater diverted around the slurry wall would discharge to the drainage swale on the west side of the property, along the railroad easement, and potentially infiltrate into the French drain for the closed ash landfill. Figure 12 in Appendix 6.4 (Recomp, 1996) depicts the leachate collection pipe elevation to be slightly below the groundwater level in shallow monitoring well MW-10 and several feet[4] below the groundwater levels in deeper monitoring wells MW-3 and MW-5.

2.5 Ash Storage Facility

In 1988, the Washington State Legislature enacted the "Washington Ash Act," which governed the generation and disposal of ash from incinerators that qualified for the Federal Ash Exclusion, (Chapter 70A.315, Revised Code of Washington, RCW). Ecology promulgated special incinerator ash management standards in WAC 173-306, effective May 31, 1990. Recomp constructed an onsite storage facility for the incinerator ash in 1989, prior to the implementation of WAC 173-306.

Harper Owes (1989) reported that the incinerator processed 100 tons per day of solid waste, generating approximately 30 tons per day of combined bottom and fly ash. They estimated that the incinerator generates 11,000 cubic yards of ash per year and that 38,000 cubic yards of ash were stored atop the active ash landfill area at the time. Harper Owes specified the design of an ash storage facility that enables storage of 78,812 cubic yards of ash, which provided storage

[4] Groundwater and leachate collection pipe elevations depicted in Figure 12 (Appendix 6.4) assumed as estimates.

capacity for the existing 38,000 cubic yards of ash in storage and three years of estimated ash generation.

Harper Owes (1989) specified that the temporary ash storage facility would be constructed in Phase I and II cells on top of the closed ash landfills. The landfills are closed with a two-foot compacted clay layer. The specified bottom liner for the ash storage facility included an 80-mil, high-density polyethylene (HDPE) geomembrane on top of the two-foot compacted clay layer, overlain by 18 inches of compacted native soil and four inches of asphalt. Harper Owes specified the temporary ash storage facility to have a two-foot-high by two-foot-wide perimeter berm, constructed of compacted soil with a 2H:1V (horizontal to vertical) side slope covered by an 80-mil HDPE geomembrane to prevent fluid movement through the berm.

Recomp staged incinerator ash in the ash storage facility from 1989 to May 2, 1994, under permits issued by Whatcom County Health Department and Ecology. The permits required Recomp to perform regular monitoring of groundwater, surface water, and air in the vicinity of the solid waste facilities (see Section 2.8).

2.6 Leachate Storage Lagoon

The leachate storage lagoon is located on the northwest corner of the Site. TRC (1989) stated that the new leachate storage lagoon is a modification of the existing leachate storage lagoon. The new leachate storage lagoon was specified to be lined with an 80-mil HPDE liner over two feet of compacted clay. The total depth of the pond is 15 feet and the side walls have a 2.5H:1V side slope. The lagoon is designed to hold 55,000 gallons with eight feet of water and seven feet of freeboard. The inside dike dimensions are 85-feet-by-85-feet and the water surface dimensions are 48-feet-by-48-feet.

The lagoon receives water collected by the leachate collection pipe installed along the west side of the ash landfill and various wastewater streams from Scrap-It Stow-It's and Regional Disposal Company's operations. Although the leachate collection pipe was originally intended to collect seepage water from the closed ash landfill (Harper Owes, 1989), the slurry wall (Golder, 1990) and paved surfaces inhibit lateral groundwater migration and surface water infiltration through the closed ash landfill. The slurry wall diverts groundwater within the Sumas Outwash Sand formation around the closed ash landfill, and the shallow groundwater west of the closed ash landfill likely discharges to the leachate collection pipe (Figure 12, Appendix 6.4).

The leachate collection pipe currently discharges into the leachate storage lagoon, and the water in the leachate storage lagoon is pumped to City of Ferndale wastewater treatment plant under a state waste discharge permit[5]. The permit requires that wastewater be sampled for pH, total

[5] Ecology Permit and Reporting Information System (PARIS) for ST0007289
http://ecyapwq/Paris/Reports/PermitDetailReport.aspx?PermitId=363634

suspended solids, oil & grease, cadmium, lead, and zinc monthly and be sampled for arsenic, chromium, copper, mercury, nickel, selenium, and silver twice per five-year cycle.

Parberry Environment Solutions is evaluating alternatives for the discharge of water from the leachate collection pipe. Parberry Environment Solutions collected water samples from the leachate line 79 times between October 1, 2014 and September 2, 2021 for analysis of cadmium, copper, lead, and zinc. The maximum detected concentrations of cadmium, copper, lead, and zinc were below the industrial stormwater general permit benchmark concentrations and below the groundwater quality criteria for the State (WAC 173-200). The sampling results are summarized in Appendix 6.5. On June 2, 2020, Parberry Environment Solutions submitted the sample for an analysis of priority pollutants, including metals, asbestos, dioxins, polychlorinated biphenyls (PCBs), pesticides, volatile organic compounds, semivolatile organic compounds, cyanide, and total phenol. The laboratory sample report is provided in Appendix 6.5. The leachate pipe water sample contained metals at concentrations consistent with natural background. The leachate pipe water sample also contained two chemicals that are not consistent with natural background—16.7 micrograms per liter (µg/L) cyanide and 0.8 µg/L ethylbenzene.

Groundwater and surface water samples were submitted for analysis of cyanide in June 1990 (SAIC, 1990; Vasey, 1994). The concentrations of cyanide ranged from less than 10 to 67 µg/L in the Site monitoring wells; the lowest concentrations of cyanide were in wells located near the leachate collection pipe on the west side of the ash landfill. The concentrations of cyanide were 158 µg/L in the leachate pond and 102 µg/L in surface water in the culvert southwest of the leachate pond. The surface water in the leachate pond included quench water used to cool the incinerator ash, groundwater intercepted by the leachate collection trench, leachate from the ash storage area, and runoff from the access roads and parking areas. No additional sampling of cyanide was performed. The concentrations of cyanide exceed the current MTCA surface water cleanup level of 4 µg/L and current groundwater cleanup level of 10 µg/L.

Ecology's Water Quality Program concluded that leachate collection pipe does not quality for discharge under the Industrial Stormwater General Permit (ISGP)[6]. Pursuant to the ISGP, the leachate collection pipe discharge is a "process wastewater" because the water presumptively commingles with water that comes into contact with a waste product (i.e., the incinerator ash). Water that commingles with process water is considered process water. Process wastewater is a prohibited discharge under the ISGP. In the absence of contact with a waste product, the ISGP may allow uncontaminated groundwater to be discharged as a "conditionally authorized non-stormwater discharge." The leachate collection pipe discharge cannot be considered to be "uncontaminated groundwater" at this time based on ISGP criteria.

[6] Ecology Industrial Stormwater General Permit Webpage https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Industrial-stormwater-permit

Ecology's Water Quality Program indicated that a modified state waste discharge permit or an individual National Pollutant Discharge Elimination System (NPDES) permit[7] might be an option for the leachate collection pipe discharge.

2.7 Consent Decree

Recomp entered into Consent Decree No. 96-2-01293-5 with Ecology on July 5, 1996. The Consent Decree required Recomp to dispose of incinerator ash at the Roosevelt Regional Ash Monofill landfill in Klickitat County, Washington that was constructed and permitted under WAC 173-306. The Consent Decree defined incinerator ash placed in the ash storage facility from 1989 to May 2, 1994 as "Prior Production" and incinerator ash generated thereafter as "Current Production." The Current Production incinerator ash was disposed at the Roosevelt Regional Monofill landfill. The Consent Decree required Recomp to remove the Prior Production from the ash storage facility and dispose the ash at the Roosevelt Regional Monofill landfill. Recomp agreed to remove the Prior Production at a sufficient rate for its removal by May 1, 2002. The Consent Decree required Recomp to submit annual Interim Closure Reports and to submit a Final Closure Report for the ash storage facility. Recomp was allowed to close the Facility Closure Account Trust Agreement, dated August 3, 1994, after the removal of the Prior Production no later than May 1, 2002. Following Ecology's Notice of Completion letter, Ecology and Recomp filed a Joint Motion to Dismiss Consent Decree No. 96-2-01293-5 with the Whatcom County Superior Court on May 15, 2001.

2.8 Monitoring Requirements

Cleanup standards were not developed under MTCA for the Recomp of Washington site. This section summarizes testing requirements after closure of the ash landfill in 1989.

TRC's Plan of Operations (Harper Owes, February 1990) describes the facility's groundwater and surface monitoring plan after closure of the ash landfill and during the operation of the ash storage facility. The monitoring plan was prepared in accordance with WAC 173-304 and intended to detect the potential release of contamination from the closed ash landfill and temporary ash storage facility. The monitoring plan includes quarterly sampling of three upgradient monitoring wells, seven downgradient monitoring wells, three surface water sampling locations in the drainage swale west of the landfill, and surface water in the leachate pond. The groundwater and surface water samples were analyzed for field measurements, conventional water quality parameters, and metals. The conventional water quality parameters include alkalinity, chloride, sulfate, nitrate+nitrite, ammonia, chemical oxygen demand, total organic carbon, total suspended solids, and total coliform. The metals include antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc. Groundwater was analyzed for dissolved metals, surface water for total metals, and leachate pond water from total and dissolved metals. The leachate pond samples

[7] Ecology Water Quality Individual Permits Webpage https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Water-Quality-individual-permits

were also analyzed for volatile and semi-volatile organic compounds. In accordance with WAC 173-304(2)(a) and the definition of contamination in WAC 173-304-100, groundwater contamination was defined as an exceedance of the maximum contaminant level in WAC 246-290-310 or a statistical significant increase in concentrations above background levels.

After WAC 173-306 became effective on May 31, 1990, the facility maintained an Ash Management Plan (November 1990, et alia) for the ash storage facility. The Ash Management Plan requires the development of a groundwater monitoring plan for the quarterly sampling of parameters specified in WAC 173-306-500(2)(d)(i)(A)-(L), which include:

A. Temperature;

B. Conductivity;

C. pH;

D. Chloride;

E. Nitrate, nitrite, and ammonia as nitrogen;

F. Sulfate;

G. Dissolved iron, cadmium, lead, and mercury;

H. Dissolved zinc and manganese;

I. Chemical oxygen demand;

J. Total organic carbon;

K. Calcium and sodium; and

L. Gamma radiation.

The Ash Management Plan stated that sampling of individual nitrogen compounds and gamma radiation was only planned for one year. The Ash Management Plan also included quarterly testing of lead and cadmium in ambient air samples and annual testing of lead and cadmium in soil at the property boundary, in accordance with WAC 173-306-200(4)(g) and WAC 173-306-500(5).

The 1996 Consent Decree stated that the incinerator ash was sampled quarterly in accordance with the US Environmental Protection Agency (EPA)'s "Sampling and Analysis of Municipal Refuse Incinerator Ash" draft guidance, dated May 20, 1994. EPA's (1994) draft guidance provides sampling procedures and methodologies to confirm that ash does not exhibit the toxicity characteristic for hazardous waste (D-listed hazardous waste defined in 40 Code of Federal Regulations (CFR) 261.24). The Consent Decree stated that the incinerator ash generated after May 2, 1994, (i.e., Current Production) was sampled, and that the concentrations of lead

and cadmium in the Toxicity Characteristic Leaching Procedure (TCLP) leachate were below the threshold for designation as hazardous waste. The Prior Production (i.e., ash generated between 1989 and May 2, 1994) was characterized by submitting 50 ash samples for analysis of TCLP metals. The Consent Decree stated that the "Prior Production passed TCLP at a high statistical confidence level" and concluded that the incinerator ash was not considered hazardous waste.

2.9 No Further Action Opinion

Because the Recomp of Washington Site was listed on Ecology's Confirmed and Suspected Contaminated Sites List (CSCSL)[8], Recomp applied to Ecology's Voluntary Cleanup Program on April 29, 2003, and requested a No Further Action (NFA) opinion (Environmental Health Services, 2003). Ecology provided an NFA opinion and removed the site from the CSCSL. The justification for the NFA opinion included:

- Permitting authorities have always permitted the site; Whatcom County Health Department with Ecology oversight for the solid waste handling permit and Northwest Air Pollution Authority for releases to air. Therefore, this site has always had some degree of regulatory oversight.

- Although pre-to-mid-1980 investigations indicated off-property migration of contaminants, several following investigations, including an EPA investigation, indicate no releases are occurring from the Recomp property.

- The Washington Department of Health conducted a Health Risk Assessment on the facility with no significant adverse findings.

- Fourteen years of groundwater and surface water monitoring did not detect an ongoing or significant release from the facility to groundwater or surface water. Twelve years of this monitoring occurred post-closure of the ash landfill thereby providing performance monitoring for the closure controls.

- The landfill has an engineered cover and is surrounded by a controlled density slurry wall on three sides and a re-compacted clay wall on the downgradient side.

- The geology of the Site is very restrictive to groundwater movement.

- The landfill has a constructed, engineered, passive leachate collection system that assures no leachate buildup will occur within the landfill.

[8]See "What does it mean to be on Ecology's List of Contaminated Sites" https://ofm.wa.gov/sites/default/files/public/legacy/resources/yearend/What_does_it_mean_to_be_on_Ecologys_list.pdf

- Collected leachate is discharged to a publicly owned treatment works (POTW) (wastewater treatment plant) under a discharge permit that requires monthly testing of the discharge. Discharge results are well below permit limitations.

- The City of Ferndale POTW that receives the wastewater required Recomp to remove all sludge impacted by the facility operations. This removal is completed.

- All temporarily stored ash is removed from the Site and disposed in accordance with an ash handling plan and permit.

- The waste materials in the landfill were characterized by EPA and Ecology and found to be suitable to remain onsite.

- No additional landfilling occurred following closure of the ash landfill in 1989.

- A hydrogeological investigation was conducted on the Site with oversight and approval from the Whatcom County Health Department and Ecology.

- The three water-bearing zones found through hydrogeological investigation have very low production rates making them unsuitable for use.

- There is no known groundwater use downgradient of the Site, between the Site and the Nooksack River.

- The facility is located within the City of Ferndale in a manufacturing zone. A significant amount of new development has occurred around the Site and the Site itself has long-term committed uses within the complex. Therefore, the Site will not be converted to residential use nor will it be abandoned.

- A solid waste transfer station with a long-term commitment resides on the property. This operation will require continued permitting and inspection by the Health Department; therefore, long-term oversight is assured.

- The Facility is fenced.

- A public participation grant was awarded to a concerned citizen group to investigate the facility and findings of State and Federal investigations have had substantial publicity thereby assuring public participation and involvement.

Ecology issued a NFA opinion on January 5, 2005 based on the review of:

- 1988 Preliminary Hydrogeological Investigation (Golder Associates, 1988).

- 1989 Engineering Report for Landfill Closure and Temporary Ash Storage Facility Construction.

- 1989 Geotechnical Design Report for Proposed Temporary Ash Storage Facility.

- Quarterly groundwater monitoring from September 1993 to September 2001.

Ecology concluded that the release of lead and cadmium into soil no longer poses a threat to human health or the environment. Ecology's NFA was granted for only the release identified in the April 29, 2003 letter. Although Ecology granted the NFA under MTCA, the

- Ash was disposed in a landfill permitted under WAC 173-301 and WAC 173-304.

- Site investigations were performed for the landfill permit under WAC 173-304.

- Landfill was closed under WAC 173-304 without post-closure care and financial assurance requirements.

- Groundwater and surface water monitoring was performed in accordance with Plan of Operation (Harper Owes, 1990) that satisfied WAC 173-304 during operation of the ash storage facility.

Under the MTCA framework, Ecology considered the release to be the landfilled ash material that contains lead and cadmium and the Remedial Action to be the landfill closure. These reports do not reference a release of contamination from the landfill. Ecology's NFA is subject to maintaining a restrictive covenant for the property.

2.10 Restrictive Covenant

Ecology determined that the Site was eligible for a 'No Further Action' determination if a Restrictive Covenant was recorded for the property. A Restrictive Covenant (provided in Appendix 6.6) was recorded for the Site on October 1, 2004 which imposed the following limitations:

Section 1. Any activity on the Property that may result in the release or exposure to the environment of the contaminated soil that was contained as part of the Remedial Action, or create a new exposure pathway is prohibited. Some examples of activities that are prohibited in the capped areas include: drilling, digging, placement of any objects or use of any equipment which deforms or stresses the surface beyond its load bearing capability, piercing the surface with a rod, spike or similar item, bulldozing or earthwork.

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. Any unpermitted activity on the property that may result in the release of contaminants remaining on the Property as part of the Remedial Action that may expose the City of Ferndale water sewer or storm water systems to contamination is prohibited without prior written approval from Ecology.

Section 5. The Owner of the Property must give thirty (30) days advance written notice to Ecology of the Owner's intent to convey interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 6. The Owner must restrict leases to uses and activities consistent with the Restrictive Covenant and notify all lessees of the restrictions on the use of the Property.

Section 7. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Restrictive Covenant. Ecology may approve any inconsistent use only after public notice and comment.

Section 8. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times, and upon reasonable notice unless an emergency prevents such notice, for the purposes of evaluating the Remedial Action, to take samples, to inspect remedial actions conducted at the property, and to inspect records that are related to the Remedial Action.

Section 9. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Restrictive Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

2.11 Site Inspection

Ecology and Whatcom County Health Department performed a site visit on January 22, 2021 to review the current status of the facility. Appendix 6.7 provides the Site Inspection Checklist and Appendix 6.8 provides photographs from the site visit.

3.0 PERIODIC REVIEW

3.1 Effectiveness of Completed Cleanup Actions

In the NFA letter, Ecology considered the completed closure of the ash landfill to be the MTCA cleanup action. Whatcom County Health Department approved the closure the ash landfill under WAC 173-304 by November 27, 1989, such that no post-closure care or financial assurance requirements were required under the solid waste regulations. Recomp performed perimeter soil and air monitoring and surface and groundwater monitoring during the operation of the overlying ash storage facility from 1989 through 2001. There is no documented release of contamination from the closed ash landfill or the former ash storage facility.

The gravel interceptor trench and leachate collection pipe was installed along the west side of the ash landfill in 1989 as a part of the landfill closure (Harper Owes, 1989). The 1990 Plan of Operations (Harper Owes, 1989) included the continued operation of the leachate collection pipe and the pump station for the leachate storage lagoon, which would intercept leachate from the closed ash landfill and discharge the leachate to the City of Ferndale wastewater treatment plant.

The long-term need for the leachate collection pipe was mitigated by the construction of the soil-bentonite slurry wall, which was proposed in February 1990 (Golder, 1990). The proposed soil-bentonite slurry wall extends along the north and east sides of current Parcel 173981, extends west through current Parcel 173983 south of the former incinerator and waste receiving building, and then extends northwest along the west property boundary of current Parcel 99458 to the south extent of the closed ash landfill. The slurry wall was constructed through the Sumas Outwash Sand formation, keyed about three feet into the underlying Bellingham Drift formation, and appears to tie-into the compacted clay berms on the northeast and southwest sides of the closed ash landfill. The slurry wall was designed with a sufficiently low permeability to prevent groundwater from laterally migrating toward the closed ash landfill. The closed ash landfill was constructed with a two-foot compacted clay cover. The surface between the closed ash landfill and the slurry wall is completed with paved and gravel surfaces, which were observed during the January 22, 2021, site visit. The clay cap of the landfill extends beyond the landfill to the asphalt-paved surface that extends to the slurry wall. The maintenance of the low-permeability landfill cover, the soil-bentonite slurry wall, and the paved surfaces at the facility limit the recharge of water into the closed ash landfill. The leachate collection pipe may only receive shallow groundwater from the drainage swale between the closed ash landfill and the railroad tracks, which is partially recharged by groundwater that is diverted around the slurry wall.

A water sample was collected from the leachate collection pipe on June 2, 2020, and submitted for the analysis of priority pollutants. The water sample contained naturally occurring metals that may be indicative of background conditions. Arsenic was detected at 5.2 µg/L, which exceeds target cleanup levels of 5.0 µg/L for groundwater and surface water, but which is generally consistent regional background concentrations. The concentrations of the other metal species were below applicable MTCA screening levels. The water sample contained 16.7 µg/L cyanide, which exceeds the 10 µg/L MTCA Method B groundwater cleanup level, the 5.2 µg/L surface water screening level protective of aquatic life, and the 4.0 µg/L surface water screening level

protective of human health. Cyanide is not listed as a potential hazardous substance for ash landfills, and its origin in unknown. The water sample also contained 0.8 µg/L of ethylbenzene, which is orders-of-magnitude below the applicable screening levels.

The Restrictive Covenant for the Site was recorded and is in place. This Restrictive Covenant prohibits activities that would disturb the landfill cover and that may result in the release of hazardous substances into the environment.

3.2 New Scientific Information for Individual Hazardous Substances or Mixtures Present at the Site

There is no new scientific information for the contaminants related to the Site.

3.3 New Applicable State and Federal Laws for Hazardous Substances Present at the Site

The cleanup at the Site was governed by landfill closure standards in WAC 173-304. The hazardous substances within the closed ash landfill and former ash storage facility were evaluated by federal hazardous waste standards, WAC 173-304 standards (non-hazardous solid waste landfills after enactment of RCRA), and WAC 173-306 standards (special incinerator ash landfills). The cleanup action is still protective of human health and the environment.

3.4 Current and Projected Site and Resource Use

The Site is currently used for commercial and industrial purposes. There have been no changes in current or projected future Site or resource uses.

3.5 Availability and Practicability of More Permanent Remedies

The ash landfill was authorized under WAC 173-301 and closed under WAC 173-304, which were the applicable solid waste regulations at the time. In the NFA letter, Ecology considered the landfill closure to be the MTCA cleanup action. The landfill containment remedies appear to be working; however, there is no groundwater monitoring requirements for the facility. The relocation of the closed ash landfill is not under consideration.

3.6 Availability of Improved Analytical Techniques to Evaluate Compliance with Cleanup Levels

The analytical methods used during the operation of the ash storage facility were capable of detection below applicable screening levels. The current monitoring requirements are limited to surface water discharges. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

The following conclusions have been made as a result of this periodic review:

- The cleanup action (i.e., landfill closure) completed at the Site appears to be protective of human health and the environment.

- The landfill containment system includes native low-permeability soils beneath the landfill, a compacted clay cover above the landfill material, and a gravel cutoff trench and leachate collection pipe downgradient of the landfill. Additionally, the soil-bentonite slurry wall and paved surfaces between the landfill cover and the slurry wall divert groundwater and surface water away from the closed ash landfill.

- The Restrictive Covenant for the property continues to be effective in protecting human health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action.

- This periodic review distinguishes the Recomp of Washington site and the adjoining Wilder Landfill site, but the periodic review does not evaluate the Wilder Landfill site.

Based on this periodic review, the Department of Ecology has determined that the requirements of the Restrictive Covenant continue to be met. No additional cleanup actions are required at the Site by the property owner. The property owner is responsible for inspecting the Site to assure that the integrity of the remedy is maintained.

4.1 Next Review

The next review for the Site will be scheduled five years from the date of this periodic review. In the event that additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years from the completion of those activities.

5.0 REFERENCES

Ecology, 1996, Consent Decree No. 96-2-01293-5 between the Washington Department of Ecology and Recomp of Washington, Inc., Signed July 1, 1996, entered into Whatcom County Superior Court on July 5, 1996.

Environmental Health Services (EHS), 2003, Letter to Ecology RE Completion of Voluntary Cleanup of Recomp of Washington, 1524 Slater Road, Ferndale, Washington 98227, Whatcom County, April 29, 2003.

Environmental Protection Agency, 1994, Sampling and Analysis of Municipal Refuse Incinerator Ash, Draft, EPA-530-R-94-020, May 1994.

Environmental Protection Agency, 2003, No Further Action letter for hazardous waste pit under Federal Superfund Program, April 25, 2003.

Golder Associates, 1988, Technical Memorandum to Thermal Reduction Company Preliminary Hydrological Investigation, Bellingham, Washington, June 1988.

Golder Associates, 1990, Geotechnical Design Report, Proposed Soil Bentonite Slurry Wall, Thermal Reduction Company, Bellingham, Washington, February 20, 1990.

Harper Owes, 1989, Engineering Report, Landfill Closure and Temporary Ash Storage Facility Construction, Thermal Reduction Company, June 28, 1989.

Harper Owes, 1990, Plan of Operation, Waste Reduction Facility, Thermal Reduction Company, February 1990.

Recomp of Washington, 1990 et alia, Ash Management Plan, Recomp of Washington, Inc., 1524 Slater Road, November 1990, revised April 1991, March 1992, et alia.

Recomp of Washington, 1996, Annual Report for the Year 1995, Recomp of Washington, Inc., Slater Road, Ferndale, Washington, March 1996.

Restrictive Covenant, October 1, 2004.

Science Applications International Corporation (SAIC), 1990, Field Sampling and Laboratory Analysis Report for Oversight of Ground Water and Surface Water Sampling at Thermal Reduction Company, Inc., Ferndale, Washington, November 1990.

Vasey Engineering, 1994, Water Quality at Recomp Ash Monofill, Recomp of Washington, 1524 Slater Road, Ferndale, Washington, April 7, 1994.

Weston Solutions, 2003, Wilder Landfill-Hazardous Waste Pit Preliminary Assessment/Site Inspection Report, EPA Contract 68-S0-01-02, TDD 01-09-0001, March 21, 2003.

Wilder Construction Company, 1974, Environmental Impact Statement, Proposed 100-Ton Per Day Solid Waste Incinerator and Disposal Site, State Highway 540 near Ferndale Washington, Northwest Pollution Authority, May 15, 1974.

6.0 APPENDICES

6.1 Vicinity and Parcel Maps

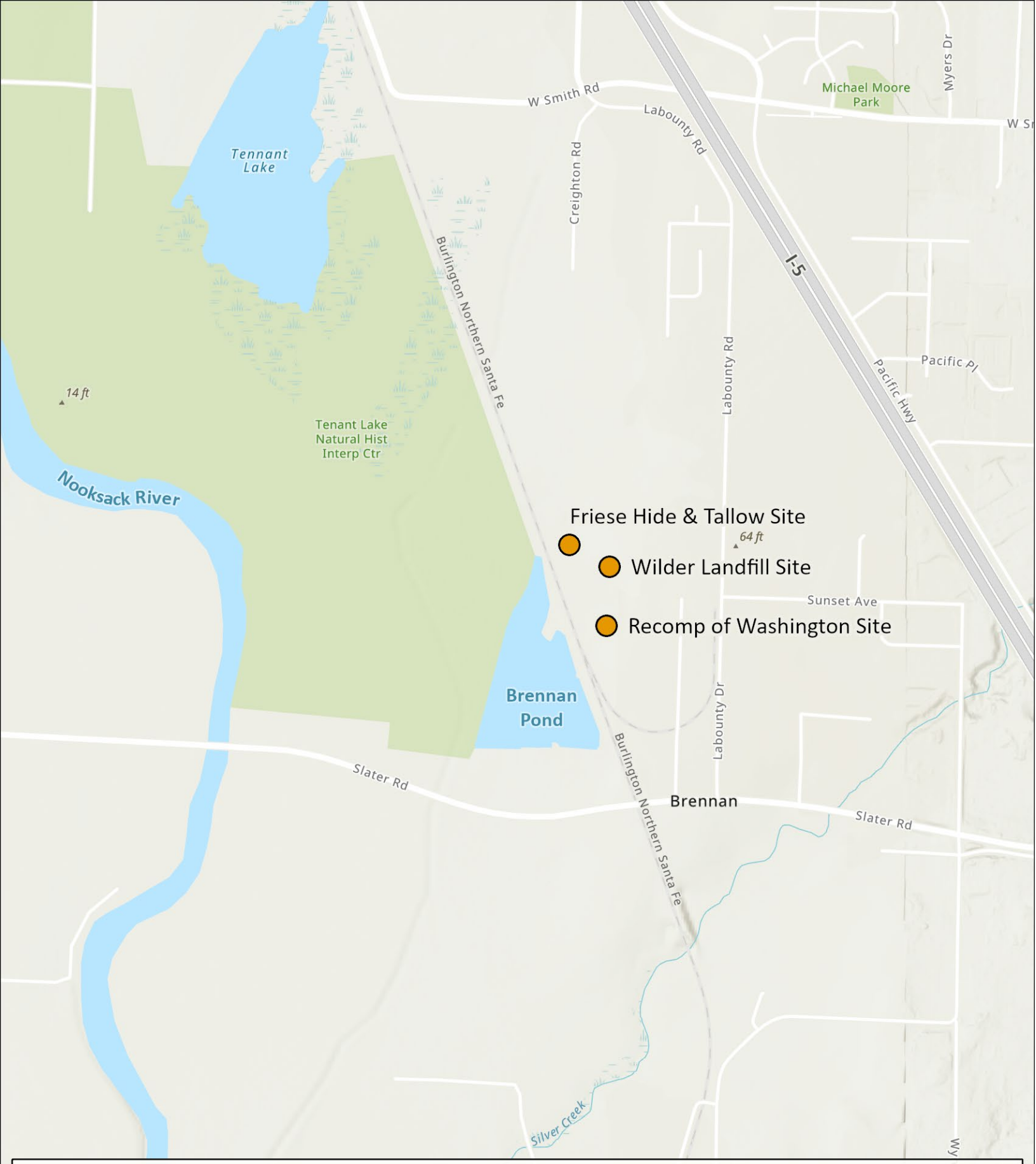


Figure 1: Vicinity Map

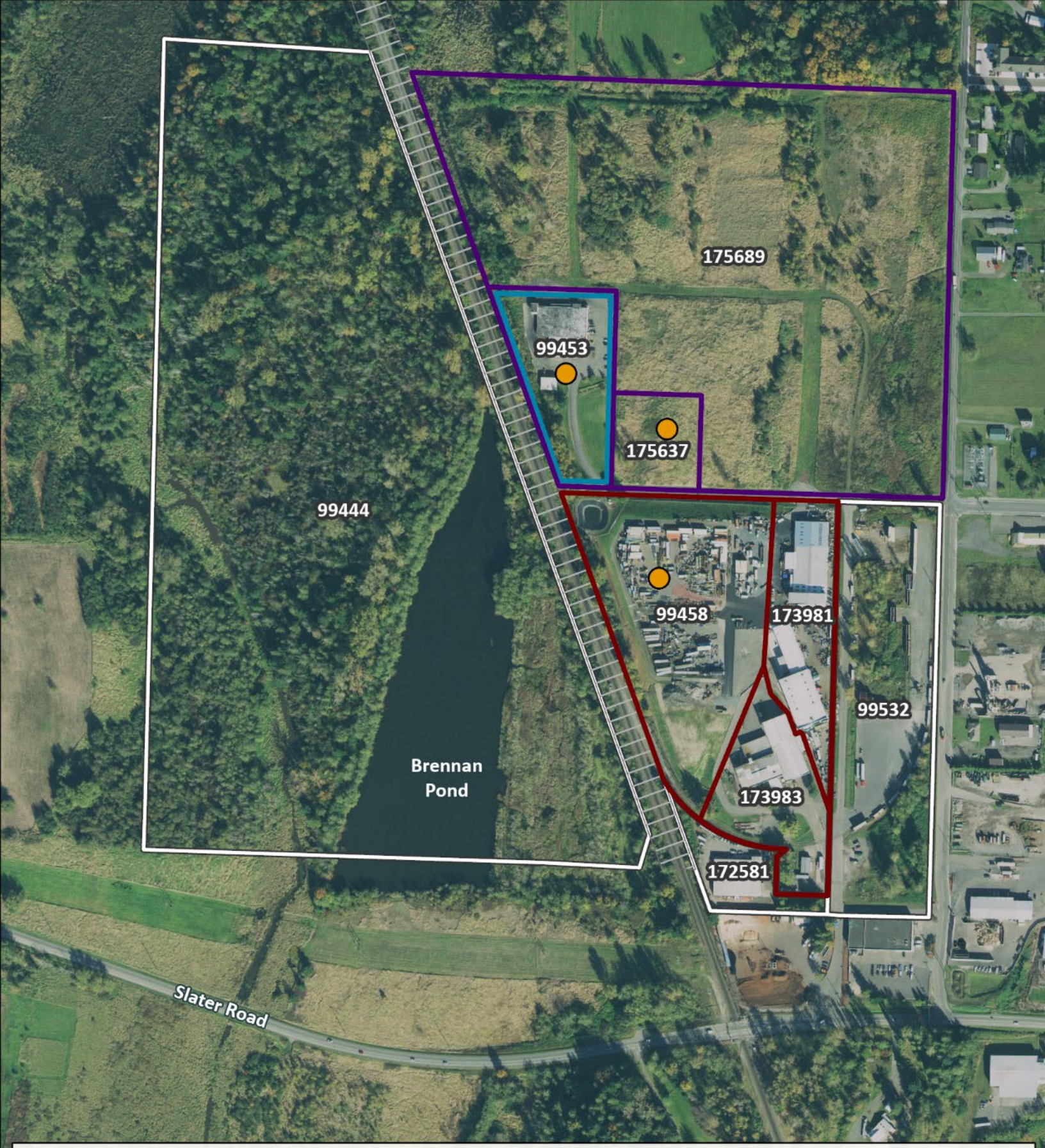


Figure 2: Parcel Map

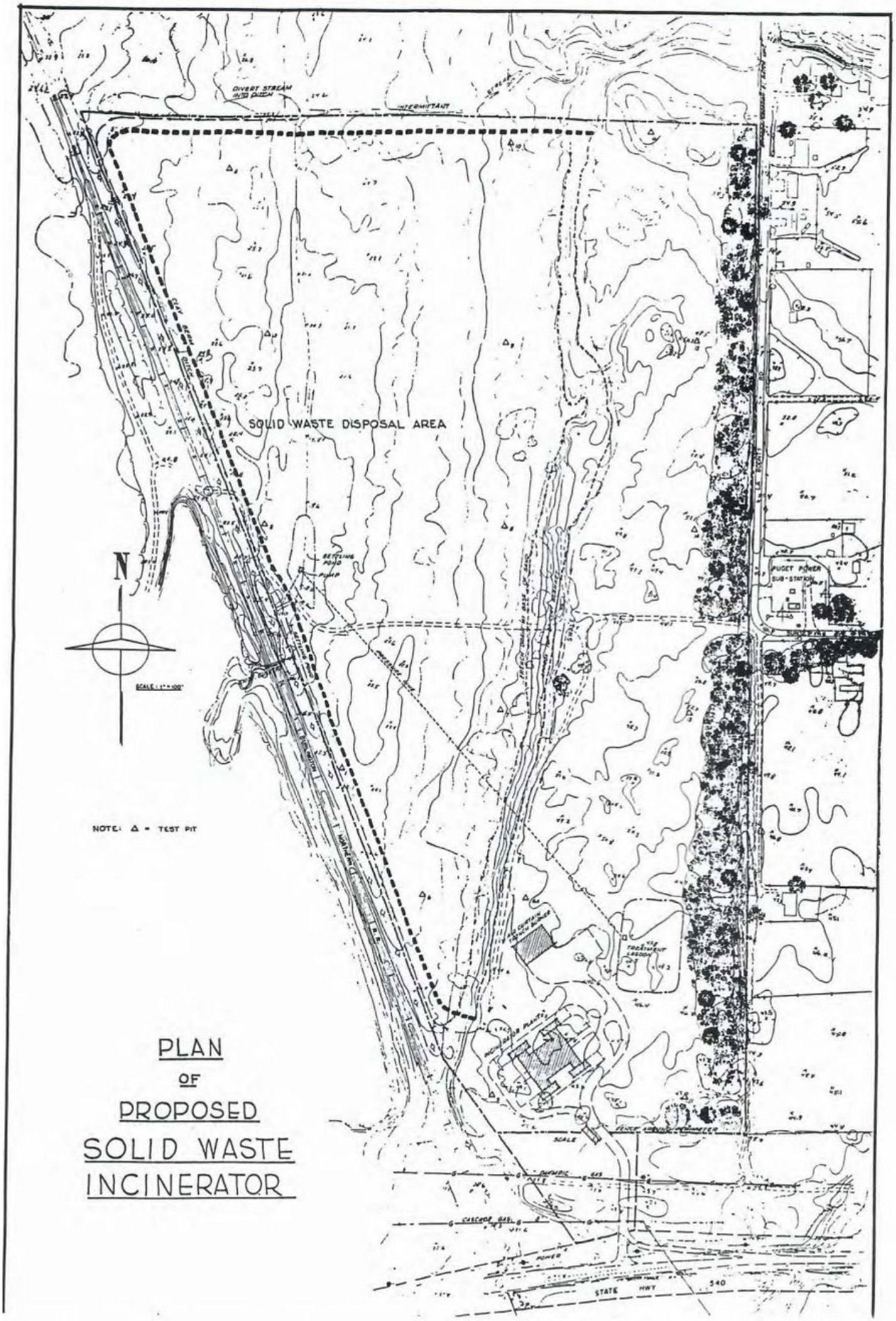
Parcel Boundaries

- Recomp of Washington Site
- Wilder Landfill Site
- Friese Hide & Tallow Site
- Railroad Easement
- Approximate source location at Site

N

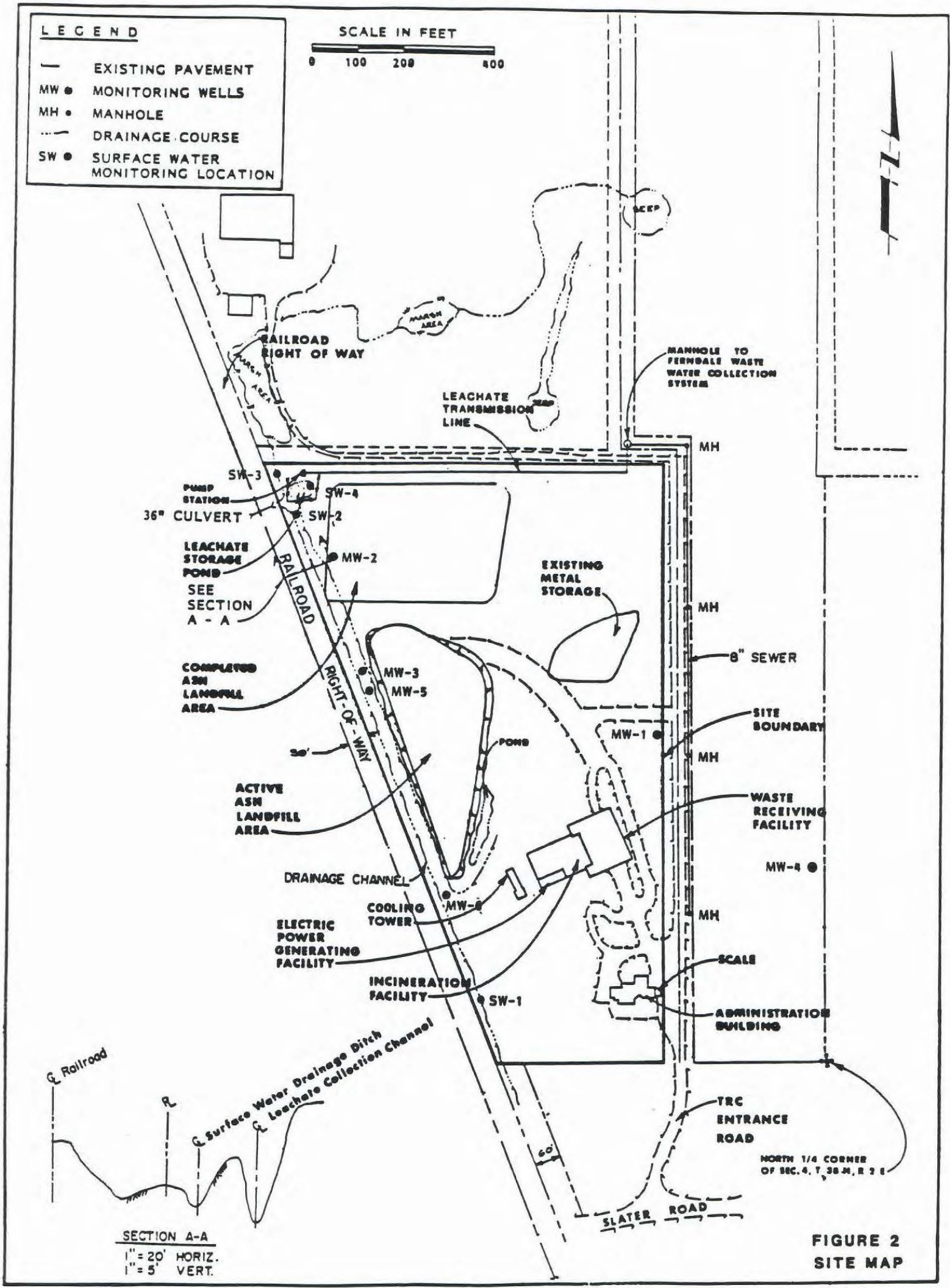
0 250 500 Feet

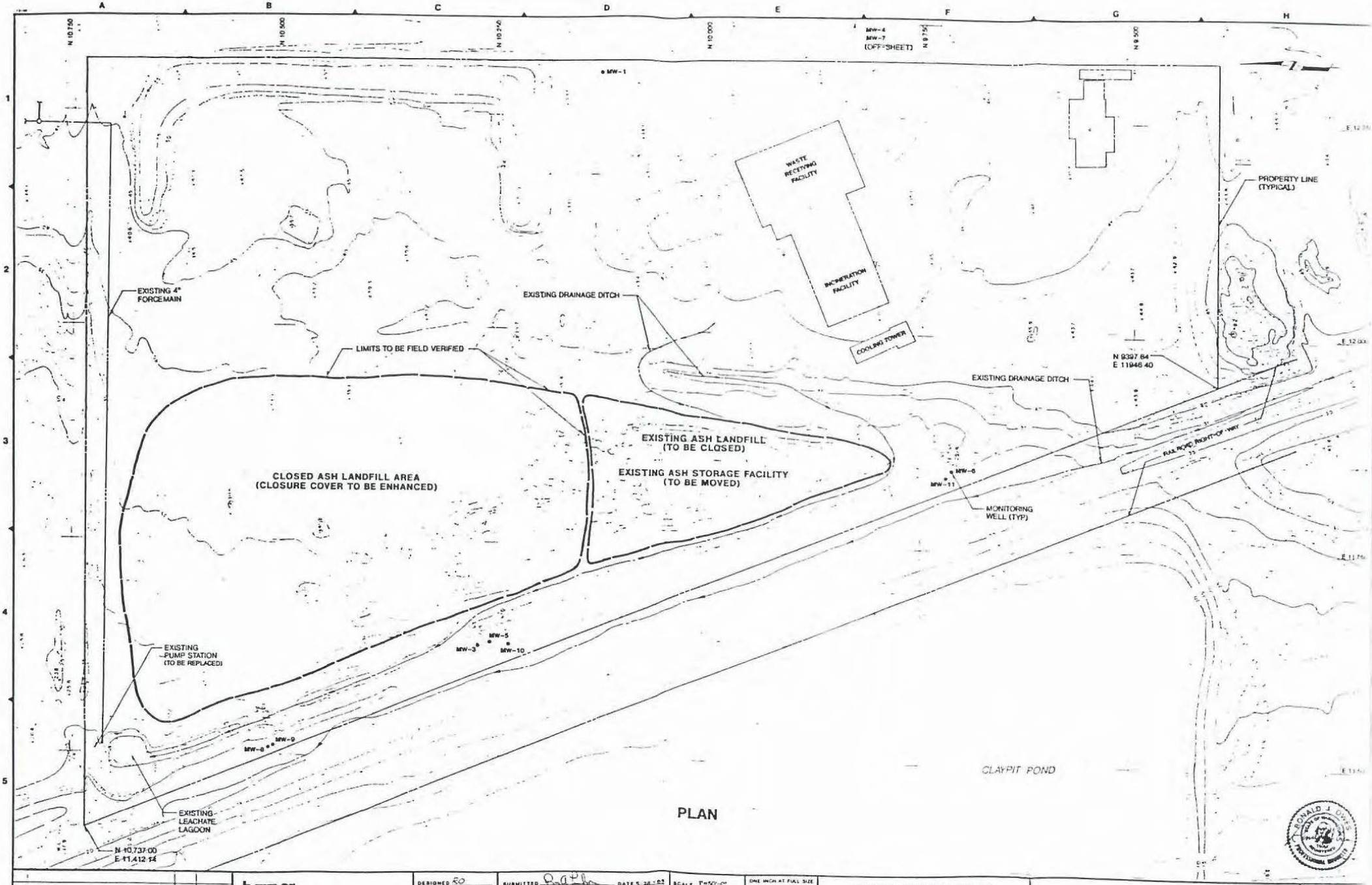
6.2 Topographic Map Prior to Landfilling (Wilder, 1974)



PLAN OF PROPOSED SOLID WASTE INCINERATOR

6.3 Facility Figures (Harper Owes, 1989)


LEGEND
EXISTING PAVEMENT
MW MONITORING WELLS
MH MANHOLE
DRAINAGE COURSE
SW SURFACE WATER MONITORING LOCATION
SCALE IN FEET
0 100 200 400
SEEP
MARSH AREA
RAILROAD RIGHT OF WAY
MANHOLE TO FERNDALE WASTE WATER COLLECTION SYSTEM
LEACHATE TRANSMISSION LINE
MH
SW-3
PUMP STATION
SW-4
36" CULVERT
SW-2
LEACHATE STORAGE POND
MW-2
SEE SECTION A - A
RAILROAD
EXISTING METAL STORAGE
MH
8" SEWER
COMPLETED ASH LANDFILL AREA
MW-3
MW-5
RIGHT-OF-WAY
SITE BOUNDARY
MW-1
POND
MH
ACTIVE ASH LANDFILL AREA
WASTE RECEIVING FACILITY
MW-4
DRAINAGE CHANNEL
COOLING TOWER
MW-6
MH
ELECTRIC POWER GENERATING FACILITY
SCALE
INCINERATION FACILITY
SW-1
ADMINISTRATION BUILDING
TRC ENTRANCE ROAD
NORTH 1/4 CORNER OF SEC. 4, T. 38 N., R. 2 E.
SLATER ROAD
℄ Railroad
R
℄ Surface Water Drainage Ditch
℄ Leachate Collection Channel
SECTION A-A
1" = 20' HORIZ.
1" = 5' VERT.
FIGURE 2
SITE MAP



REVISION	BY	DATE

harper owes CONSULTING ENGINEERS

DESIGNED EO
DRAWN BB
CHECKED

SUBMITTED DATE 5-31-89
APPROVED DATE
APPROVED DATE

SCALE 1"=50'-0"
DATE JUNE 28,1989
JOB NO TRLA 1068

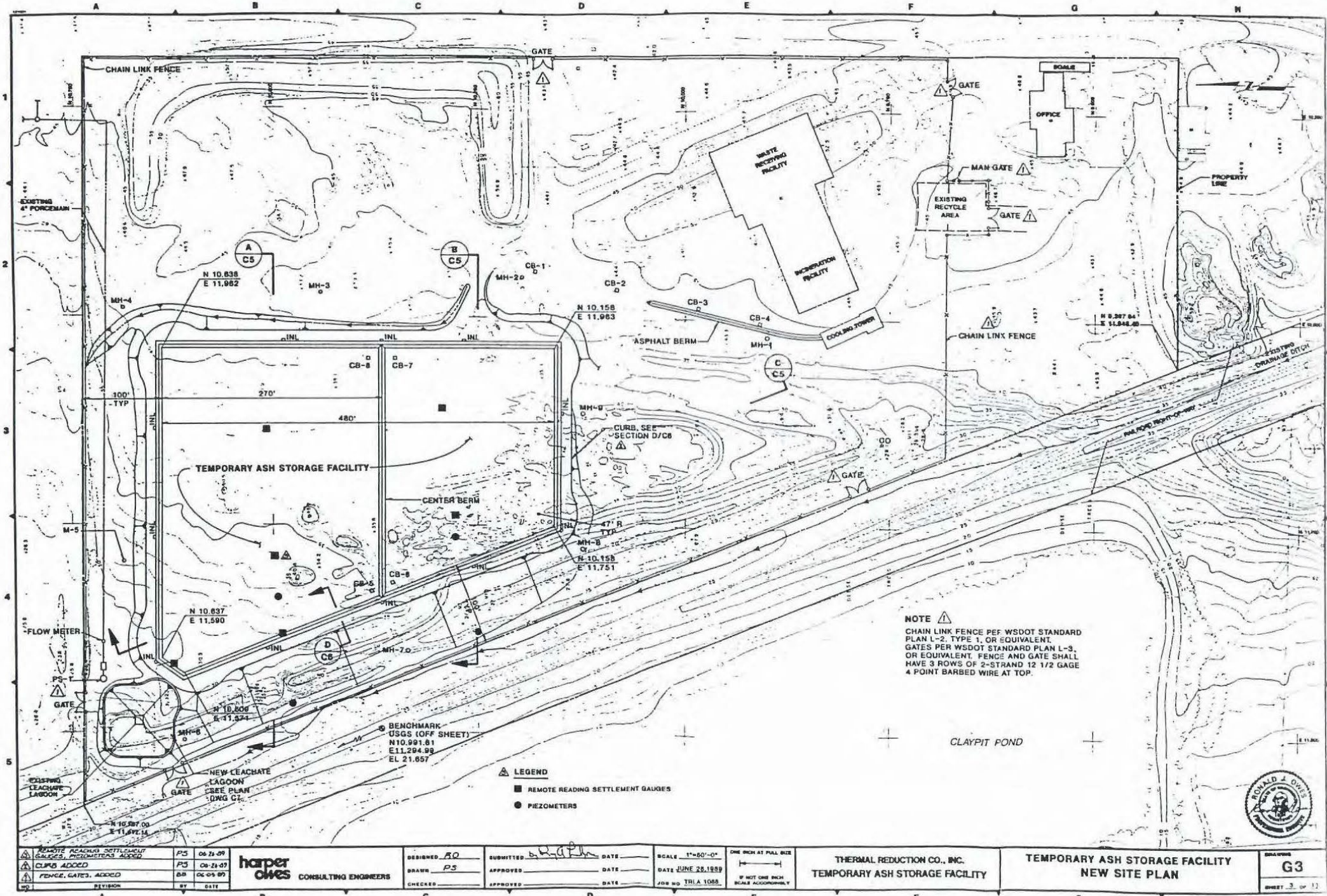
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

THERMAL REDUCTION CO., INC.
TEMPORARY ASH STORAGE FACILITY

EXISTING SITE PLAN

DRAWING G2

SHEET 2 OF 3



NO	REVISION	BY	DATE
3	REMOTE READING SETTLEMENT GAUGES, PIEZOMETERS ADDED	PS	06-26-89
2	CURB ADDED	PS	06-26-89
1	FENCE, GATES, ADDED	BB	06-05-89

harper owes CONSULTING ENGINEERS

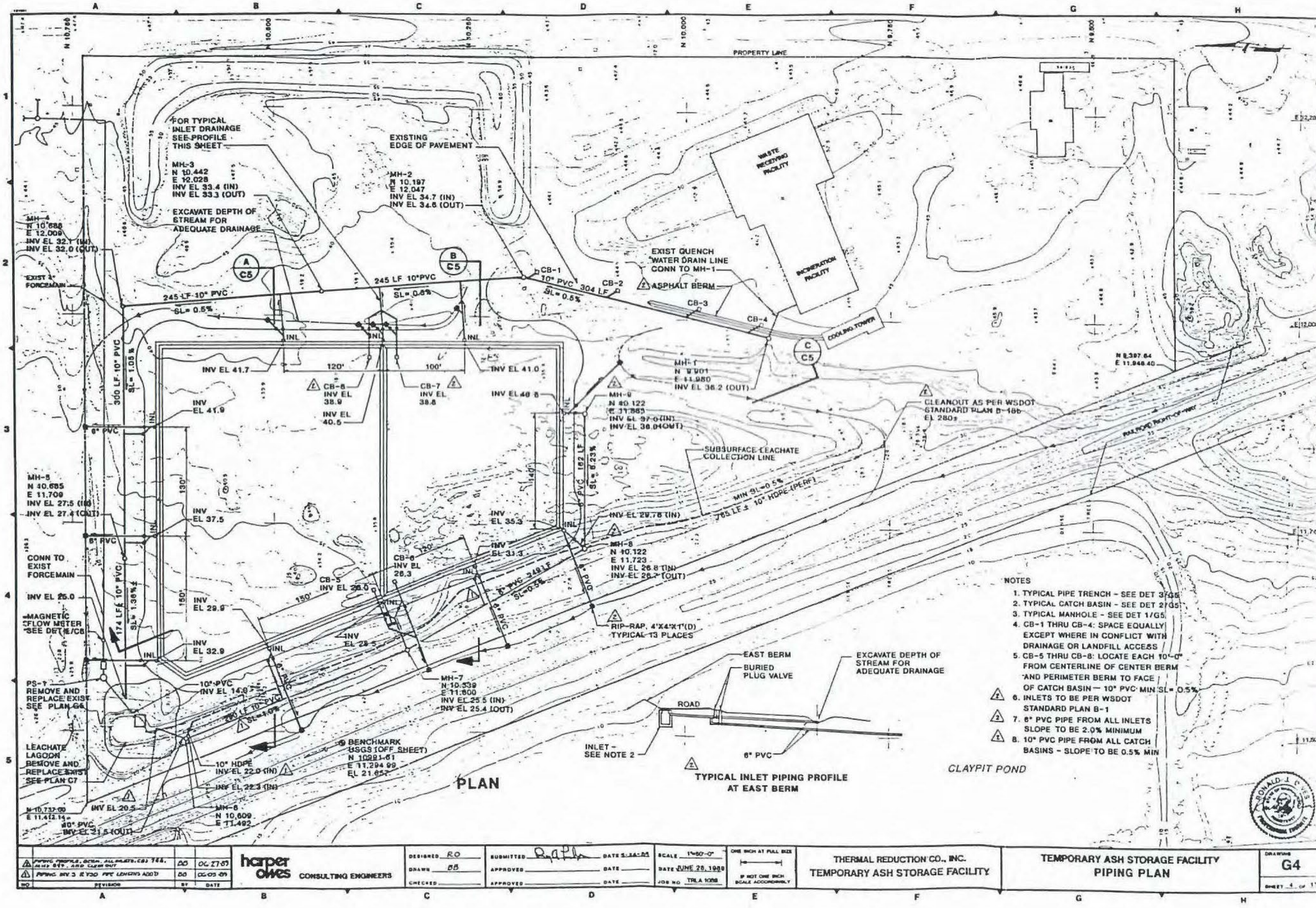
DESIGNED AO
DRAWN PS
CHECKED
SUBMITTED DATE
APPROVED DATE
APPROVED DATE

SCALE 1"=60'-0"
DATE JUNE 28,1989
JOB NO TRI.A 1068

THERMAL REDUCTION CO., INC.
TEMPORARY ASH STORAGE FACILITY

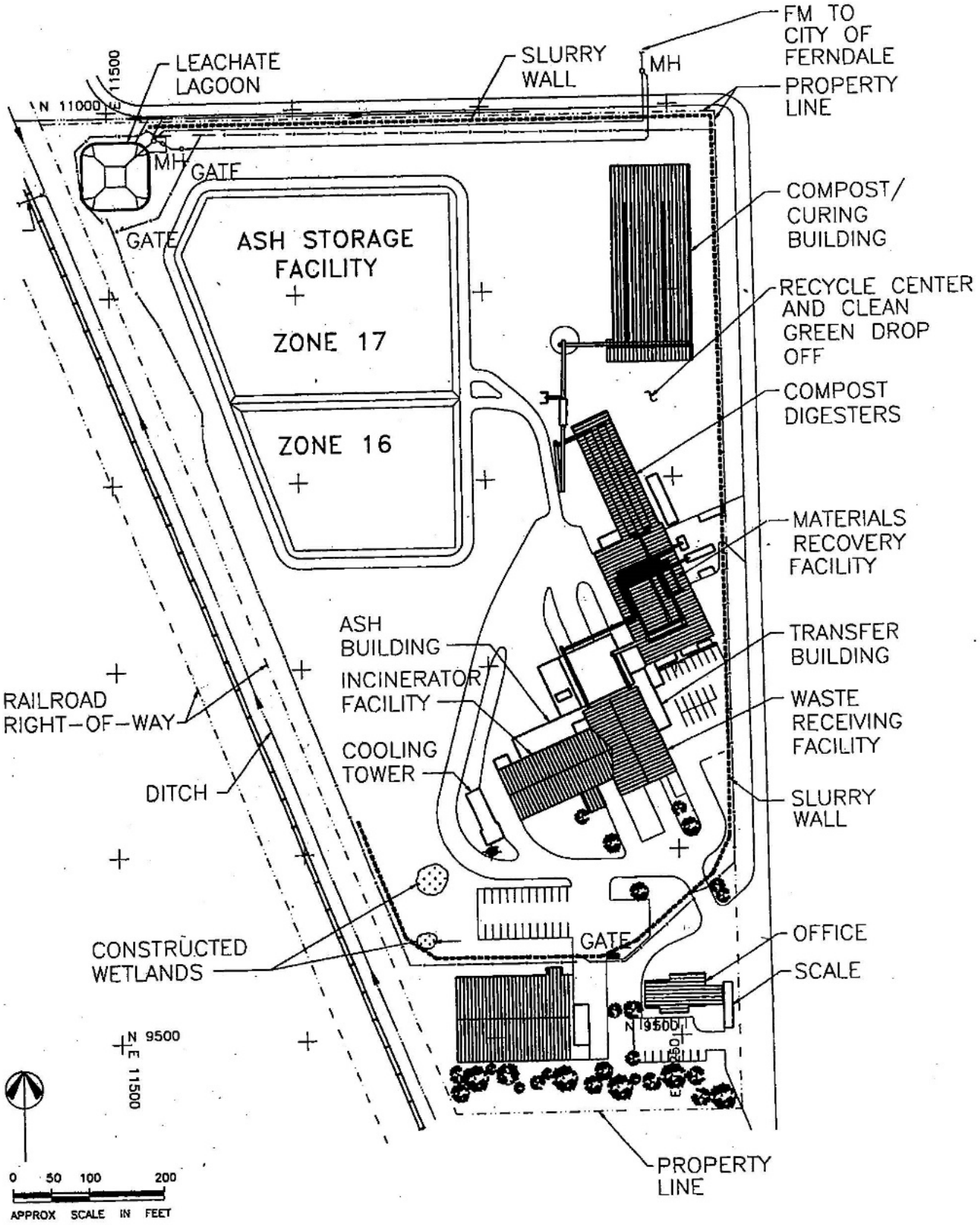
TEMPORARY ASH STORAGE FACILITY
NEW SITE PLAN

DRAWING G3
SHEET 3 OF 12



PROPERTY LINE
FOR TYPICAL INLET DRAINAGE SEE PROFILE THIS SHEET
EXISTING EDGE OF PAVEMENT
MH-3 N 10,442 E 12,028 INV EL 33.4 (IN) INV EL 33.3 (OUT)
MH-2 N 10,197 E 12,047 INV EL 34.7 (IN) INV EL 34.6 (OUT)
MH-4 N 10,686 E 12,009 INV EL 32.1 (IN) INV EL 32.0 (OUT)
EXCAVATE DEPTH OF STREAM FOR ADEQUATE DRAINAGE
WASTE RECEIVING FACILITY
INCINERATION FACILITY
EXIST QUENCH WATER DRAIN LINE CONN TO MH-1
ASPHALT BERM
COOLING TOWER
EXIST 4" FORCEMAIN
245 LF 10" PVC SL= 0.5%
245 LF 10"PVC SL= 0.5%
CB-1 10" PVC 304 LF SL= 0.5%
CB-2
CB-3
CB-4
INL
120'
100'
INV EL 41.7
INV EL 41.0
CB-8 INV EL 38.9
INV EL 40.5
CB-7 INV EL 38.8
INV EL 40.8
MH-1 N 9,901 E 11,980 INV EL 36.2 (OUT)
MH-9 N 10,122 E 11,883 INV EL 37.0 (IN) INV EL 36.9 (OUT)
300 LF 10" PVC SL= 1.05%
INV EL 41.9
8" PVC
CLEANOUT AS PER WSDOT STANDARD PLAN B-186 EL 28.0±
RAILROAD RIGHT-OF-WAY
SUBSURFACE LEACHATE COLLECTION LINE
MIN SL=0.5%
765 LF± 10" HDPE (PERF)
10" PVC 162 LF SL= 0.23%
MH-5 N 10,685 E 11,709 INV EL 27.5 (IN) INV EL 27.4 (OUT)
INV EL 37.5
130'
140'
INV EL 35.3
INV EL 29.78 (IN)
MH-8 N 10,122 E 11,723 INV EL 26.8 (IN) INV EL 26.7 (OUT)
CONN TO EXIST FORCEMAIN
CB-6 INV EL 26.3
INV EL 31.3
8" PVC 349 LF SL=0.5%
CB-5 INV EL 26.0
150'
INV EL 25.0
INV EL 29.9
MAGNETIC FLOW METER SEE DET E/C6
174 LF 10" PVC SL= 1.36%
RIP-RAP, 4'X4'X1'(D) TYPICAL 13 PLACES
INV EL 29.5
INV EL 32.9
MH-7 N 10,339 E 11,600 INV EL 25.5 (IN) INV EL 25.4 (OUT)
PS-1 REMOVE AND REPLACE EXIST. SEE PLAN C6
10" PVC INV EL 14.0
220 LF 10" PVC SL= 1.0%
BENCHMARK USGS (OFF SHEET) N 10991.61 E 11,294.99 EL 21.657
LEACHATE LAGOON REMOVE AND REPLACE EXIST SEE PLAN C7
10" HDPE INV EL 22.0 (IN)
INV EL 22.3 (IN)
INV EL 20.5
MH-6 N 10,609 E 11,492
N 10,737.00 E 11,412.14
10" PVC INV EL 21.5 (OUT)
N 9,397.64 E 11,946.40
EAST BERM
BURIED PLUG VALVE
EXCAVATE DEPTH OF STREAM FOR ADEQUATE DRAINAGE
ROAD
INLET - SEE NOTE 2
8" PVC
TYPICAL INLET PIPING PROFILE AT EAST BERM
PLAN
CLAYPIT POND
NOTES
1. TYPICAL PIPE TRENCH - SEE DET 3/G5.
2. TYPICAL CATCH BASIN - SEE DET 2/G5.
3. TYPICAL MANHOLE - SEE DET 1/G5.
4. CB-1 THRU CB-4: SPACE EQUALLY EXCEPT WHERE IN CONFLICT WITH DRAINAGE OR LANDFILL ACCESS
5. CB-5 THRU CB-8: LOCATE EACH 10'-0" FROM CENTERLINE OF CENTER BERM AND PERIMETER BERM TO FACE OF CATCH BASIN — 10" PVC MIN SL= 0.5%
6. INLETS TO BE PER WSDOT STANDARD PLAN B-1
7. 8" PVC PIPE FROM ALL INLETS SLOPE TO BE 2.0% MINIMUM
8. 10" PVC PIPE FROM ALL CATCH BASINS - SLOPE TO BE 0.5% MIN
RONALD J. OWES PROFESSIONAL ENGINEER
harper owes CONSULTING ENGINEERS
DESIGNED RO
DRAWN BB
CHECKED
SUBMITTED
APPROVED
SCALE 1"=60'-0"
DATE JUNE 28, 1988
JOB NO. TRLA 1088
ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY
THERMAL REDUCTION CO., INC.
TEMPORARY ASH STORAGE FACILITY
TEMPORARY ASH STORAGE FACILITY PIPING PLAN
DRAWING G4
SHEET 4 OF 11
REVISION BY DATE

6.4 Facility Cross-Section (West to East) (Recomp, 1996)

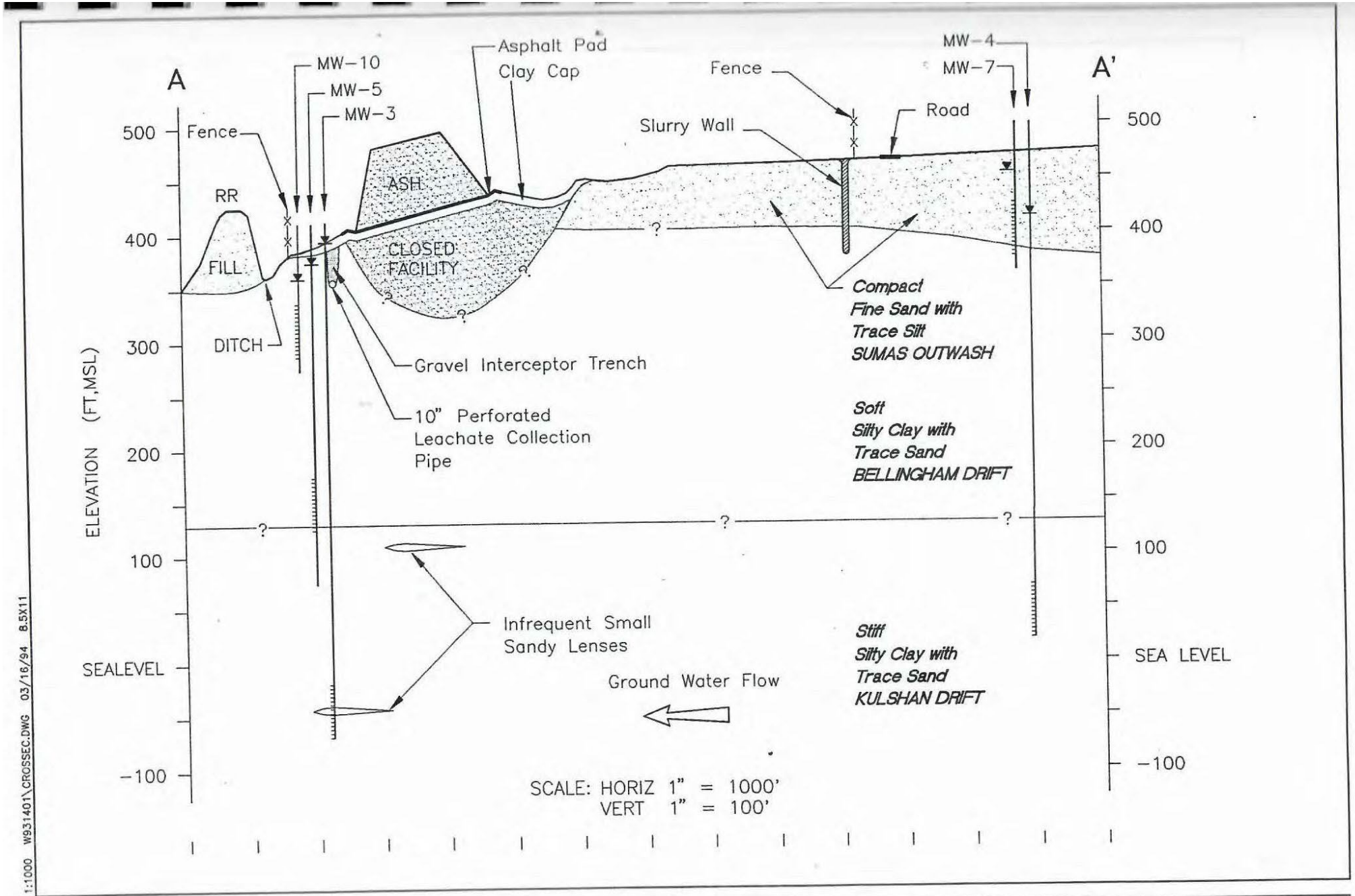


1:200 RECOMP\08-8.DWG - TILEMODE 07/15/96

Figure 2

SITE MAP
Recomp of Washington
Ferndale, Washington

vasey engineering



vasey engineering

FACILITY CROSS SECTION
Recomp of Washington
Ferndale, Washington

Figure
12

6.5 Leachate Collection Pipe Water Sample Results

ADAK IA

Ground and Surface Water Interceptor / Historic Leachate Line

Sample Date	Cadimum (ug/L)		Copper (ug/L)		Lead (ug/L)		Zinc (ug/L)		Notes
10/1/2014	ND		3.0		2.3		10.0		
10/30/2014	ND		5.0		2.0		21.0		
1/14/2015	ND		2.0		1.0		5.0		
3/10/2015	ND		2.0		1.0		5.0		
4/9/2015	ND		1.6		1.0		4.3		
5/7/2015	ND		2.2		1.2		6.0		
7/8/2015	ND		6.0		2.0		8.0		
8/14/2015	ND		3.0		2.0		9.0		
9/10/2015	ND		3.6		2.0		10.0		
10/7/2015	ND		9.7		2.2		38.0		
11/10/2015	ND		3.0		2.6		9.0		
12/10/2015	ND		4.0		1.0		17.0		
3/3/2016	ND		4.0		1.0		21.0		
4/7/2016	0.03	J	2.4		1.0		7.5		
5/13/2016	ND		6.3		1.1		14.0		
6/15/2016	0.06	J	2.2		1.5		7.4		
7/14/2016	0.06	J	3.0		2.0		9.0		
8/9/2016	0.09	J	5.0		2.0		9.0		
9/9/2016	ND		3.0		2.0		19.0		
10/11/2016	ND		4.0		2.0		10.0		
11/15/2016	ND		5.0		1.0		29.0		
12/5/2016	0.09	J	3.0		1.0		15.0		
1/10/2017	ND		2.0		0.9		6.0		
2/17/2017	0.3		12.0		6.0		65.0		Lagoon backed up into leachate line few days prior to sample
3/6/2017	0.05	j	4.0		0.8		10.0		
4/6/2017	0.04	j	3.0		0.8		10.0		
5/3/2017	0.03	j	6.0		1.0		40.0		
6/7/2017	ND		2.0		1.0		5.0		
7/12/2017	0.07	J	6.0		2.0		9.0		
8/8/2017	0.2	J	11.0		2.0		40.0		
9/15/2017	0.05	J	3.0		2.0		7.0		
10/12/2017	0.04		3.0		2.0		10.0		
11/8/2017	0.3		3.0		2.0		17.0		
12/8/2017	ND		2.0		1.1		6.0		
1/10/2018	ND		1.6	J	0.9		9.3		
2/8/2018	ND		2.1		0.8		9.7		
3/8/2015	0.022	J	2.3		1.0		12.0		
4/4/2018	ND		1.4	J	0.9		4.4		Reported Cr @ 36Ug/L MTCA 50 or 100

ADAK IA

Ground and Surface Water Interceptor / Historic Leachate Line

Sample Date	Cadimum (ug/L)		Copper (ug/L)		Lead (ug/L)		Zinc (ug/L)		Notes
5/8/2018	0.04	J	2.3		1.1		5.6		
6/12/2018	0.03	J	2.7		1.3		5.1		
7/6/2018	ND		2.2		2.0		7.0		
8/7/2018	0.05	J	4.0		2.0		8.0		
9/7/2018	0.007		4.0		2.5		10.0		
10/9/2018	0.04	J	3.8		1.9		11.0		
11/7/2018	0.03	J	3.2		1.9		9.3		Pumping to wet well
12/13/2018	0.2	J	9.9		3.1		46.0		Lagoon backed up into leachate line days prior to sample
1/9/2019	0.05	J	6.2		0.9		17.0		
2/6/2019	0.08	j	3.4		1.0		6.3		
3/13/2019	0.04	J	1.9	J	1.0		6.1		
4/5/2019	0.06		1.9		1.1		5.9		
5/7/2019	0.06	J	1.9	J	1.1		0.6		
6/7/2019	0.08	J	3.2		1.3		12.0		
7/10/2019	0.05	J	2.9		1.6		7.0		
8/13/2019	0.03	J	2.6		1.8		8.5		
9/11/2019	ND		2.5		1.6		11.0		
10/16/2019	0.06	J	3.0		1.7		10.2		Lagoon backed up into leachate line 9 days prior to sample
11/19/2019	ND		3.9		1.5		22.5		new pump 11/9
12/11/2019	0.07	J	2.5		1.5		8.2		
1/8/2020	0.17	J	3.1		1.0		34.4		1.75"rain, bypassing pump
2/1/2020									Not tested Sheen backup into leachate line
3/18/2020	0.02	J	1.4		0.9	J	4.0		
5/13/2020	0.04	J	5.6		1.2		15.3		
6/2/2020	0.02	J	1.5	J	1.2		11.8		With Priority Pollutant scan
7/15/2020	0.03	J	2.1		1.4		6.9		
8/7/2020	0.02		2.3		1.4		5.9		
9/9/2020	0.02	J	2.2		1.8		5.6		
10/13/2020									No sample, unsafe weather conditions
11/13/2020	ND		3.6		1.2		75.4		
12/10/2020	0.07	J	3.2		0.9		11.0		
1/19/2021	0.059	J	2.1		0.8		7.5		
2/18/2021	ND		7.7		2.3		47.4		Lagoon backup into interceptor line 2/1/21
3/16/2021	ND		2.0		0.9		3.9		
4/14/2021	ND		1.9	J	0.9	J	4.6		
5/13/2021	ND		1.9	J	1.0		5.1		
6/15/2021	ND		1.8	J	1.1		6.5		
7/8/2021	ND		2.1		1.5		7.5		

ADAK IA

Ground and Surface Water Interceptor / Historic Leachate Line

Sample Date	Cadimum (ug/L)		Copper (ug/L)		Lead (ug/L)		Zinc (ug/L)		Notes
8/4/2021	ND		3.8		1.6		7.3		
9/2/2021	ND		2.4		1.8		5.7		
AVE	0.0697		3.50		1.51		13.5		
Min	ND		1.6		1.0		4.3		
Max	0.3		12.0		6		75.4		
ISWGP Benchmark	2.1		14.0		64.6		117		
WAC 173-201A									
Fresh H20	acute/chronic		acute/chronic		acute/chronic		acute/chronic		
Q-1 2001	4.92/1.25		21.79/14.20		85.8/3.34		143/131		
Q-2 2001	11.55/2.24		45.80/27.86		196.4/7.73		279/255		
Q-3 2001	14.41/2.60		55.55/33.19		245.5/9.57		332/303		
WAC 246-290 MCL or ** Action Level Drinking H20	5		1300**		15**		5000		
WAC 173-200	10		1000		50		5000		
Regional Surface Water SW 4 from North									
6/7/1990	0		10		3		15		
12/11/1991	2		11		3		17		
6/16/1992	5		10		2		12		
9/19/1992	2		7		2		52		
12/16/1992	2		4		3		9		
AVE	**2**		**8**		**3**		**21**		

ADAK IA

Ground and Surface Water Interceptor / Historic Leachate Line

Sample Date	Cadimum (ug/L)		Copper (ug/L)		Lead (ug/L)		Zinc (ug/L)		Notes
MW-7 Upgradient Total									
3/14/1989	2	L	7		4.7		19		
10/25/1989	2	L	19		4		26		
6/7/1990	0.2	B	17.5	B	2.4	B	17.2	B	
AVE	1.4		14.5		3.7		20.7		
MW-7 Upgradient Dissolved									
3/14/1989	2	L	2	L	2	L	7		
10/25/1989	2	L	2	L	1	L	17		
6/7/1990	0.2	L	3.3	B	1	L	9.4	B	
AVE	1.4		2.4		1.3		11.1		
(H5) exceeded holding time									
(j) Estimated value. Value above the method detection but below calibration curve									

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Bend, OR *Microbiology (e)*
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

July 23, 2020

Dave B.
Parberry Environmental Solutions, Inc.
P O Box 669
Ferndale, WA 98248

RE: 20-17415 - Groundwater Testing

Dear Dave B.,

Your project: Groundwater Testing, was received on Tuesday June 02, 2020.

All samples were analyzed within the accepted holding times and were appropriately preserved and analyzed according to approved analytical protocols, unless noted in the data or QC reports. The quality control data was within laboratory acceptance limits, unless specified in the data or QC reports.

If you have questions phone us at 800 755-9295.

Respectfully

Hiro Yamamoto
Chief Organic Chemist

Enclosures: Data Report

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Revised - 8-3-2020

Data Report

Client Name: Parberry Environmental Solutions, Inc.
P O Box 669
Ferndale, WA 98248

Reference Number: **20-17415**
Project: Groundwater Testing

Report Date: 7/23/20

Date Received: 6/2/20
Approved by: ajw,bj,mle
Authorized by:

Hiro Yamamoto
Chief Organic Chemist

Sample Description: Leachate Line LL Sump= Leachate Line Sump — Matrix WW — Sample Date: 6/2/20 8:30 am
Lab Number: 33337 — Sample Comment: — Collected By: Dave Bader

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment
1332-21-4	**ASBESTOS**	ND	2.782	0.931	MFL>10um	1.0	100.2	a	6/8/20	SH	LABCOR_200608	
7439-97-6	**MERCURY - Clean**	0.00102	0.0005	0.0002	ug/L	1.0	1631		6/8/20	TEC	ANA1631_200608	Analyzed By Anatek
7440-36-0	**ANTIMONY**	1.9	1.0	0.00691	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-38-2	**ARSENIC**	5.2	0.5	0.02177	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-41-7	**BERYLLIUM**	0.01 J	0.5	0.00676	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-43-9	**CADMIUM**	0.02 J	0.25	0.01127	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-47-3	**CHROMIUM**	31.2	1.0	0.02026	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-50-8	**COPPER**	1.5 J	2	0.02764	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7439-92-1	**LEAD**	1.2	0.5	0.00666	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-02-0	**NICKEL**	2.0	0.5	0.01618	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7782-49-2	**SELENIUM**	4.4	1	0.0266	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-22-4	**SILVER**	0.1 J	0.2	0.01175	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-28-0	**THALLIUM**	0.10 J	0.36	0.00706	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
7440-66-6	**ZINC**	11.8	2.5	0.55193	ug/L	1.0	200.8/3010A	a	6/3/20	BJ	200.8_200603A2	
18540-29-9	**HEXAVALENT CHROMIUM**	0.020 J	0.030	0.0049	ug/L	1.0	218.6	a	6/2/20	LJH	218.6_200602	
E-10253	**PHENOLICS**	ND	0.02		mg/L	1.0	420.4		6/15/20	AY	AMT420_200612	Analyzed by AmTest

Sample Description: Leachate Line Field Blank — Matrix WW — Sample Date: 6/2/20 8:30 am
Lab Number: 33338 — Sample Comment: — Collected By: Dave Bader

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment
7439-97-6	**MERCURY - clean**	ND	0.5	0.2	ng/L	1.0	1631		6/8/20	TEC	ANA1631_200608	Analyzed by Anatek

Notes:

ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. - Dilution Factor

If you have any questions concerning this report contact us at the above phone number.

Form: cRslt_2.rpt

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WSDOE Lab C567

DATA REPORT

Client Name: Parberry Environmental Solutions, Inc.
P O Box 669
Ferndale, WA 98248

Reference Number: **20-17415**
Project: Groundwater Testing

Lab Number: 33337
Field ID: Leachate Line
Sample Description: LL Sump= Leachate Line Sump
Matrix: Wastewater
Sample Date: 6/2/20
Extraction Date:
Extraction Method: 3510C

Report Date: 7/23/20
Date Analyzed: 6/7/20
Analyst: KH
Analytical Method: 1613
Batch: PACE1613_200607
Approved By: bj,hy,mle,nml,pdm

Authorized by:

Hiro Yamamoto
Chief Organic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Base/Neutral Extractables									
1746-01-6	2,3,7,8-TCDD(DIOXIN)	**ND**		pg/L	5	5	1.24	1.00		Analyzed by PACE_MN

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.
ND - indicates the compound was not detected above the PQL or MDL.
Lab QL = Laboratory Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
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WSDOE Lab C567

DATA REPORT

Client Name: Parberry Environmental Solutions, Inc.
P O Box 669
Ferndale, WA 98248

Reference Number: **20-17415**
Project: Groundwater Testing

Lab Number: 33337
Field ID: Leachate Line
Sample Description: LL Sump= Leachate Line Sump
Matrix: Wastewater
Sample Date: 6/2/20
Extraction Date: 6/8/20
Extraction Method: 3510C

Report Date: 7/23/20
Date Analyzed: 6/18/20
Analyst: NML
Analytical Method: 608
Batch: 608_200608
Approved By: bj,hy,mle,nml,pdm

Authorized by:

Hiro Yamamoto
Chief Organic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	PCBs									
12674-11-2	AROCLOR 1016	**ND**		ug/L	0.1	0.5	0.1	1.00	a	
11104-28-2	AROCLOR 1221	**ND**		ug/L	0.5	0.5	0.2	1.00	a	
11141-16-5	AROCLOR 1232	**ND**		ug/L	0.5	0.5	0.2	1.00	a	
53469-21-9	AROCLOR 1242	**ND**		ug/L	0.1	0.5	0.1	1.00	a	
12672-29-6	AROCLOR 1248	**ND**		ug/L	0.5	0.5	0.2	1.00	a	
11097-69-1	AROCLOR 1254	**ND**		ug/L	0.1	0.5	0.1	1.00	a	
11096-82-5	AROCLOR 1260	**ND**		ug/L	0.1	0.5	0.1	1.00	a	
	Organochlorine Pesticides									
309-00-2	ALDRIN	**ND**		ug/L	0.05	0.05	0.013	1.00	a	
319-84-6	BHC, ALPHA -	**ND**		ug/L	0.05	0.05	0.021	1.00	a	
319-85-7	BHC, BETA -	**ND**		ug/L	0.05	0.05	0.009	1.00	a	
58-89-9	LINDANE (BHC - GAMMA)	**ND**		ug/L	0.05	0.05	0.015	1.00	a	
319-86-8	BHC, DELTA -	**ND**		ug/L	0.05	0.05	0.013	1.00	a	
57-74-9	CHLORDANE	**ND**		ug/L	0.05	0.05	0.015	1.00	a	gamma chlordane
50-29-3	4,4' - DDT	**ND**		ug/L	0.05	0.05	0.011	1.00	a	
72-55-9	4,4' - DDE	**ND**		ug/L	0.05	0.05	0.025	1.00	a	
72-54-8	4,4' - DDD	**ND**		ug/L	0.05	0.05	0.011	1.00	a	
60-57-1	DIELDRIN	**ND**		ug/L	0.05	0.05	0.017	1.00	a	
959-98-8	ENDOSULFAN I	**ND**		ug/L	0.05	0.05	0.022	1.00	a	
33213-65-9	ENDOSULFAN II	**ND**		ug/L	0.05	0.05	0.023	1.00	a	
1031-07-8	ENDOSULFAN SULFATE	**ND**		ug/L	0.05	0.05	0.017	1.00	a	
72-20-8	ENDRIN	**ND**		ug/L	0.05	0.05	0.013	1.00	a	
7421-93-4	ENDRIN ALDEHYDE	**ND**	CV	ug/L	0.05	0.05	0.015	1.00	a	
76-44-8	HEPTACHLOR	**ND**		ug/L	0.05	0.05	0.024	1.00	a	
1024-57-3	HEPTACHLOR EPOXIDE "B"	**ND**		ug/L	0.05	0.05	0.014	1.00	a	
8001-35-2	TOXAPHENE	**ND**		ug/L	0.5	0.5	0.4	1.00	a	

Notes:

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D.F. - Dilution Factor.

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Form: c608.rpt

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WSDOE Lab C567

DATA REPORT

Client Name: Parberry Environmental Solutions, Inc.
P O Box 669
Ferndale, WA 98248

Reference Number: **20-17415**
Project: Groundwater Testing

Lab Number: 33337
Field ID: Leachate Line
Sample Description: LL Sump= Leachate Line Sump
Matrix: Wastewater
Sample Date: 6/2/20
Extraction Date: 6/8/20
Extraction Method: 5030B

Report Date: 7/23/20
Date Analyzed: 6/8/20
Analyst: HY
Analytical Method: 624(pH4)
Batch: 624_200608
Approved By: bj,hy,mle,nml,pdm

Authorized by:

Hiro Yamamoto
Chief Organic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Volatiles									
107-02-8	ACROLEIN	**ND**		ug/L	4.0	10	1.66	1.00	a	
107-13-1	ACRYLONITRILE	**ND**		ug/L	1.0	2.0	0.56	1.00	a	

Notes:

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WSDOE Lab C567

DATA REPORT

Client Name: Parberry Environmental Solutions, Inc.
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Ferndale, WA 98248

Reference Number: **20-17415**
Project: Groundwater Testing

Lab Number: 33337
Field ID: Leachate Line
Sample Description: LL Sump= Leachate Line Sump
Matrix: Wastewater
Sample Date: 6/2/20
Extraction Date: 6/8/20
Extraction Method: 5030B

Report Date: 7/23/20
Date Analyzed: 6/8/20
Analyst: HY
Analytical Method: 624.1
Batch: 624_200608
Approved By: bj,hy,mle,nml,pdm

Authorized by:

Hiro Yamamoto
Chief Organic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Volatiles									
71-43-2	BENZENE	**ND**		ug/L	0.5	2.0	0.23	1.00	a	
75-25-2	BROMOFORM	**ND**		ug/L	0.5	2.0	0.26	1.00	a	
56-23-5	CARBON TETRACHLORIDE	**ND**		ug/L	0.5	2.0	0.24	1.00	a	
108-90-7	CHLOROBENZENE	**ND**		ug/L	0.5	2.0	0.28	1.00	a	
75-00-3	CHLOROETHANE	**ND**		ug/L	0.5	2.0	0.34	1.00	a	
110-75-8	2 - CHLOROETHYL VINYL ETHER	**ND**		ug/L	2.0	2.0	0.46	1.00	a	
67-66-3	CHLOROFORM	**ND**		ug/L	0.5	2.0	0.25	1.00	a	
124-48-1	CHLORODIBROMOMETHANE	**ND**		ug/L	0.5	2.0	0.28	1.00	a	
95-50-1	O - DICHLOROBENZENE	**ND**		ug/L	0.5	7.6	0.31	1.00	a	
541-73-1	M - DICHLOROBENZENE	**ND**		ug/L	0.5	7.6	0.29	1.00	a	
106-46-7	P - DICHLOROBENZENE	**ND**		ug/L	0.5	17.6	0.29	1.00	a	
75-27-4	DICHLOROBROMOMETHANE	**ND**		ug/L	0.5	2.0	0.28	1.00	a	
75-34-3	1,1 - DICHLOROETHANE	**ND**		ug/L	0.5	2.0	0.32	1.00	a	
107-06-2	1,2 - DICHLOROETHANE	**ND**		ug/L	0.5	2.0	0.38	1.00	a	
75-35-4	1,1 - DICHLOROETHYLENE	**ND**		ug/L	0.5	2.0	0.25	1.00	a	
78-87-5	1,2 - DICHLOROPROPANE	**ND**		ug/L	0.5	2.0	0.22	1.00	a	
10061-01-5	CIS - 1,3 - DICHLOROPROPENE	**ND**		ug/L	0.5	2.0	0.31	1.00	a	
10061-02-6	TRANS- 1,3 - DICHLOROPROPENE	**ND**		ug/L	0.5	2.0	0.24	1.00	a	
542-75-6	1,3-DICHLOROPROPYLENE, TOTAL	**ND**		ug/L	0.5	0.5		1.00	a	
100-41-4	ETHYLBENZENE	**0.8**		ug/L	0.5	2.0	0.29	1.00	a	
74-83-9	METHYL BROMIDE (BROMOMETHANE)	**ND**		ug/L	0.5	10.0	0.37	1.00	a	
74-87-3	METHYL CHLORIDE (CHLOROMETHANE)	**ND**		ug/L	0.5	2.0	0.28	1.00	a	
75-09-2	METHYLENE CHLORIDE	**ND**		ug/L	0.5	10.0	0.28	1.00	a	
79-34-5	1,1,2,2 - TETRACHLOROETHANE	**ND**		ug/L	0.5	2.0	0.37	1.00	a	
127-18-4	TETRACHLOROETHYLENE	**ND**		ug/L	0.5	2.0	0.24	1.00	a	
108-88-3	TOLUENE	**ND**		ug/L	0.5	2.0	0.24	1.00	a	

Notes:

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CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
156-60-5	1,2 - TRANS - DICHLOROETHYLENE	**ND**		ug/L	0.5	2.0	0.34	1.00	a	
71-55-6	1,1,1 - TRICHLOROETHANE	**ND**		ug/L	0.5	2.0	0.26	1.00	a	
79-00-5	1,1,2 - TRICHLOROETHANE	**ND**		ug/L	0.5	2.0	0.28	1.00	a	
79-01-6	TRICHLOROETHYLENE	**ND**		ug/L	0.5	2.0	0.29	1.00	a	
75-01-4	VINYL CHLORIDE	**ND**		ug/L	0.5	2.0	0.28	1.00	a	

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Portland, OR *Microbiology/Chemistry (c)*
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Corvallis, OR *Microbiology/Chemistry (d)*
1100 p N Circle Blvd, Ste 130 - Corvallis, OR 97330 - 541.753.4946

Bend, OR *Microbiology (e)*
20332 NmEire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

WSDOE Lab C567

DATA REPORT

Client Name: Parberry Environmental Solutions, Inc.
P O Box 669
Ferndale, WA 98248

Reference Number: **20-17415**
Project: Groundwater Testing

Lab Number: 33337
Field ID: Leachate Line
Sample Description: LL Sump= Leachate Line Sump
Matrix: Wastewater
Sample Date: 6/2/20
Extraction Date: 6/8/20
Extraction Method: 3510C

Report Date: 7/23/20
Date Analyzed: 6/23/20
Analyst: NML
Analytical Method: 625
Batch: 625_200608
Approved By: bj,hy,mle,nml,pdm

Authorized by:

Hiro Yamamoto
Chief Organic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Base/Neutral Extractables									
83-32-9	ACENAPHTHENE	**ND**		ug/L	0.4	0.4	0.04	1.00	a	
208-96-8	ACENAPHTHYLENE	**ND**		ug/L	0.4	0.6	0.07	1.00	a	
120-12-7	ANTHRACENE	**ND**		ug/L	0.4	0.6	0.05	1.00	a	
92-87-5	BENZIDINE	**ND**	P	ug/L	10	24	9.	1.00	a	screening method
85-68-7	BENZYL BUTYL PHTHALATE	**ND**		ug/L	0.4	0.6	0.03	1.00	a	
56-55-3	BENZ[A]ANTHRACENE	**ND**		ug/L	0.4	0.6	0.05	1.00	a	
205-99-2	3,4 - BENZOFLUORANTHENE (BENZO[B])	**ND**		ug/L	0.4	1.6	0.08	1.00	a	unresolved w/ Benzo(J)Fluoranthene
207-08-9	BENZO[K]FLUORANTHENE	**ND**		ug/L	0.4	1.6	0.08	1.00	a	
50-32-8	BENZO[A]PYRENE	**ND**		ug/L	0.4	1	0.05	1.00	a	
191-24-2	BENZO[G,H,I]PERYLENE	**ND**		ug/L	0.4	1	0.05	1.00	a	
111-91-1	BIS(2-CHLOROETHOXY)METHANE	**ND**		ug/L	0.4	21.2	0.06	1.00	a	
111-44-4	BIS(2-CHLOROETHYL)ETHER	**ND**		ug/L	0.4	1	0.06	1.00	a	
108-60-1	BIS(2-CHLORO-1-METHYLETHYL)ETHER	**ND**		ug/L	0.4	0.6	0.06	1.00	a	
117-81-7	Bis(2-ETHYLHEXYL)PHTHALATE	**ND**		ug/L	0.4	0.5	0.1	1.00	a	
101-55-3	4-BROMOPHENYL PHENYL ETHER	**ND**		ug/L	0.4	0.4	0.04	1.00	a	
91-58-7	2-CHLORONAPHTHALENE	**ND**		ug/L	0.4	0.6	0.05	1.00	a	
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	**ND**		ug/L	0.4	0.5	0.04	1.00	a	
218-01-9	CHRYSENE	**ND**		ug/L	0.4	0.6	0.06	1.00	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	**ND**		ug/L	0.4	1.6	0.05	1.00	a	
91-94-1	3,3-DICHLOROBENZIDINE	**ND**		ug/L	0.4	1	0.2	1.00	a	
84-66-2	DIETHYL PHTHALATE	**ND**		ug/L	0.4	7.6	0.06	1.00	a	
131-11-3	DIMETHYL PHTHALATE	**ND**		ug/L	0.4	6.4	0.05	1.00	a	
84-74-2	DI-N-BUTYL PHTHALATE	**ND**		ug/L	0.4	1	0.07	1.00	a	
121-14-2	2,4-DINITROTOLUENE	**ND**		ug/L	0.4	0.4	0.07	1.00	a	
606-20-2	2,6-DINITROTOLUENE	**ND**		ug/L	0.4	0.4	0.09	1.00	a	

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CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
117-84-0	DI-N-OCTYL PHTHALATE	**ND**		ug/L	0.4	0.6	0.02	1.00	a	
122-66-7	1,2-DIPHENYLHYDRAZINE (as Azobenzene)	**ND**		ug/L	0.4	20	0.06	1.00	a	as Azobenzene
206-44-0	FLUORANTHENE	**ND**		ug/L	0.4	0.6	0.05	1.00	a	
86-73-7	FLUORENE	**ND**		ug/L	0.4	0.6	0.05	1.00	a	
118-74-1	HEXACHLOROBENZENE	**ND**		ug/L	0.4	0.6	0.06	1.00	a	
87-68-3	HEXACHLOROBUTADIENE	**ND**		ug/L	0.4	1	0.09	1.00	a	
77-47-4	HEXACHLOROCYCLOPENTADIENE	**ND**		ug/L	0.4	1	0.2	1.00	a	
67-72-1	HEXACHLOROETHANE	**ND**		ug/L	0.4	1	0.09	1.00	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	**ND**		ug/L	0.4	1	0.09	1.00	a	
78-59-1	ISOPHORONE	**ND**		ug/L	0.4	1	0.07	1.00	a	
91-20-3	NAPHTHALENE	**ND**		ug/L	0.4	0.6	0.06	1.00	a	
98-95-3	NITROBENZENE	**ND**		ug/L	0.4	1	0.05	1.00	a	
62-75-9	N-NITROSODIMETHYLAMINE	**ND**		ug/L	0.4	4	0.3	1.00	a	
621-64-7	N-NITROSODI-N-PROPYLAMINE	**ND**		ug/L	0.4	1	0.1	1.00	a	
86-30-6	N-NITROSODIPHENYLAMINE	**ND**		ug/L	0.4	1	0.05	1.00	a	as Diphenylamine
85-01-8	PHENANTHRENE	**ND**		ug/L	0.4	0.6	0.06	1.00	a	
129-00-0	PYRENE	**ND**		ug/L	0.4	0.6	0.05	1.00	a	
120-82-1	1,2,4-TRICHLOROBENZENE	**ND**		ug/L	0.4	0.6	0.05	1.00	a	
	Acid Extractables									
95-57-8	2-CHLOROPHENOL	**ND**		ug/L	1	2	0.1	1.00	a	
120-83-2	2,4-DICHLOROPHENOL	**ND**		ug/L	1	1	0.2	1.00	a	
105-67-9	2,4-DIMETHYLPHENOL	**ND**		ug/L	1	1	0.4	1.00	a	
534-52-1	4,6-DINITRO-O-CRESOL	**ND**		ug/L	1	2	0.3	1.00	a	
51-28-5	2,4-DINITROPHENOL	**ND**		ug/L	2	2	0.5	1.00	a	
88-75-5	2-NITROPHENOL	**ND**		ug/L	1	1	0.2	1.00	a	
100-02-7	4-NITROPHENOL	**ND**		ug/L	1	1	0.3	1.00	a	
59-50-7	P-CHLORO-M-CRESOL	**ND**		ug/L	1	2	0.2	1.00	a	
87-86-5	PENTACHLOROPHENOL	**ND**		ug/L	1	1	0.2	1.00	a	
108-95-2	PHENOL	**ND**		ug/L	1	4	0.1	1.00	a	
88-06-2	2,4,6-TRICHLOROPHENOL	**ND**		ug/L	1	4	0.1	1.00	a	
	Ecology Priority Toxic Chemicals									
205-82-3	BENZO(J)FLUORANTHENE	**ND**		ug/L	1	1	0.4	1.00	a	unresolved w/ Benzo(B)Fluoranthene
189-55-9	BENZO(R,S,T)PENTAPHENE	**ND**		ug/L	1	1	0.3	1.00	a	
226-36-8	DIBENZO(A,H)ACRIDINE	**ND**		ug/L	1	10	0.4	1.00	a	
224-42-0	DIBENZO(A,J)ACRIDINE	**ND**		ug/L	1	10	0.4	1.00	a	
192-65-4	DIBENZO(A,E)PYRENE	**ND**		ug/L	1	10	0.5	1.00	a	
189-64-0	DIBENZO(A,H)PYRENE	**ND**		ug/L	1	10	0.3	1.00	a	
56-49-5	3-METHYL CHOLANTHRENE	**ND**		ug/L	1	8	0.4	1.00	a	
198-55-0	PERYLENE	**ND**		ug/L	1	7.6	0.6	1.00	a	

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WSDOE Lab C567

DATA REPORT

Client Name: Parberry Environmental Solutions, Inc.
P O Box 669
Ferndale, WA 98248

Reference Number: **20-17415**
Project: Groundwater Testing

Lab Number: 33337
Field ID: Leachate Line
Sample Description: LL Sump= Leachate Line Sump
Matrix: Wastewater
Sample Date: 6/2/20
Extraction Date:
Extraction Method:

Report Date: 7/23/20
Date Analyzed: 6/9/20
Analyst: BSP
Analytical Method: D7511-12
Batch: D7511_200609
Approved By: bj,hy,mle,nml,pdm

Authorized by:

Hiro Yamamoto
Chief Organic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Metals, Cyanide and Total Phenols									
57-12-5	CYANIDE, TOTAL	**16.7**		ug/L	10	10	4.	1.00	a	

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Calibration Check

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
200.8_200603A2	0	ANTIMONY	0.00094	0.001	mg/L	200.8	94	80-120		CAL	
	0	ARSENIC	0.00097	0.001	mg/L	200.8	97	80-120		CAL	
	0	BERYLLIUM	0.00102	0.001	mg/L	200.8	102	80-120		CAL	
	0	CADMIUM	0.00102	0.001	mg/L	200.8	102	80-120		CAL	
	0	CHROMIUM	0.00102	0.001	mg/L	200.8	102	80-120		CAL	
	0	COPPER	0.00097	0.001	mg/L	200.8	97	80-120		CAL	
	0	LEAD	0.001	0.001	mg/L	200.8	100	80-120		CAL	
	0	NICKEL	0.00108	0.001	mg/L	200.8	108	80-120		CAL	
	0	SELENIUM	0.00095	0.001	mg/L	200.8	95	80-120		CAL	
	0	SILVER	0.00108	0.001	mg/L	200.8	108	80-120		CAL	
	0	THALLIUM	0.00099	0.001	mg/L	200.8	99	80-120		CAL	
	0	ZINC	0.0011	0.001	mg/L	200.8	110	80-120		CAL	
218.6_200602	0	HEXAVALENT CHROMIUM	7.013	7.000	ug/L	218.6	100	85-115		CAL	LDR
D7511_200609	0	CYANIDE, TOTAL	0.092	0.100	mg/L	D7511-12	92	90-110		CAL	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
200.8_200603A2	0	ANTIMONY	0.0242	0.025	mg/L	200.8	97	85-115		LFB	
	0	ARSENIC	0.0241	0.025	mg/L	200.8	96	85-115		LFB	
	0	BERYLLIUM	0.0229	0.025	mg/L	200.8	92	85-115		LFB	
	0	CADMIUM	0.0239	0.025	mg/L	200.8	96	85-115		LFB	
	0	CHROMIUM	0.0251	0.025	mg/L	200.8	100	85-115		LFB	
	0	COPPER	0.0241	0.025	mg/L	200.8	96	85-115		LFB	
	0	LEAD	0.0255	0.025	mg/L	200.8	102	85-115		LFB	
	0	NICKEL	0.0244	0.025	mg/L	200.8	98	85-115		LFB	
	0	SELENIUM	0.0248	0.025	mg/L	200.8	99	85-115		LFB	
	0	SILVER	0.0127	0.0125	mg/L	200.8	102	85-115		LFB	
	0	THALLIUM	0.0245	0.025	mg/L	200.8	98	85-115		LFB	
	0	ZINC	0.0224	0.025	mg/L	200.8	90	85-115		LFB	
218.6_200602	1	HEXAVALENT CHROMIUM	0.255	0.250	ug/L	218.6	102	90-110		LFB	
	2	HEXAVALENT CHROMIUM	0.516	0.500	ug/L	218.6	103	90-110		LFB	
	3	HEXAVALENT CHROMIUM	1.007	1.000	ug/L	218.6	101	90-110		LFB	
608_200608	0	DECACHLOROBIPHENYL (Surr)	101		%	608		31-157		LFB	
	0	TETRACHLORO-M-XYLENE (Surr)	67		%	608		56-122		LFB	
	0	AROCLOR 1221	1.3	2	ug/L	608	65	15-178		LFB	
	0	4,4' - DDD	0.48	0.5	ug/L	608	96	31-141		LFB	
	0	4,4' - DDE	0.47	0.5	ug/L	608	94	30-145		LFB	
	0	4,4' - DDT	0.49	0.5	ug/L	608	98	25-160		LFB	
	0	ALDRIN	0.37	0.5	ug/L	608	74	42-140		LFB	
	0	BHC, ALPHA -	0.45	0.5	ug/L	608	90	37-140		LFB	
	0	BHC, BETA -	0.45	0.5	ug/L	608	90	17-147		LFB	
	0	BHC, DELTA -	0.48	0.5	ug/L	608	96	19-140		LFB	
	0	CHLORDANE	0.45	0.5	ug/L	608	90	45-119		LFB	gamma chlordane
	0	DIELDRIN	0.48	0.5	ug/L	608	96	36-146		LFB	
	0	ENDOSULFAN I	0.46	0.5	ug/L	608	92	45-153		LFB	
	0	ENDOSULFAN II	0.47	0.5	ug/L	608	94	1-202		LFB	
	0	ENDOSULFAN SULFATE	0.48	0.5	ug/L	608	96	26-144		LFB	

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
608_200608	0	ENDRIN	0.48	0.5	ug/L	608	96	30-147		LFB	
	0	ENDRIN ALDEHYDE	0.26	0.5	ug/L	608	52	35-149		LFB	
	0	HEPTACHLOR	0.36	0.5	ug/L	608	72	34-140		LFB	
	0	HEPTACHLOR EPOXIDE "B"	0.47	0.5	ug/L	608	94	37-142		LFB	
	0	LINDANE (BHC - GAMMA)	0.46	0.5	ug/L	608	92	32-140		LFB	
624_200608	0	1,1 - DICHLOROETHANE	4.2	4	ug/L	624.1	105	59-155		LFB	
	0	1,1 - DICHLOROETHYLENE	3.9	4	ug/L	624.1	98	0-234		LFB	
	0	1,1,1 - TRICHLOROETHANE	4.3	4	ug/L	624.1	108	52-162		LFB	
	0	1,1,2 - TRICHLOROETHANE	4.4	4	ug/L	624.1	110	52-150		LFB	
	0	1,1,2,2 - TETRACHLOROETHANE	4.1	4	ug/L	624.1	103	46-157		LFB	
	0	1,2 - DICHLOROETHANE	4.1	4	ug/L	624.1	103	49-155		LFB	
	0	1,2 - DICHLOROPROPANE	4.3	4	ug/L	624.1	108	0-210		LFB	
	0	1,2 - TRANS - DICHLOROETHYLENE	3.8	4	ug/L	624.1	95	54-156		LFB	
	0	2 - CHLOROETHYL VINYL ETHER	9.9	10	ug/L	624.1	99	0-305		LFB	
	0	ACROLEIN	11.2	10	ug/L	624.1	112	60-140		LFB	
	0	ACRYLONITRILE	18.9	20	ug/L	624.1	95	60-140		LFB	
	0	BENZENE	4.2	4	ug/L	624.1	105	37-151		LFB	
	0	BROMOFORM	4.0	4	ug/L	624.1	100	45-169		LFB	
	0	CARBON TETRACHLORIDE	4.3	4	ug/L	624.1	108	70-140		LFB	
	0	CHLOROBENZENE	4.3	4	ug/L	624.1	108	37-160		LFB	
	0	CHLORODIBROMOMETHANE	3.9	4	ug/L	624.1	98	53-149		LFB	
	0	CHLOROETHANE	4.1	4	ug/L	624.1	103	14-230		LFB	
	0	CHLOROFORM	4.1	4	ug/L	624.1	103	15-138		LFB	
	0	CIS - 1,3 - DICHLOROPROPENE	4.4	4	ug/L	624.1	110	0-227		LFB	
	0	DICHLOROBROMOMETHANE	3.9	4	ug/L	624.1	98	35-155		LFB	
	0	ETHYLBENZENE	4.4	4	ug/L	624.1	110	37-162		LFB	
	0	M - DICHLOROBENZENE	4.2	4	ug/L	624.1	105	59-156		LFB	
	0	METHYL BROMIDE (BROMOMETHANE)	4.0	4	ug/L	624.1	100	0-242		LFB	
	0	METHYL CHLORIDE (CHLOROMETHANE)	4.3	4	ug/L	624.1	108	0-273		LFB	
	0	METHYLENE CHLORIDE	3.8	4	ug/L	624.1	95	0-221		LFB	
	0	O - DICHLOROBENZENE	4.2	4	ug/L	624.1	105	18-190		LFB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
624_200608	0	P - DICHLOROBENZENE	4.3	4	ug/L	624.1	108	18-190		LFB	
	0	TETRACHLOROETHYLENE	4.4	4	ug/L	624.1	110	64-148		LFB	
	0	TOLUENE	4.2	4	ug/L	624.1	105	47-150		LFB	
	0	TRANS- 1,3 - DICHLOROPROPENE	4.5	4	ug/L	624.1	113	17-183		LFB	
	0	TRICHLOROETHYLENE	4.2	4	ug/L	624.1	105	71-157		LFB	
	0	VINYL CHLORIDE	3.7	4	ug/L	624.1	93	0-251		LFB	
625_200608	0	2 - FLUOROBIPHENYL (Surr)	38		%	625		71-119		LFB	
	0	2 - FLUOROPHENOL (Surr)	24		%	625		32-86		LFB	
	0	2,4,6 - TRIBROMOPHENOL (Surr)	42		%	625		64-126		LFB	
	0	d5-NITROBENZENE (Surr)	39		%	625		67-126		LFB	
	0	p-TERPHENYL-d14 (Surr)	40		%	625		69-116		LFB	
	0	1,2,4-TRICHLOROBENZENE	3.4	10	ug/L	625	34	57-130	L2	LFB	
	0	1,2-DIPHENYLHYDRAZINE (as Azobenzene)	3.8	10	ug/L	625	38	71-125	L2	LFB	
	0	2,4-DINITROTOLUENE	4.1	10	ug/L	625	41	48-127	L2	LFB	
	0	2,6-DINITROTOLUENE	4.3	10	ug/L	625	43	68-137	L2	LFB	
	0	2-CHLORONAPHTHALENE	3.7	10	ug/L	625	37	65-120	L2	LFB	
	0	3,3-DICHLOROBENZIDINE	0.4	1	ug/L	625	40	8-213		LFB	
	0	3,4 - BENZOFLUORANTHENE (BENZO[B])	7.9	20	ug/L	625	40	42-140	L2	LFB	
	0	4-BROMOPHENYL PHENYL ETHER	4.1	10	ug/L	625	41	65-120	L2	LFB	
	0	4-CHLOROPHENYL PHENYL ETHER	3.8	10	ug/L	625	38	38-145		LFB	
	0	ACENAPHTHENE	3.6	10	ug/L	625	36	60-132	L2	LFB	
	0	ACENAPHTHYLENE	3.8	10	ug/L	625	38	54-126	L2	LFB	
	0	ANTHRACENE	3.9	10	ug/L	625	39	43-120	L2	LFB	
	0	BENZ[A]ANTHRACENE	4.0	10	ug/L	625	40	42-133	L2	LFB	
	0	BENZIDINE	5.1	25	ug/L	625	20	1-125		LFB	
	0	BENZO[A]PYRENE	4.1	10	ug/L	625	41	32-148		LFB	
	0	BENZO[G,H,I]PERYLENE	3.9	10	ug/L	625	39	1-195		LFB	
	0	BENZO[K]FLUORANTHENE	3.7	10	ug/L	625	37	25-146		LFB	
	0	BENZYL BUTYL PHTHALATE	3.0	10	ug/L	625	30	1-140		LFB	
	0	BIS(2-CHLORO-1-METHYLETHYL)ETHER	3.6	10	ug/L	625	36	63-139	L2	LFB	
	0	BIS(2-CHLOROETHOXY)METHANE	4.0	10	ug/L	625	40	49-165	L2	LFB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
625_200608	0	BIS(2-CHLOROETHYL)ETHER	3.7	10	ug/L	625	37	43-126	L2	LFB	
	0	Bis(2-ETHYLHEXYL)PHTHALATE	4.5	10	ug/L	625	45	29-137		LFB	
	0	CHRYSENE	3.9	10	ug/L	625	39	44-140	L2	LFB	
	0	DIBENZO[A,H]ANTHRACENE	4.2	10	ug/L	625	42	1-200		LFB	
	0	DIETHYL PHTHALATE	3.3	10	ug/L	625	33	1-120		LFB	
	0	DIMETHYL PHTHALATE	2.0	10	ug/L	625	20	1-120		LFB	
	0	DI-N-BUTYL PHTHALATE	3.9	10	ug/L	625	39	8-120		LFB	
	0	DI-N-OCTYL PHTHALATE	4.5	10	ug/L	625	45	19-132		LFB	
	0	FLUORANTHENE	4.1	10	ug/L	625	41	43-121	L2	LFB	
	0	FLUORENE	3.9	10	ug/L	625	39	70-120	L2	LFB	
	0	HEXACHLOROBENZENE	3.6	10	ug/L	625	36	8-142		LFB	
	0	HEXACHLOROBUTADIENE	2.7	10	ug/L	625	27	38-120	L2	LFB	
	0	HEXACHLOROCYCLOPENTADIENE	3.0	10	ug/L	625	30	14-170		LFB	
	0	HEXACHLOROETHANE	2.9	10	ug/L	625	29	55-120	L2	LFB	
	0	INDENO[1,2,3,C,D]PYRENE	4.3	10	ug/L	625	43	1-151		LFB	
	0	ISOPHORONE	4.3	10	ug/L	625	43	47-180	L2	LFB	
	0	NAPHTHALENE	3.5	10	ug/L	625	35	36-120	L2	LFB	
	0	NITROBENZENE	3.8	10	ug/L	625	38	54-158	L2	LFB	
	0	N-NITROSODIMETHYLAMINE	2.5	10	ug/L	625	25	20-116		LFB	
	0	N-NITROSODI-N-PROPYLAMINE	4.1	10	ug/L	625	41	14-198		LFB	
	0	N-NITROSODIPHENYLAMINE	4.2	10	ug/L	625	42	65-137	L2	LFB	
	0	PHENANTHRENE	3.9	10	ug/L	625	39	65-120	L2	LFB	
	0	PYRENE	4.1	10	ug/L	625	41	70-120	L2	LFB	
	0	2,4,6-TRICHLOROPHENOL	4.1	10	ug/L	625	41	52-129	L2	LFB	
	0	2,4-DICHLOROPHENOL	4.1	10	ug/L	625	41	53-122	L2	LFB	
	0	2,4-DIMETHYLPHENOL	4.0	10	ug/L	625	40	42-120	L2	LFB	
	0	2,4-DINITROPHENOL	6.9	10	ug/L	625	69	1-173		LFB	
	0	2-CHLOROPHENOL	3.5	10	ug/L	625	35	36-120	L2	LFB	
	0	2-NITROPHENOL	4.3	10	ug/L	625	43	45-167	L2	LFB	
	0	4,6-DINITRO-O-CRESOL	6.4	10	ug/L	625	64	53-130		LFB	
	0	4-NITROPHENOL	2.3	10	ug/L	625	23	13-129		LFB	
	0	P-CHLORO-M-CRESOL	4.3	10	ug/L	625	43	41-128		LFB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
625_200608	0	PENTACHLOROPHENOL	4.6	10	ug/L	625	46	38-152		LFB	
	0	PHENOL	1.8	10	ug/L	625	18	17-120		LFB	
	0	3-METHYL CHOLANTHRENE	3.7	10	ug/L	625	37	57-119	L2	LFB	
	0	BENZO(J)FLUORANTHENE	7.8	20	ug/L	625	39	42-140	L2	LFB	
	0	BENZO(R,S,T)PENTAPHENE	2.9	10	ug/L	625	29	1-172		LFB	
	0	DIBENZO(A,E)PYRENE	3.0	10	ug/L	625	30	1-199		LFB	
	0	DIBENZO(A,H)ACRIDINE	3.9	10	ug/L	625	39	60-131	L2	LFB	
	0	DIBENZO(A,H)PYRENE	3.3	10	ug/L	625	33	4-160		LFB	
	0	DIBENZO(A,J)ACRIDINE	3.9	10	ug/L	625	39	55-136	L2	LFB	
	0	PERYLENE	4.0	10	ug/L	625	40	57-125	L2	LFB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Low-Level Lab Fortified Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
218.6_200602	0	HEXAVALENT CHROMIUM	0.027	0.030	ug/L	218.6	90	50-150		LLFB	MRL

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Reagent Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
200.8_200603A2	0	ANTIMONY	ND		mg/L	200.8		0-0		LRB	
	0	ARSENIC	ND		mg/L	200.8		0-0		LRB	
	0	BERYLLIUM	ND		mg/L	200.8		0-0		LRB	
	0	CADMIUM	ND		mg/L	200.8		0-0		LRB	
	0	CHROMIUM	ND		mg/L	200.8		0-0		LRB	
	0	COPPER	ND		mg/L	200.8		0-0		LRB	
	0	LEAD	ND		mg/L	200.8		0-0		LRB	
	0	NICKEL	ND		mg/L	200.8		0-0		LRB	
	0	SELENIUM	ND		mg/L	200.8		0-0		LRB	
	0	SILVER	ND		mg/L	200.8		0-0		LRB	
	0	THALLIUM	ND		mg/L	200.8		0-0		LRB	
	0	ZINC	ND		mg/L	200.8		0-0		LRB	
218.6_200602	0	HEXAVALENT CHROMIUM	ND		ug/L	218.6		0-0		LRB	
	1	HEXAVALENT CHROMIUM	ND		ug/L	218.6		0-0		LRB	
	2	HEXAVALENT CHROMIUM	ND		ug/L	218.6		0-0		LRB	
D7511_200609	0	CYANIDE, TOTAL	ND		mg/L	D7511-12		0-0		LRB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
200.8_200603A2	0	ANTIMONY	ND		mg/L	200.8		0-0		MB	
	0	ARSENIC	ND		mg/L	200.8		0-0		MB	
	0	BERYLLIUM	ND		mg/L	200.8		0-0		MB	
	0	CADMIUM	ND		mg/L	200.8		0-0		MB	
	0	CHROMIUM	ND		mg/L	200.8		0-0		MB	
	0	COPPER	ND		mg/L	200.8		0-0		MB	
	0	LEAD	ND		mg/L	200.8		0-0		MB	
	0	NICKEL	ND		mg/L	200.8		0-0		MB	
	0	SELENIUM	ND		mg/L	200.8		0-0		MB	
	0	SILVER	ND		mg/L	200.8		0-0		MB	
	0	THALLIUM	ND		mg/L	200.8		0-0		MB	
	0	ZINC	ND		mg/L	200.8		0-0		MB	
608_200608	0	DECACHLOROBIPHENYL (Surr)	114		%	608		31-157		MB	
	0	TETRACHLORO-M-XYLENE (Surr)	60		%	608		56-122		MB	
	0	AROCLOR 1016	ND		ug/L	608		0-0		MB	
	0	AROCLOR 1221	ND		ug/L	608		0-0		MB	
	0	AROCLOR 1232	ND		ug/L	608		0-0		MB	
	0	AROCLOR 1242	ND		ug/L	608		0-0		MB	
	0	AROCLOR 1248	ND		ug/L	608		0-0		MB	
	0	AROCLOR 1254	ND		ug/L	608		0-0		MB	
	0	AROCLOR 1260	ND		ug/L	608		0-0		MB	
	0	4,4' - DDD	ND		ug/L	608		0-0		MB	
	0	4,4' - DDE	ND		ug/L	608		0-0		MB	
	0	4,4' - DDT	ND		ug/L	608		0-0		MB	
	0	ALDRIN	ND		ug/L	608		0-0		MB	
	0	BHC, ALPHA -	ND		ug/L	608		0-0		MB	
	0	BHC, BETA -	ND		ug/L	608		0-0		MB	
	0	BHC, DELTA -	ND		ug/L	608		0-0		MB	
	0	CHLORDANE	ND		ug/L	608		0-0		MB	
	0	DIELDRIN	ND		ug/L	608		0-0		MB	
	0	ENDOSULFAN I	ND		ug/L	608		0-0		MB	

*Notation:

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
608_200608	0	ENDOSULFAN II	ND		ug/L	608		0-0		MB	
	0	ENDOSULFAN SULFATE	ND		ug/L	608		0-0		MB	
	0	ENDRIN	ND		ug/L	608		0-0		MB	
	0	ENDRIN ALDEHYDE	ND		ug/L	608		0-0		MB	
	0	HEPTACHLOR	ND		ug/L	608		0-0		MB	
	0	HEPTACHLOR EPOXIDE "B"	ND		ug/L	608		0-0		MB	
	0	LINDANE (BHC - GAMMA)	ND		ug/L	608		0-0		MB	
	0	TOXAPHENE	ND		ug/L	608		0-0		MB	
624_200608	0	1,1 - DICHLOROETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	1,1 - DICHLOROETHYLENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	1,1,1 - TRICHLOROETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	1,1,2 - TRICHLOROETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	1,1,2,2 - TETRACHLOROETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	1,2 - DICHLOROETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	1,2 - DICHLOROPROPANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	1,2 - TRANS - DICHLOROETHYLENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	2 - CHLOROETHYL VINYL ETHER	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	ACROLEIN	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	ACRYLONITRILE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	BENZENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	BROMOFORM	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	CARBON TETRACHLORIDE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	CHLOROBENZENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	CHLORODIBROMOMETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	CHLOROETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	CHLOROFORM	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	CIS - 1,3 - DICHLOROPROPENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	DICHLOROBROMOMETHANE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	ETHYLBENZENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	M - DICHLOROBENZENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	METHYL BROMIDE (BROMOMETHANE)	ND		ug/L	624.1		0-0		MB	TB 20-17415

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
624_200608	0	METHYL CHLORIDE (CHLOROMETHANE)	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	METHYLENE CHLORIDE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	O - DICHLOROBENZENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	P - DICHLOROBENZENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	TETRACHLOROETHYLENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	TOLUENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	TRANS- 1,3 - DICHLOROPROPENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	TRICHLOROETHYLENE	ND		ug/L	624.1		0-0		MB	TB 20-17415
	0	VINYL CHLORIDE	ND		ug/L	624.1		0-0		MB	TB 20-17415
625_200608	0	2 - FLUOROBIPHENYL (Surr)	45		%	625		71-119		MB	
	0	2 - FLUOROPHENOL (Surr)	30		%	625		32-86		MB	
	0	2,4,6 - TRIBROMOPHENOL (Surr)	45		%	625		64-126		MB	
	0	d5-NITROBENZENE (Surr)	48		%	625		67-126		MB	
	0	p-TERPHENYL-d14 (Surr)	50		%	625		69-116		MB	
	0	1,2,4-TRICHLOROBENZENE	ND		ug/L	625		0-0		MB	
	0	1,2-DIPHENYLHYDRAZINE (as Azobenzene)	ND		ug/L	625		0-0		MB	
	0	2,4-DINITROTOLUENE	ND		ug/L	625		0-0		MB	
	0	2,6-DINITROTOLUENE	ND		ug/L	625		0-0		MB	
	0	2-CHLORONAPHTHALENE	ND		ug/L	625		0-0		MB	
	0	3,3-DICHLOROBENZIDINE	ND		ug/L	625		0-0		MB	
	0	3,4 - BENZOFLUORANTHENE (BENZO[B])	ND		ug/L	625		0-0		MB	
	0	4-BROMOPHENYL PHENYL ETHER	ND		ug/L	625		0-0		MB	
	0	4-CHLOROPHENYL PHENYL ETHER	ND		ug/L	625		0-0		MB	
	0	ACENAPHTHENE	ND		ug/L	625		0-0		MB	
	0	ACENAPHTHYLENE	ND		ug/L	625		0-0		MB	
	0	ANTHRACENE	ND		ug/L	625		0-0		MB	
	0	BENZ[A]ANTHRACENE	ND		ug/L	625		0-0		MB	
	0	BENZIDINE	ND		ug/L	625		0-0		MB	
	0	BENZO[A]PYRENE	ND		ug/L	625		0-0		MB	
	0	BENZO[G,H,I]PERYLENE	ND		ug/L	625		0-0		MB	
	0	BENZO[K]FLUORANTHENE	ND		ug/L	625		0-0		MB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
625_200608	0	BENZYL BUTYL PHTHALATE	ND		ug/L	625		0-0		MB	
	0	BIS(2-CHLORO-1-METHYLETHYL)ETHER	ND		ug/L	625		0-0		MB	
	0	BIS(2-CHLOROETHOXY)METHANE	ND		ug/L	625		0-0		MB	
	0	BIS(2-CHLOROETHYL)ETHER	ND		ug/L	625		0-0		MB	
	0	Bis(2-ETHYLHEXYL)PHTHALATE	ND		ug/L	625		0-0		MB	
	0	CHRYSENE	ND		ug/L	625		0-0		MB	
	0	DIBENZO[A,H]ANTHRACENE	ND		ug/L	625		0-0		MB	
	0	DIETHYL PHTHALATE	ND		ug/L	625		0-0		MB	
	0	DIMETHYL PHTHALATE	ND		ug/L	625		0-0		MB	
	0	DI-N-BUTYL PHTHALATE	ND		ug/L	625		0-0		MB	
	0	DI-N-OCTYL PHTHALATE	ND		ug/L	625		0-0		MB	
	0	FLUORANTHENE	ND		ug/L	625		0-0		MB	
	0	FLUORENE	ND		ug/L	625		0-0		MB	
	0	HEXACHLOROBENZENE	ND		ug/L	625		0-0		MB	
	0	HEXACHLOROBUTADIENE	ND		ug/L	625		0-0		MB	
	0	HEXACHLOROCYCLOPENTADIENE	ND		ug/L	625		0-0		MB	
	0	HEXACHLOROETHANE	ND		ug/L	625		0-0		MB	
	0	INDENO[1,2,3,C,D]PYRENE	ND		ug/L	625		0-0		MB	
	0	ISOPHORONE	ND		ug/L	625		0-0		MB	
	0	NAPHTHALENE	ND		ug/L	625		0-0		MB	
	0	NITROBENZENE	ND		ug/L	625		0-0		MB	
	0	N-NITROSODIMETHYLAMINE	ND		ug/L	625		0-0		MB	
	0	N-NITROSODI-N-PROPYLAMINE	ND		ug/L	625		0-0		MB	
	0	N-NITROSODIPHENYLAMINE	ND		ug/L	625		0-0		MB	
	0	PHENANTHRENE	ND		ug/L	625		0-0		MB	
	0	PYRENE	ND		ug/L	625		0-0		MB	
	0	2,4,6-TRICHLOROPHENOL	ND		ug/L	625		0-0		MB	
	0	2,4-DICHLOROPHENOL	ND		ug/L	625		0-0		MB	
	0	2,4-DIMETHYLPHENOL	ND		ug/L	625		0-0		MB	
	0	2,4-DINITROPHENOL	ND		ug/L	625		0-0		MB	
	0	2-CHLOROPHENOL	ND		ug/L	625		0-0		MB	
	0	2-NITROPHENOL	ND		ug/L	625		0-0		MB	

*Notation:

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NA = Indicates % Recovery could not be calculated.

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
625_200608	0	4,6-DINITRO-O-CRESOL	ND		ug/L	625		0-0		MB	
	0	4-NITROPHENOL	ND		ug/L	625		0-0		MB	
	0	P-CHLORO-M-CRESOL	ND		ug/L	625		0-0		MB	
	0	PENTACHLOROPHENOL	ND		ug/L	625		0-0		MB	
	0	PHENOL	ND		ug/L	625		0-0		MB	
	0	3-METHYL CHOLANTHRENE	ND		ug/L	625		0-0		MB	
	0	BENZO(J)FLUORANTHENE	ND		ug/L	625		0-0		MB	
	0	BENZO(R,S,T)PENTAPHENE	ND		ug/L	625		0-0		MB	
	0	DIBENZO(A,E)PYRENE	ND		ug/L	625		0-0		MB	
	0	DIBENZO(A,H)ACRIDINE	ND		ug/L	625		0-0		MB	
	0	DIBENZO(A,H)PYRENE	ND		ug/L	625		0-0		MB	
	0	DIBENZO(A,J)ACRIDINE	ND		ug/L	625		0-0		MB	
	0	PERYLENE	ND		ug/L	625		0-0		MB	
D7511_200609	0	CYANIDE, TOTAL	ND		mg/L	D7511-12		0-0		MB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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ANALYTICAL

SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Quality Control Sample

Reference Number: **20-17415**
Report Date: 07/23/20

Batch		Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
200.8_200603A2	0	ANTIMONY	0.0376	0.04	mg/L	200.8	94	90-110		QCS	
	0	ARSENIC	0.0392	0.04	mg/L	200.8	98	90-110		QCS	
	0	BERYLLIUM	0.0407	0.04	mg/L	200.8	102	90-110		QCS	
	0	CADMIUM	0.0407	0.04	mg/L	200.8	102	90-110		QCS	
	0	CHROMIUM	0.0408	0.04	mg/L	200.8	102	90-110		QCS	
	0	COPPER	0.0396	0.04	mg/L	200.8	99	90-110		QCS	
	0	LEAD	0.0408	0.04	mg/L	200.8	102	90-110		QCS	
	0	NICKEL	0.043	0.04	mg/L	200.8	108	90-110		QCS	
	0	SELENIUM	0.0415	0.04	mg/L	200.8	104	90-110		QCS	
	0	SILVER	0.0206	0.02	mg/L	200.8	103	90-110		QCS	
	0	THALLIUM	0.0391	0.04	mg/L	200.8	98	90-110		QCS	
	0	ZINC	0.0405	0.04	mg/L	200.8	101	90-110		QCS	
218.6_200602	0	HEXAVALENT CHROMIUM	0.366	0.364	ug/L	218.6	101	90-110		QCS	
D7511_200609	0	CYANIDE, TOTAL	0.097	0.100	mg/L	D7511-12	97	90-110		QCS	
	1	CYANIDE, TOTAL	0.136	0.125	mg/L	D7511-12	109	90-110		QCS	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

SAMPLE DEPENDENT
QUALITY CONTROL REPORT
Duplicate, Matrix Spike/Matrix Spike Duplicate and Confirmation Result Report

Batch	Sample	Analyte	Result	Duplicate Result	Units	%RPD	Limits	QC Qualifier	Type	Comments
Duplicate										
200.8_200603A2										
7440-36-0	33337	ANTIMONY	1.9	0.3	ug/L	**145.5**	0-20	INH	DUP	
7440-38-2	33337	ARSENIC	5.2	3.9	ug/L	**28.6**	0-20	INH	DUP	
7440-41-7	33337	BERYLLIUM	0.01	ND	ug/L	**NA**	0-20	IEV	DUP	
7440-43-9	33337	CADMIUM	0.02	ND	ug/L	**NA**	0-20	IEV	DUP	
7440-47-3	33337	CHROMIUM	31.2	31.3	ug/L	**0.3**	0-20		DUP	
7440-50-8	33337	COPPER	1.5	1.3	ug/L	**14.3**	0-20		DUP	
7439-92-1	33337	LEAD	1.2	1.0	ug/L	**18.2**	0-20		DUP	
7440-02-0	33337	NICKEL	2.0	2.3	ug/L	**14.0**	0-20		DUP	
7782-49-2	33337	SELENIUM	4.4	4.0	ug/L	**9.5**	0-20		DUP	
7440-22-4	33337	SILVER	0.1	0.01	ug/L	**163.6**	0-20	IEV	DUP	
7440-28-0	33337	THALLIUM	0.10	ND	ug/L	**NA**	0-20		DUP	
7440-66-6	33337	ZINC	11.8	4.5	ug/L	**89.6**	0-20	INH	DUP	
218.6_200602										
18540-29-9	32838	HEXAVALENT CHROMIUM	0.056	0.057	ug/L	**1.8**	0-20		DUP	
D7511_200609										
57-12-5	33987	CYANIDE, TOTAL	ND	ND	mg/L	**NA**	0-20		DUP	

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of a analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

Laboratory Fortified Matrix (MS)

Batch/CAS	Sample	Analyte	Result	Spike Result	Duplicate Spike Result	Spike Conc	Units	Percent Recovery MS	Percent Recovery MSD	Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
200.8_200603A2															
7440-36-0	33337	ANTIMONY	1.9	25.2		25.0	ug/L	**93**		70-130	**NA**	0-20		LFM	
7440-38-2	33337	ARSENIC	5.2	28.0		25.0	ug/L	**91**		70-130	**NA**	0-20		LFM	
7440-41-7	33337	BERYLLIUM	0.01	22.9		25.0	ug/L	**92**		70-130	**NA**	0-20		LFM	
7440-43-9	33337	CADMIUM	0.02	23.6		25.0	ug/L	**94**		70-130	**NA**	0-20		LFM	
7440-47-3	33337	CHROMIUM	31.2	56.9		25.0	ug/L	**103**		70-130	**NA**	0-20		LFM	
7440-50-8	33337	COPPER	1.5	25.6		25.0	ug/L	**96**		70-130	**NA**	0-20		LFM	
7439-92-1	33337	LEAD	1.2	25.6		25.0	ug/L	**98**		70-130	**NA**	0-20		LFM	
7440-02-0	33337	NICKEL	2.0	26.5		25.0	ug/L	**98**		70-130	**NA**	0-20		LFM	
7782-49-2	33337	SELENIUM	4.4	24.8		25.0	ug/L	**82**		70-130	**NA**	0-20		LFM	
7440-22-4	33337	SILVER	0.1	12.3		12.5	ug/L	**98**		70-130	**NA**	0-20		LFM	
7440-28-0	33337	THALLIUM	0.10	23.6		25.0	ug/L	**94**		70-130	**NA**	0-20		LFM	
7440-66-6	33337	ZINC	11.8	30.0		25.0	ug/L	**73**		70-130	**NA**	0-20		LFM	
218.6_200602															
18540-29-9	31597	HEXAVALENT CHROMIUM	0.106	0.380	0.380	0.300	ug/L	**91**	**91**	90-110	**0.0**	0-20		LFM	
608_200608															
43-13-9	33337	DECACHLOROBIPHENYL (Surr)	110	111	108		%		**NA**	31-157	**NA**	0-20		LFM	
42-13-7	33337	TETRACHLORO-M-XYLENE (Surr)	87	94	86		%		**NA**	56-122	**NA**	0-20		LFM	
72-54-8	33337	4,4' - DDD	ND	0.48	0.46	0.5	ug/L	**96**	**92**	31-141	**4.3**	0-39		LFM	
72-55-9	33337	4,4' - DDE	ND	0.49	0.46	0.5	ug/L	**98**	**92**	30-145	**6.3**	0-35		LFM	
50-29-3	33337	4,4' - DDT	ND	0.49	0.46	0.5	ug/L	**98**	**92**	25-160	**6.3**	0-42		LFM	
309-00-2	33337	ALDRIN	ND	0.48	0.42	0.5	ug/L	**96**	**84**	42-140	**13.3**	0-35		LFM	
11104-28-2	33337	AROCLOR 1221	ND	1.4	1.3	2	ug/L	**70**	**65**	15-178	**7.4**	0-48		LFM	
319-84-6	33337	BHC, ALPHA -	ND	0.46	0.41	0.5	ug/L	**92**	**82**	37-140	**11.5**	0-36		LFM	
319-85-7	33337	BHC, BETA -	ND	0.42	0.39	0.5	ug/L	**84**	**78**	17-147	**7.4**	0-44		LFM	
319-86-8	33337	BHC, DELTA -	ND	0.46	0.42	0.5	ug/L	**92**	**84**	19-140	**9.1**	0-52		LFM	
57-74-9	33337	CHLORDANE	ND	0.45	0.42	0.5	ug/L	**90**	**84**	60-140	**6.9**	0-20		LFM	gamma chlordane
60-57-1	33337	DIELDRIN	ND	0.53	0.49	0.5	ug/L	**106**	**98**	36-146	**7.8**	0-49		LFM	
959-98-8	33337	ENDOSULFAN I	ND	0.51	0.47	0.5	ug/L	**102**	**94**	45-153	**8.2**	0-28		LFM	
33213-65-9	33337	ENDOSULFAN II	ND	0.52	0.50	0.5	ug/L	**104**	**100**	1-202	**3.9**	0-53		LFM	
1031-07-8	33337	ENDOSULFAN SULFATE	ND	0.52	0.50	0.5	ug/L	**104**	**100**	26-144	**3.9**	0-38		LFM	
72-20-8	33337	ENDRIN	ND	0.47	0.48	0.5	ug/L	**94**	**96**	30-147	**2.1**	0-48		LFM	
7421-93-4	33337	ENDRIN ALDEHYDE	ND	0.04	0.08	0.5	ug/L	**8**	**16**	35-149	**66.7**	0-40	M2	LFM	

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of a analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

Reference Number: 20-17415
Report Date: 7/23/2020

Batch/CAS	Sample	Analyte	Result	Spike Result	Duplicate Spike Result	Spike Conc	Units	Percent Recovery MS	Percent Recovery MSD	Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
76-44-8	33337	HEPTACHLOR	ND	0.46	0.44	0.5	ug/L	**92**	**88**	34-140	**4.4**	0-43		LFM	
1024-57-3	33337	HEPTACHLOR EPOXIDE "B"	ND	0.52	0.48	0.5	ug/L	**104**	**96**	37-142	**8.0**	0-26		LFM	
58-89-9	33337	LINDANE (BHC - GAMMA)	ND	0.43	0.37	0.5	ug/L	**86**	**74**	32-140	**15.0**	0-39		LFM	
624_200608															
75-34-3	33337	1,1 - DICHLOROETHANE	ND	4.1	4.1	4	ug/L	**103**	**103**	59-155	**0.0**	0-20		LFM	
75-35-4	33337	1,1 - DICHLOROETHYLENE	ND	3.8	3.7	4	ug/L	**95**	**93**	1-234	**2.7**	0-20		LFM	
71-55-6	33337	1,1,1 - TRICHLOROETHANE	ND	4.1	4.1	4	ug/L	**103**	**103**	52-162	**0.0**	0-20		LFM	
79-00-5	33337	1,1,2 - TRICHLOROETHANE	ND	4.2	4.2	4	ug/L	**105**	**105**	52-150	**0.0**	0-20		LFM	
79-34-5	33337	1,1,2,2 - TETRACHLOROETHANE	ND	3.9	3.8	4	ug/L	**98**	**95**	46-157	**2.6**	0-20		LFM	
107-06-2	33337	1,2 - DICHLOROETHANE	ND	4.1	4.0	4	ug/L	**103**	**100**	49-155	**2.5**	0-20		LFM	
78-87-5	33337	1,2 - DICHLOROPROPANE	ND	4.1	4.0	4	ug/L	**103**	**100**	1-210	**2.5**	0-20		LFM	
156-60-5	33337	1,2 - TRANS - DICHLOROETHYLENE	ND	3.7	3.7	4	ug/L	**93**	**93**	54-156	**0.0**	0-20		LFM	
110-75-8	33337	2 - CHLOROETHYL VINYL ETHER	ND	10.9	10.2	10	ug/L	**109**	**102**	1-305	**6.6**	0-20		LFM	
107-02-8	33337	ACROLEIN	ND	4.9	4.0	10	ug/L	**49**	**40**	60-140	**20.2**	0-20	M2	LFM	
107-13-1	33337	ACRYLONITRILE	ND	9.9	9.5	10	ug/L	**99**	**95**	60-140	**4.1**	0-20		LFM	
71-43-2	33337	BENZENE	ND	4.1	4.1	4	ug/L	**103**	**103**	37-151	**0.0**	0-20		LFM	
75-25-2	33337	BROMOFORM	ND	3.8	3.5	4	ug/L	**95**	**88**	45-169	**8.2**	0-20		LFM	
56-23-5	33337	CARBON TETRACHLORIDE	ND	4.2	4.2	4	ug/L	**105**	**105**	70-140	**0.0**	0-20		LFM	
108-90-7	33337	CHLOROBENZENE	ND	4.3	4.3	4	ug/L	**108**	**108**	37-160	**0.0**	0-20		LFM	
124-48-1	33337	CHLORODIBROMOMETHANE	ND	3.8	3.6	4	ug/L	**95**	**90**	53-149	**5.4**	0-20		LFM	
75-00-3	33337	CHLOROETHANE	ND	4.1	4.3	4	ug/L	**103**	**108**	14-230	**4.8**	0-20		LFM	
67-66-3	33337	CHLOROFORM	ND	4.0	4.0	4	ug/L	**100**	**100**	51-138	**0.0**	0-20		LFM	
10061-01-5	33337	CIS - 1,3 - DICHLOROPROPENE	ND	4.2	3.9	4	ug/L	**105**	**98**	1-227	**7.4**	0-20		LFM	
75-27-4	33337	DICHLOROBROMOMETHANE	ND	3.7	3.7	4	ug/L	**93**	**93**	35-155	**0.0**	0-20		LFM	
100-41-4	33337	ETHYLBENZENE	0.8	4.8	4.8	4	ug/L	**100**	**100**	37-162	**0.0**	0-20		LFM	
541-73-1	33337	M - DICHLOROBENZENE	ND	3.9	3.8	4	ug/L	**98**	**95**	59-156	**2.6**	0-20		LFM	
74-83-9	33337	METHYL BROMIDE (BROMOMETHANE	ND	3.7	3.6	4	ug/L	**93**	**90**	1-242	**2.7**	0-20		LFM	
74-87-3	33337	METHYL CHLORIDE (CHLOROMETHAN	ND	4.2	3.5	4	ug/L	**105**	**88**	1-273	**18.2**	0-20		LFM	
75-09-2	33337	METHYLENE CHLORIDE	ND	3.9	4.0	4	ug/L	**98**	**100**	1-221	**2.5**	0-20		LFM	
95-50-1	33337	O - DICHLOROBENZENE	ND	4.0	3.9	4	ug/L	**100**	**98**	18-190	**2.5**	0-20		LFM	
106-46-7	33337	P - DICHLOROBENZENE	ND	4.2	4.1	4	ug/L	**105**	**103**	18-190	**2.4**	0-20		LFM	
127-18-4	33337	TETRACHLOROETHYLENE	ND	4.2	4.2	4	ug/L	**105**	**105**	64-148	**0.0**	0-20		LFM	
108-88-3	33337	TOLUENE	ND	4.1	4.0	4	ug/L	**103**	**100**	47-150	**2.5**	0-20		LFM	
10061-02-6	33337	TRANS- 1,3 - DICHLOROPROPENE	ND	4.3	3.9	4	ug/L	**108**	**98**	17-183	**9.8**	0-20		LFM	

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of a analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

Batch/CAS	Sample	Analyte	Result	Spike Result	Duplicate Spike Result	Spike Conc	Units	Percent Recovery MS	Percent Recovery MSD	Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
79-01-6	33337	TRICHLOROETHYLENE	ND	4.1	4.2	4	ug/L	**103**	**105**	71-157	**2.4**	0-20		LFM	
75-01-4	33337	VINYL CHLORIDE	ND	3.5	3.6	4	ug/L	**88**	**90**	1-251	**2.8**	0-20		LFM	
625_200608															
321-60-8	33337	2 - FLUOROBIPHENYL (Surr)	54	55	58		%		**NA**	71-119	**NA**	0-20		LFM	
367-12-4	33337	2 - FLUOROPHENOL (Surr)	35	36	36		%		**NA**	32-86	**NA**	0-20		LFM	
118-79-6	33337	2,4,6 - TRIBROMOPHENOL (Surr)	63	67	68		%		**NA**	64-126	**NA**	0-20		LFM	
98-95-3	33337	d5-NITROBENZENE (Surr)	53	55	55		%		**NA**	67-126	**NA**	0-20		LFM	
1718-51-0	33337	p-TERPHENYL-d14 (Surr)	45	45	44		%		**NA**	69-116	**NA**	0-20		LFM	
120-82-1	33337	1,2,4-TRICHLOROBENZENE	ND	5.1	5.0	10	ug/L	**51**	**50**	44-142	**2.0**	0-50		LFM	
122-66-7	33337	1,2-DIPHENYLHYDRAZINE (as Azobenz	ND	5.6	5.9	10	ug/L	**56**	**59**	67-127	**5.2**	0-40	L2	LFM	
88-06-2	33337	2,4,6-TRICHLOROPHENOL	ND	6.5	6.4	10	ug/L	**65**	**64**	37-144	**1.6**	0-40		LFM	
120-83-2	33337	2,4-DICHLOROPHENOL	ND	6.2	6.2	10	ug/L	**62**	**62**	39-135	**0.0**	0-40		LFM	
105-67-9	33337	2,4-DIMETHYLPHENOL	ND	6.3	6.1	10	ug/L	**63**	**61**	32-120	**3.2**	0-40		LFM	
51-28-5	33337	2,4-DINITROPHENOL	ND	4.7	4.7	10	ug/L	**47**	**47**	1-191	**0.0**	0-40		LFM	
121-14-2	33337	2,4-DINITROTOLUENE	ND	6.4	6.3	10	ug/L	**64**	**63**	39-139	**1.6**	0-42		LFM	
606-20-2	33337	2,6-DINITROTOLUENE	ND	6.9	6.7	10	ug/L	**69**	**67**	50-158	**2.9**	0-40		LFM	
91-58-7	33337	2-CHLORONAPHTHALENE	ND	5.6	5.7	10	ug/L	**56**	**57**	60-120	**1.8**	0-40	L2	LFM	
95-57-8	33337	2-CHLOROPHENOL	ND	5.4	5.3	10	ug/L	**54**	**53**	23-134	**1.9**	0-40		LFM	
88-75-5	33337	2-NITROPHENOL	ND	6.8	6.8	10	ug/L	**68**	**68**	29-182	**0.0**	0-40		LFM	
91-94-1	33337	3,3-DICHLOROBENZIDINE	ND	0.3	0.4	1	ug/L	**30**	**40**	1-262	**28.6**	0-40		LFM	
205-99-2	33337	3,4 - BENZOFLUORANTHENE (BENZO[	ND	7.9	8.0	20	ug/L	**40**	**40**	24-159	**1.3**	0-40		LFM	
56-49-5	33337	3-METHYL CHOLANTHRENE	ND	3.6	3.6	10	ug/L	**36**	**36**	5-125	**0.0**	0-40		LFM	
534-52-1	33337	4,6-DINITRO-O-CRESOL	ND	8.2	8.1	10	ug/L	**82**	**81**	1-181	**1.2**	0-40		LFM	
101-55-3	33337	4-BROMOPHENYL PHENYL ETHER	ND	6.0	6.0	10	ug/L	**60**	**60**	53-127	**0.0**	0-40		LFM	
7005-72-3	33337	4-CHLOROPHENYL PHENYL ETHER	ND	5.8	5.7	10	ug/L	**58**	**57**	25-158	**1.7**	0-40		LFM	
100-02-7	33337	4-NITROPHENOL	ND	3.1	3.1	10	ug/L	**31**	**31**	1-132	**0.0**	0-40		LFM	
83-32-9	33337	ACENAPHTHENE	ND	5.7	5.8	10	ug/L	**57**	**58**	47-145	**1.7**	0-40		LFM	
208-96-8	33337	ACENAPHTHYLENE	ND	5.7	5.7	10	ug/L	**57**	**57**	33-145	**0.0**	0-40		LFM	
120-12-7	33337	ANTHRACENE	ND	6.0	5.9	10	ug/L	**60**	**59**	27-133	**1.7**	0-40		LFM	
56-55-3	33337	BENZ[A]ANTHRACENE	ND	5.3	5.0	10	ug/L	**53**	**50**	33-143	**5.8**	0-40		LFM	
92-87-5	33337	BENZIDINE	ND	ND	ND	25	ug/L		**NA**	1-59	**NA**	0-40	P	LFM	
205-82-3	33337	BENZO(J)FLUORANTHENE	ND	7.7	7.8	20	ug/L	**39**	**39**	21-123	**1.3**	0-40		LFM	
189-55-9	33337	BENZO(R,S,T)PENTAPHENE	ND	1.7	1.8	10	ug/L	**17**	**18**	1-156	**5.7**	0-40		LFM	
50-32-8	33337	BENZO[A]PYRENE	ND	3.6	3.5	10	ug/L	**36**	**35**	17-163	**2.8**	0-40		LFM	

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NA = Indicates %RPD could not be calculated

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Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

Reference Number: 20-17415
Report Date: 7/23/2020

Batch/CAS	Sample	Analyte	Result	Spike Result	Duplicate Spike Result	Spike Conc	Units	Percent Recovery MS	Percent Recovery MSD	Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
191-24-2	33337	BENZO[G,H,I]PERYLENE	ND	2.3	2.4	10	ug/L	**23**	**24**	1-219	**4.3**	0-40		LFM	
207-08-9	33337	BENZO[K]FLUORANTHENE	ND	3.0	2.9	10	ug/L	**30**	**29**	11-162	**3.4**	0-40		LFM	
85-68-7	33337	BENZYL BUTYL PHTHALATE	ND	6.0	5.9	10	ug/L	**60**	**59**	1-152	**1.7**	0-40		LFM	
108-60-1	33337	BIS(2-CHLORO-1-METHYLETHYL)ETHE	ND	5.5	5.3	10	ug/L	**55**	**53**	36-166	**3.7**	0-40		LFM	
111-91-1	33337	BIS(2-CHLOROETHOXY)METHANE	ND	5.9	6.0	10	ug/L	**59**	**60**	33-184	**1.7**	0-40		LFM	
111-44-4	33337	BIS(2-CHLOROETHYL)ETHER	ND	5.3	5.3	10	ug/L	**53**	**53**	12-158	**0.0**	0-40		LFM	
117-81-7	33337	Bis(2-ETHYLHEXYL)PHTHALATE	ND	1.5	1.5	10	ug/L	**15**	**15**	8-158	**0.0**	0-40		LFM	
218-01-9	33337	CHRYSENE	ND	4.9	4.7	10	ug/L	**49**	**47**	17-168	**4.2**	0-40		LFM	
192-65-4	33337	DIBENZO(A,E)PYRENE	ND	1.6	1.7	10	ug/L	**16**	**17**	1-154	**6.1**	0-40		LFM	
226-36-8	33337	DIBENZO(A,H)ACRIDINE	ND	4.4	4.4	10	ug/L	**44**	**44**	25-133	**0.0**	0-40		LFM	
189-64-0	33337	DIBENZO(A,H)PYRENE	ND	2.0	2.0	10	ug/L	**20**	**20**	4-160	**0.0**	0-40		LFM	
224-42-0	33337	DIBENZO(A,J)ACRIDINE	ND	4.3	4.4	10	ug/L	**43**	**44**	31-139	**2.3**	0-40		LFM	
53-70-3	33337	DIBENZO[A,H]ANTHRACENE	ND	2.4	2.5	10	ug/L	**24**	**25**	1-227	**4.1**	0-40		LFM	
84-66-2	33337	DIETHYL PHTHALATE	ND	5.8	5.7	10	ug/L	**58**	**57**	1-120	**1.7**	0-40		LFM	
131-11-3	33337	DIMETHYL PHTHALATE	ND	4.9	4.8	10	ug/L	**49**	**48**	1-120	**2.1**	0-40		LFM	
84-74-2	33337	DI-N-BUTYL PHTHALATE	ND	6.0	6.0	10	ug/L	**60**	**60**	1-120	**0.0**	0-40		LFM	
117-84-0	33337	DI-N-OCTYL PHTHALATE	ND	1.2	1.2	10	ug/L	**12**	**12**	4-146	**0.0**	0-40		LFM	
206-44-0	33337	FLUORANTHENE	ND	6.0	5.9	10	ug/L	**60**	**59**	26-137	**1.7**	0-40		LFM	
86-73-7	33337	FLUORENE	ND	6.0	6.1	10	ug/L	**60**	**61**	59-121	**1.7**	0-40		LFM	
118-74-1	33337	HEXACHLOROBENZENE	ND	5.5	5.5	10	ug/L	**55**	**55**	1-152	**0.0**	0-40		LFM	
87-68-3	33337	HEXACHLOROBUTADIENE	ND	4.1	4.2	10	ug/L	**41**	**42**	24-120	**2.4**	0-40		LFM	
77-47-4	33337	HEXACHLOROCYCLOPENTADIENE	ND	3.2	3.3	10	ug/L	**32**	**33**	1-142	**3.1**	0-40		LFM	
67-72-1	33337	HEXACHLOROETHANE	ND	4.6	4.6	10	ug/L	**46**	**46**	40-120	**0.0**	0-40		LFM	
193-39-5	33337	INDENO[1,2,3,C,D]PYRENE	ND	2.6	2.6	10	ug/L	**26**	**26**	1-171	**0.0**	0-40		LFM	
78-59-1	33337	ISOPHORONE	ND	6.1	6.1	10	ug/L	**61**	**61**	21-196	**0.0**	0-40		LFM	
91-20-3	33337	NAPHTHALENE	ND	5.3	5.4	10	ug/L	**53**	**54**	21-133	**1.9**	0-40		LFM	
98-95-3	33337	NITROBENZENE	ND	5.6	5.6	10	ug/L	**56**	**56**	35-180	**0.0**	0-40		LFM	
62-75-9	33337	N-NITROSODIMETHYLAMINE	ND	4.0	3.8	10	ug/L	**40**	**38**	19-109	**5.1**	0-40		LFM	
621-64-7	33337	N-NITROSODI-N-PROPYLAMINE	ND	6.1	5.9	10	ug/L	**61**	**59**	1-230	**3.3**	0-40		LFM	
86-30-6	33337	N-NITROSODIPHENYLAMINE	ND	6.6	6.5	10	ug/L	**66**	**65**	61-139	**1.5**	0-40		LFM	
59-50-7	33337	P-CHLORO-M-CRESOL	ND	6.8	6.7	10	ug/L	**68**	**67**	22-147	**1.5**	0-40		LFM	
87-86-5	33337	PENTACHLOROPHENOL	ND	7.6	7.5	10	ug/L	**76**	**75**	14-176	**1.3**	0-40		LFM	
198-55-0	33337	PERYLENE	ND	3.5	3.5	10	ug/L	**35**	**35**	18-114	**0.0**	0-40		LFM	
85-01-8	33337	PHENANTHRENE	ND	5.8	5.8	10	ug/L	**58**	**58**	54-120	**0.0**	0-40		LFM	

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Reference Number: 20-17415
Report Date: 7/23/2020

Batch/CAS	Sample	Analyte	Result	Spike Result	Duplicate Spike Result	Spike Conc	Units	Percent Recovery MS	Percent Recovery MSD	Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
108-95-2	33337	PHENOL	ND	3.0	2.9	10	ug/L	**30**	**29**	5-120	**3.4**	0-40		LFM	
129-00-0	33337	PYRENE	ND	6.0	5.9	10	ug/L	**60**	**59**	52-120	**1.7**	0-40		LFM	
D7511_200609															
57-12-5	33987	CYANIDE, TOTAL	ND	0.048	0.051	0.050	mg/L	**96**	**102**	70-130	**6.1**	0-0		LFM	

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Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of a analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

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Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt

QUALITY CONTROL REPORT
SURROGATE REPORT

Reference Number: 20-17415
Report Date: 07/23/20

Lab No	Analyte	Result	Qualifier	Units	Method	Limit
608_200608						
33337	DECACHLOROBIPHENYL (Surr)	110		%	608	
	TETRACHLORO-M-XYLENE (Surr)	87		%		
624_200608						
33337	1,2 - DICHLOROETHANE-d4 (SURR)	96		%	624.1	Acceptance Limit 70-130%
	1,4 - DIFLUROBENZENE-d4 (Surr)	100		%		Acceptance Limit 70-130%
	4-BROMOFLUOROBENZENE (Surr)	108		%		Acceptance Limit 70-130%
	d8-TOLUENE (Surr)	102		%		Acceptance Limit 70-130%
625_200608						
33337	2,4,6 - TRIBROMOPHENOL (Surr)	63		%	625	
	2 - FLUOROBIPHENYL (Surr)	54		%		
	2 - FLUOROPHENOL (Surr)	35		%		
	d5-PHENOL (Surr)	27		%		
	p-TERPHENYL-d14 (Surr)	45		%		
	d5-NITROBENZENE (Surr)	53		%		

*Notation:

A surrogate is a pure compound added to a sample in the laboratory just before processing so that the overall efficiency of a method can be determined.

The Acceptance Limits (or Control Limits) approximate a 99% confidence interval around the mean recovery.

Qualifier Definitions

Reference Number: 20-17415
Report Date: 07/23/20

Qualifier	Definition
CV	The end calibration verification was significantly below the acceptance criterion of 80%. Low recovery is a result of this sample's high boiling material residue analyzed prior affecting chromatography. Data if reported, is suspect as biased low.
IEV	Acceptance criteria do not apply to estimated values
INH	The sample was non-homogeneous
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
L2	The associated blank spike recovery was below laboratory acceptance limits.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
P	The Laboratory Fortified Blank was within limits. Little or No recovery of the MS/MSD indicates matrix effects. Detection at the reported amount may not have been achieved.

Note: Some qualifier definitions found on this page may pertain to results or QC data which are not printed with this report.

Chain of Custody / Analysis Request (Please complete all applicable shaded sections)

Report to:	ADAK IA, LLC	Bill to:		ADA03	
Ship Address:	P.O. Box 669	Address:			
City:	Ferndale St: WA Zip: 98248	City:	St:	Zip:	
Attn:	Dave B.	Phone:	FAX:		
Phone:	360.734-1112 FAX:	P.O.#:	Attn:		
Email:	daveatehs@aol.com, lisa@scrapitwa.com	☐ Visa ☐ M/C ☐ A/E	Expires	/	
Project	Groundwater testing	Card#:			

20-17415
33337 - 33338

Check Regulatory Program
- ☐ Safe Drinking Water Act
- ☐ Clean Water Act
- ☐ RCRA / CERCLA
- ☐ Other

EDGE ANALYTICAL
Main Lab (800-755-9295)
1620 South Walnut St. Burlington, WA 98233
Microbiology (888-725-1212)
805 W. Orchard Dr. Suite 4 Bellingham, WA 98225
Wilsonville Lab (503-682-7802)
9150 SW Pioneer Ct. Suite W Wilsonville, OR 97070
Corvallis Lab (541-753-4946)
1100 NE Circle Blvd, Ste 130, Corvallis, OR 97330
Bend Lab (541-639-8425)
20332 Empire Ave Ste F4, Bend, OR 97703

Instructions
1. Use one line per sample Location.
2. Be specific in analysis requests.
3. *(NEW)* **List each metal individually** *(NEW)*
4. Check off analyses to be performed for each sample Location.
5. Enter number of containers.

Turn Around Time Required
- ☒ Standard
- ☐ Half-time (50% surcharge)
- ☐ Quickest (100% surcharge) Phone Call Req.
- ☐ Emergency (Phone Call Req.)

Analyses Requested

CO044443

	Field ID	Location	Grab/ Comp.	Sample Matrix*	Date	Time	Priority Pollutant List (App A 40CFR423)	Swab	1631E						Number of Containers	Special Instructions Conditions on Receipt
1	Leachate Line	LL Sump =	grab	WW	6/2/20	8:30 to 10:50 AM	X		X						23	
2		leachate Line Sump														
3																
4																
5																
6																
7																
8																
9																Includes 2 extra

**Are there known hazardous or dangerous wastes in these samples? YES / NO If YES, indicate type on reverse of this form; samples may be returned to you.

23 Total Containers

Sampled by: David Bader Phone: 360-739-3703 FAX: Email: DaveATEHS@aol.com

Sample Receipt Request (Must include FAX or Email) ☐

* **W** - water **SW** - surface water **WW** - waste water **SL** - salt water **DW** - drinking water **ST** - storm water **S** - soil **OL** - oil Other:

**Relinquished by	Date	Time	Received by	Date	Time
[signature]	6-2-20	12:50	KMD	6/2/20	1300

	Yes	No	N/A
Custody seals intact	NA		
Sample temp 5.9 °C satisfactory	✓		
Samples received intact	✓		
Chain of custody & labels agree	✓		

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

Edge Analytical
1620 S. Walnut
Burlington, WA 98233
Attention: H Blunt
Project Name: GROUNDWATER TESTING
Project #: 20-17415
PO Number: 20-17415
All results reported on an as received basis.

Date Received: 06/03/20
Date Reported: 6/12/20

AMTEST Identification Number **20-A007537**
Client Identification **33337**
Sampling Date **06/02/20, 08:30**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Phenol	< 0.02	mg/L		0.02	EPA 420.4	AY	06/12/20

Kathy Fugiel
President

Anatek Labs, Inc.

1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Client:	Edge Analytical	Work Order:	MAF0103
Address:	1620 S Walnut St.	Project:	Groundwater Testing
	Burlington, WA 98233	Reported:	6/17/2020 12:30
Attn:	Edge Analytical		

Analytical Results Report

Sample Location:	33337		
Lab/Sample Number:	MAF0103-01	Collect Date:	06/02/20 08:30
Date Received:	06/03/20 14:20	Collected By:	
Matrix:	Wastewater		

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Mercury								
Mercury	0.00102	ug/L	0.000200	0.000500	6/8/20 15:01	TEC	EPA 1631 E	

Anatek Labs, Inc.

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504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Analytical Results Report

(Continued)

Sample Location: 33338 Blank
Lab/Sample Number: MAF0103-02 Collect Date: 06/02/20 08:30
Date Received: 06/03/20 14:20 Collected By:
Matrix: Wastewater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Mercury								
Mercury	ND	ug/L	0.000200	0.000500	6/8/20 15:09	TEC	EPA 1631 E	U

Authorized Signature,

Justin Doty For Todd Taruscio, Laboratory Manager

U	Compound was analyzed for but not detected
PQL	Practical Quantitation Limit
ND	Not Detected
MDL	Method Detection Limit
Dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was spiked or duplicated.

Anatek Labs, Inc.

1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Quality Control Data

Mercury

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAF0273 - Hg Trace										
Blank (BAF0273-BLK1)					Prepared & Analyzed: 6/8/2020					
Mercury	ND	U	0.000500	ug/L						
LCS (BAF0273-BS1)					Prepared & Analyzed: 6/8/2020					
Mercury	0.00400		0.000500	ug/L	0.00500		79.9	77-123		
Matrix Spike (BAF0273-MS1)		**Source: MAF0116-01**			Prepared & Analyzed: 6/8/2020					
Mercury	0.00415		0.000500	ug/L	0.00500	ND	83.0	71-125		
Matrix Spike Dup (BAF0273-MSD1)		**Source: MAF0116-01**			Prepared & Analyzed: 6/8/2020					
Mercury	0.00412		0.000500	ug/L	0.00500	ND	82.5	71-125	0.677	24

EDGE ANALYTICAL

Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.7
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

MAF0103

Due: 06/23/20

Subcontract Work Order

Laboratory Name: Anatek Lab, Inc
1282 Alturas Drive
Moscow, ID 83843

Project: **Groundwater Testing**

Date: 6/2/2020
Reference Number: **20-17415**
Date Due: **6/23/2020**

Lab Number: **33337** Sample Origin: **WA** Matrix: **Wastewater** Date Sampled: **6/2/2020** **08:30**

Analyte Name	Units	PQL
Analytical Method **1631**		
MERCURY - Clean	ug/L	0.0005

blank

Lab Number: **33338** Sample Origin: **WA** Matrix: **Wastewater** Date Sampled: **6/2/2020** **08:30**

Analyte Name	Units	PQL
Analytical Method **1631**		
MERCURY - clean	ng/L	0.5

Please send results to: lab@edgeanalytical.com

KMS
Relinquished By

6/2/2020
Date Time

Received By

10.3.20 1033
Date Time

MAF0103

Due: 06/23/20

Anatek Labs, Inc.

Sample Receipt and Preservation Form

Client Name: Edge Project: *(apply Anatek sample label here)*

TAT: (Normal) RUSH: _____ days

Samples Received From: FedEx (UPS) USPS Client Courier Other: _____

Custody Seal on Cooler/Box: Yes (No) Custody Seals Intact: Yes No (N/A)

Number of Coolers/Boxes: 2 Type of Ice: (Ice/Ice Packs) Blue Ice Dry Ice None

Packing Material: Bubble Wrap Bags Foam/Peanuts (None) Other: _____

Cooler Temp As Read (°C): 5.6 Cooler Temp Corrected (°C): 5.6 Thermometer Used: IR-3

				Comments:
Samples Received Intact?	(Yes)	No	N/A	
Chain of Custody Present?	(Yes)	No	N/A	
Samples Received Within Hold Time?	(Yes)	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	Yes	No	(N/A)	
VOC Trip Blanks Present?	Yes	No	(N/A)	
Labels and Chains Agree?	(Yes)	No	N/A	
Total Number of Sample Bottles Received: 2				

Chain of Custody Fully Completed?	(Yes)	No	N/A	
Correct Containers Received?	(Yes)	No	N/A	
Anatek Bottles Used?	(Yes)	No	Unknown	

Record preservatives (and lot numbers, if known) for containers below:

BrCl (A403-02) → 1631

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

Received/Inspected By: HS Date/Time: 6-3-20 1033

Form F18.00 - Eff 8 Feb 2019

Lab/Cor, Inc.
7619 6th Ave NW
Seattle, WA 98117

Phone: (206) 781-0155
http://www.labcor.net

EPA 100.2 - Asbestos in Drinking Water Final Report

Job Number: 200588
Client: **Edge Analytical**
Address: **805 Orchard Dr**
Suite 4
Bellingham, WA 98225
Project Name: Groundwater Testing
Project No.:
PO Number:
PWS ID:
Reference No.: 20-17415

Report Number: 200588R01
Report Date: 6/8/2020

Report Note: Due to the turbidity of the sample the required 0.2MFL sensitivity is not achievable within the LabCor test parameters. If achieving the sensitivity is required, additional grid openings can be analyzed at an additional cost. Please contact the lab for additional information.

Enclosed please find results for samples submitted to our laboratory. A list of samples and analyses follows:

Lab/Cor Sample #	Client Sample # and Description	Analysis	Analysis Notes	Date Received:
200588 - S1	33337 - Wastewater, WA Water ID#: 11923258	EPA 100.2 - Asbestos in Drinking Water		6/3/2020

EPA 100.2 - Asbestos in Drinking Water

Preparation and analysis of the above samples was conducted by a NELAP accredited lab (Lab ID Number: 11747) in accordance with the EPA method #100.2. In this method, samples were taken from an affected water supply to measure the amount of asbestos contamination in the system. Any samples received 48 hours or more after collection were subjected to ozone/UV treatment.

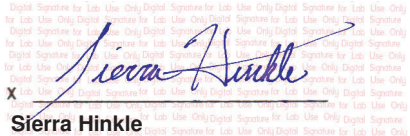
Each sample was shaken, then sonicated briefly in a Health Sonics Ultrasonic Cleaner to distribute particulate evenly. Several aliquots were filtered onto 0.22 µm, 25 mm diameter mixed cellulose ester filters. Briefly, the samples were collapsed with a solution of N,N-dimethylformamide and acetic acid, then etched in a low temperature plasma etcher to remove the top surface of the filter and other organics. The samples were coated at high vacuum with a thin layer of carbon, placed on 200 mesh copper grids and allowed to dissolve in N,N-Dimethlyformamide / Acetone baths until cleared of filter debris.

Each aliquot was examined at low magnification to determine the best particulate loading for analysis. Any samples requiring an aliquot <1ml were resuspended in a new 1L solution to ensure even loading and proper sampling technique. Analysis was performed using a transmission electron microscope equipped with an EDS X ray analyzer. The samples were analyzed at an approximate screen magnification of 10,000x, with an accelerating voltage of 100 KV, analyzing for structures >10um in length. The sizing of grid openings was performed using a calibrated digital imaging system at low magnification.

Disclaimer The results reported relate only to the samples tested or analyzed; the laboratory is not responsible for data collected by personnel who are not affiliated with the laboratory. Results reported in both structures/cm3 and structures/mm2 are dependent on the sample volume and area. These parameters are measured and recorded by non-laboratory personnel and are not covered by the laboratory's accreditation. Interpretation of these results is the sole responsibility of the client.

If further clarification of these results is needed, please call us. Thank you for allowing the staff at Lab/Cor, Inc. the opportunity to provide you with the analytical services.

Sincerely,



Sierra Hinkle
Technician/Analyst

Lab/Cor, Inc.
7619 6th Ave NW
Seattle, WA 98117

Phone: (206) 781-0155
http://www.labcor.net

EPA 100.2 - Asbestos in Drinking Water Summary Data - Final Report

Job Number: 200588 **SEA**
Client: Edge Analytical
Project Name: Groundwater Testing

Report Number: 200588R01
Date Received: 6/3/2020

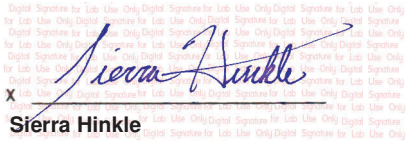
Lab/Cor Sample No.: S1
Client Sample No.: 33337
Description: Wastewater, WA Water ID#: 11923258
Filter Fraction: 1 **Aliquot Dilution:** 1
Begin Volume: 1 ml **Final Dilution:** 1
Volume Taken: 1 ml

Sample Area/Mass/Volume (ml) : 800
Lab Filter Area (mm2) : 201
Grid Openings Analyzed : 20
Average Grid Opening Area : 0.0108
Area Analyzed (mm2) : 0.216
Analytical Sens. (struc/MFL>10-um) : 0.931
Detection Limit. (struc/MFL>10-um) : 2.782

Analyst(s)	Analysis Date	Microscope	Magnification
SH	6/8/2020	Hitachi 7000FA	10000

Structure Type	Concen-tration MFL>10-um	95% Confidence Interval MFL>10-um	Structure Count[1] Prim/Total	
TEM Water Amphibole	< 0.931	0 - 3.433 - Poisson	0	
TEM Water Chrysotile	< 0.931	0 - 3.433 - Poisson	0	
TEM Water Total	< 0.931	0 - 3.433 - Poisson	0	

Reviewed by:



X
Sierra Hinkle
Technician/Analyst

* One-sided upper 95% Poisson confidence limits may be used to calculate sample concentrations ([Struc count] * [Analytical Sensitivity]) when the structure count is below 4. The limits are: 0 str - 0, 1 str - 1, 2 str - 2, 3 str - 3

Lab/Cor, Inc.
7619 6th Ave NW
Seattle, WA 98117

Phone: (206) 781-0155
http://www.labcor.net

EPA 100.2 - Asbestos in Drinking Water Raw Data - Final Report

Job Number: 200588 **SEA** **EPA 100.2**
Client: Edge Analytical **Report Number:** 200588R01
Project Name: Groundwater Testing **Date Received:** 6/3/2020
Project No.:

Lab/Cor Sample No: S1
Client Sample No: 33337
Description: Wastewater, WA Water ID#: 11923258

Gr	No.	Loc.	ID	Prim	Tot	Class	Length	Width	Aspect	Analyte	Elements	Comment	Count Categories
G5	1	C43				NSD							
G5	2	C44				NSD							
G5	3	E43				NSD							
G5	4	E44				NSD							
G5	5	F43				NSD							
G5	6	F44				NSD							
G5	7	G43				NSD							
G5	8	G44				NSD							
G5	9	H43				NSD							
G5	10	H44				NSD							
G5	11	K43				NSD							
G6	12	C41				NSD							
G6	13	C42				NSD							
G6	14	E41				NSD							
G6	15	E42				NSD							
G6	16	F41				NSD							
G7	17	C43				NSD							
G7	18	C44				NSD							
G7	19	E43				NSD							
G7	20	E44				NSD							

Count Categories

Water_Amph	TEM Water Amphibole	WATER_Chrys	TEM Water Chrysotile	WATER_Total	TEM Water Total

Reviewed by:

X

Sierra Hinkle
Technician/Analyst

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Client Services
Edge Analytical
1620 S. Walnut Street
Burlington WA 98233

REPORT OF LABORATORY ANALYSIS FOR TCDD

Report Information:

Pace Project #: 10520157
Sample Receipt Date: 06/03/2020
Client Project #: 20-17415
Client Sub PO #: N/A
State Cert #: C486

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 2,3,7,8-TCDD Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Kirsten Hogberg, your Pace Project Manager.

This report has been reviewed by:

June 09, 2020

Kirsten Hogberg, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
kirsten.hogberg@pacelabs.com

Report Prepared Date:
June 8, 2020

Report of Laboratory Analysis

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analysis performed on one sample submitted by a representative of Edge Analytical. The sample was analyzed for the presence or absence of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) using USEPA Method 1613B. Per request, the reporting limits were set to 5 pg/L.

The isotopically-labeled TCDD internal standard in the sample extract was recovered at 108%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1613B. Also, since the quantification of the native TCDD was based on isotope dilution, the data were automatically corrected for recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of 2,3,7,8-TCDD at the reporting limit.

Laboratory spike samples were also prepared using clean reference matrix that had been fortified with native standard material. The results show that the spiked native TCDD was recovered at 95-106% with a relative percent difference of 10.9%. These results were within the target ranges for the method. Matrix spikes were not prepared with the sample batch.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - Pet	1240
Alabama	40770	Mississippi	MN00064
Alaska - DW	MN00064	Missouri - DW	10100
Alaska - UST	17-009	Montana	CERT0092
Arizona	AZ0014	Nebraska	NE-OS-18-06
Arkansas - DW	MN00064	Nevada	MN00064
Arkansas - WW	88-0680	New Hampshire	2081
CNMI Saipan	MP0003	New Jersey (NE	MN002
California	2929	New York	11647
Colorado	MN00064	North Carolina -	27700
Connecticut	PH-0256	North Carolina -	530
EPA Region 8+	via MN 027-053	North Dakota	R-036
Florida (NELAP	E87605	Ohio - DW	41244
Georgia	959	Ohio - VAP	CL101
Guam	20-00.R	Oklahoma	9507
Hawaii	MN00064	Oregon - Primar	MN300001
Idaho	MN00064	Oregon - Secon	MN200001
Illinois	200011	Pennsylvania	68-00563
Indiana	C-MN-01	Puerto Rico	MN00064
Iowa	368	South Carolina	74003
Kansas	E-10167	Tennessee	TN02818
Kentucky - DW	90062	Texas	T104704192
Kentucky - WW	90062	Utah (NELAP)	MN00064
Louisiana - DE	84596	Vermont	VT-027053137
Louisiana - DW	MN00064	Virginia	460163
Maine	MN00064	Washington	C486
Maryland	322	West Virginia -	382
Massachusetts	M-MN064	West Virginia -	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming - UST	2926.01
Minnesota - De	via MN 027-053		

REPORT OF LABORATORY ANALYSIS

Report No.....10520157

Appendix A

Sample Management

EDGE ANALYTICAL

Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7602
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

Subcontract Work Order

Laboratory Name: Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414

Project: **Groundwater Testing**

Date: 6/2/2020
Reference Number: **20-17415**
Date Due: **6/23/2020**

Lab Number: **33337** Sample Origin: **WA** Matrix: **Wastewater** Date Sampled: **6/2/2020** **08:30**

Analyte Name	Units	PQL
Analytical Method **1613**		
2,3,7,8-TCDD(DIOXIN)	pg/L	5

001

WO# : 10520157

10520157

Please send results to: lab@edgeanalytical.com

Relinquished By

6/2/20
Date Time

Received By

6/2/20 950 T= 4-5°C
Date 6/3/20 Time
CH 6/3/20

FORM: cSubCOC.rpt

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: EDGE

Project #: WO#: 10520157

PM: KNH Due Date: 06/17/20

CLIENT: Edge

Courier: ☐Fed Ex ☒UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial See Exceptions ☐

Tracking Number: 1Z 741 W47 01 7287 4527

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☐Yes ☒No

Thermometer: ☐T1(0461) ☐T2(1336) ☒T3(0459) ☐T4(0254) ☐T5(0489) **Type of Ice:** ☐Wet ☒Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:**_____ °C **Average Corrected Temp (no temp blank only):** ☒See Exceptions ☐1 Container

Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:**_____ °C 4.5 °C

USDA Regulated Soil: (☒ N/A, water sample/Other:_____)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

Date/Initials of Person Examining Contents: GNZ 6/3/20

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☒N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☐Yes	☒No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☒Water ☐Soil ☐Oil ☐Other_____				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒Yes	☐No	☐N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: Kristen Hoffberg **Date:** 6/3/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: GNZ

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 26Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.00**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp
3.8	3.9	4.5
4.9	5.0	
3.9	4.0	
5.1	5.2	

Tracking Number/Temperature	

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interferencepresent

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Edge Analytical

Client's Sample ID	33337		
Lab Sample ID	10520157001		
Filename	F200607A_10		
Injected By	BAL		
Total Amount Extracted	969 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	06/02/2020
ICAL ID	F200601	Received	06/03/2020 09:50
CCal Filename(s)	F200606B_16	Extracted	06/04/2020 12:05
Method Blank ID	BLANK-79881	Analyzed	06/07/2020 19:36

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	5.0	2,3,7,8-TCDD-13C	2.00	108
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	100

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

R = Recovery outside target range
E = Exceeds calibration range

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKAR		
Lab Sample ID	BLANK-79881	Matrix	Water
Filename	F200606A_04	Dilution	NA
Total Amount Extracted	1050 mL	Extracted	06/04/2020 12:05
ICAL ID	F200601	Analyzed	06/06/2020 14:49
CCal Filename(s)	F200605B_16	Injected By	BAL

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	5.0	2,3,7,8-TCDD-13C	2.00	102
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	114

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-79882		
Filename	F200606A_01	Matrix	Water
Total Amount Extracted	1060 mL	Dilution	NA
ICAL ID	F200601	Extracted	06/04/2020 12:05
CCal Filename	F200605B_16	Analyzed	06/06/2020 12:35
Method Blank ID	BLANK-79881	Injected By	BAL

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDD	10	9.5	7.3	14.6	95
2,3,7,8-TCDD-37Cl4	10	8.5	3.7	15.8	85
2,3,7,8-TCDD-13C	100	88	25.0	141.0	88

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCSD-79883		
Filename	F200606A_02	Matrix	Water
Total Amount Extracted	1050 mL	Dilution	NA
ICAL ID	F200601	Extracted	06/04/2020 12:05
CCal Filename	F200605B_16	Analyzed	06/06/2020 13:19
Method Blank ID	BLANK-79881	Injected By	BAL

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDD	10	11	7.3	14.6	106
2,3,7,8-TCDD-37Cl4	10	9.0	3.7	15.8	90
2,3,7,8-TCDD-13C	100	92	25.0	141.0	92

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B

Spike Recovery Relative Percent Difference (RPD) Results

Client	Edge Analytical		
Spike 1 ID	LCS-79882	Spike 2 ID	LCSD-79883
Spike 1 Filename	F200606A_01	Spike 2 Filename	F200606A_02

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDD	95	106	10.9

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

ANALYTICAL

Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7602
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

Subcontract Work Order

Laboratory Name: Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414

Project: **Groundwater Testing**

Date: 6/2/2020
Reference Number: **20-17415**
Date Due: **6/23/2020**

Lab Number: **33337** Sample Origin: **WA** Matrix: **Wastewater** Date Sampled: **6/2/2020** **08:30**

Analyte Name	Units	PQL
Analytical Method **1613**		
2,3,7,8-TCDD(DIOXIN)	pg/L	5

001

WO# : 10520157

10520157

Please send results to: lab@edgeanalytical.com

Relinquished By

6/2/20

Date Time

Received By

6/2/20 950 T= 4-5°C

Date 6/3/20 Time

CH 6/3/20

FORM: cSubCOC.rpt

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: EDGE

Project #: WO#: 10520157

PM: KNH Due Date: 06/17/20

CLIENT: Edge

Courier: ☐Fed Ex ☒UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial **See Exceptions** ☐

Tracking Number: 1Z 741 W47 01 7287 4527

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☐Yes ☒No

Thermometer: ☐T1(0461) ☐T2(1336) ☒T3(0459) ☐T4(0254) ☐T5(0489) **Type of Ice:** ☐Wet ☒Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:**_____ °C **Average Corrected Temp (no temp blank only):** ☒See Exceptions ☐1 Container

Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:**_____ °C 4.5 °C

USDA Regulated Soil: (☒ N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** GNZ 6/3/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☒N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☐Yes	☒No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☒Water ☐Soil ☐Oil ☐Other_____				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒Yes	☐No	☐N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: Kristen Hopfenspirger **Date:** 6/3/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: GNZ

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 26Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.00**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp
3.8	3.9	4.5
4.9	5.0	
3.9	4.0	
5.1	5.2	

Tracking Number/Temperature	

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interferencepresent

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

ANALYTICAL

Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7602
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

Subcontract Work Order

Laboratory Name: Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414

Project: **Groundwater Testing**

Date: 6/2/2020
Reference Number: **20-17415**
Date Due: **6/23/2020**

Lab Number: **33337** Sample Origin: **WA** Matrix: **Wastewater** Date Sampled: **6/2/2020** **08:30**

Analyte Name	Units	PQL
Analytical Method **1613**		
2,3,7,8-TCDD(DIOXIN)	pg/L	5

001

WO# : 10520157

10520157

Please send results to: lab@edgeanalytical.com

Relinquished By

6/2/20

Date Time

Received By

6/2/20 950 T= 4-5°C

Date 6/3/20 Time

CH 6/3/20

FORM: cSubCOC.rpt

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: EDGE

Project #: WO#: 10520157

PM: KNH Due Date: 06/17/20

CLIENT: Edge

Courier: ☐Fed Ex ☒UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial **See Exceptions** ☐

Tracking Number: 1Z 741 W47 01 7287 4527

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☐Yes ☒No

Thermometer: ☐T1(0461) ☐T2(1336) ☒T3(0459) ☐T4(0254) ☐T5(0489) **Type of Ice:** ☐Wet ☒Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:**_____ °C **Average Corrected Temp (no temp blank only):** ☒See Exceptions ☐1 Container

Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:**_____ °C 4.5 °C

USDA Regulated Soil: (☒ N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** GNZ 6/3/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☒N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☐Yes	☒No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☒Water ☐Soil ☐Oil ☐Other_____				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒Yes	☐No	☐N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: Kristen Hopfenspirger **Date:** 6/3/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: GNZ

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 26Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.00**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp
3.8	3.9	4.5
4.9	5.0	
3.9	4.0	
5.1	5.2	

Tracking Number/Temperature	

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interferencepresent

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Edge Analytical

Client's Sample ID	33337		
Lab Sample ID	10520157001		
Filename	F200607A_10		
Injected By	BAL		
Total Amount Extracted	969 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	06/02/2020
ICAL ID	F200601	Received	06/03/2020 09:50
CCal Filename(s)	F200606B_16	Extracted	06/04/2020 12:05
Method Blank ID	BLANK-79881	Analyzed	06/07/2020 19:36

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	5.0	2,3,7,8-TCDD-13C	2.00	108
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	100

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

R = Recovery outside target range
E = Exceeds calibration range

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKAR		
Lab Sample ID	BLANK-79881	Matrix	Water
Filename	F200606A_04	Dilution	NA
Total Amount Extracted	1050 mL	Extracted	06/04/2020 12:05
ICAL ID	F200601	Analyzed	06/06/2020 14:49
CCal Filename(s)	F200605B_16	Injected By	BAL

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	5.0	2,3,7,8-TCDD-13C	2.00	102
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	114

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-79882		
Filename	F200606A_01	Matrix	Water
Total Amount Extracted	1060 mL	Dilution	NA
ICAL ID	F200601	Extracted	06/04/2020 12:05
CCal Filename	F200605B_16	Analyzed	06/06/2020 12:35
Method Blank ID	BLANK-79881	Injected By	BAL

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDD	10	9.5	7.3	14.6	95
2,3,7,8-TCDD-37Cl4	10	8.5	3.7	15.8	85
2,3,7,8-TCDD-13C	100	88	25.0	141.0	88

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCSD-79883		
Filename	F200606A_02	Matrix	Water
Total Amount Extracted	1050 mL	Dilution	NA
ICAL ID	F200601	Extracted	06/04/2020 12:05
CCal Filename	F200605B_16	Analyzed	06/06/2020 13:19
Method Blank ID	BLANK-79881	Injected By	BAL

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDD	10	11	7.3	14.6	106
2,3,7,8-TCDD-37Cl4	10	9.0	3.7	15.8	90
2,3,7,8-TCDD-13C	100	92	25.0	141.0	92

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B

Spike Recovery Relative Percent Difference (RPD) Results

Client	Edge Analytical		
Spike 1 ID	LCS-79882	Spike 2 ID	LCSD-79883
Spike 1 Filename	F200606A_01	Spike 2 Filename	F200606A_02

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDD	95	106	10.9

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

6.6 Restrictive Covenant

Recorded & Sent to Ecology

October 4, 2004

1524 Slater Road
Ferndale, WA 98248
(360) 384-1057 Tel
(360) 384-5738 Fax

RECOMP OF WASHINGTON

Mr. John Keeling
Toxics Cleanup Program
Washington State Dept. of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

Dear Mr. Keeling:

Re: Independent Remedial Action
Recomp of Washington, 1524 Slater Road, Ferndale, WA 98248

Per your letter of September 20, 2004, enclosed please find a copy of the Recomp of Washington, Inc. Restrictive Covenant. The Restrictive Covenant was filed with Whatcom County on October 1, 2004.

As a Notary Public in and for the State of Washington residing in Ferndale, I certify that the enclosed copy of the Restrictive Covenant is a true copy of the original. My Notary expiration date is 09-28-2006. Thomas J. Bubanich Thomas J. Bubanich 10-04-04.

Sincerely,

Thomas J. Bubanich

Thomas J. Bubanich
Administrator

Cc: Frank Moscone, President, Recomp of Washington, Inc. (via email)
Dave Bader, Environmental Health Services (via email)

Enclosure

THOMAS J. BUBANICH NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES 9-28-06

2041000167
Page: 1 of 5
10/01/2004 2:44 PM
D/RC $23.00
Whatcom County, WA
Request of: RECOMP OF WASHINGTON INC

RETURN DOCUMENT TO:

Recomp of Washington, Inc.
1524 Slater Road
Ferndale, WA 98248

Use dark black ink and print legibly. Documents not legible will be rejected per RCW 65.04.045 & 65.04.047

DOCUMENT TITLE(S):
RESTRICTIVE COVENANT

AUDITOR FILE NUMBER & VOL. & PG. NUMBERS OF DOCUMENT(S) BEING ASSIGNED OR RELEASED:

Four Pages

Additional reference numbers can be found on page_____ of document.

GRANTOR(S)

RECOMP OF WASHINGTON, INC.

Additional grantor(s) can be found on page_____ of document.

GRANTEE(S):

Additional grantee(s) can be found on page_____ of document.

ABBREVIATED LEGAL DESCRIPTION: (Lot, block, plat name OR; qtr/qtr, section, township and range OR; unit, building and condo name.)

LOT 4 RECOMP SHORT PLAT AS RECORDED BOOK 21 SHORT PLATS PG 93

Additional legal(s) can be found on page_____ of document.

ASSESSOR'S 16-DIGIT PARCEL NUMBER:

390233 183094 0000

Additional numbers can be found on page_____

The Auditor/Recorder will rely on the information provided on this form. The responsibility for the accuracy of the indexing information is that of the document preparer.

Section 5. The Owner of the Property must give thirty (30) days advance written notice to Ecology of the Owner's intent to convey interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 6. The Owner must restrict leases to uses and activities consistent with the Restrictive Covenant and notify all lessees of the restrictions on the use of the Property.

Section 7. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Restrictive Covenant. Ecology may approve any inconsistent use only after public notice and comment.

Section 8. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times, and upon reasonable notice unless an emergency prevents such notice, for the purposes of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, and to inspect records that are related to the Remedial Action.

Section 9. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Restrictive Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Sept 30-04

Recomp of Washington, Inc. Date

Signed before me by Frank Moscone on this 30th Day of September 2004. Thomas J. Bubanich

Thomas J. Bubanich, Notary Public of Washington State. My Notary expire 09-28-2006, I reside in Ferndale, Washington

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Page: 1 of 5
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D/RC $23.00
Whatcom County, WA
Request of: RECOMP OF WASHINGTON INC

RETURN DOCUMENT TO:

Recomp of Washington, Inc.
1524 Slater Road
Ferndale, WA 98248

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Recomp of Washington, Inc.
1524 Slater Road
Ferndale, WA 98248

RESTRICTIVE COVENANT

This Declaration of Restrictive Covenant is made pursuant to RCW 70.105D.030(1)(f) and (g), and WAC 173-340-440 by Recomp of Washington, Inc., its successors and assigns, and the Washington State Department of Ecology, its successors and assigns.

Legal Description: LOT 4 RECOMP SHORT PLAT AS RECORDED
BOOK 21 SHORT PLATS PG 93

Tax Parcel I.D. #: 390233 183094 0000

RESTRICTIVE COVENANT

Recomp of Washington, Inc., 1524 Slater Road, Ferndale, Washington

This Declaration of Restrictive Covenant is made pursuant to RCW 70.105D.030(1)(f) and (g) and WAC 173-340-44- by Recomp of Washington, Inc., its successors and assigns, and the State of Washington Department of Ecology, its successors and assigns (hereafter "Ecology").

An independent remedial action (hereafter "Remedial Action") occurred at the property that is the subject of this Restrictive Covenant. The Remedial Action conducted at the property is described in the following documents:

- Voluntary Cleanup Program Application and Report by Environmental Health Services, Inc., April 29, 2003.
- 1999 Annual Report, by Recomp of Washington, Inc., March 2000.
- Quarterly Groundwater Monitoring Reports by Vasey Engineering, from September 10, 1993 to December 18, 1996.
- Quarterly Groundwater Monitoring Reports by Environmental Health Services, Inc., from September 23, 1997 to September 16, 2001.
- Engineering Report Landfill Closure and Temporary Ash Storage Facility Construction by Harper Owes, June 28, 1989.
- Geotechnical Design Report Proposed Temporary Ash Storage Facility by Golder Associates, Inc.
- Technical Memorandum to Thermal Reduction Company Preliminary Hydrological Investigation, Bellingham, Washington by Golder Associates, June 1988, includes Appendix B (Groundwater) by Berryman and Henigar.
- Ecology's NFA letter of July 7, 2004.

These documents are on file at Ecology's Northwest Regional Office.

This Restrictive Covenant is required because the Remedial Action resulted in residual concentrations of Lead and Cadmium which exceed the Model Toxics Control Act Method B Residential Cleanup Levels for Soil established under WAC 173-340-740.

The undersigned, Recomp of Washington, Inc., is the fee owner of real property (hereafter "Property") in the County of Whatcom, State of Washington, that is subject to this Restrictive Covenant. The Property is legally described as follows: LOT 4 RECOMP SHORT PLAT AS RECORDED BOOK 21 SHORT PLATS PG 93 and located approximately within the SW ¼ of the SW ¼ of section 33 township 39N range 2E.

Recomp of Washington, Inc. makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in Property (hereafter "Owner").

Section 1. Any activity on the Property that may result in the release or exposure to the environment of the contaminated soil that was contained as part of the Remedial Action, or create a new exposure pathway, is prohibited. Some examples of activities that are prohibited in the capped areas include: drilling, digging, placement of any objects or use of any equipment which deforms or stresses the surface beyond its load bearing capability, piercing the surface with a rod, spike or similar item, bulldozing or earthwork.

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. Any unpermitted activity on the property that may result in the release of contaminants remaining on the Property as part of the Remedial Action that may expose the City of Ferndale water sewer or storm water systems to contamination is prohibited without prior written approval from Ecology.

Section 5. The Owner of the Property must give thirty (30) days advance written notice to Ecology of the Owner's intent to convey interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 6. The Owner must restrict leases to uses and activities consistent with the Restrictive Covenant and notify all lessees of the restrictions on the use of the Property.

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Recomp of Washington, Inc. Date

Signed before me by Frank Moscone on this 30th Day of September 2004. Thomas J. Bubanich, Notary Public of Washington State. My Notary expire 09-28-2006, I reside in Ferndale, Washington

6.7 Site Inspection Checklist

Site Inspection Checklist

SITE INFORMATION	
Site name: Recomp of Washington	**Date of inspection:** January 22, 2021
Location and Region: 1524 Slater Road, Ferndale, Washington NWRO	**F/S ID:** 76245362
Agency, office, or company leading the five-year review: Department of Ecology NWRO SWM (Whatcom County Health Department joined site walk)	**Weather/temperature:** cool and clear

Remedy Includes: (Check all that apply)

- X Landfill cover/containment
- − Access controls
- X Institutional controls
- − Groundwater pump and treatment
- − Surface water collection and treatment
- − Other_____
- − Monitored natural attenuation
- − Groundwater containment
- X Vertical barrier walls

Attachments: X Inspection team roster attached X Site map attached

INSTITUTIONAL CONTROLS X Applicable − N/A

A. Fencing

1. **Fencing damaged** − Location shown on site map − Gates secured X N/A
   Remarks: Fence in good condition, access restricted at entrance.

B. Other Access Restrictions

1. **Signs and other security measures** − Location shown on site map − N/A
   Remarks:

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs properly implemented — X Yes − No − N/A
Site conditions imply ICs being fully enforced — X Yes − No − N/A

Type of monitoring (*e.g.*, self-reporting, drive by) self-reporting
Frequency: Monthly
Responsible party/agency _____
Contact: Dave Bader Consultant-Environmental Health Services, LLC (360) 739-3703
Name Title Date Phone no.

Reporting is up-to-date — X Yes − No − N/A
Reports are verified by the lead agency — X Yes − No − N/A

Specific requirements in deed or decision documents have been met — X Yes − No − N/A
Violations have been reported — X Yes − No − N/A
Other problems or suggestions: − Report attached

The landfill containment system includes native, low-permeability soils beneath the landfill, a compacted clay cover above the landfill material, and a gravel cutoff trench and leachate collection pipe downgradient of the landfill. Additionally, the soil-bentonite slurry wall and paved surfaces between the landfill cover and the slurry wall divert groundwater and surface water away from the closed ash landfill. The leachate collection pipe discharges to a leachate storage lagoon, which is pumped to the City of Ferndale wastewater treatment plant under a state waste discharge permit.

2. **Adequacy** X ICs are adequate − ICs are inadequate − N/A

Remarks: The Restrictive Covenant for the Site was recorded and is in place. This Restrictive Covenant prohibits activities that would disturb the landfill cover and that may result in the release of hazardous substances into the environment.

GROUND COVERS − Applicable − N/A		
Surface		
1.	**Settlement** (Low spots) − Location shown on site map − Settlement not evident Areal extent_____ Depth_____ Remarks_____	
2.	**Cracks** − Location shown on site map − Cracking not evident Lengths_____ Widths_____ Depths_____ Remarks_____	
3.	**Erosion** − Location shown on site map − Erosion not evident Areal extent_____ Depth_____ Remarks_____	
4.	**Holes** − Location shown on site map − Holes not evident Areal extent_____ Depth_____ Remarks_____	
5.	**Vegetative Cover** − Grass − Cover properly established − No signs of stress − Trees/Shrubs (indicate size and locations on a diagram) Remarks_____	
8.	**Wet Areas/Water Damage** − Wet areas/water damage not evident − Wet areas − Location shown on site map Areal extent_____ − Ponding − Location shown on site map Areal extent_____ − Seeps − Location shown on site map Areal extent_____ − Soft subgrade − Location shown on site map Areal extent_____ Remarks_____	
9.	**Slope Instability** − Slides − Location shown on site map − No evidence of slope instability Areal extent_____ Remarks_____	

Treatment System	X Applicable − N/A Remarks: Wastewater treatment plant
1.	**Treatment Train** (Check components that apply) − Metals removal − Oil/water separation − Bioremediation − Air stripping − Carbon adsorbers − Filters_____ − Additive (*e.g.*, chelation agent, flocculent)_____ − Others_____ − Good condition − Needs Maintenance − Quantity of groundwater treated annually_____ − Quantity of surface water treated annually_____ Remarks: No treatment prior to discharging to wastewater treatment plant.
2.	**Electrical Enclosures and Panels** (properly rated and functional) − N/A − Good condition X Needs Maintenance Remarks: Pump and flowmeter need upgrading.
3.	**Tanks, Vaults, Storage Vessels** X N/A − Good condition − Proper secondary containment − Needs Maintenance Remarks: Leachate lagoon in good condition and fenced off with locking gate.
4.	**Discharge Structure and Appurtenances** − N/A X Good condition − Needs Maintenance Remarks: Leachate storage lagoon.
5.	**Treatment Building(s)** X N/A − Good condition (esp. roof and doorways) − Needs repair − Chemicals and equipment properly stored Remarks:
6.	**Monitoring Wells** (pump and treatment remedy) − Properly secured/locked X Functioning − Routinely sampled X Good condition − All required wells located X Needs Maintenance − N/A Remarks: There are no groundwater monitoring requirements under the solid waste regulations or the Restrictive Covenant. Well monuments not properly locked.

Monitoring Data Not applicable. There are no groundwater monitoring requirements under the solid waste regulations or the Restrictive Covenant.

1. Monitoring Data
   − Is routinely submitted on time − Is of acceptable quality

2. Monitoring data suggests:
   − Groundwater plume is effectively contained − Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
   − Properly secured/locked − Functioning − Routinely sampled − Good condition
   − All required wells located − Needs Maintenance − N/A
   Remarks: Some wells need locks.

OTHER REMEDIES

If there are remedies applied at the site not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The following conclusions have been made about the remedy for the Site:

- The cleanup action (i.e., landfill closure) completed at the Site appears to be protective of human health and the environment.
- The landfill containment system includes native, low-permeability soils beneath the landfill, a compacted clay cover above the landfill material, and a gravel cutoff trench and leachate collection pipe downgradient of the landfill. Additionally, the soil-bentonite slurry wall and paved surfaces between the landfill cover and the slurry wall divert groundwater and surface water away from the closed ash landfill.
- The Restrictive Covenant for the property is in place and continues to be effective in protecting human health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

The landfill is closed and a slurry wall extends around three sides to divert shallow groundwater around the landfill. The leachate collection line collects any groundwater from under the landfill and discharges it into the lagoon. The lagoon also receives various wastewater streams from the facility. Ecology issues a state waste discharge permit for the discharge of this water to the City of Ferndale wastewater treatment plant. Ecology's Water Quality Program should evaluate any modification to this discharge.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, which suggest that the protectiveness of the remedy may be compromised in the future. None identified.
Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. The property owner needs to continue operating leachate collection pipe or propose a means of demonstrating that the operation of the leachate collection pipe is not necessary to prevent the release of hazardous substances from the landfill.

Inspection Team:

Ecology: Alan Noell, Tim O'Connor
Whatcom County Health Department: Bill Angel, Ed Halasz
Environmental Health Services, LLC: Dave Bader

6.8 Photographs from January 22, 2021 Site Visit

Photo 1: Waste transfer station located south of closed ash landfill, view to south

Photo 2: Closed ash landfill located north (opposing side) of ravine, view to north

Photo 3: Grass covered surface of southern portion of closed ash landfill, view to south

Photo 4: Northern portion of closed ash landfill is predominantly paved and used for scrap material staging, view to east

Photo 5: Northern portion of closed ash landfill, view to north from west side

Photo 6: Northern portion of closed ash landfill, view to north from east side

Photo 7: View of scrap material stored on northern portion of closed ash landfill

Photo 8: View of scrap material stored on northern portion of closed ash landfill, view to northeast

Photo 9: Stormwater collection basin on northern portion of closed ash landfill

Photo 10: Stormwater discharge pipe extending west of closed ash landfill, view to north

Photo 11: West slope of closed ash landfill, view to north

Photo 12: West slope of closed ash landfill and drainage swale, view to southwest

Photo 13: Leachate storage lagoon located on northwest corner of property