Limited Remedial Investigation Work Plan Rocky Top Environmental Limited Purpose Landfill

Prepared for

DTG Debris to Green Recycling

April 2025

Parametrix

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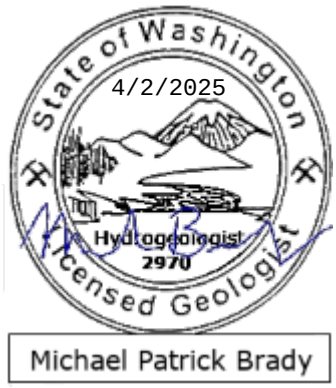
Certification

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional hydrogeologist licensed to practice as such, is affixed below.



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Acronyms and Abbreviations

µg/m3	micrograms per cubic meter
AO	Agreed Order
APH	Air-Phase Petroleum Hydrocarbons
CLARC	Cleanup Levels and Risk Calculations
CO	carbon monoxide
COPCs	constituents of potential concern
cPAHs	carcinogenic polycyclic aromatic hydrocarbons
CULs	cleanup levels
DTG	DTG Recycle
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
F	Fahrenheit
FLIR	forward looking infrared
Freestone	Freestone Environmental Services
GWQS	Water Quality Standards for Groundwaters of the State of Washington (Chapter 173-200 WAC)
HASP	Health and Safety Plan
HWA	HWA Geosciences Inc.
IAWP	Interim Action Work Plan
LEL	lower explosive limit
LFCI	Landfill Fire Control Inc.
LFG	landfill gas
LPL	Limited Purpose Landfill
mg/kg	milligrams per kilogram
MRF	materials recovery Facility
MTCA	Model Toxics Control Act (Chapter 173-340 WAC)
PCS	petroleum contaminated soil
PFAS	Per- and polyfluoroalkyl substances
PFCAS	Perfluoroalkyl Carboxylic Acids

Acronyms and Abbreviations (continued)

PFOA	Perfluorooctanoic acid
ppm	parts per million
PUF	polyurethane foam
QC	Quality Control
RI	Remedial Investigation
SAPs	Sampling and Analysis Plans
SEPA	State Environmental Policy Act
Site	cleanup site
SOPs	Standard Operating Procedures
TPH	total petroleum hydrocarbons
VOCs	volatile organic compounds
WAC	Washington Administrative Code
YHD	Yakima Health District
YRCAA	Yakima County Clean Air Agency

1. Introduction

DTG Recycling (DTG) operates the Rocky Top Environmental Limited Purpose Landfill (LPL) located at 41 Rocky Top Road in Yakima, Washington in accordance with Washington Administrative Code (WAC) 173-350-400. Figure 1 shows the vicinity of the LPL. DTG purchased the LPL from Ron Anderson in 2019. In February 2023, DTG signed an Agreed Order with the Washington State Department of Ecology (Ecology) related to a potential release from the LPL. This Limited Remedial Investigation (RI) Work Plan is intended to partially address the requirements of Agreed Order (AO) No. DE 21624.

Due to the complicated nature of the work performed at this site, this report utilizes digital appendices that are referenced throughout the work plan and are updated periodically. The digital appendices (Appendix A and Appendix B) are located at:

https://files.parametrix.com

Username: DTGYakimaLPL

Password: 8T79p466

1.1 Agreed Order

Ecology listed the northwest slope of the LPL as a Model Toxics Control Act (MTCA) cleanup site (Site) and DTG and Ecology negotiated an AO that was executed in February 2023. The Site is in the vicinity of the gas probes and thermistors at the LPL shown on Figure 2.

The AO requires DTG to:

- Complete a Limited Remedial Investigation (RI) and interim actions for the Site, if necessary
- Notify Ecology of significant changes in conditions
- Provide monthly progress reports
- Submit plans or other deliverables to Ecology for approval

The Limited RI scope of work included:

- Develop a Limited RI Work Plan
- Complete the Limited RI
- Implement Interim Actions, if required
- Complete State Environmental Policy Act (SEPA) compliance, as needed in conjunction with Interim Actions
- Participate in public meetings.

1.1.1 Objective of the Limited Remedial Investigation

DTG is the sole potential liable party (PLP) and is performing the Limited RI to evaluate site cleanup requirements in accordance with Chapter 173-340 WAC (Model Toxics Control Act) and Chapter 173-350 WAC (Solid Waste Handling Standards) under the AO with Ecology. The Limited RI will be utilized to determine Interim Actions for the Site or determine if a Feasibility Study (FS) and additional remedial actions are necessary for cleanup of the Site. This work plan describes the outline of background information and investigative tasks to be completed for the Limited RI and includes the Sampling and Analysis Plans (SAPs) and Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP).

1.2 Site History

The Facility was originally permitted as an unlined construction, demolition, and land-clearing debris landfill that began operation in 1997 as Anderson Rock and Demolition Pit under Chapter 173-304 WAC. The Facility was reclassified as an LPL in 2007, with the southern expansion area permitted in 2015. The LPL accepted treated petroleum-contaminated soil (PCS) that was stockpiled in a separate area on the northeast portion of the Facility and managed until soil concentrations were below MTCA Method A cleanup levels (CULs) for unrestricted land use. Once soil concentrations in the stockpiles were below MTCA CULs, they were used as daily cover in the LPL following approval from Yakima Health District (YHD).

Phase 1 is the historical fill area and is unlined (Figure 2). Filling Phase 1 continued through 2022, and then waste was placed in a permitted unlined expansion cell south of Phase 1. It was discovered that the area of the expansion cell had differing physical conditions from Phase 1. This area became known as the temporary fill area and DTG began plans for a lined expansion cell (Phase 2). Waste placement in the temporary fill area continued through June 2023 with plans that the waste would be moved to Phase 2 upon completion. In July 2023, YHD denied the permit renewal for the Facility primarily due to the need for an air permit from the Yakima Regional Clean Air Agency (YRCAA), and filling of the temporary fill area ceased.

Phase 2 was constructed with a liner system and leachate collection system and is located on the southern portion of the Facility. Phase 2 construction was completed in September 2024 and the Facility was re-permitted. Filling of Phase 2 began in December 2024.

1.2.1 Overview of Prior Investigations

Previous Investigations of the Site are summarized in the following reports (attached in Appendix A):

- Geotechnical & Hydrogeologic Investigation Report of the Anderson Rock and Demolition Pits Limited Purpose Landfill Expansion (HWA Geosciences Inc. [HWA] 2015).
- Hydrogeologic Investigation Report of the DTG/Anderson Pit LPL (HWA 2022).
- Soil Gas and Ambient Air Sampling Report, Summary of December 9, 2021 and January 21, 2022 Sampling Events (Freestone Environmental Services [Freestone] 2022).
- Landfill Gas Investigation Yakima Limited Purpose Landfill (Parametrix 2022).
- DTG Yakima Limited Purpose Landfill - Gas Probe Construction and Landfill Fire Emission Assessment (Parametrix 2023a).
- DTG Yakima Limited Purpose Landfill – Health and Safety, Fire Control and Monitoring Plan (Landfill Fire Control Inc. [LFCI] 2023a).
- Thermistor Installation Report – DTG Yakima Limited Purpose Landfill (Parametrix 2023b).
- 2023 Annual Groundwater Monitoring Report, DTG Limited Purpose Landfill, Yakima, Washington (Parametrix 2024a).
- 2024 Emission Assessment Results. Yakima Limited Purpose Landfill, Yakima, Washington (Parametrix 2024b).
- DTG Yakima Limited Purpose Landfill Yakima, Washington First Quarter 2024 Groundwater Monitoring Report (Parametrix 2024c).
- DTG LPL Landfill Fire Investigations and Mitigation – Focused Review of Trigger Levels. PowerPoint presentation (LFCI 2024).

- DTG Yakima Limited Purpose Landfill Yakima, Washington Second Quarter 2024 Groundwater Monitoring Report (Parametrix 2024d).
- October 2024. Monitoring Well Construction Update Technical Memorandum (Parametrix 2024e).
- Rocky Top Limited Purpose Landfill, Third Quarter 2024 Groundwater Monitoring Report (Parametrix 2024f).
- Third Quarter 2024 MTCA Sampling – AO#DE21624 Technical Memorandum (Parametrix 2024g).
- Hydraulic Testing Results Rocky Top Environmental Limited Purpose Landfill Technical Memorandum (Parametrix 2025a).
- Fourth Quarter 2024 MTCA Sampling – AO#DE21624 Technical Memorandum (Parametrix 2025b).
- 2024 Annual Groundwater Monitoring Report, DTG Rocky Top Environmental Limited Purpose Landfill Yakima, Washington (Parametrix 2025c).

1.3 Land Use

Land use in the vicinity of the Site is predominantly vacant arid land (west, south, southeast), single-family homes on large parcels (north and east), and agricultural land/orchards (northwest, further north, and east). DTG operates a quarry and materials recovery Facility (MRF) at the property in addition to the LPL. There are currently no permanent structures developed on the Facility. The Facility is accessed through Rocky Top Road, which is a paved asphalt roadway. All roadways on the Facility consist of crushed gravel surfaces.

1.4 Physical Setting

The LPL and the surrounding Yakima area are located within the Columbia Plateau (also known as the Columbia Basin). The area of the LPL is within the Yakima fold and thrust belt of the Columbia Plateau which is a series of east-west trending thrust faults and folds on the westernmost portion of the Columbia Plateau. The anticlines are usually formed over a thrust fault and typically form topographic ridges. The LPL is on the northern face of Cowiche Mountain, which is an east-west trending anticlinal structure that extends from Cowiche Mountain to under the City of Yakima and forms Yakima Ridge to the east of the LPL. The axis of the anticline is located approximately 1,600 feet to the south of the LPL (Bentley and Campbell 1983).

1.4.1 Topography

The topography of the Site slopes northerly from an elevation of approximately 2,000 feet above sea level on the southern border of the Facility down to approximately 1,800 feet above sea level on the northern border of the Facility. The Facility has an average slope, from southwest to northeast, of approximately 15% to 25%.

1.4.2 Soils

Soils on the Site consist of silt loams up to 14-inches thick derived from Ellensburg Formation undifferentiated Deposits and breakdown of basalt bedrock. Some areas of the Site surface soils consist solely of weathered basalt fragments. The thickness of unconsolidated soil above bedrock varies up to approximately 14 feet.

1.4.3 Geology

Below the surface soils of the Ellensburg Formation undifferentiated deposits, the geology of the Site is comprised of Columbia River Basalt bedrock with sedimentary interbeds. The Wanapum Basalt is the shallow bedrock below the Site, and is comprised of massive basalt, fractured basalt, columnar zones, pillow basalt, and palagonite. The thickness varies across the Site and has been identified to be up to 260 feet thick at MW-2S. The Wanapum Basalt is underlain by the Vantage Interbed of the Ellensburg Formation. The Vantage Interbed consists of sandstone, silt, and sand lenses and is approximately 30 to 35 feet thick. Below the Vantage Interbed is the Grande Ronde Basalt consisting of massive, columnar, and fractured basalt.

1.4.4 Hydrogeology

Groundwater monitoring for the LPL is completed quarterly for compliance with WAC 173-350-100 and permit requirements. There are two aquifers that are monitored below the LPL including a Shallow Aquifer and Interflow Zone located within the Columbia River Basalt bedrock. The basalt is dipping northerly at the Facility due to the Cowiche Mountain anticline. The natural dip places the Shallow Aquifer as the first groundwater unit below the northern portion of the Facility and the Interflow Zone as the first groundwater unit below the southern portion of the Facility.

The Shallow Aquifer occurs within the bottom flow zone of the Wanapum Basalt, saturated portions of the Vantage Interbed, and saturated portions of the flow top zone of the Grande Ronde basalt. The Interflow Zone occurs approximately 150 to 200 feet below the Grande Ronde-Vantage Interbed interface.

Five monitoring wells have been completed in the Shallow Aquifer. MW-2S and MW-3S were completed between 2005 and 2007 and background monitoring events were conducted in 2008 and 2009. MW-4S was completed in July 2022 and background monitoring events were completed through 2024. MW-5S and MW-6S were completed in 2024 and background monitoring is being conducted on an expedited basis.

Parametrix summarized the installation of the new Shallow Aquifer monitoring wells and four Interflow Zone monitoring wells in September 2024 (Parametrix 2024e). A copy of the technical memorandum is attached in Appendix A. The well locations for the Facility are shown on Figure 4.

Four monitoring wells have been completed in the Interflow Zone. MW-7D, MW-8D, MW-9D, and MW-10D were completed in 2024 and background monitoring is being conducted on an expedited basis.

Table 1. Well Construction Summary

Well ID	Northing	Easting	Ground Elevation (ft)	TOC Elevation (ft)	Screen Interval (ft bgs)	Completion Zone	Static Water Level [1] (ft below top of casing)	Water Level Elevation[1] (ft)
MW-2S	473814.19	1591095.99	1856.31	1858.36	310-330	SA	287.32	1571.04
MW-3S	473404.76	1592840.90	1843.82	1845.92	188-1985	SA	173.60	1672.32
MW-4S	472860.94	1591915.35	1843.44	1845.59	49-69	SA	43.04	1802.55
MW-5S	473452.58	1591789.89	1881.53	1883.88	222-242	SA	219.34	1664.54
MW-6S	473095.44	1592102.50	1822.97	1825.31	110-130	SA	100.44	1724.87
MW-7D	473475.06	1591782.75	1881.68	1883.88	475-495	IZ	433.17	1450.71

Table 1. Well Construction Summary (continued)

Well ID	Northing	Easting	Ground Elevation (ft)	TOC Elevation (ft)	Screen Interval (ft bgs)	Completion Zone	Static Water Level [1] (ft below top of casing)	Water Level Elevation[1] (ft)
MW-8D	473169.85	1590740.82	1861.6	1863.94	375-405	IZ	308.02	1555.92
MW-9D	473421.50	1592857.26	1845.25	1847.49	420-440	IZ	433.16	1414.33
MW-10D	471017.47	1592164.59	1986.47	1988.77	150-170	IZ	86.80	1901.97

[1] Measured on 9/11/24, except MW-6S measured on 9/3/24.

SA = Shallow Aquifer

IZ = Interflow zone

1.4.4.1 Gradient

The hydraulic gradient of the Site was evaluated using data collected at all existing monitoring wells during the third quarter of 2024 (Parametrix 2024f).

Shallow Aquifer

The gradient for the third quarter of 2024 was observed to be 0.279 ft/ft, or approximately 1,475 ft per mile. This gradient is slightly steeper than the gradient observed during the first quarter of 2024 (0.23 ft/ft), and the flow direction is northerly. MW-2S is completed in the flow top zone of the Grande Ronde Basalt and water levels at that location are anticipated to be slightly lower than other Shallow Aquifer wells completed above or across the Vantage Interbed. The Shallow Aquifer gradient may be slightly more north-northwesterly following the slope of the anticline and topography as initially identified by HWA (2022) when water levels were measured in nearby domestic wells.

Interflow Zone

The gradient for the third quarter of 2024 was observed to be 0.197 ft/ft, or approximately 1,040 ft per mile. The flow direction is north-northwesterly which generally follows the slope of the topography.

1.4.4.2 Aquifer Parameters

Hydraulic testing of monitoring wells has previously been completed using pumps and evaluating drawdown and recovery as well as slug testing. Hydraulic testing utilized pressure transducers and manual water level measurements in order to evaluate aquifer parameters. Hydraulic testing is summarized in Hydrogeologic Investigation Report (HWA 2022) and the Hydraulic Testing Results Technical Memorandum (Parametrix 2025a).

Shallow Aquifer

Shallow Aquifer hydraulic testing shows Transmissivity (T) values range from 10 to 1,891 ft^2/day, and Hydraulic Conductivity (K) Values ranging from 0.345 to 76 ft/day (Parametrix 2025a, HWA 2022).

Interflow Zone

Hydraulic testing of the Interflow Zone showed T values ranging from 0.23 to 565 ft^2/day, and K values ranging from 0.04 to 10 ft/day (Parametrix 2025a)

1.4.4.3 Groundwater Users

Groundwater users surrounding the Facility consist of private domestic wells (Group D), small community water systems (Group B), and wells for irrigation. The nearest wells to the Facility are presented on Figure 4. The closest well to the unlined Landfill (Phase 1) is located at a distance of 1,250 feet.

1.4.4.4 Horizontal Flow Velocity

The estimated effective porosity for both the Shallow Aquifer and Interflow Zone are estimated to be 20% (0.20).

Groundwater particle velocity is described by the following relationship: V = K i / n, where:

V = particle velocity

K = hydraulic conductivity

i = gradient

n = effective porosity

Based on the hydraulic testing results and gradient observed during the third quarter of 2024, the following horizontal flow rates were calculated:

- Shallow Aquifer 0.48 to 106 ft / day
- Interflow Zone 0.039 to 9.8 ft/day

The nearest domestic well to the Site is approximately 1,250 feet away from the LPL indicating minimal travel times in the Shallow Aquifer range from 12 days to 7 years.

1.4.5 Surface Water

Surface water at the Facility is comprised of ephemeral drainages flowing north off Cowiche Mountain periodically towards Cowiche Creek located in the valley north of the Site. Surface water for the Facility is generally captured and evaporated on the Site through surface water evaporation ponds.

2. Previous Environmental Investigations

2.1 Initial Fire Discovery

2.1.1 Initial Investigation

In 2020, Yakima Health District (YHD) received odor complaints from the LPL neighbors. Odors were confirmed by YHD and Ecology in October 2021 and tracked to the northwest slope of Phase 1 where visual vapor plumes emanating from fissures within the LPL were observed. In December 2021, DTG initiated landfill gas (LFG) investigations on the northwest slope and retained Freestone Environmental Services (Freestone). Freestone confirmed emissions of certain volatile organic compounds (VOCs) including benzene were above MTCA air CULs above the northwest slope (Freestone 2022). Concentrations of VOCs in ambient air samples collected along the property boundary were found below MTCA CULs for air. A copy of the report is attached in Appendix A.

2.1.2 Landfill Gas Investigation

In July 2022, DTG retained Parametrix to investigate the source of the emissions. Parametrix installed eight shallow temporary vapor probes (VP1 through VP8) into the top of waste across Phase 1 of the LPL to evaluate LFG. The sampling identified only one area on the northwest slope of the LPL that had petroleum hydrocarbons and associated VOCs. At that location, methane was measured up to 4.2 percent by volume, below the lower explosive limit (LEL). No methane was observed at the seven other vapor probes. Ambient air sampling confirmed concentrations of benzene and naphthalene above MTCA CULs for air above the northwest slope (Parametrix 2022). A copy of the Landfill Gas Investigation Report is attached in Appendix A.

2.1.3 Gas Probe Installation and Ambient Air Monitoring

In March 2023, Parametrix conducted an investigation of LFG and ambient air monitoring. The results were presented in the Gas Probe Construction and Landfill Fire Emission Assessment report (Parametrix 2023a) and a copy of the report is attached in Appendix A. The initial gas probe installation was an attempt to determine if a fire was present by following CalRecycle (2006) summary of subsurface Fire Indicators including:

- Elevated gas temperatures above 170 degrees Fahrenheit (F)
- Carbon monoxide above 200 ppm
- Subsidence
- Active fissures / elevated surface temperatures

2.1.3.1 Gas Probe Installation

In March 2023, Parametrix directed the completion of ten gas probes (GP-1 through GP-10) into the LPL for evaluating subsurface conditions of VOCs, other gases, and temperature at the locations shown on Figure 2. A subsurface landfill fire was confirmed by soil temperatures in exceedance of 400 degrees F, physically burnt material recovered in soil cores, gas temperatures in excess of 400 degrees F, high concentrations of hydrogen gas, high concentrations of carbon monoxide, active fissures and vents, and surface settlement (Parametrix 2023a).

2.1.4 Initial Ambient Air Monitoring

Ambient air summa canister samples were collected from four locations at the LPL in March 2023 and analyzed for LFG components of methane, carbon monoxide, hydrogen sulfide, and carbon dioxide; APH; and VOCs.

Three locations outside the fire area (AMB-6, AMB-11, AMB-12) showed:

- APHs at <140 to 170 micrograms per cubic meter (µg/m^3)
- Benzene at 0.18 µg/m^3
- No detections of toluene, ethylbenzenes, total xylenes, or naphthalene
- No detections of 1,4-dioxane or any other VOCs except dichlorodifluoromethane (R-12), which is common freon gas, and was found at very low levels; and 1,2-dichloroethane which may be related to leaded fuels

Ambient air above the fire area (AMB-13) showed:

- APHs at 684 µg/m^3
- Benzene at 45 µg/m^3
- Ethylbenzene at 29 µg/m^3
- Total xylenes at 20.4 µg/m^3
- Naphthalene at 4 µg/m^3
- No detected toluene
- 1,4-Dioxane at 1.1 µg/m^3

Carbon dioxide, carbon monoxide, hydrogen, and methane were not detected above approximately 1,100 parts per million (ppm), or 0.11 percent by volume, in all samples.

2.1.5 Additional Gas Probes

Following confirmation of the landfill fire, DTG retained Landfill Fire Control Inc. (LFCI) to delineate the extent of the fire and develop a plan to extinguish it. LFCI developed a fire control and monitoring plan (LFCI 2023a) to assess and delineate the subsurface fire. LFCI assisted DTG in installation of additional gas probes GP-11 through GP-31 at the locations shown on Figure 2 by June 2023. These additional gas probes are completed approximately 4.5 feet into the waste. A copy of the LFCI plan is attached in Appendix A. Table B1 in Appendix B summarizes the construction depths and monitoring points.

2.2 Fire Characterization and Interim Actions

In August 2023, Ecology allowed for the development of a work plan to install thermistors in the LPL as part of the initial phase of the Limited RI separate from the overall work plan due to the urgency in delineation of the fire. DTG and Ecology negotiated the scope of the work plan and location of the thermistors. Parametrix developed the work plan for thermistor installation (Parametrix 2023c).

2.2.1 Thermistor Installation

In September 2023, Parametrix oversaw the installation of three thermistors/gas probes (T-1, T-2, and T-3) using sonic drilling techniques into the fire area of the LPL as the initial phase of the Limited RI (Parametrix 2023d). Two of the thermistors were drilled into the basalt bedrock to

confirm the extent of the fire. All three thermistors were constructed with a screened gas probe and blank thermistor pipe in the same borehole. Figure 2 displays the location of the thermistors. A copy of the report is attached in Appendix A.

No smoldering or charred materials were encountered during drilling of the three thermistors. Soil recovery from thermistors T-1 and T-2 was somewhat poor. Temperature was observed during drilling using a forward looking infrared (FLIR) device. The highest temperatures observed were:

- 270 degrees F at 25 feet below ground at T-1
- 241 degrees F at 35 feet below ground at T-2
- 200 degrees F at 30 feet below ground at T-3

Initial gas probe monitoring of the three thermistors (T-1, T-2, and T-3) was completed during routine weekly monitoring through October 5, 2023. Temperature monitoring was completed by placement and monitoring of multiple depth thermocouples approximately every 10 feet in each thermistor (10 feet, 20 feet, 30 feet, and 40 feet below grade).

The results of the LFG and temperature monitoring showed T-1 and T-2 to be very different from T-3. Low concentrations of VOCs and very high temperatures were observed at T-1 and T-2, whereas very high concentrations of VOCs and moderate temperatures were observed at T-3. Concentrations of oxygen were found near atmospheric conditions at both T-1 and T-2. At T-3, oxygen was 0% and methane was reported at 4.7% by volume; carbon monoxide was also found above 500 parts per million and hydrogen sulfide over 100 ppm.

Temperatures measured in the thermocouples were highest in T-1 at the 20-foot depth and measured over 400 degrees F. Temperatures at T-2 were approximately 250 degrees F at the same depth. T-3 was approximately 190 degrees F at 40 feet, which is generally within 5 feet of the equivalent depth of the T-1 and T-2 20-foot thermocouples. T-3 temperatures increased with depth whereas both T-1 and T-2 thermistors show the heat zones more concentrated at the 20-foot thermocouples with lower temperatures at higher elevation and lower elevation thermocouples.

2.2.1.1 Petroleum Contaminated Soil

The initial ambient air monitoring conducted in March 2023 identified APH, benzene, and naphthalene in ambient air above the fire area and these compounds were not detected in other ambient air monitoring locations (Parametrix 2023a). The prior petroleum contaminated soil (PCS) operations plan required soils to be below MTCA Method A CULs prior to deposition in the landfill.

Analyses of soil collected during the thermistor installation identified total petroleum hydrocarbons (TPH) above MTCA Method A CULs within the landfill contents (Parametrix 2023d). Samples from location T-1 and T-2 had low level TPH concentrations below MTCA Method A CULs. However, recovery of soil from these locations was extremely difficult. Sample recovery was much greater from location T-3, and some concentrations in samples from T-3 were above MTCA CULs, as summarized below.

T-3 samples:

- Gasoline-range TPH was found up to 170 milligrams per kilogram (mg/kg), above the MTCA Method A CUL
- Oil-range TPH was found up to 3,900 mg/kg, above the MTCA Method A CUL
- Benzene was found up to 1.6 mg/kg, above the MTCA Method A CUL
- 1,2,4-trimethylbenzene was found up to 2.3 mg/kg above the MTCA Method B CUL for protectiveness of groundwater at T-3-10'. It was found below the CUL in deeper samples.

Two soil samples were collected from native basalt encountered below the waste footprint. No PCS, cPAHs, or VOCs, were identified in native samples collected (Parametrix 2023d). Low level metals were found as summarized below.

T-1-40':

- Arsenic at 1.61 mg/kg
- Lead at 3.81 mg/kg

T-2-40':

- Lead at 4.78 mg/kg
- Cadmium at 1.3 mg/kg
- Chromium at 6.21 mg/kg

Based on the waste encountered, samples were also analyzed for pH by the laboratory. The results show pH ranging from 6.6 to 8.4 within the majority of the waste. Two locations showed higher pH including a pH of 9.4 at T-1-25' and a pH of 11 at T-2-25'. Elevated pH can be an indication of both concrete and ash.

2.2.2 Fire Suppression

LFCI developed a fire suppression plan that consisted of covering the fire area with additional fill materials of low permeability soil (LFCI 2023b). The work plan for fire suppression was negotiated with YHD and Ecology (Appendix A). DTG implemented the plan following resolution of YHD comments (DTG 2023) and substantially completed the initial fire suppression efforts in December 2023. The placement of cover material was intended to decrease the concentrations of oxygen and eliminate the fire within the LPL. Emissions from the fire have been suspected to be the likely source of odors being observed by the neighboring LPL residents.

A total of approximately 8 to 10 feet of low permeability Vantage material was placed on the northwest slope of the LPL. The slope was completely regraded. DTG purchased the neighboring parcel to the north and the abandoned irrigation canal was partially filled to allow the regrading of the slope (Figure 2). The existing gas probes (GP-1 through GP-31) and thermistors (T-1, T-2, and T-3) were extended upwards approximately 10 feet to account for the regrade.

2.2.3 Emission Assessment

The Landfill Fire Emission Assessment Work Plan (Parametrix 2023b) was implemented in March 2024. The field investigation consisted of ambient air sampling with 6-liter summa canisters over a 6- to 8-hour period in the evening, ambient air sampling with Tisch polyurethane foam (PUF) samplers over a 24-hour period, and LFG sampling with the 1-liter summa canisters over 15-minute periods. Ambient air sampling with the summa canisters occurred during a relatively windy period during low pressure between two high pressures, Ambient air sampling with the PUF samplers occurred during typical wind conditions and during stable pressure. The air and LFG samples were analyzed for APH, major gases, dioxins and furans, cPAHs, and VOCs.

The results from the investigation show concentrations of APH and VOCs in gas probes were within the same ranges as the previous investigations. However, ambient air concentrations from this investigation were well below the previous concentrations detected at the Site and VOCs were found predominantly non-detect. There were no detections of cPAHs or dioxins/furans in ambient air samples collected above the subsurface fire area, and therefore these do not appear to be constituents of potential concern (COPCs) for the Site.

The results of the emission assessment show the primary COPCs for the Site remain APH, benzene, naphthalene, and other fuel and/or paint related VOCs. The low permeability soil cover placed over the subsurface fire area is currently preventing emissions. Benzene and naphthalene were previously found above MTCA Method B CULs for air. However, ambient air data collected during this study showed the low permeability soil cover was preventing APH and VOCs from emitting from the LPL.

Based on the results of the investigation, the following recommendations were determined:

- No further sampling with PUF samplers for EPA Method TO-9A or TO-13A appears warranted.
- Additional ambient air sampling with summa canisters for APH and VOCs is prudent while the subsurface fire remains on-going. The results from this investigation show ambient air concentrations below MTCA CULs. Future ambient air monitoring can be addressed by operational control under the solid waste permit.

An updated monitoring schedule for ambient air and landfill gas laboratory sampling is attached in Appendix B.

2.2.4 On-going Air and Landfill Gas Monitoring

On-going ambient air and gas probe monitoring is being completed by DTG and summarized to YHD, Ecology, and Yakima County Clean Air Agency (YRCAA) on a monthly basis by LFCI. Monthly progress reports have also been submitted from DTG to Ecology during the on-going RI work.

On May 28, 2024, LFCI presented an updated discussion regarding the current state of the subsurface fire (LFCI 2024a). A copy of the presentation is attached in Appendix A. LFCI interpreted there to be potentially two separate active fire areas based upon heat signatures and carbon monoxide concentrations. Ecology and YHD indicated further data on the southern zone near GP-20 and GP-25 would be necessary to determine the extent of the subsurface fire and associated VOCs. Additionally, Ecology and YHD would like deep thermistors to the east of the fire to confirm the extent of the fire at depth.

The most recent monthly summary from December (DTG 2025) is attached in Appendix A. LFCI (2024b) estimated it would take approximately 3 to 6 months for temperatures at location GP-3 to decrease below 180 F. GP-3 has had the highest temperatures monitored at the Site to date.

2.3 Groundwater Investigations

2.3.1 Detection Monitoring (WAC 173-351-400)

Nitrate has been detected at well MW-4S at concentrations above Chapter 173-200 WAC groundwater quality standards (GWQS) and recently also at well MW-3S; however, the results show nitrate concentrations are below the GWQS at further downgradient locations of MW-4S within the existing monitoring well network (Parametrix, 2024f; 2025c). There are no existing wells currently downgradient of MW-3S.

2.3.2 MTCA Monitoring (Chapter 173-340 WAC)

To date, no TPH have been verified in monitoring wells in the Shallow Aquifer downgradient of the LPL (Parametrix 2024c). Quarterly samples from wells have been analyzed for TPH using Ecology test methods NWTPH-Gx (gasoline-range) and NWTPH-Dx/Dx Extended (diesel- and oil-range) since approximately 2022.

Ecology completed sampling of 12 nearby wells surrounding the LPL in December 2022 for TPH and VOCs. Ecology found no evidence of contaminated drinking water for TPH or VOCs as a result of the LPL (Ecology 2023c). A copy of the Ecology report is attached in Appendix A.

In 2024, Ecology requested that per- and polyfluorinated alkyl substances (PFAS) and dioxins and furans be added to the list of potential contaminants within the Shallow Aquifer below the LPL, and these were sampled during the third and fourth quarters of 2024. Semi-volatiles and cPAHs were also requested and were sampled during the fourth quarter of 2024.

PFAS was detected in MW-3S above MTCA Method B CULs for PFOS in the third quarter of 2024 (Parametrix 2024g). PFAS above CULs was confirmed in MW-3S in the subsequent fourth quarter of 2024 (Parametrix 2025b). The PFAS signature appears to match PFAS found in leachate from similar LPLs within Washington being predominantly Perfluoroalkyl Carboxylic Acids (PFCAs) with a high percentage of Perfluorooctanoic acid (PFOA) and does not appear to match PFAS suspected from the Yakima Firing Range (Parametrix 2024g). PFCAs were detected in MW-4S and MW-6S but at concentrations below CULs during the third and fourth quarter events. PFOA was not detected in the MW-4S and MW-6S samples.

Dioxins and furans were initially detected in MW-4S above MTCA Method B CULs during the third quarter 2024 sampling event (the first event tested). However, the results were not confirmed in the subsequent fourth quarter 2024 sampling event (Parametrix 2025b). The fourth quarter results for semi-volatiles and cPAHs were non-detect in the Shallow Aquifer and the results will be verified in the first quarter of 2025.

Table A1 in the Groundwater SAP (Appendix B) summarizes the list of analytes and CULs for the MTCA Monitoring.

3. Draft Conceptual Site Model

The draft conceptual site model established for the Site notes that the landfill is a potential source of contaminants related to the subsurface fire within the landfill and from leachate migrating from older unlined cells.

As shown on Figure 3, two routes of transmission of contaminants have been identified:

- Upward and horizontal migration of emissions causing contaminants in ambient air
- Downward migration of emissions/leachate causing contaminants in the Shallow Aquifer

3.1 Landfill Fire Migration Hazards

Since the development of the draft conceptual site model, interim actions in the form of a low permeability soil cover (reworked Vantage material) have been placed over the fire area under the direction of LCFI. The low permeability soil cover is intended to both prevent oxygen from reaching the subsurface fire as well as preventing emissions and LFG migration from the LPL.

The second migration pathway is potential migration of petroleum hydrocarbons and VOCs within the fire emissions to groundwater. Parametrix (2023d) previously tested soil in native materials below the fire area for petroleum hydrocarbons and VOCs. No petroleum hydrocarbons or VOCs were detected in the native deposits below the LPL. To date no petroleum hydrocarbons or VOCs have been identified in groundwater monitoring wells (Parametrix 2024c).

3.2 Contaminant Migration to Groundwater

The older cells of the LPL prior to Phase 2 are unlined allowing leachate to migrate into the subsurface. These are defined as arid-design cells where precipitation and leachate generation are thought to be minimal and protective due to the migration pathway and travel time through basalt bedrock was extensive. The current temporary fill area located south of Phase 1 was excavated into the Vantage Interbed. The updated hydrogeologic investigation of the LPL shows the Shallow Aquifer consists of the flow bottom zone of the Wanapum Basalt, sandy portions of the Vantage Interbed, and the flow top zone of the Grande Ronde basalt (Parametrix 2024e). No contaminants were previously detected in groundwater above Chapter 173-200 WAC criteria except nitrate in MW-4S and recently also in MW-3S, and total dissolved solids in MW-4S (Parametrix 2024f).

Emerging contaminants of PFAS were detected at MW-3S located north of and downgradient of Phase 1 and the temporary fill area (Parametrix 2024g). CULs for PFAS are an order of magnitude lower and methods of detection are relatively new. PFAS sampling also has specific requirements to avoid false positives. The Site monitoring wells were all outfitted with PFAS free bladder pumps and the SAP for on-going monitoring was updated for PFAS sampling standards. The results for the third and fourth quarter 2024 events were consistent with leachate from the unlined waste impacting groundwater at very low levels but above current drinking water standards and MTCA Method B CULs.

3.3 Constituents of Potential Concern

The COPCs related to the migration pathways include the following:

Ambient Air:

- LFG components of methane, carbon monoxide (CO), hydrogen sulfide, and carbon dioxide
- Air-phase petroleum hydrocarbons (APH)
- VOCs (benzene and naphthalene)

Soil:

- TPH
- VOCs
- cPAHs
- Metals

Groundwater:

- TPH
- VOCs
- Landfill contaminants (WAC 173-350-500) and Metals
- Semi-volatile organic compounds (SVOCs) including cPAHs and dioxins and furans
- Nitrate, total dissolved solids, conductivity
- Per- and polyfluoroalkyl substances (PFAS)

3.3.1 Sampling Plans

Sampling and Analysis Plans (SAPs) have been developed for the Site as part of the RI work. Standard Operating Procedures (SOPs) are included in the appendices of the SAPs. These will be followed in collection of soil, air, gas, and groundwater data. SAPs are attached in Appendix B and may be updated periodically. The SAPs include the following:

- Sampling and Analysis Plan for Soil (Parametrix, October 2024, Revised March 2025)
- Groundwater Sampling and Analysis Plan for the Yakima Limited Purpose Landfill; (Parametrix, September 2024), for on-going WAC 173-351-400 Monitoring
- Groundwater Sampling and Analysis Plan for MTCA Sampling Rocky Top Environmental Limited Purpose Landfill (Parametrix, January 2025, Revised March 2025)
- Air/Gas Sampling and Analysis Plan for the Yakima Limited Purpose Landfill (Parametrix, March 2024)

3.3.2 Draft Cleanup Standards

The draft cleanup standards for the Site include MTCA Method A and Method B cancer and noncancer CULs for groundwater, soil, and hazardous air pollutants as published in Cleanup Levels and Risk Calculations (CLARC, Ecology 2025). LFG samples are not compared to MTCA CULs as these results are simply representative of conditions within the LPL. There are no buildings above the waste and vapor intrusion screening levels are not applicable.

Specific CULs for CPOCs are outlined in the SAPs.

4. Limited Remedial Investigation Work Plan

The scope of the limited RI has been negotiated with Ecology and YHD with input from YRCAA.

The primary tasks of the Limited RI include:

- Evaluation of ambient air for potential landfill fire emissions
- Evaluate groundwater for potential releases related to the LPL and delineate extent
- Delineation of the subsurface fire extent.

The subsurface landfill fire remains on-going as evidenced by elevated temperatures and CO at the LPL. The Emissions Assessment completed in March 2024 showed ambient air was below applicable CULs following completion of the low permeability soil cover. However, the Emissions Assessment recommended continued ambient air monitoring to ensure any changes in the subsurface fire are evaluated to ensure no releases to ambient air above MTCA CULs:

Although temperatures continue a slow decline within the LPL and LFCI estimated temperatures would be below 180 degrees F by July 2025 (LFCI 2024b) within the existing network, elevated CO remains at a few locations. Ecology and YHD have requested additional thermistors be installed to the east of the current monitoring network and surrounding GP-20 to characterize and delineate the full extent of the subsurface fire. A total of four additional thermistors (T-4 through T-7) will be drilled through the waste to delineate the extent of the fire.

Ecology and YHD have determined that because MTCA violations at the Site are predominantly related to the subsurface fire that delineation of the fire extent should best be addressed by the MTCA RI in order to determine the presumptive remedy or Interim Actions for the Site.

Groundwater contamination in the form of nitrate and PFAS have been identified in the Shallow Aquifer below the Site. The nitrate plume from the LPL appears to be contained within the existing monitoring well network at MW-4S; however, concentrations exceed GWQS at MW-3S. PFAS identified in the third and fourth quarters of 2024 above MTCA Method B cancer CULs at MW-3S appears to be similar to that expected from landfill leachate. There are no existing monitoring wells located downgradient (north) of MW-3S. Due to the proximity of neighboring residential wells including two Group B systems (Figure 4), two additional monitoring wells have been negotiated with Ecology and YHD.

4.1 Task 1 Landfill Fire and Related Issues

Two of the primary tasks of the Limited RI are related to the subsurface fire. Field work for this task includes borehole drilling and thermistor construction, soil sampling, gas sampling, and ambient air sampling. The intent is to delineate the fire and evaluate potential releases:

- Establish lateral and vertical extent of the subsurface fire within Phase 1
- Evaluate contaminant concentrations within the waste mass and soil below the waste
- Construct thermistors to serve as observation points of fire and gas conditions within Phase 1
- Evaluate and monitor landfill gas and temperature within the fire area
- Determine if additional actions are necessary to eliminate the subsurface fire
- Evaluate ambient air above the subsurface fire zone, up wind, and downwind to confirm no risks to neighboring landowners and residences.
- Prepare reports and technical memorandums outlining the findings of drilling and sampling
- Groundwater evaluation related to the fire is presented in Section 4.2

4.1.1 Thermistor Drilling

The landfill fire will be investigated by drilling thermistors into Phase 1 of the LPL to delineate the extent. Currently four additional thermistors are proposed to be installed in addition to the existing three thermistors and gas probe network that have been installed to delineate the extent of the subsurface fire within Phase 1. If based upon the results, additional thermistors are to be installed to delineate the extent of the fire within Phase 1, the thermistors will follow this work plan with the details of the depth and completions to be negotiated with Ecology.

4.1.1.1 Drilling and Construction

Sonic drilling techniques utilize a variable diameter core barrel that recovers relatively undisturbed samples in 5-foot to 10-foot increments. The soil cores are traditionally extracted into polyethylene bags for soil observations and sampling. Elevated temperatures may prevent placement of the cores into bags.

Drilling of thermistors shall fully penetrate the waste mass and proceed approximately 5 feet into competent bedrock. This is in order to confirm the bottom depth of the borehole and ensure the full depth of waste has been verified and allow soil sampling below the waste footprint.

A total of four thermistors (T-4, T-5, T-6, and T-7) are proposed to be drilled in order to delineate the extent of the subsurface fire within Phase 1. The locations of the thermistors are presented on Figure 2. The thermistors will be nested to allow monitoring of multiple zones for gas and temperature (Figure 6). The thermistors are being constructed solely in waste except for bentonite filling the bedrock portion and no variance from Chapter173-160 WAC is necessary (Ecology 2024). Based on elevated temperatures within the subsurface fire, neat cement grout will be utilized as the seal between the two nested thermistors in each of the locations. Temperature resistant non-shrink grout can be utilized with some mixtures capable of withstanding temperatures of up to 2,400 degrees F. This will relieve concerns regarding thermistor construction and dehydration of bentonite seals near the fire zone.

T-4 will be drilled from an elevation of approximately 1910 feet above sea level to approximately 70 feet below ground. The thermistor will be drilled approximately 5 feet into bedrock to confirm the bottom of waste. The bedrock portion of the borehole will be backfilled with hydrated bentonite and the thermistor will be constructed with two gas probes and a blank thermistor pipe. The gas probes will be screened targeting approximately 55 to 65 feet below ground near the base of the landfill and at 25 to 35 feet below ground.

T-5 will be drilled from an elevation of approximately 1930 feet above sea level to approximately 90 feet below ground, approximately 5 feet into bedrock to confirm the bottom of waste. The bedrock portion of the borehole will be backfilled with hydrated bentonite and the thermistor will be constructed with two gas probes and a blank thermistor pipe. The gas probes will be screened targeting approximately 75 to 85 feet below ground near the base of the landfill and targeting 45 to 55 feet below ground.

T-6 will be drilled from an elevation of approximately 1940 feet above sea level to approximately 100 feet below ground, approximately 5 feet into bedrock to confirm the bottom of waste. The bedrock portion of the borehole will be backfilled with hydrated bentonite and the thermistor will be constructed with two gas probes and a blank thermistor pipe. The gas probes will be screened targeting approximately 85 to 95 feet below ground near the base of the landfill and targeting 55 to 65 feet below ground.

T-7 will be drilled from an elevation of approximately 1940 feet above sea level to approximately 100 feet below ground, approximately 5 feet into bedrock to confirm the bottom of waste. The bedrock portion of the borehole will be backfilled with hydrated bentonite and the thermistor will be

constructed with two gas probes and a blank thermistor pipe. The gas probes will be screened targeting approximately 85 to 95 feet below ground near the base of the landfill and targeting 55 to 65 feet below ground.

Temperature probes will be placed in the new thermistors at approximately 15-foot intervals. Table 2, below, summarizes the construction of the gas probes.

Table 2. Proposed Thermistor Construction Details

Location ID	Elevation (ft)	Total Depth (ft)	Screened Intervals (ft)	Screen Elevations (ft)	Thermistors Elevations (ft)
T-4	1910	70	25-35 (a), 55-65 (b)	1885-1875 (a), 1855-1845 (b)	1895, 1880, 1865, 1850
T-5	1930	90	45-55 (a), 75-85 (b)	1885-1875 (a), 1855-1845(b)	1915, 1900, 1885, 1870, 1855
T-6	1940	100	55-65 (a), 85-95 (b)	1885-1875 (a), 1855-1845(b)	1925, 1910, 1895, 1880, 1865, 1850
T-7	1940	100	55-65 (a), 85-95 (b)	1885-1875 (a), 1855-1845(b)	1925, 1910, 1895, 1880, 1865, 1850

These proposed completions are also summarized on Figure 6. A bentonite seal will be placed from below the concrete at the current grade to 3 feet below the top of the landfill surface (Figure 6).

4.1.1.2 Soil Sampling and Analysis

Due to the nature of the subsurface fire, the core sampler will be evaluated for temperature by the drilling staff with assistance from Parametrix using the FLIR thermal imaging camera and thermocouple. Prior sampling was completed without using water; however, this was determined to be difficult for sample recovery. Water may be used to assist in the drilling and sample recovery with the core sampler.

If nominal, the core sampler will be emptied into polyethylene bags for evaluation by the on-site geologist. If excess temperatures or fire are determined present, the core sampler will be emptied into a steel wheelbarrow for evaluation, screening, and sampling by the on-site geologist from Parametrix. Once the sample has been evaluated and possibly sampled, it will be transferred to a skid steer or loader bucket. If the sample is actively on fire, it will be extinguished by oxygen suppression with a fire blanket, or if unsuccessful with a fire extinguisher.

Once the soils samples have been collected and completion of the drilling of the thermistor, the soils will be placed within the temporary fill area of the LPL until receipt of the soil results. The soils will be placed on and covered with a minimum of plastic sheeting to protect the soils from the elements. Once the soil results are finalized, a decision will be made on the final placement of the cores.

Approximately four soil samples will be collected from waste or soil encountered at each of the thermistor locations and one soil sample will be collected from below the waste at each location. Samples within the waste will be selected based upon field screening for VOCs, odors, visual staining, and sheen. Samples will mostly be collected from areas outside of the fire zone as the heat would alter the results of analysis. Samples collected from within the fire zone will be held on the chain of custody pending further analysis. Samples will be collected in three 40 mL volatile organic analysis (VOA) vials using EPA Method 5035 (purge and trap) and one 4-ounce glass jar. For samples

from native deposits, two additional 4-ounce glass jars will be collected for cPAHs and metals analyses. Soil sampling will follow the SAP and SOP in Appendix B.

4.1.1.3 Air and Gas Sampling

There will be eight new gas probes constructed in the four thermistors. The gas probes will be sampled for TO-15 and APH using a 1-liter summa canister. A tedlar bag or separate 1-liter summa canister will be collected for analysis of major gases using EPA Method 3C. The use of a separate collection device will resolve prior issues related to the analysis using EPA Method 3C. Prior analysis utilized the "left over" air from the summa cannisters following analysis of APH and TO-15 to run the EPA Method 3C analysis at a separate laboratory. Samples will now be collected separately specific for the major gases and quality assurance (QA)/Quality Control (QC) issues will be avoided.

Concentrations of CO between 100 and 1,000 are noted to be suspect for fires; however, only when other indicators are present including subsidence, visual emissions, or elevated temperatures above 130 degrees F for the Site. Elevated temperature landfills can produce CO at levels greater than 1,000 ppm without active fire or combustion present (SCS 2016). CalRecycle (2025) notes smolder may be present at concentrations exceeding 1,000 ppm and levels between 500 to 1,000 ppm indicate there is no active smolder. Ecology has requested laboratory reporting limits for CO be as low as 100 ppm; however, due to uncertainties in sample volumes, laboratory sensitivity, and interference reporting limits may be greater than 100 ppm. Gas detector tubes can be utilized to evaluate gas concentrations below the laboratory reporting limits for locations where other fire indicators are present. CO will be measured by multiple field meters with different sensitivities. This allows for quality control (QC) of the field measurements during each reading which can also be compared to the laboratory analysis.

Existing gas probes GP-2, GP-3, GP-20, and T-3 will be sampled for APH and TO-15 in addition to the new locations. Carbon Dioxide will be measured in these locations and the new locations using a Landtec GEM 5000 to evaluate the CO/CO2 ratio at the Site.

Ambient air will be collected for APH and VOCs using 5-liter summa canisters at locations AMB-1, AMB-6, AMB-11, AMB-13, and AMB-16. Barometric pressure will be recorded with an on-site pressure transducer. Weather including wind speed and direction will be monitored using nearby weather stations to determine the effects on the results.

The air and gas sampling will follow the Air and LFG SAP attached in Appendix B. An updated schedule regarding ambient air and landfill gas sampling is attached in Appendix B.

4.1.2 On-Going Gas and Temperature Monitoring

The four new thermistors will be added to the weekly monitoring program. The data from the gas probes and thermistors will be evaluated on a monthly basis by DTG, YHD, and Ecology in order to streamline the monitoring program and determine the next course of action.

4.1.2.1 Evaluation

In consultation with Ecology and YHD, the data from the new gas probes will be evaluated and determine if additional subsurface characterization of the fire is necessary. Additional characterization would be accomplished by completion of thermistors using sonic drilling techniques or installation of additional barhole punch gas probes.

4.1.2.2 Monitoring

Ecology and YHD have been concerned regarding delineation of the extent of the fire. The following summarizes triggers proposed for evaluating the on-going monitoring of the fire including the new thermistors and determining if additional thermistors or gas probe investigations are necessary as part of the RI. These have been slightly modified from the assessment presented by LFCI to account for agency comments.

According to CalRecycle (2025), CO and temperature are the two most important elements when assessing subsurface fire conditions. Concentrations of CO above 1,500 ppm are considered to be a positive indication of active smolder, concentrations between 1,000 and 1,500 are thought to be suspicious and require further air and temperature monitoring, concentrations between 500 and 1,000 may indicate pre- or post-fire conditions but active combustion is typically absent, and levels below 500 ppm confirm that smolder is not present. Elevated temperature landfills can produce CO at levels greater than 1,000 ppm without active fire or combustion present (SCS 2016).

LFCI (2023a) and Ecology (2024) have refined the subsurface fire conditions at the Site and determined the following apply specific to the DTG LPL.

CO Monitoring :

- Possible Fire Indication – Above 100 ppm
- Possible Fire in Area 200 – 500 ppm
- Potential Smoldering Nearby 500 – 750 ppm
- Fire or Exothermic Reaction Likely 750 – 1,000 ppm
- Fire in Area > 1,000 ppm

Temperature Monitoring:

- Above Normal Thermal Activity specific to the Site 130 F
- Boiling Point of Water 212 F
- Exothermic Activity 220 F
- Exothermic Decay of Wood 300 F
- Active Fire 600 F

4.1.2.3 Early Warnings and Triggers

The following early warning triggers have been established for evaluating the subsurface fire behavior. Any thermistors or gas probes having these changed conditions will require consultation with Ecology and YHD in order to determine the next steps in monitoring or delineation of the fire.

Early Warning Triggers for Investigation include the following:

- Increase of 10 to 15 degrees F within 2 weeks
- Increase in CO to near 100 ppm

These are identified as potential indicators of activity that should be evaluated.

DTG will utilize a tier system to evaluate landfill fire changes over time. Each probe will initially fall into only one of the Tiers based on the current state of monitoring. The gas probe trigger and contingency action flow chart (Figure 5) summarizes actions and responses for gas probes in Tier 1 through Tier 4. Table B1 (attached in Appendix B) summarizes information for existing gas probes and the tiers as of January 2025.

Tier 1 - Gas Probes with no history of fire indicators

These gas probes and thermistors are in the background stage with no active fire indications. The gas probes would move to Tier 2 with any of the following:

- Any exceedance of 130 F
- Any exceedance of 100 ppm CO
- Visible emissions next to the probe (fumaroles, etc.)
- Subsidence in the vicinity of the probe

Tier 2 - Gas probes with history of fire indicators.

These gas probes and thermistor have temperatures above 130 F or CO above 100 ppm. If temperatures remain between 130 F to 212 F, or CO remains below 1,000 ppm, the location would remain in routine monitoring. These gas probes would move to Tier 3 with any of the following:

- Any increases in temperature above 212 F
- Any increases in CO above 100 ppm
- Visible new emissions or fumaroles
- New or increased subsidence

Tier 3 - Gas probes showing likely fire activity nearby.

These gas probes have a history of fire activity with temperatures above 212 F (the boiling point of water) and CO concentrations up to 1,000 ppm. The gas probes would remain in routine monitoring if conditions remain or move down to Tier 2 if conditions improve. The probes would move to Tier 4 with any of the following:

- Increases in temperature above 300 F
- Increases in CO of 500 ppm or greater over 3 consecutive weeks
- Increases in CO above 1,000 ppm
- Visible new emissions or fumaroles
- New or increased subsidence

Tier 4 - Gas probes fire monitoring

These gas probes are the highest interest showing likely fire activity in the vicinity. If conditions improve probes can be moved back to Tier 3. However, additional investigation will be necessary with any of the following conditions:

- Increases in temperature above 600 F
- Increases in CO of 500 ppm or greater over 3 consecutive weeks
- Visible emissions
- Subsidence

These triggers have been established in order to determine applicable and relevant appropriate requirements (ARARs) including notification of YHD and Ecology and will assist when additional investigation or characterization is necessary. Figure 5 presents a flow chart to evaluate if the new thermistors, existing thermistors, and gas probes require additional investigations and Interim Actions to protect human health and the environment during changing fire conditions.

These ARARs are general in nature and will be evaluated holistically and individually with discussion with YHD and Ecology. For new probes/thermistors, if they fall in Tier 3 or Tier 4, an interim action work plan will be required indicating additional delineation measures are necessary.

4.1.2.4 Response to Triggers

- Notify YHD and Ecology
- Evaluate overall dataset
- Conduct follow up monitoring
- Determine if LFG or ambient air monitoring is required following the Air and LFG SAP
- Determine if additional thermistors or gas probes are required
- Determine if additional interim actions are necessary (cover, suppression, water, etc.) and start on an IAWP

4.1.3 Subsidence Monitoring

The most recent LiDAR survey was completed in September 2024. The LiDAR data will be compared to previous survey assessments to evaluate subsidence at the LPL. LiDAR surveys of the LPL will be periodically completed under the solid waste permit. Visual subsidence will be documented during the weekly inspections of gas probes over the fire area. These observations are more frequent and relevant to observable subsidence related to increased fire activity. Similarly, DTG staff conducting monitoring will use the FLIR to document any heat changes at the surface that may be capturing subsidence and changes to the northern slope of Phase 1 in vicinity of the subsurface fire area.

4.1.4 Interim Actions

The results of the thermistor drilling and subsequent monitoring will be evaluated to determine if the extent of the fire has been properly delineated. If necessary, an Interim Action Work Plan (IAWP) will be developed to address additional concerns related to the subsurface fire. The IAWP may contain the following:

- Additional gas probes or thermistors to be constructed
- Additional remedial measures to ensure risk to human health and the environment have been properly addressed

If substantive characterization from the RI shows additional assessment is necessary, these will be completed under the direction of YHD and Ecology as part of the AO and solid waste permit.

4.2 Task 2 Contaminant Migration to Groundwater

The other primary task of the Limited RI is related to contaminant migration from the unlined landfill / temporary fill area to groundwater within the Shallow Aquifer. Field work for this task includes borehole drilling and well construction, and groundwater monitoring. The intent is to delineate the extent of groundwater impacts, evaluate potential releases, and confirm there are no risks to neighboring groundwater users:

- Determine the extent of groundwater impacts
- Drill and construct additional monitoring wells into the Shallow Aquifer
- Determine what contaminants are present in the Shallow Aquifer
- Sample new and existing wells for COPCs

- Perform hydraulic testing of new monitoring wells
- Survey new monitoring wells
- Update hydrogeologic cross sections
- Update contaminant fate and transport calculations
- Prepare reports and technical memorandums outlining the findings of drilling and groundwater sampling

4.2.1 Well Drilling, Construction, and Testing

4.2.1.1 Drilling

Two monitoring wells will be drilled downgradient of the LPL (Figure 4). MW-1S will be drilled northeast of the Site and MW-11S will be drilled north of MW-3S. Both wells will be drilled on parcels owned by DTG and completed in the Shallow Aquifer. The wells will be drilled using sonic or air rotary drilling techniques.

MW-1S will be drilled from an elevation of approximately 1775 feet above sea level to an approximately depth of 215 feet below ground surface (elevation 1560 feet above sea level). MW-11S will be drilled from an elevation of approximately 1815 feet above sea level to an approximate depth of 280 feet below ground surface (elevation 1535 feet above sea level). These drilling depths will allow full penetration of the Shallow Aquifer including the Vantage Interbed and top of the Grande Ronde Basalt.

Completion elevations will be determined based upon the conditions encountered. Table 3 below assumes the wells will be completed above the Vantage Interbed; however, some well screen may be placed within saturated portions of the Vantage Interbed similar to the construction of other monitoring wells at the Site. Figure 7 summarizes the approximate construction details.

Table 3. Proposed Well Construction Details

Location ID	Elevation (ft)	Total Depth (ft)	Screened Intervals (ft)	Screen Elevations (ft)
MW-1S	1775	215	Approx. 155 - 175	Approx. 1620 – 1600
MW-11S	1815	280	Approx. 220 - 240	Approx. 1595 – 1575

4.2.1.2 Construction

The wells will be constructed with 4-inch diameter schedule 80 PVC. Approximately 20 feet of 0.020-inch slot PVC screen will be utilized for the well screen. Silica sand pack will be placed surrounding the well screen to at least 3 feet above the top of the screen. Unused borehole will be backfilled with bentonite or sand pack depending upon the final depth and screen interval. A bentonite seal will be placed above the sand pack to within 3 feet of the top of the well and an above ground monument will be constructed.

4.2.1.3 Hydraulic Testing

Each of the new wells will be hydraulically tested to evaluate aquifer conditions using pressure transducers, water level meters, and pumps or slugs. Manual measurements and pressure transducers will be utilized in the pumping well and at least two observation wells. Hydraulic testing will be completed after both new wells have been properly constructed. The duration of the tests will be

determined based upon the aquifer conditions observed during well development and pumping equipment capabilities. Flow rates will be measured using a graduated 5-gallon bucket, graduated cylinder, or totalizer meter. Analysis of the results will be completed using the Cooper-Jacob (1946) method for drawdown and recovery. In the event that the Shallow Aquifer has low production at the two locations, slug testing will be utilized and the analysis will follow the Bouwer and Rice (1976) method.

4.2.1.4 Well Survey

Each of the new wells will be professional surveyed by a licensed surveyor to the Site datum (WA State Plane South/ North American Datum 1983, and North American Vertical Datum 1988).

4.2.1.5 Dedicated sample pumps

Dedicated sample pumps will be purchased for the new wells. QED Well Wizard PFAS-free pumps will be utilized in sampling to prevent false positives in accordance with the SAP.

4.2.2 Groundwater Sampling

Groundwater sampling of monitoring wells will be completed approximately quarterly (four sampling events) for target COPCs in 2025. New monitoring wells are anticipated to be drilled prior to June 2025 and will be included in three of the four monitoring events.

The following schedule outlines the WAC 173-340 (MTCA) schedule.

Chapter 173-340 WAC (MTCA Monitoring of the Shallow Aquifer)

MW-2S, MW-3S, MW-4S, MW-5S, MW-6S: March, June, September, December

MW-1S, MW-11S: June, September, December

In addition to the MTCA monitoring, the Site wells are being sampled for routine detection/performance monitoring in accordance with Chapter 173-350 WAC. The following schedule outlines the anticipated Chapter 173-350 WAC monitoring schedule.

Chapter 173-350 WAC (Routine Detection/Performance Monitoring)

MW-2S, MW-3S, MW-4S: March, June, September, December

MW-5S, MW-6S, MW-7D, MW-8D, MW-9D, MW-10D: February, March, April, June, July, September, October, December

MW-1S, MW-11S: June, July, September, October, December

4.2.2.2 MTCA COPCs and Sample Frequency

All the Shallow Aquifer monitoring wells are currently sampled for TPH and WAC 173-350-400 parameters for routine monitoring which include VOCs and nitrate. PFAS will be sampled during the four monitoring events in all Shallow Aquifer wells and the two new wells will have three events in 2025. PFAS has also been added to the SAP for WAC 173-350 Monitoring.

For all other COPCs of dioxins/furans, semi-volatiles and cPAHs, parameters will be sampled at least twice. If after two consecutive events of non-detections, these COPCs will be removed from monitoring. For EPA priority pollutant metals, these will be sampled in March in all Shallow Aquifer wells, and in June for the two new wells and MW-3S. These metals will be removed from monitoring after demonstration that metals are within the natural background values. Natural background will be evaluated by researching water quality publications, Ecology's Environmental Information Management (EIM) Database, as well as interwell comparisons (i.e. MW-2S).

Dioxins/furans were sampled in the third and fourth quarter of 2024 in Shallow Aquifer wells and were not verified to have impacted groundwater as they were detected in the third quarter (Parametrix, 2024g) and non-detected in the fourth quarter (Parametrix 2025b). Semi-volatiles were sampled in the fourth quarter of 2024 in the Shallow Aquifer wells and were not detected (Parametrix 2025b).

For EPA priority pollutant metals, any exceedances of CULs will be verified with subsequent re-testing the following quarter. If metals are not detected, no retesting will be completed. For all other COPCs, parameters will be sampled at least twice.

4.2.2.3 Data Validation

WAC 173-340-700 accounts for the fact that some cleanup standards established in CLARC may be lower than natural background conditions of the practical quantitation limit (PQL). In those instances, CULs are established at either the natural background or the PQL. Reporting limits may only be lowered to the PQL as determined by the laboratory. These will vary on a case-by-case basis and can vary depending upon the laboratory specific quality control for that quarter. The data validation technical memorandum documented for each sampling event will account for flagging of data where the PQL exceeds the CULs identified in CLARC. Results of groundwater investigations for Chapter 173-350 WAC monitoring will be summarized in the RI Report. Data validation staff will be personnel not involved in the sampling event, in charge of tabulation, or leading the reporting.

4.2.2.4 Data Tabulation

Quarterly data for MTCA monitoring will be tabulated and submitted to YHD and Ecology following data validation in the form of a PDF table. Results will be compared to applicable MTCA CULs and exceedances will be highlighted.

4.2.3 Interim Actions

Following the initial sampling event of new wells in June, a meeting will be held to discuss if additional interim actions are necessary (i.e. additional monitoring wells, or other engineering controls). If necessary, an additional IAWP will be developed outlining next steps for the cleanup and/or characterization of the Site.

5. Execution

5.1 Addendums

If Ecology has any comments on this work plan or modifications to the proposed work, these will be addressed in the form of an addendum to this work plan.

5.2 Health and Safety Plan

DTG and Parametrix staff will be utilized in execution of the work. Parametrix has developed a Health and Safety Plan (HASP) for on-going work at the Site. This HASP is routinely updated and follows the DTG Contractor Safety Program. The DTG Safety Program Requirements are attached in Appendix C. The most recent version of the Parametrix HASP for this work is located in the Digital Appendix B at the following address:

https://files.parametrix.com

Username: DTGYakimaLPL

Password: 8T79p466

5.3 Inadvertent Discovery Plan

An inadvertent discovery plan (IDP) has been prepared for work outside of the waste footprint. The IDP is attached in Appendix D. The IDP has contact information for state and tribal agencies in the event that cultural resources are encountered during the course of the project.

5.4 Laboratory Analysis

Laboratory analysis of samples, if necessary, will be completed by Ecology accredited laboratories. The following laboratories have been identified for this work plan execution:

- Friedman and Bruya, Inc.:
  - Air: MA-APH, TO-15
  - Soil: NWTPH-Gx, NWTPH-Dx, EPA Method 8260D, EPA Method 8270E, and EPA Method 6020B
- Fremont Analytical:
  - Air: EPA Method 3C
- Onsite Environmental:
  - Groundwater: NTWPH-Gx, NWPTH-Dx, EPA Method 8260, EPA 8270, Inorganics
- ALS:
  - Groundwater: EPA Method 1633, EPA Method 1613b

All laboratory analysis, data tabulation, and data validation will be completed following the SAPs presented in Appendix B.

5.5 Reporting

A Limited RI summary report will be completed following placement of the four thermistors, soil sampling, the air and LFG sampling, groundwater drilling, and quarterly sampling. This will summarize the results of the RI and include:

- Laboratory data and chain of custody forms
- Field sampling sheets and data
- Data validation summary
- Tabulated data with soil/air results compared to MTCA CULs
- Tabulated data with groundwater results compared to MTCA CULs and Chapter 173-200 WAC criteria.
- Photographs, well logs, potentiometric surface maps, survey results
- Figures detailing the hydrogeology of the LPL and Site and delineated extent of COPCs
- References to Previous Reports

5.6 Notifications

DTG will notify YHD, Ecology, and YRCAA of planned sampling schedules to provide the agencies with the opportunity to observe sampling methodologies and implementation.

5.7 Quality Control

Project QC procedures will follow the Project Management Plan and Quality Management Plan developed by Parametrix. Additional QC procedures are presented in the Sampling and Analysis Plans presented in Appendix B.

6. Proposed Schedule

Based upon the monitoring described above, the following describes the anticipated schedule of the project.

- Thermistor installation and soil, air, and LFG sampling (April 2025)
- MTCA Groundwater Monitoring (March - April 2025)
- New Monitoring Well Drilling (April - May 2025)
- MTCA Groundwater Monitoring with new wells (June, September, December 2025)
- Meeting with Ecology and YHD to discuss groundwater results (July 2025)

If no Interim Actions are needed the following schedule will be completed:

- Draft RI Report (March 2026)
- 90-day Ecology comment period (March 2026 to May 2026)
- Final RI Report (June 2026)

If Interim Actions are needed the schedule will be modified by an addendum.

7. References

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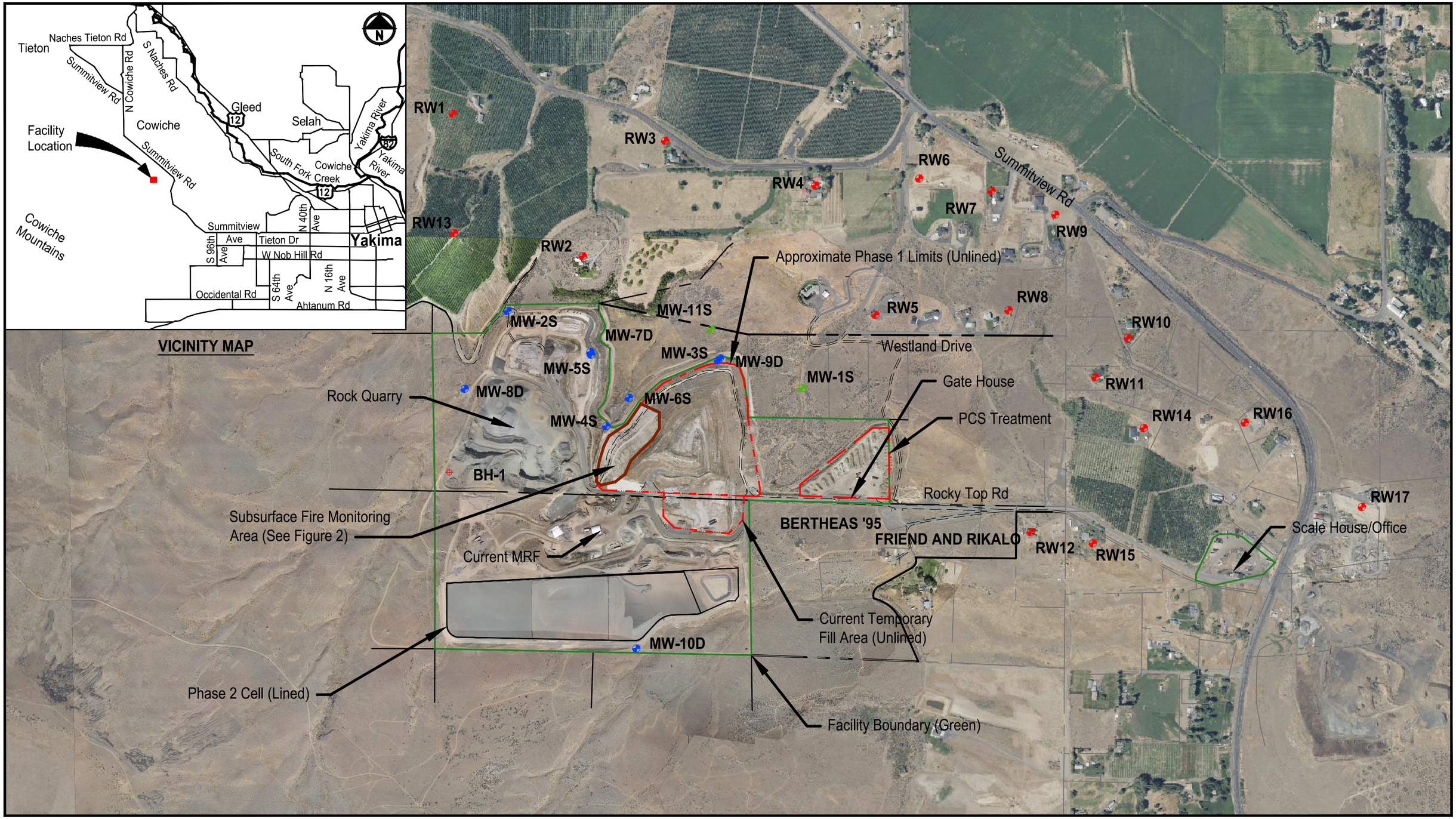
Figures



Parametrix

DATE: April 1, 2025

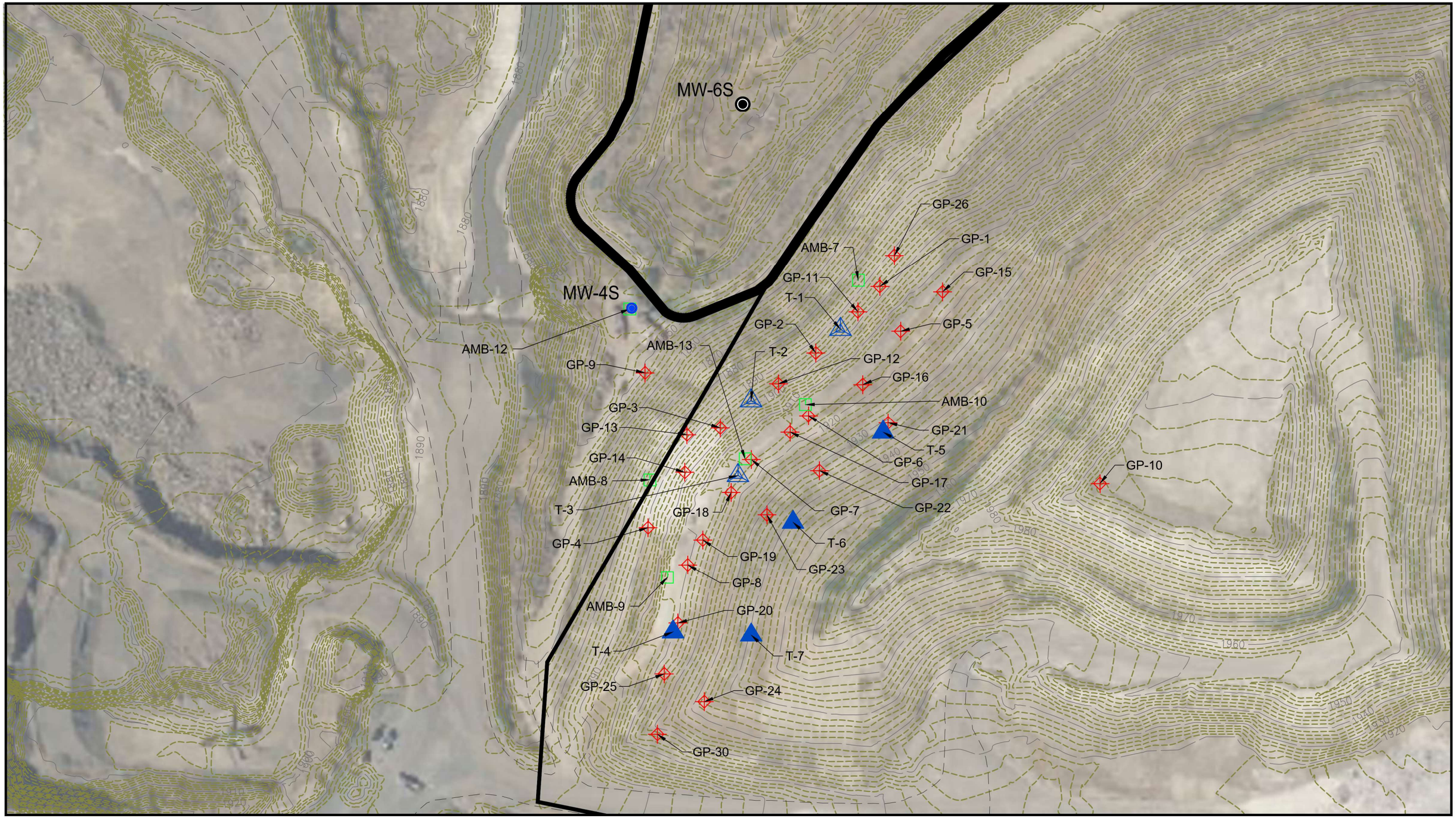
FILE: PS8472008–FIGURE 1 – VICINITY MAP

0 N 750

SCALE: 1"=750'

- Monitoring Well
- Proposed Monitoring Well
- Borehole
- Domestic Well
- Decommissioned Well

Figure 1
Facility Vicinity Map
Rocky Top Environmental Limited Purpose Landfill



Parametrix

DATE: October 10, 2024

FILE: SAP–THERMISTOR&GASPROBE MAP– FIG 2

0 N 100

1 INCH = 100 FT.

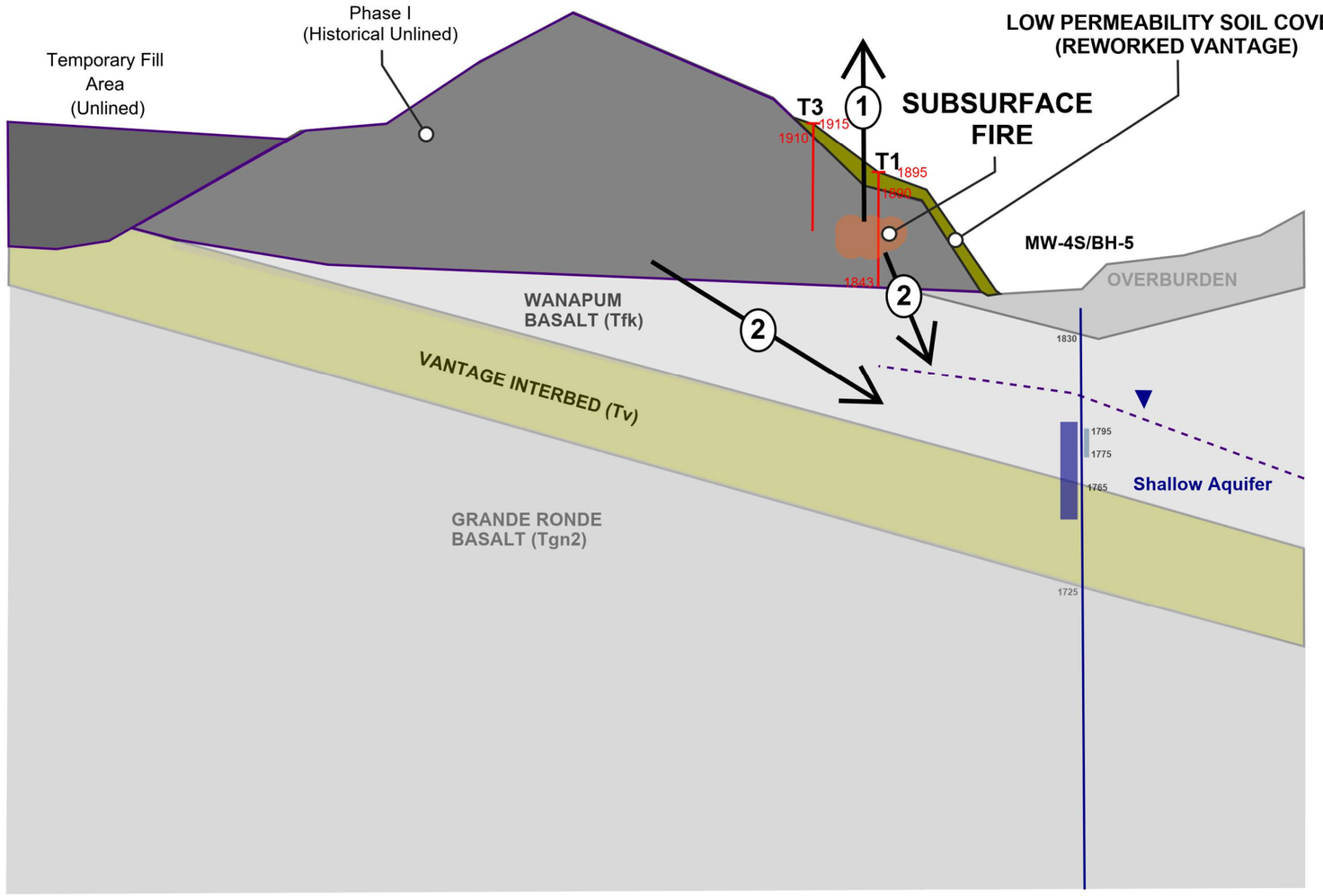
THERMISTOR LOCATION

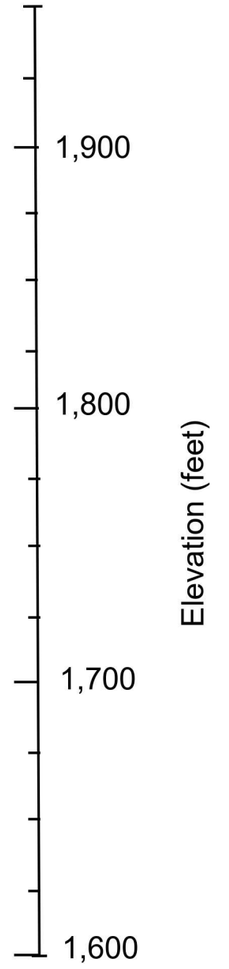
GAS PROBE LOCATION

AMBIENT AIR MONITORING LOCATION

PROPOSED THERMISTOR

Figure 2
Thermistor and Gas Probe Location Map
DTG Rocky Top Environmental Limited Purpose Landfill





0 100
Distance (feet)

Note: Vertical Exaggeration ~2:1

LEGEND

WELL

Water Level / Table

1765 Elevation Interval

Screened Zone — Water Bearing Zone

GAS PROBE / THERMISTOR

1910 Elevation Interval

Potential Migration Pathways

1 - Fire Emissions to Ambient Air

2 - Fire Emissions / Contaminants to Groundwater

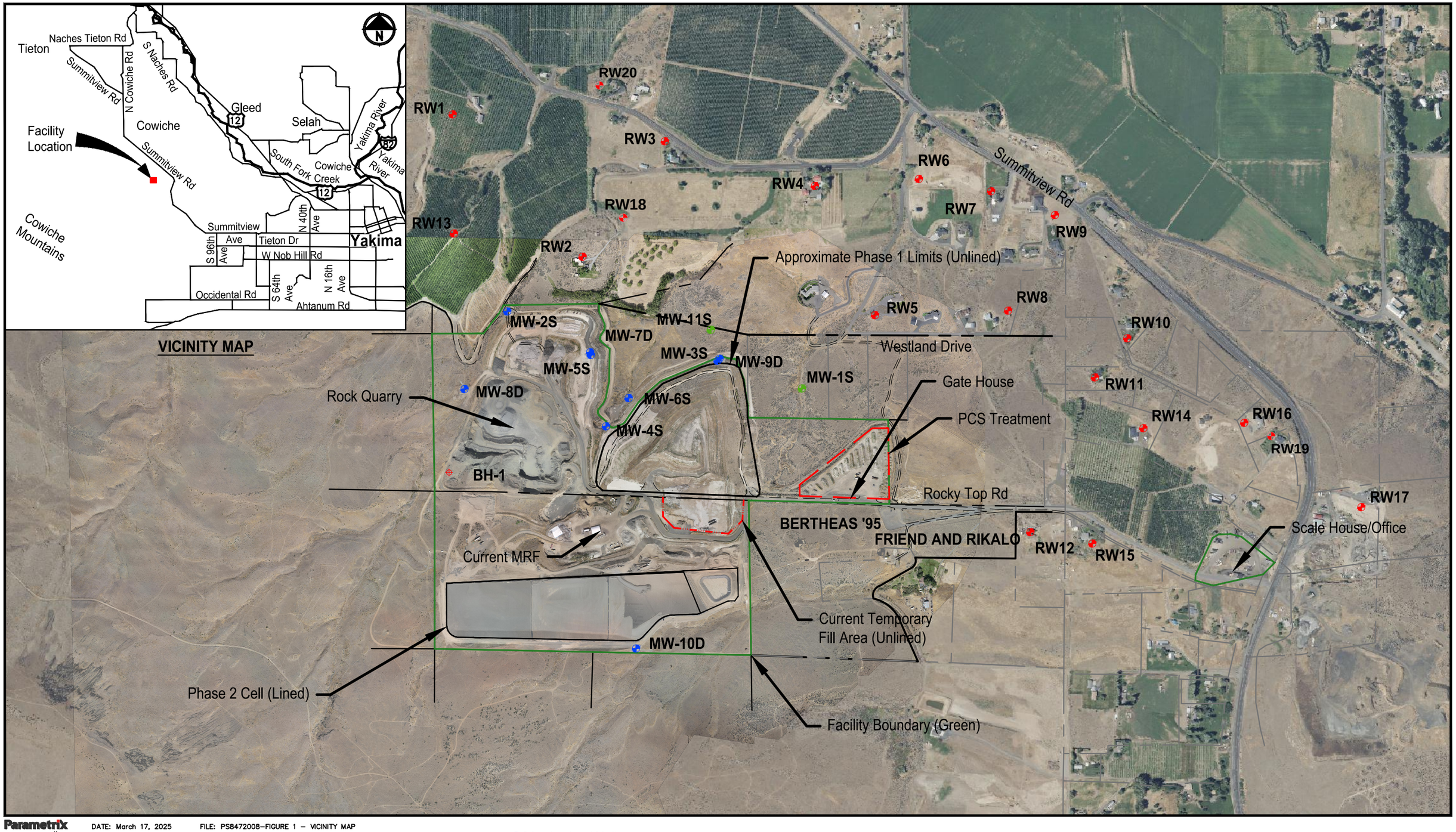
Parametrix

Note: The Draft Conceptual Site Model is modified from Figure 3 (Cross Section A-A') of the Hydrogeologic Work Plan (Parametrix with HWA Geosciences, May 2023)

Revised May 2024

Figure 3
Draft Conceptual Site Model

DTG Rocky Top Environmental Limited Purpose Landfill



Parametrix

DATE: March 17, 2025

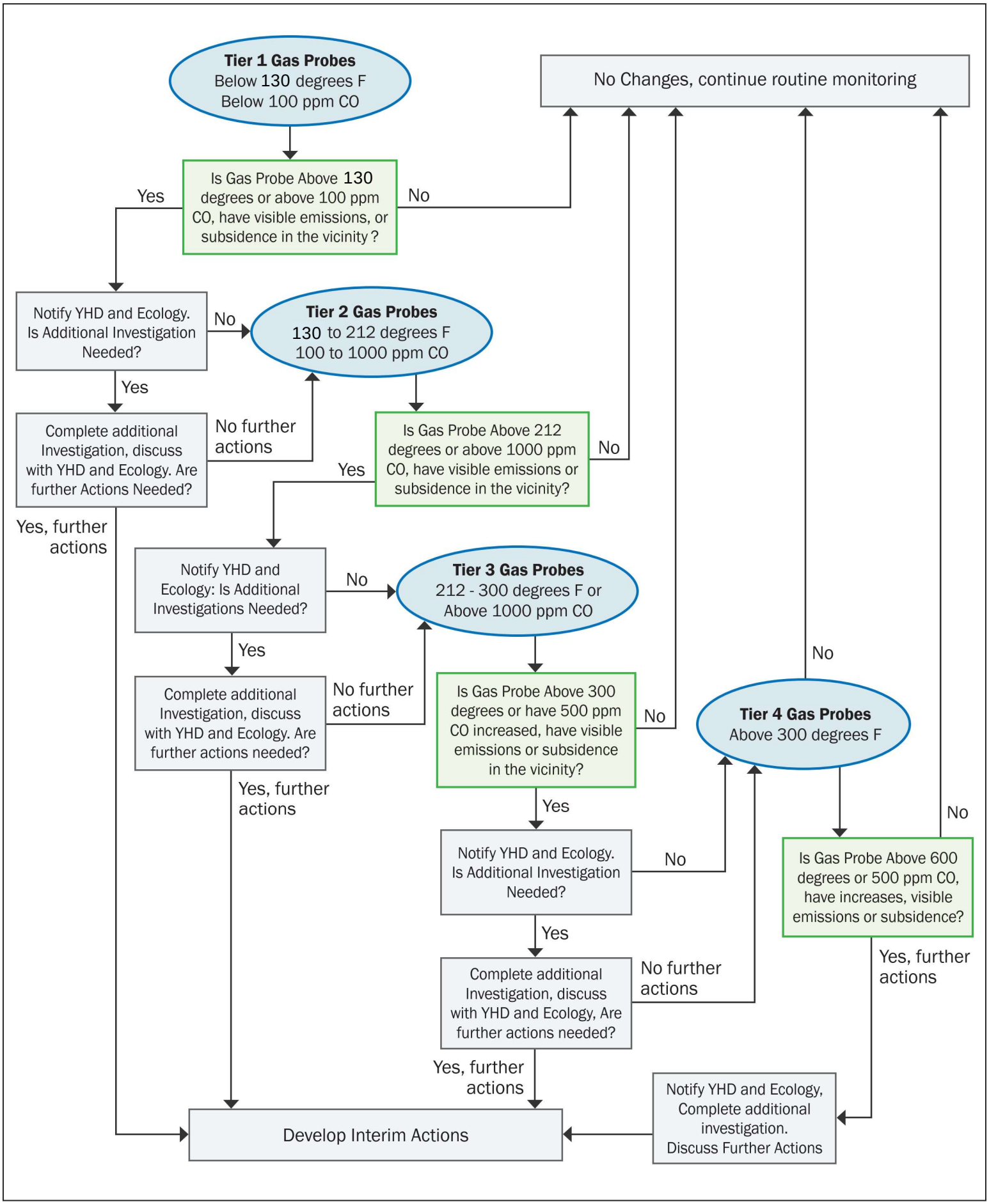
FILE: PS8472008–FIGURE 1 – VICINITY MAP

0 N 750

SCALE: 1"=750'

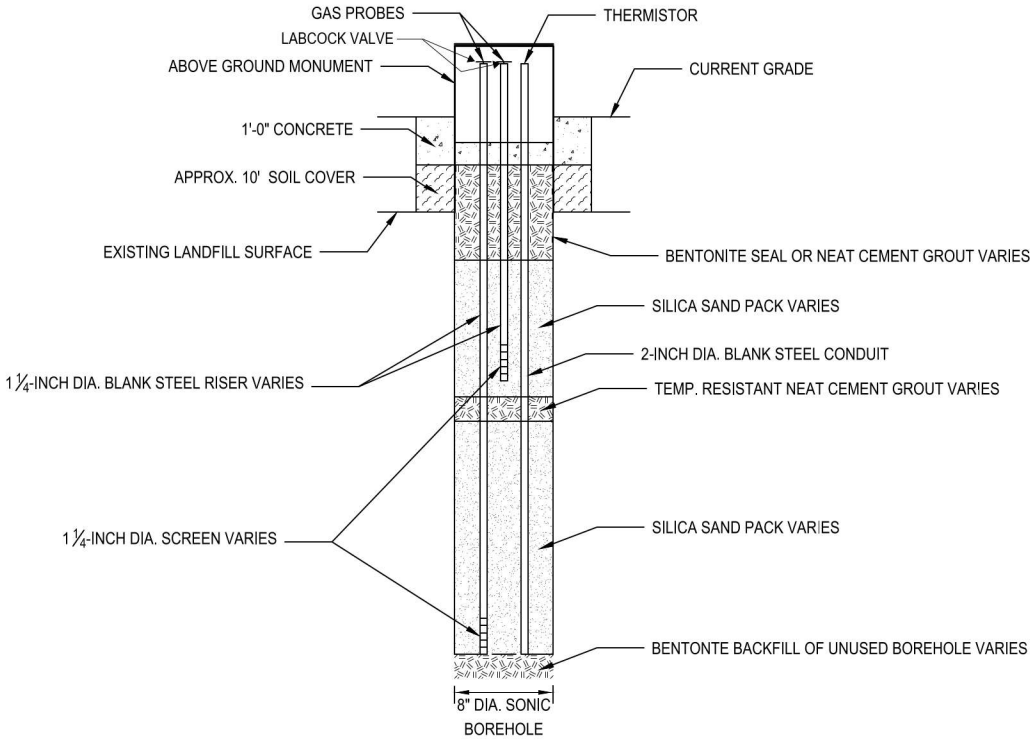
- Monitoring Well
- Proposed Monitoring Well
- Borehole
- Domestic Well
- Decommissioned Well

Figure 4
Well Location Map
Rocky Top Environmental Limited Purpose Landfill



Parametrix

Figure 5
Gas Probe Flow Chart: Triggers and Contingent Actions
DTG Rocky Top Environmental Limited Purpose Landfill



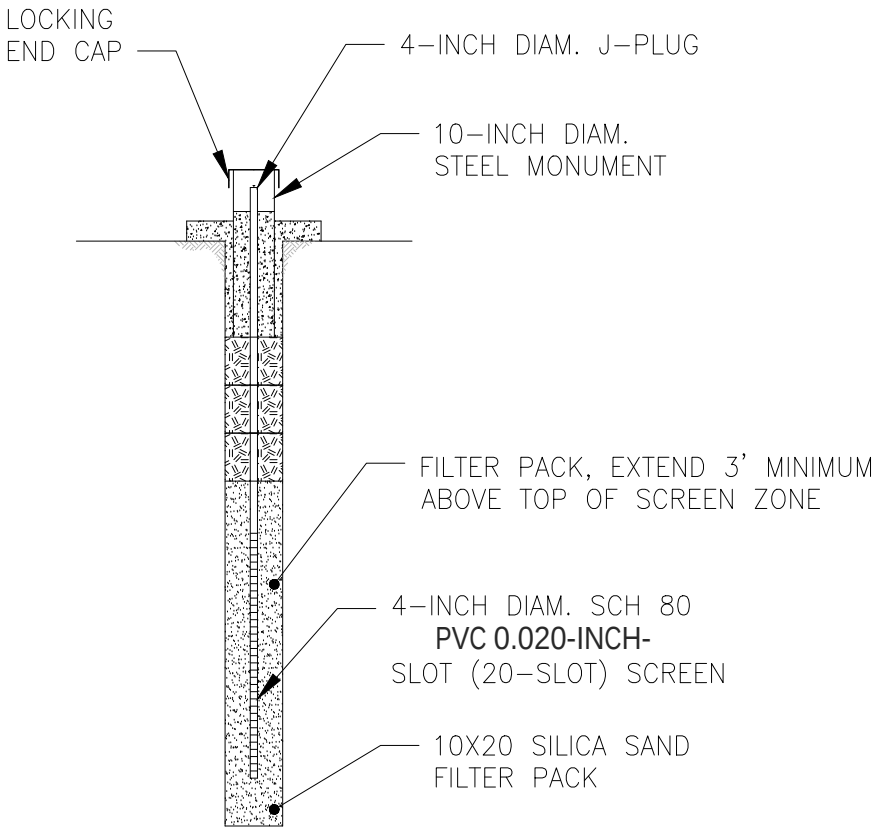
GAS PROBE AND THERMISTOR DETAIL 1

NO SCALE -

PROPOSED CONSTRUCTION				
LOCATION ID	ELEVATION (FT)	TOTAL DEPTH (FT)	SCREENED INTERVALS (FT)	SCREEN ELEVATIONS (FT)
T-4	1910	70	23-35 (a) 55-65 (b)	1885-1875 (a) 1855-1845 (b)
T-5	1930	90	45-55 (a) 75-85 (b)	1885-1875 (a) 1855-1845 (b)
T-6	1940	100	55-65 (a) 85-95 (b)	1885-1875 (a) 1855-1845 (b)
T-7	1940	100	55-65 (a) 85-95 (b)	1885-1875 (a) 1855-1845 (b)

Parametrix DATE: February 28, 2025 FILE: DTG GAS PROBE AND TERMISTOR

Figure 6
Gas Probe and Thermistor Detail
DTG Rocky Top Environmental Limited Purpose Landfill



MONITORING WELL

DETAIL

N.T.S

WELL ID	WELL MATERIAL	TOTAL WELL DEPTH (FT BGS)	APPROXIMATE SCREEN LENGTH (FT)
MW–1S	4–INCH PVC	215'	20'
MW–11S	4–INCH PVC	280'	20'

Parametrix DATE: January 30, 2025 FILE: MONITORING WELL DETAIL

NO SCALE

Figure 7
Monitoring Well Detail
DTG Rocky Top Environmental Limited Purpose Landfill

Appendix A

Digital Appendix

https://files.parametrix.com

Username: DTGYakimaLPL

Password: 8T79p466

Appendix B

Digital Appendix

https://files.parametrix.com

Username: DTGYakimaLPL

Password: 8T79p466

Appendix C

DTG Safety Program Requirements

DOCUMENT UNCONTROLLED WHEN PRINTED

CONTRACTOR SAFETY PROGRAM

Program ID No: DTG CONTR PROG 007

This program is applicable to all DTG Recycle, Inc. facilities.

DOCUMENT CONTROL

Managed by: Sr. EHS Managers	**Responsible Position(s):** EHS Team/Site Supervisors/Operations Leaders	**Version:** 1.0
Approved by: Vita Williams	**Title:** Vice President of EHS	
Approving Signature:	**Date:** 10/17/2023	

TABLE OF CONTENTS

1. INTRODUCTION

It is DTG Recycle policy that the establishment of safe, healthy working conditions and the implementation of safe working practices are essential. Every contractor must conduct her/his activities so that equipment, supplies, and work practices are safe for the contractor, company employees, and for all third parties. The contractor must comply with all applicable safety, fire protection, and health regulations. This program serves to make each contractor aware of this policy before the contractor is permitted to commence work for DTG Recycle.

The contractor must indicate that all items furnished, and all work performed will comply with the applicable requirements of the Occupational Safety and Health Act of 1970 as well as all other state and local standards and regulations (OSHA 29 CFR Part 1910 and WAC 296-800-100).

In furtherance of this, the company's policy, procedures, and requirements are detailed in the rules following this introduction which serve as a reminder of some of the more common hazards and of appropriate accident prevention measures. It is not intended to substitute for regulations.

The contractor:

- Will employ only properly trained persons who are competent in the performance of their trades, callings, and duties. Training documentation must be available to the company, if requested. In addition, contractor employees may need to attend specific DTG Recycle hazard awareness training. If required, the Project Manager will collaborate with the EHS Manager for training dates and times.
- Will comply with the health and safety rules contained herein.
- Is not relieved of any of obligations under statute and law.
- Undertakes to indemnify the company against any liability incurred as a result of any injury to persons, or loss or damage to property arising out of the work.

No permission or consent by or on behalf of the company shall in any way relieve the contractor of his liability for accidents, injury, and/or damage.

This document is issued to each Contractor under the title "Contractors Safety Program". Acknowledgment of receipt and agreement to observe is required prior to the commencement of any work. Before the work is begun, the Contractor Safe Work Certification (**007-A1**) must be signed and returned to DTG Recycle by the contractor.

1.1 Contact Information/Emergency Numbers

Before the Contractor starts work on DTG Recycle property, the Project Manager must contact the contractor, and record the indicated contact information on the Contractor Contact Information & Emergency Numbers (**007-A6**) form. A copy of the Contractor Contact Information & Emergency Numbers (**007-A6**) form must be provided to the contractor. The copy should be posted at the worksite.

Competent Person information must be supplied when contractor work activities will require a Competent Person according to OSHA 29 CFR Part 1910 or WAC 296-800-100 regulations.

1.2 Definitions

Throughout this document the foregoing titles have the following meaning:

Company: DTG Recycle

Contractor: A company, firm, or person which has a Purchase Order or contract to perform work or services for DTG Recycle and any subcontractor(s) employed by the contractor to carry out this work or service.

Project Manager: The representative of DTG Recycle who is responsible for the Contractor working on Company property, including any subcontractor(s) employed by the Contractor to perform the work. He/she usually will give authorization and instruction.

1.3 Pre-Contract Conditions

Prior to the commencement of any contract work, the project manager must discuss with a responsible person representing the Supplier/Contractor, the health, safety, and fire protection rules which are considered necessary by the company.

In addition, the Project Manager must be notified before work commences.

The contractor must ensure that:

a) The site of operations is clearly defined.
b) He/she has been informed of the emergency procedures and first aid facilities available for the contractor employees.
c) He/she has been informed of the hazards to which contractor employees may be exposed while performing their work (Hazard Communication) and made aware of the location of Safety Data Sheets for all company chemicals to which they may be exposed while performing their work.

d) He/she receives information about hazardous or secure areas where entry is not usually permitted unless certain safety instruction is obtained.
e) That all contractor personnel, including all subcontractor personnel, who will work on company property complete a mandatory safety briefing conducted by the Project Manager, with appropriate assistance from the EHS lead, before beginning any work.
f) Contractor employees, including subcontractors, receive any special information concerning company processes which may affect or involve the contract work.
g) The precautions required by these rules are fully observed. The contractor is responsible for inspecting and policing its respective areas for conformance to all applicable environmental, health, and safety practices, including those outlined in this program. No work will be conducted under conditions that are unsanitary or hazardous to health, safety, or the environment.
h) The contractor will act immediately upon reports by the Project Manager where there is a violation of these health or safety rules or any other regulatory issues.
i) All outside inspections (WISHA , Fire Department, Building Department, Department of Ecology, etc.) conducted of the contractor are immediately reported to EHS, either directly or via the Project Manager.
j) The Contractor Safe Work Certification (**007-A1**) is signed.

Failure to adhere to these rules may result in the contractor being removed from the DTG Recycle job site.

2. GENERAL SAFETY RULES

2.1 Visitor Log

All visitors on the company property must sign-in on the designated Visitor Sign-In Log upon entering company property, and sign-out upon leaving company property.

2.2 Accidents and Reporting

The company investigates all accidents that occur on company property. All accidents must be reported to the Project Manager immediately. This includes traffic accidents on company property or damage to property.

Except where agreed upon in advance by the company, the contractor is responsible for the provision of emergency medical treatment, transportation of injured personnel to the contractor's designated medical facility, all necessary first aid supplies for contractor personnel, and for assuring contractor personnel know

how to contact the arranged provider of medical services prior to commencing work.

2.3 Access and Passageways

Nothing shall be done, or omitted to be done, by the contractor or contractor employees that obstructs or renders unsafe any means of access or egress of company employees or vehicles to, from or within the premises.

Permission must be obtained from the Project Manager and Environmental, Health and Safety (EHS) manager for the restriction of movement or the creation of any temporary obstruction. The contractor will supply, position, and maintain all necessary fencing, lighting, signs, and other warning devices to ensure safety at all times.

Care must be taken to avoid the casual trailing of supply lines and cables carrying air, gas, electricity, etc. in or across passageways.

2.4 Tools and Equipment

The contractor must provide her/his own tools, equipment, and supplies for the contracted scope of work and is responsible for:

- The adequacy, safe condition, and use of all structures, scaffolding, equipment, and tools used in the execution of contractor work, whether such equipment and tools are the property of the company or otherwise.
- Use of any company equipment or tools by the contractor is by strict exception under unique circumstances only and requires the express prior permission of the VP of Health & Safety.

All contractor equipment or tools must comply with OSHA and other regulations and all relevant local, state and federal codes.

2.5 Toxic or Hazardous Materials – Use, Storage, & Handling

The Project Manager and EHS Manager must be advised prior to the commencement of any operation involving the use of toxic or hazardous materials. Safety Data Sheets (SDS) must be provided to the EHS Manager before any hazardous materials are brought onto company property. All chemical containers must be properly labeled.

The contractor must observe all applicable hazardous materials regulations (asbestos, flammables, control of release to environment, etc.) and arrange storage to minimize the possibility of any material entering a catch basin, storm

drain or sanitary drain. Improper or potentially damaging releases to air, water or land must be prevented.

The contractor must consult the Project Manager on the storage, handling, and management of such materials.

2.6 Control of Dust, Fumes, and Vapor

No internal combustion or compression ignition engine may be used inside buildings or any confined space unless properly rated for the environment and adequate provision is in place to conduct exhaust gases to the outside air, or the area is adequately ventilated to prevent the accumulation of dangerous gases.

The creation of dust, fumes, or any other impurity which could be offensive or injurious to health or could cause damage to property must be effectively prevented or controlled.

2.7 Fire Precautions and Evacuation

The contractor, subcontractors, and contractor employees must adhere to all OSHA, Fire Department, Building Department, DTG Recycle, Insurance Carrier, and other applicable safety, health, and fire protection regulations.

General information relating to company alarms and evacuation procedures are:

Fire/Evacuation Alarm: Bell, Horn, or Siren Sound

Evacuation Procedure:

- If you hear the Fire/Evacuation alarm, follow the most direct route to the nearest exit door to evacuate the building.
- Comply with the instructions of any company evacuation team members who assist and direct you in the course of evacuating the building.
- After evacuating outside the building, proceed away from the building to the nearest evacuation assembly/rally point area. Identify yourself to the assembly/rally point leader and remain there for further instruction.
- Permission to re-enter the buildings is given only by the responding municipal fire department or company representative.
- BEFORE an emergency situation occurs and before starting work on premises, the contractor must ensure contractor employees know the evacuation route(s) from the building area(s) where they will be working.

To Signal an Emergency:

Activate the nearest fire alarm pull station or telephone the emergency number provided on the Contractor Contact Information & Emergency Numbers (**007-A6**) form.

The Project Manager must consult with and make contractor employees sufficiently aware of the building fire alarm system, means of escape, and evacuation procedures for the area in which they will work. It is the contractor's responsibility to assure his own employees are informed about fire evacuation procedures and to check them off the premises in the event of an emergency requiring evacuation.

The contractor must provide portable fire extinguishers for use by the contractor's trained employees when hot work is performed. Discharge of a fire extinguisher on premises requires a report to be submitted to the EHS Manager.

Fire hydrants are for emergency use only and are not to be used by the contractor except strictly within the scope of contracted work and unless specifically authorized by the EHS Manager

Tarpaulins used for protection of equipment, as security barriers, etc., must be flame retardant and asbestos-free.

Where any work requires interference with or shut down of any fire detection, suppression, protection, or alarm signaling systems of equipment, prior notification and written approval must be secured and notification made via the Project Manager and EHS Manager to notify the insurance company ahead of time.

A company Hot Work Permit must be secured via the Project Manager and a contractor fire watch posted prior to start of any cutting, welding, or spark producing work.

2.8 Machinery in Motion

No work may commence near or above machinery in motion without the permission of the Project Manager and EHS Manager.

The contractor must use appropriate lockout/tagout practices when working with equipment or systems, and the contractor must not remove, displace, or defeat any guard, fencing, or other safety equipment fixed to, or provided at, any machinery or from any place where provided, except within the specific scope of the work contracted. Any removed guard, fencing, or other safety equipment must be replaced by the contractor immediately after the work has been completed. The contractor must ensure that no machinery is set in motion without first replacing all guards and safety devices.

2.9 Disposal of Waste

The contractor is responsible to keep work areas safe, neat, and orderly at all times. The contractor must place waste material in an agreed temporary storage location until final removal from company property. All accumulations of combustible waste must be removed from the building at the end of each working day.

The contractor is required to comply with federal, state, and local regulations governing the management and disposal of waste. Contractor-owned residual hazardous materials stocks, hazardous waste, and empty chemical containers must not be placed into waste containers owned or leased by DTG Recycle.

If toxic or hazardous waste will be generated during contractor work, prior discussion and arrangements with the EHS Manger are required regarding waste management. Disposal on DTG Recycle property will not be permitted.

2.10 Noise Control

The contractor is required to comply with OSHA and local environmental noise control requirements, and it is expected that all contractor machinery and tools are designed and used to prevent the generation of nuisance levels of noise. The contractor is responsible for all personal protective equipment for contractor employees.

2.11 Overhead Work

No work may be performed above company employees or over passageways or roads, including air lifts, until appropriate precautions (i.e. protective scaffolding, personnel evacuation, etc.) are taken to ensure the safety of persons below. Permission from the Project Manager and EHS Manager is required.

2.12 Working at Heights/Fall Protection

All ladders, step ladders, scaffolds, lifts, safety harnesses, or other fall protection used or intended for use must be of sound construction, adequate strength, sufficient length, properly maintained, and used in accordance with the manufacturer's requirements and applicable regulations. Fall protection is required if construction personnel are working within ten feet of unprotected elevations above 6 feet (4 feet for non-construction personnel). It is the responsibility of the contractor to supply all fall protection equipment and training.

The contractor must determine that anchor points to be used are structurally sound and secure, are adequate for the intended use, and meet OSHA

requirements for location and strength. Where any doubt exists, the contractor must report these concerns to the Project Manager.

All temporary structures (scaffolds, etc.) erected by the contractor for the purpose of allowing contractor employees to work at heights must be constructed in accordance with OSHA and other applicable standards.

2.13 Work Near Overhead Cables

No work may be carried out in the vicinity of overhead cabling (including the handling or carrying of long metal objects and movements involving jibs, masts, arms, or other elevated parts) until the Project Manager has been advised and the appropriate precautions have been taken by the contractor to comply with OSHA standards and protect employee safety.

2.14 Protective Clothing and Equipment

Many DTG Recycle work areas require the wearing of personal protective equipment (PPE) when the area is entered. If contractor employees must work in these areas, it is the contractor's responsibility to supply the necessary PPE and/or other safety devices (i.e. bump caps, hearing protection, safety toe shoes, safety glasses, clothing, etc.). PPE such as hearing protection must be used by contractor employees when/where a requirement is posted by DTG Recycle. Minimum PPE requirements at DTG sites include class 2 hi vis vest or jacket, safety toe boots, safety glasses, and a hard hat.

2.15 Building Operations Including Repair, Painting, and Demolition

The contractor is responsible for ensuring that building operations are carried out in accordance with all relevant federal, state and local regulations. Attention must be given to the provision of guardrails and toe-boards on working platforms and workplaces, passageways, etc.

Articles must be properly raised and lowered and must not be thrown or dropped from heights where they are liable to cause injury.

All overhead scaffolds or staging must be left in a safe condition and loose tools removed and secured against falling at the end of each work shift.

2.16 Electrical Installation and Repair (Including Electronics)

Contractor electrical work must be performed only by those having the necessary qualifications, competence, and licensing. All installations and work practices must conform to applicable codes and standards (NFPA, OSHA, NEC, etc.).

The contractor must ensure that its employees and subcontractors are properly trained and equipped to comply with NFPA 70E arc flash protection requirements. Only qualified persons with proper personal protective equipment are permitted to work in an arc flash hazard zone. Prior to allowing contractor employees to work on or near exposed electrical conductors and circuit parts operating at more than 50 volts or 25 Amps, Lockout/Tagout must be implemented. If live parts are not placed in an electrically safe work condition, because de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations, it is energized electrical work and will be performed by written permit only. Energized electrical work must not begin until an energized electrical work permit compliant with NFPA 70E has been completed.

2.17 Supervision

The contractor must ensure that his employees and subcontractors are always supervised. The contractor is responsible for the safety of contractor and subcontractor employees, and the work site.

2.18 Storage

The contractor is not permitted to store equipment or materials on company property without written permission from the Project Manager. At no time must access or egress of personnel or vehicles be obstructed due to storage.

2.19 Warning Signs

All warning signs must conform to industry standards and/or applicable codes or regulation (i.e. ANSI Z53.1, OSHA, etc.).

2.20 Sanitation

The company's sanitary facilities are available for use by the contractor employees only as agreed to previously by the Project Manager. The contractor must provide and properly supervise portable work site sanitary facilities when required.

2.21 Traffic Control and Speed Restrictions

Vehicles brought onto company premises must be in safe working order and properly insured. The speed of vehicles driving on company property must be consistent with safety and not exceed any limit specified on signs displayed around the property. Traffic control devices, signals, and signs must be observed at all times.

2.22 Smoking Restrictions

Smoking is prohibited inside all company buildings. Smoking is permitted only within designated outdoor smoking areas. The Project Manager is responsible for identifying smoking areas available to contractor employees.

2.23 Temporary Heating Devices (Salamanders)

Temporary heating devices may be used only with the approval of the EHS Manager. All devices must be Underwriters Laboratory (UL) approved and in good condition. They must be guarded from traffic and at least ten feet from any ignitable material or structure.

3. SPECIAL PRECAUTIONS

3.1 Entry into Confined Spaces

When work is required inside any vessel, tank, chamber, pipe, manhole, catch basin, flue, or other confined space, the contractor must not allow any contractor employees to enter such a space without a contractor-issued Confined Space Entry Permit.

- The contractor will notify the Project Manager and Environmental, Health, and Safety Manager of the proposed confined space entry and present a copy of the contractor's written confined space entry program.
- The EHS Manager will provide the contractor with a list of site-specific confined spaces when the contractor provides notification that a confined space entry will take place during the work activity.
- The EHS Manager will provide the contractor with an acknowledgment yielding confined space entry program control to the contractor for the specific date and entry task. The contractor assumes responsibility for the entire confined space entry task including all OSHA requirements such as supervision, communication, air monitoring, entry supervisor, entrant, attendant, standby personnel, personal protective equipment, training, rescue operations and actual issuance and management of a compliant Confined Space Entry Permit. The contractor is responsible for supplying all necessary equipment.
- The Contractor will notify the EHS Manager when the confined space entry has concluded and of any problems that should be noted for any future entrants.

The contractor may only issue a Confined Space Entry Permit when the space concerned is safe to enter and all requirements of OSHA Regulations are met.

3.2 Excavations

The contractor is not permitted to carry out excavation work without consulting the Project Manager who will give permission to dig after identifying any site-specific precautions such as the position of known underground structures or conditions such as tanks, buried electric cables, drains, gas, sprinkler and water mains, etc. The contractor is required to conduct a thorough work site inspection, review, and contact Dig Safe. The contractor is responsible for any damage done to underground structures or services, and for providing both emergency and permanent repairs to restore any damage to a safe and functional operating condition.

The contractor must obtain local permits. Excavations or openings must be securely fenced, covered over (i.e. steel plates), or otherwise protected, including the use of warning lights, where appropriate, during hours of darkness or poor visibility.

The contractor is responsible for the proper shoring of excavations and trenching in accordance with OSHA and other applicable regulations. Prior to any dewatering, the contractor must discuss planned water and silt controls with the Project Manager and EHS Manager.

All soil fill brought on the property must be clean, with appropriate certification and test data.

Prior permission from the Project Manager is required before removal of excavated soils from company property.

3.3 Pressure Vessels

Pressure vessels used by the contractor such as compressed air receivers and vessels used for spraying paint and similar materials must have been tested and bear current state inspection certification, where applicable under state law.

3.4 Cranes, Hoists, Lifting Appliances, Tackle, and Vehicles

The contractor must not use the company's equipment including cranes, hoists, lifting appliances, tackle, ladders, tools, and vehicles, unless specifically agreed under the terms of the contract with permission from the VP of Health & Safety. When access to such company equipment is desired by the contractor, the contractor must submit a request to the Project Manager. Upon company review of the contractor request, the company may communicate permission via the Project Manager based on contractual agreement, need, and competency of operating

personnel. The contractor is responsible for the equipment's fitness for the specific purpose.

No lifting chain, rope or lifting tackle, crane or lifting machinery may be used on company property unless inspected and maintained in accordance with applicable regulations, and certified where required.

It is forbidden to load a crane beyond the safe working load marked upon it. In the case of a jib crane in which the angle of jib can be altered, the safe working load is that which corresponds with the angle shown on the automatic indicator or table of safe working loads attached to the crane.

It is forbidden for any load to be suspended on any lifting or hoisting equipment unless an operator is at the controls. No lifting over company personnel or visitors is permitted. All slinging and lifting operations must be supervised and signaled by trained personnel. Setting up safe zones and drop zones is the responsibility of the contractor

3.5 Use of Electrically Driven Portable Tools

All contractor portable electrically driven tools or equipment intended for use on company property must be inspected by a qualified contractor representative. The contractor is responsible to supply and use ground fault circuit interrupter (GFCI) extension cords or GFCI portable outlets as required by OSHA.

Portable tools must be connected to the electrical supply by means of a 3-wire cable and 3 pin plug and socket (double insulated tools excepted). Where a 3-phase supply is to be used, 4-wire cable and 4 pin plugs and sockets with ground connections must be used. All such tools must be protected by ground-fault circuit interrupters.

The use of extension cords is not encouraged, and they must not be run across floors or through closing doors or windows and not trailed so as to present a hazard. All electrical equipment and associated wiring must meet NEC and OSHA regulations.

Portable electric lamps must be suitably secured and protected. Lamps used in wet environments must be restricted to voltages not exceeding 25 volts or must be protected by ground-fault circuit interrupters.

3.6 Powder Actuated Tools

The use of powder actuated (percussion) tools must be approved by the Project Manager.

These tools must be used only by competent persons and must be under lock and key when not in use. Extreme care must be taken to ensure that the tools are correctly charged and working surfaces are suitable for the use of powder actuated devices.

3.7 Compressed Gas Cylinders

The storage or use of compressed gas cylinders must be approved by the Project Manager and EHS Manager. Cylinders must be appropriately secured at all times. The indoor use of propane, or other flammable gases, is not encouraged where practical alternatives are available.

3.8 Petroleum, Cellulose, and other Combustible or Flammable Liquids and Mixtures

The contractor must consult the Project Manager before use of combustible or flammable fluids such as petroleum-based paints or adhesives, cellulose-based paints and thinners, combustible, or flammable cleaners, etc., inside a building.

Flammable fluids must not be stored inside buildings except as permitted by regulations, subject to review by the EHS Manager, and stored in an approved cabinet or storage room designed for the purpose.

Work carried out with combustible or flammable fluids is not permitted without strict observation of “no smoking” rules and strict control of spark-producing equipment and open flames. The contractor must provide the means of ensuring adequate ventilation to prevent potentially dangerous concentrations of flammable or other hazardous atmospheres and is responsible for displaying appropriate warning notices such as "No Smoking" and "No Open Flame".

3.9 Explosive and Radioactive Materials

Explosive and radioactive materials are not to be brought onto company property without prior written notice from the contractor and written permission from the Project Manager and EHS Manager. All appropriate licenses and permits are the responsibility of the supplier/contractor. Explosives, radiation sources, and radiation producing equipment will be secured under lock and key when not in use.

3.10 Fork Truck and Other Powered Industrial Trucks

The contractor's powered industrial trucks must not be used on company property without the permission of the Project Manager. Trucks must only be driven by the contractor’s competent, licensed personnel, and must comply with all applicable regulations.

3.11 Hot Work

The contractor must inform the Project Manager of intended hot work including flame cutting, welding, soldering and other spark producing work tasks (i.e. grinding). A written Hot Work Permit must be issued by a Project Manager **before** work is started. The contractor is responsible for posting a fire watch. The contractor is responsible for compliance with any local ordinance that may require a municipal hot work permit.

3.12 Lasers

Where contractor work involves the use of a laser device on DTG Recycle property, the contractor must inform the EHS Manager prior to its use and must ensure the equipment is constructed and operated according to the safety requirements of ANSI Z136.1 and all applicable codes and regulations.

3.13 Safety Data Sheets

If the contractor intends to bring any chemical materials onto company property, a Safety Data Sheet for each such material, and a list by chemical name and quantity for each such material, must be provided to the Project Manager and the EHS Manager at least twenty-four hours before the material arrives. Chemical materials include any gases, liquids, powders, or solids, such as acids, adhesives, alkalis, bases, caustics, cleaners, coatings, coolants, corrosives, degreasers, encapsulants, epoxies, explosives, finishes, flammables, fluxes, inks, lubricants, oils, paints, reactive agents, sealants, solders, solvents, strippers, thinners, toners, varnishes, waxes, and any similar materials.

3.14 Asbestos-Containing Building Material

The contractor will meet with the Project Manager to review all work that may involve the removal, abatement, or disturbance of asbestos-containing building materials. The EHS Manager must be notified prior to beginning such work and any asbestos-containing wastes which are generated will be managed for disposal subject to the review of the EHS Manager.

The contractor is prohibited from disturbing asbestos-containing material unless specifically required by the scope of work and only if properly qualified to perform the work. Should accidental disturbance of asbestos-containing material occur, the contractor must immediately suspend operations and notify the Project Manager and EHS Manager.

For contracts requiring the removal of asbestos-containing material, the contractor is responsible for securing all permits and meeting applicable state, federal and local environmental and safety laws.

3.15 Lead-Containing Building Material

Should accidental disturbance of lead-containing material occur, the contractor must immediately suspend operations and notify the EHS Manager and Project Manager. The contractor is prohibited from disturbing lead containing material unless specifically required by the scope of work.

3.16 Lockout/Tagout – Hazardous Energy Control

The Project Manager and Maintenance Manager must be notified when contractor lockout/tagout is to be used. The contractor must conform to OSHA lockout/tagout requirements. Contractors must provide their own lockout/tagout materials, i.e. padlocks, warning tags, hasps, valve covers, etc. Adequate signs and/or labels will be displayed or attached, as necessary, to notify company personnel of a contractor lockout/tagout condition. The contractor is responsible for monitoring subcontractors.

Whenever the contractor is to be engaged in lockout/tagout activities, the Project Manager and the contractor must inform each other of their respective lockout/tagout procedures. The Project Manager must ensure that company employees understand and comply with the restrictions and prohibitions of the contractor's energy control program.

3.17 State and Local Requirements

In some state and local jurisdictions, additional requirements may apply to contractors who will be working on DTG Recycle premises. As required, the following documents will be presented to the Project Manager and approved by the EHS Manager prior to commencement of work.

- A copy of the Federal/State 300A Injury Summary Log for the previous three years.
- Written disclosure of any violations received from federal or state agencies such as OSHA, WA L&I, OR-OSHA, DOT (as applicable), etc., in the previous 3 years.
- If the contractor will be providing construction or maintenance services, the contractor may need to provide a list of employee names and contact information including: Project Manager, Safety Officer, and other project personnel.
- A list of subcontractor names.

- Applicable training certificates or current training records that pertain to specific hazards of the contracted work. Records must include the first and last name of trained employees, title of the training, and the date that the training was performed. The Project Manager and EHS Manager will determine the specific training records that need to be provided.

4. ROLES AND RESPONSIBILITIES

Contractor

- Adhere to this program and DTG Recycle's EHS Policy.
- Responsible for following their own safety and health program and complying with all federal, state, and local laws, in addition to any site-specific requirements established by this program or DTG Recycle.
- Provide a safety representative or designate an individual responsible for addressing worksite EHS concerns.
- Depending on the nature of the work and potential hazards, and upon request, submit a plan detailing the scope of work to EHS for review.
- Ensure all employees have the proper knowledge and training (e.g., OSHA 10hour or 30-hour, the general safety requirements for the project, as well as any task-specific training required) and access to required personal protective equipment.
- Proof of training must be available upon request.
- Ensure subcontractors adhere to all safety and health requirements.
- Report all incidents to DTG Recycle's Project Managers and OSHA, if applicable.

Project Manager

- Adhere to the requirements of this program.
- Notify EHS of all incidents, injuries, near misses, unsafe act/conditions.
- Coordinate shutdowns, lockout/tagout, hot work permits, confined space entries, fire protection or detection system impairments, or any other tasks requiring authorization, permitting, support, or intervention.
- Notify and collaborate with EHS to address environmental, health, and safety concerns (e.g., potential asbestos, lead-based paint, working at heights, working in confined spaces).
- Notify contractors of known hazardous conditions and provide site-specific information (e.g., confined space assessments, asbestos testing results, rooftop anchor certifications).

EHS Manager

- Adhere to the requirements of this program.
- Review and update this program, as necessary.
- Provide guidance and technical assistance as needed, including assistance in reviewing and accepting contractor safety and work plans.

5. MONITORING, EVALUATION AND REVIEW

The DTG Recycle Contractor Safety Program will be monitored, evaluated, and reviewed periodically and through implementation and use. Adjustments and improvements will be determined as the need for improvement is identified.

6. DEFINITON AND ABBREVIATIONS

Contractor – Contractors, subcontractors, service providers and vendors providing singular or multiple services to DTG Recycle. It includes, but is not limited to contractors, subcontractors, resident contractors, moving, cleaning, repair & maintenance, equipment installation and service, hazardous waste contractors, technology service and installation, inspection services and other outsourced activities.

7. ASSOCIATED DOCUMENTS

007-A1 Contractor Safe Work Certification
007-A2 Contractor Acknowledgment
007-A3 Scope of Work
007-A4 Contractor Safety Training Matrix
007-A5 General Safety Rules for Contract Personnel
007-A6 Contractor Contact Information & Emergency Numbers
007-A7 Contractor Health & Safety Inspection
007-A8 Contractor Hazard Assessment

8. REFERENCES

REVISION RECORD

Date	Version	Revision Description
10/17/2023	1.0	Initial

Appendix D

Inadvertent Discovery Plan

INADVERTENT DISCOVERY PLAN

PLAN AND PROCEDURES FOR THE DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6000 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with a speech disability may call TTY at 877-833-6341.

Site Name(s): DTG-Anderson Landfill Location: 41 Rocky Top Rd, Yakima

Project Lead/Organization: Luke LeMond/Ecology County: Yakima

If this Inadvertent Discovery Plan (IDP) is for multiple (batched) projects, ensure the location information covers all project areas.

1. INTRODUCTION

The IDP outlines procedures to perform in the event of a discovery of archaeological materials or human remains, in accordance with applicable state and federal laws. An IDP is required, as part of Agency Terms and Conditions for all grants and loans, for any project that creates disturbance above or below the ground. An IDP is not a substitute for a formal cultural resource review (Executive 21-02 or Section 106).

Once completed, **the IDP should always be kept at the project site** during all project activities. All staff, contractors, and volunteers should be familiar with its contents and know where to find it.

2. CULTURAL RESOURCE DISCOVERIES

A cultural resource discovery could be prehistoric or historic. Examples include (see images for further examples):

- An accumulation of shell, burned rocks, or other food related materials.
- Bones, intact or in small pieces.
- An area of charcoal or very dark stained soil with artifacts.
- Stone tools or waste flakes (for example, an arrowhead or stone chips).
- Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings.
- Agricultural or logging materials that appear older than 50 years. These could include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, and many other items.
- Clusters of tin cans or bottles, or other debris that appear older than 50 years.
- Old munitions casings. ***Always assume these are live and never touch or move.***
- Buried railroad tracks, decking, foundations, or other industrial materials.
- Remnants of homesteading. These could include bricks, nails, household items, toys, food containers, and other items associated with homes or farming sites.

The above list does not cover every possible cultural resource. When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

If any employee, contractor, or subcontractor believes that they have uncovered cultural resources or human remains at any point in the project, take the following steps to ***Stop-Protect-Notify***. **If you suspect that the discovery includes human remains, also follow Sections 5 and 6.**

STEP A: Stop Work.

All work must stop immediately in the vicinity of the discovery.

STEP B: Protect the Discovery.

Leave the discovery and the surrounding area untouched and create a clear, identifiable, and wide boundary (30 feet or larger) with temporary fencing, flagging, stakes, or other clear markings. Provide protection and ensure integrity of the discovery until cleared by the Department of Archaeological and Historical Preservation (DAHP) or a licensed, professional archaeologist.

Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site. Do not allow work to resume within the boundary until the requirements of this IDP are met.

STEP C: Notify Project Archaeologist (if applicable).

If the project has an archaeologist, notify that person. If there is a monitoring plan in place, the archaeologist will follow the outlined procedure.

STEP D: Notify Project and Washington Department of Ecology (Ecology) contacts.

Project Lead Contacts

Primary Contact		Alternate Contact	
Name:	Ian Sutton	Name:	Mike Brady
Organization:	DTG	Organization:	Parametrix
Phone:	509-421-4807	Phone:	206-604-8570
Email:	isutton@dtgrecycle.com	Email:	mbrady@parametrix.com

Ecology Contacts (completed by Ecology Project Manager)

Ecology Project Manager		Alternate or Cultural Resource Contact	
Name:	Luke LeMond	Name:	Sydney Hanson
Program:	SWM	Program:	TCP
Phone:	509-379-3961	Phone:	564-999-1054
Email:	llem461@ecy.wa.gov	Email:	syha461@ecy.wa.gov

STEP E: Ecology will notify DAHP.

Once notified, the Ecology Cultural Resource Contact or the Ecology Project Manager will contact DAHP to report and confirm the discovery. To avoid delay, the Project Lead/Organization will contact DAHP if they are not able to reach Ecology.

DAHP will provide the steps to assist with identification. DAHP, Ecology, and Tribal representatives may coordinate a site visit following any necessary safety protocols. DAHP may also inform the Project Lead/Organization and Ecology of additional steps to further protect the site.

Do not continue work until DAHP has issued an approval for work to proceed in the area of, or near, the discovery.

DAHP Contacts:

Name: Rob Whitlam, PhD
Title: State Archaeologist
Cell: 360-890-2615
Email: Rob.Whitlam@dahp.wa.gov
Main Office: 360-586-3065

Human Remains/Bones:

Name: Guy Tasa, PhD
Title: State Anthropologist
Cell: 360-790-1633 (24/7)
Email: Guy.Tasa@dahp.wa.gov

4. TRIBAL CONTACTS

In the event cultural resources are discovered, the following tribes will be contacted. See Section 10 for Additional Resources.

Tribe:	Yakama Nation	Tribe:	
Name:	Casey Barney	Name:	
Title:	Program Manager Cultrual Resources	Title:	
Phone:	509-865-5121	Phone:	
Email:	casey_barney@yakama.com	Email:	
Tribe:		Tribe:	
Name:		Name:	
Title:		Title:	
Phone:		Phone:	
Email:		Email:	

Please provide contact information for additional tribes within your project area, if needed, in Section 11.

5. FURTHER CONTACTS (if applicable)

If the discovery is confirmed by DAHP as a cultural or archaeological resource, or as human remains, and there is a partnering federal or state agency, Ecology or the Project Lead/Organization will ensure the partnering agency is immediately notified.

Federal Agency:		State Agency:	
Agency:		Agency:	
Name:		Name:	
Title:		Title:	
Phone:		Phone:	
Email:		Email:	

6. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Follow the steps under ***Stop-Protect-Notify.*** For specific instructions on how to handle a human remains discovery, see: *RCW 68.50.645: Skeletal human remains—Duty to notify—Ground disturbing activities—Coroner determination—Definitions*.

Suggestion: If you are unsure whether the discovery is human bone or not, contact Guy Tasa with DAHP, for identification and next steps. Do not pick up the discovery.

Guy Tasa, PhD State Physical Anthropologist
Guy.Tasa@dahp.wa.gov
(360) 790-1633 (Cell/Office)

For discoveries that are confirmed or suspected human remains, follow these steps:

1. Notify law enforcement and the Medical Examiner/Coroner using the contacts below. **Do not call 911** unless it is the only number available to you.

   Enter contact information below (required):
   - Local Medical Examiner or Coroner name and phone: Jim Curtice 509-574-1610
   - Local Law Enforcement main name and phone: Robert Udell 509-574-2500
   - Local Non-Emergency phone number (911 if without a non-emergency number): 509-574-2500
2. The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human or if the discovery site constitutes a crime scene and will notify DAHP.
3. **DO NOT speak with the media, allow photography or disturbance of the remains, or release any information about the discovery on social media.**
4. If the remains are determined to be non-forensic, Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed by others or disturbed.

Further activities:

- Per RCW 27.44.055, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains. Ecology staff will participate in consultation. Organizations may also participate in consultation.
- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.
- When consultation and documentation activities are complete, work in the discovery area may resume as described in Section 8.

If the project occurs on federal lands (such as a national forest or park or a military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) apply and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Lead/Organization will comply with applicable state and federal laws, and the above protocol.

7. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological resources discovered during construction are protected by state law RCW 27.53 and assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

The Project Lead/Organization must ensure that proper documentation and field assessment are made of all discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Ecology, affected tribes, and the archaeologist.

The archaeologist will record all prehistoric and historic cultural material discovered during project construction on a standard DAHP archaeological site or isolate inventory form. They will photograph site overviews, features, and artifacts and prepare stratigraphic profiles and soil/sediment descriptions for minimal subsurface exposures. They will document discovery locations on scaled site plans and site location maps.

Cultural features, horizons, and artifacts detected in buried sediments may require the archaeologist to conduct further evaluation using hand-dug test units. They will excavate units in a controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. They may also use a test unit or trench excavation to determine if an intact occupation surface is present. They will only use test units when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. They will conduct excavations using standard archaeological techniques to precisely document the location of cultural deposits, artifacts, and features.

The archaeologist will record spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock for each unit on a standard form. They will complete test excavation unit level forms, which will include plan maps for each excavation level and artifact counts and material types, number, and vertical provenience (depth below

surface and stratum association where applicable) for all recovered artifacts. They will draw a stratigraphic profile for at least one wall of each test excavation unit.

The archaeologist will screen sediments excavated for purposes of cultural resources investigation through 1/8-inch mesh, unless soil conditions warrant 1/4-inch mesh.

The archaeologist will analyze, catalogue, and temporarily curate all prehistoric and historic artifacts collected from the surface and from probes and excavation units. The ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Ecology, and the affected tribe(s).

Within 90 days of concluding fieldwork, the archaeologist will provide a technical report describing any and all monitoring and resultant archaeological excavations to the Project Lead/Organization, who will forward the report to Ecology, the federal agencies (if any), DAHP, and the affected tribe(s) for review and comment.

If assessment activities expose human remains (burials, isolated teeth, or bones), the archaeologist and Project Lead/Organization will follow the process described in **Section 6**.

8. PROCEEDING WITH WORK

The Project Lead/Organization shall work with the archaeologist, DAHP, and affected tribe(s) to determine the appropriate discovery boundary and where work can continue.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Lead/Organization, DAHP, any affected tribe(s), Ecology, and the federal agencies (if any) determine that compliance with state and federal laws is complete.

9. ORGANIZATION RESPONSIBILITY

The Project Lead/Organization is responsible for ensuring:

- This IDP has complete and accurate information.
- This IDP is immediately available to all field staff at the sites and available by request to any party.
- This IDP is implemented to address any discovery at the site.
- That all field staff, contractors, and volunteers are instructed on how to implement this IDP.

10. ADDITIONAL RESOURCES

Informative Video

Ecology recommends that all project staff, contractors, and volunteers view this informative video explaining the value of IDP protocol and what to do in the event of a discovery. The target audience is anyone working on the project who could unexpectedly find cultural resources or human remains while excavating or digging. The video is also posted on DAHP's inadvertent discovery language website.

Ecology's IDP Video (https://www.youtube.com/watch?v=ioX-4cXfbDY)

Informational Resources

DAHP (https://dahp.wa.gov)

Washington State Archeology (DAHP 2003)
(https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

Association of Washington Archaeologists (https://www.archaeologyinwashington.com)

Potentially Interested Tribes

Interactive Map of Tribes by Area
(https://dahp.wa.gov/archaeology/tribal-consultation-information)

WSDOT Tribal Contact Website
(https://wsdot.wa.gov/tribal/TribalContacts.htm)

11. ADDITIONAL INFORMATION

Please add any additional contact information or other information needed within this IDP.

Implement the IDP if you see…

Chipped stone artifacts.

Examples are:

- Glass-like material.
- Angular material.
- “Unusual” material or shape for the area.
- Regularity of flaking.
- Variability of size.

Stone artifacts from Oregon.

Stone artifacts from Washington.

Biface-knife, scraper, or pre-form found in NE Washington. Thought to be a well knapped object of great antiquity. Courtesy of Methow Salmon Rec. Foundation.

Implement the IDP if you see…

Ground stone artifacts.

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.

Above: Fishing Weight - credit CRITFC Treaty Fishing Rights website.

Artifacts from unknown locations (left and right images).

Implement the IDP if you see…

Bone or shell artifacts, tools, or beads.

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a “shoehorn”.
- Variability of size.
- Beads from shell (dentalium) or tusk.

Upper Left:*Bone Awls from Oregon.*

Upper Center: *Bone Wedge from California.*

Upper Right: *Plateau dentalium choker and bracelet, from Nez Perce National Historical Park, 19th century, made using Antalis pretiosa shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, Public Domain.*

Above: *Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.*

Implement the IDP if you see…

Culturally modified trees, fiber, or wood artifacts.

Examples are:

- Trees with bark stripped or peeled, carvings, axe cuts, de-limbing, wood removal, and other human modifications.
- Fiber or wood artifacts in a wet environment.
- Variability of size, function, and complexity.

Left and Below: *Culturally modified tree and an old carving on an aspen (Courtesy of DAHP).*

Right, Top to Bottom: *Artifacts from Mud Bay, Olympia: Toy war club, two strand cedar rope, wet basketry*.

Implement the IDP if you see…

Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them. Examples are:

- "Unusual" accumulations of rock (especially fire-cracked rock).
- "Unusual" shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a "layer cake" appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the "unusual" or out of place (for example, rock piles in areas with otherwise few rocks).

Shell Midden pocket in modern fill discovered in sewer trench.

Underground oven. Courtesy of DAHP.

Shell midden with fire cracked rock.

Hearth excavated near Hamilton, WA.

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.

Left: Top to Bottom: *Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Right: *Collections of historic artifacts discovered during excavations in eastern Washington cities.*

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Railway tokens, coins, and buttons.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware.

Main Image: *Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.*

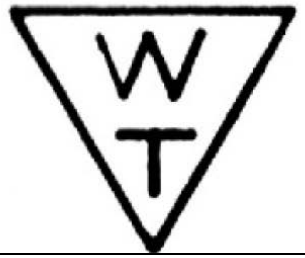
Right, from Top to Bottom: *Coins, token, spectacles and Montgomery Ward pitchfork toy discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Implement the IDP if you see…

- Old munition casings – if you see ammunition of any type – ***always assume they are live and never touch or move!***
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.

Far Left: .303 British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!
Left: Maker's mark on bottom of old bottle.

Right: *Old beer can found in Oregon. ACME was owned by Olympia Brewery. Courtesy of Heather Simmons.*



Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).

Can opening dates, courtesy of W.M. Schroeder.

Implement the IDP if you see…

You see historic foundations or buried structures.

Examples are:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.

Counter Clockwise, Left to Right: *Historic structure 45KI924, in WSDOT right of way for SR99 tunnel. Remnants of Smith Cove shantytown (45-KI-1200) discovered during Ecology CSO excavation, City of Spokane historic trolley tracks uncovered during stormwater project, intact foundation of historic home that survived the Great Ellensburg Fire of July 4, 1889, uncovered beneath parking lot in Ellensburg.*

Implement the IDP if you see...

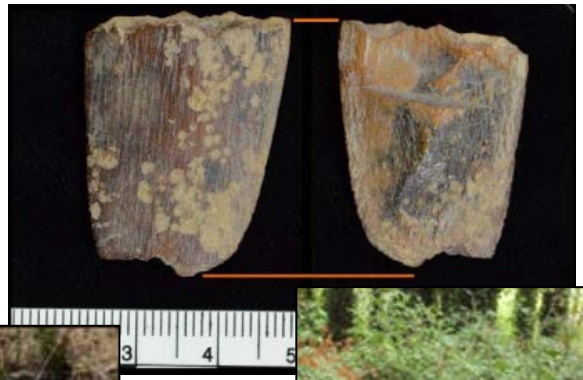
Potential human remains.

Examples are:

- Grave headstones that appear to be older than 50 years.
- Bones or bone tools--intact or in small pieces. It can be difficult to differentiate animal from human so they must be identified by an expert.
- These are all examples of animal bones and are not human.

Center: *Bone wedge tool, courtesy of Smith Cove Shantytown excavation (45KI1200).*

Other images (Top Right, Bottom Left, and Bottom) Center: Courtesy of DAHP.



Directly Above: This is a real discovery at an Ecology sewer project site.

What would you do if you found these items at a site? Who would be the first person you would call?

Hint: *Read the plan!*