APPENDIX I

AECOM

Hartland Landfill Groundwater, Surface Water and Leachate Monitoring Program Annual Report

(April 2025 to March 2026)

Capital Regional District

Project number: 60740388

October 22, 2026

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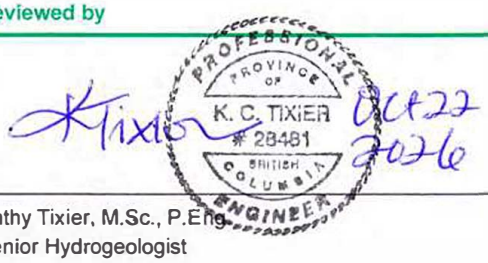
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Executive Summary

This report summarizes the results of the 2025/26 water and leachate monitoring program at Hartland Landfill. Groundwater, surface water, leachate, and domestic well water quality was collected to evaluate leachate containment, water quality trends, and assess regulatory compliance. The following sections summarize our analysis and interpretation of historical and new data collected in 2025/26.

Leachate Flow and Containment

In 2025/26, leachate levels and discharge at Hartland were consistent with historical interpretations. The leachate mound in Phase 1 persisted, but leachate levels continued to decrease slowly. The most notable change in leachate discharge patterns in Phase 1 occurred at the North Purge Wells, where leachate discharge volumes continued to decrease. Groundwater levels at P52 have been increasing for five years, indicating diminishing pump performance of the purge wells in that area. The pump at adjacent purge well P7 appears to be able to maintain leachate levels within the purge wells at the target elevation, so the well should be tested to confirm it is performing adequately, effecting a drawdown cone as designed, and rehabilitated as part of ongoing maintenance activities if it is not doing so. Ultimately, groundwater quality at wells installed north of the North Purge Wells confirmed that no leachate had migrated north. Similarly, the South Purge Wells performed adequately, and no leachate impacts were observed downgradient.

Leachate elevations observed at monitoring stations within Phase 2 were comparable to historical values, indicating that the refuse was largely unsaturated. Groundwater levels at critical monitoring locations north of the Phase 2 Basin were consistently higher than leachate levels in Phase 2, implying that leachate levels were stable and the hydraulic trap was maintained.

Groundwater Flow

In 2025/26, groundwater flow patterns at Hartland were generally consistent with historical interpretations, with most of the groundwater in the bedrock underlying the landfill captured by the Phase 2 leachate collection system. Groundwater levels along the North Ridge continued to be lower and show greater variability than historical values. We attributed these patterns to quarrying in the Toutle Valley and lowering of the valley floor. No substantive changes to hydraulic gradients have been observed in the Cell 4 area since a liner was installed in early 2025, but hydraulic gradients in this area should continue to be monitored closely in 2026/27 to assess if the liner is impacting the groundwater flow regime. Despite the observed changes to the potentiometric surface in this area, the Phase 2 hydraulic trap was maintained in 2025/26.

Groundwater Quality

The primary sources of groundwater quality degradation at the site include leachate, road salt, aggregate runoff, and the use of a magnesium lignosulphonate dust suppressant. The parameters used to identify impacts from various landfill activities include electrical conductivity, ammonia, chloride, sulphate, and nitrate concentrations. Professional judgement is used to differentiate between different contaminant sources and assess the nature and severity of any impacts. Groundwater quality may be judged to be impacted relative to background without exceeding regulatory criteria. Groundwater quality data were screened against BC Contaminated Sites Regulation (CSR) Schedule 3.2 Generic Numerical Water Standards for Drinking Water Use (DW) and Aquatic Life Water Use (AW).

The 2025/26 groundwater quality data was interpreted with consideration for the following:

Background Conditions:

- Background conductivity is typically below 500 µS/cm but has been observed in some background wells (e.g., GW-78-1-1) at concentrations up to 1,000 µS/cm immediately after well installation or following prolonged dry periods.
- Background ammonia and nitrate concentrations are typically below 0.1 mg/L but occasionally reach 0.5 mg/L downgradient of wetland areas.
- Background chloride concentrations are typically below 20 mg/L.
- Background sulphate concentrations are typically below 50 mg/L but are regularly observed at concentrations up to 100 mg/L in wells screened within weathered bedrock and near geological alteration zones.

Impact Criteria:

- Leachate: Groundwater is considered impacted by leachate when conductivity is above 1,000 µS/cm, ammonia concentrations are above 1 mg/L, and chloride concentrations are above 20 mg/L. Peak concentrations in leachate-impacted wells are typically observed during the dry summer and early fall months, when there is limited dilution by precipitation.
- Aggregate Runoff: Groundwater is considered impacted by aggregate (e.g., production, stockpiling or site construction works) when nitrate concentrations are greater than background levels (~0.1 mg/L) and leachate indicator concentrations are low. In recent years, elevated nitrate concentrations have been observed in the absence of elevated sulphate concentrations. However, elevated sulphate concentrations (>75 mg/L) may occur over a greater period and potentially after nitrate concentrations have subsided. Peak nitrate and sulphate concentrations are typically observed during the first sampling event following the onset of wet weather in the fall months following aggregate stockpiling or blasting activities.
- Road Salt: Groundwater is considered impacted by road salt when chloride concentration is elevated above background levels (i.e., 20 mg/L), and the molar ratio of chloride to sodium is around 1.0 or greater. Cl/Na molar ratios in road salt are generally 1:1, assuming 100% compositional purity. In groundwater, Cl/Na ratios may be greater than 1.0 due to differential ion mobility, cation exchange, and inputs from natural or anthropogenic sources. Road salt-impacted sites must also be located downgradient (or downstream) of surfaces where road salt is known to be applied. Conductivity and chloride concentrations typically exhibit peaks following cold weather periods when de-icing salt is often applied to roadways.
- Magnesium lignosulphonate: Magnesium lignosulphonate has been used as a dust suppressant at the site and likely has an impact on groundwater quality similar to aggregate runoff because it contains nitrogen and sulphur. Additionally, it exhibits elevated iron and manganese concentrations. Laboratory testing indicated that the dust suppressant exhibited elevated conductivity (520 µS/cm), ammonia (51 mg/L), and total sulphur concentrations (83.7 mg/L) in aqueous phase (**Appendix G**). Between July and September 2025, approximately 7,000 litres of magnesium lignosulphonate was applied at the site.

Analysis of the groundwater quality data indicated:

- Leachate Containment: Leachate-impacted groundwater was contained within the landfill property boundary.
- Aggregate Runoff Impacts: Aggregate runoff impacts (e.g., elevated conductivity, sulphate, and nitrate concentrations) are a pervasive issue at the site, especially north of the landfill. Impacts were most severe at compliance monitoring locations 31, 111, 112, and in many areas of the site immediately downgradient of stockpiles. Elevated nitrate and/or sulphate concentrations were also observed at the south end of the site, at compliance monitoring locations 73 and 71. In the northwest area of the landfill, dilute aggregate runoff impacts were identified, but concentrations were low at the property boundary and low to non-detectable in the receiving environment.
- Magnesium Lignosulphonate Impacts: Magnesium lignosulphonate is used as a dust suppressant at the site, and impacts have been observed at monitoring locations immediately north of the Phase 2 basin (e.g., 37, 104). Impacts continued to be observed in this area in 2025/26 and were also observed to the west at GW-92-1-1.
- Elevated Boron Concentrations: Boron concentrations exceeding the CSR DW standard have been previously observed at monitoring location 20 for several years. A previous investigation by AECOM determined that groundwater at monitoring locations 20, 52, and in the North and South Purge wells exhibits a distinct geochemical signature characterized by highly elevated silicon and boron concentrations, potentially caused by mobilization of boron and silicon from the Lower Lagoon clay berm, or leachate reacting with bedrock below the Phase 1 landfill. In 2025/26, boron concentrations at monitoring location 20 remained elevated but met all applicable CSR standards. Boron concentrations should continue to be monitored at this location.
- Elevated Antimony Concentrations at GW-112-1-1: Antimony concentrations have exceeded the CSR DW standard on three of the four sampling events that have occurred since compliance monitoring well GW-112-1-1 was installed in 2024. It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the well was installed and have been steadily decreasing since. Antimony concentrations should continue to be monitored at this location for continued improvement.
- Elevated Chloride Concentrations: Elevated chloride concentrations observed in the south area of the site likely reflect road salt impacts, as indicated by Cl/Na ratios around 0.5 to 2.0, and low to non-detectable ammonia concentrations.

The highest chloride concentrations were observed at deep well GW-60-1-1 in the south area of the landfill. Chloride concentrations at this location have sharply increased since 2024 and exceeded the CSR DW standard throughout 2025/26. The source is currently unknown but does not appear to be related to deep bypass of the leachate collection system due to low ammonia and metal concentrations. There may be a preferential pathway delivering impacted groundwater to this location from elsewhere on site where road salt is heavily applied or stored. Chloride concentrations should continue to be monitored at this location, and the source should be investigated if concentrations continue to increase.

Domestic Well Water Quality

The domestic groundwater quality met applicable regulatory criteria at all locations, except aesthetic objectives for temperature and operational guidelines for pH. The data indicated that the wells were not impacted by leachate, and the water quality was consistent with background conditions as observed since the monitoring program began.

Surface Water Quality

The primary sources of surface water quality degradation at the site include landfill leachate, road salting, aggregate runoff, and the use of a magnesium lignosulphonate dust suppressant. The parameters used to identify impacts from various landfill activities include electrical conductivity, ammonia, chloride, sulphate, and nitrate concentrations. Professional judgement is used to differentiate between different contaminant sources and assess the nature and severity of any impacts. Surface water quality may be judged to be impacted relative to background without exceeding regulatory criteria. Surface water quality data were compared to the BC Approved and Working Water Quality Guidelines (BCWQG) Long-Term/Chronic (LTC) and Short-Term/Acute (STA) Guidelines for the protection of Freshwater Aquatic Wildlife (AW).

The 2025/26 surface water quality data was interpreted with consideration for the following:

Background Conditions:

- Background conductivity in surface water is typically below 200 µS/cm but has been observed at higher levels at some locations during periods of low flow, or after periods of prolonged dry weather.
- Background ammonia/nitrate concentrations are typically below 0.01 mg/L but occasionally exceed 0.1 mg/L in wetland areas.
- Background chloride concentrations are typically below 10 mg/L.
- Background sulphate concentrations are typically below 10 mg/L but often increase in the downstream direction as streams receive groundwater discharge.

Impact Criteria:

- Leachate: Surface water is considered impacted by leachate when electrical conductivity exceeds 500 µS/cm, ammonia concentrations exceed 0.5 mg/L and chloride concentrations exceed 20 mg/L. Peak concentrations of these parameters are typically observed during the dry summer and early fall months, when flows are low and there is limited dilution by precipitation.
- Aggregate Runoff: Surface water is considered impacted by aggregate (e.g., production, stockpiling or site construction works) when nitrate concentrations are greater than background levels (~0.1 mg/L) and leachate indicator concentrations are low. In recent years, elevated nitrate concentrations have been observed in the absence of elevated sulphate concentrations. However, elevated sulphate concentrations may occur over a greater period and potentially after nitrate concentrations have subsided. Peak nitrate and sulphate concentrations are typically observed during the first sampling event following the onset of wet weather in the fall months following aggregate stockpiling or blasting activities.
- Road Salt: Surface water is considered impacted by road salt when chloride concentration is elevated above background levels (i.e., 20 mg/L), and the molar ratio of chloride to sodium is around 1.0 or greater. Cl/Na molar ratios in road salt are generally 1:1, assuming 100% compositional purity. Cl/Na ratios may be greater than 1.0 due to differential ion mobility and inputs from natural or anthropogenic sources. Road salt-impacted sites must also be located downgradient (or downstream) of surfaces where road salt is known to be applied. Conductivity and chloride concentrations typically exhibit peaks following cold weather periods when de-icing salt is often applied to roadways.
- Magnesium Lignosulphonate: Magnesium lignosulphonate has been used as a dust suppressant at the site and likely has an impact on groundwater quality similar to aggregate runoff because it contains nitrogen and sulphur. Laboratory

testing indicated that the dust suppressant exhibited elevated conductivity (520 µS/cm), ammonia (51 mg/L), and total sulphur concentrations (83.7 mg/L) in aqueous phase (**Appendix G**). Between July and September 2025, approximately 7,000 litres of magnesium lignosulphonate was applied at the site.

Analysis of the surface water quality data indicated:

- Elevated Trace Metal Concentrations: Several trace metal BCWQG LTC exceedances (e.g., aluminium, iron, dissolved copper) were reported that likely reflect turbid and/or low-flow conditions at the time of sampling. Relatively high trace metal concentrations were often observed downstream of the landfill, suggesting that elevated trace metal concentrations occur via background gas-water-rock interactions.
- Background Surface Water Quality: Surface water quality at background stations SW-S-52 and SW-N-66 exhibited low (i.e., <114 µS/cm) conductivity, and low to non-detectable aggregate runoff and leachate indicator concentrations. Copper concentrations at SW-N-66 (0.52 µg/L) exceeded the BCWQG LTC, and may reflect naturally unfavourable geochemical conditions (e.g., low hardness or DOC concentrations), which are used in the copper BLM model to calculate the copper guidelines.
- Copper Concentration Exceedances: Copper concentration BCWQG LTC exceedances persisted in many areas of the site. However, LTC copper concentration exceedances were reported at a background location and in other locations in the receiving environment, including SW-N-15 and all three surface water monitoring locations at the confluence of Durrance Creek and Tod Creek. This suggests that elevated copper concentrations are typical of the local environment.
- Aggregate Runoff Impacts: Surface water across the landfill, at most compliance monitoring points, and in several areas of the offsite receiving environment continued to exhibit aggregate runoff impacts. Nitrate concentrations decreased in some areas (e.g., downstream of the Northwest Stockpile), but higher nitrate concentrations were observed north of Phase 1 (e.g., location 19, and compliance monitoring location 16). Despite the decrease in nitrate concentrations observed downstream of the Northwest Stockpile, higher sulphate concentrations and conductivity were observed, which likely reflect sulphide oxidation in the stockpile. The temporal patterns observed among nitrate and sulphate concentrations likely reflect differing reaction rates of ammonium nitrate/fuel oil explosives (ANFO) leaching and sulphide oxidation in the stockpile.

  Aggregate runoff impacts were observed north of the site, in Durrance and Tod creeks. The impacts in Durrance Creek likely begin where the narrow stream passing through SW-N-42S1 meets Durrance Creek.
- Elevated Chloride Concentrations: Some monitoring locations south of the landfill were likely impacted by road salt, as indicated by moderate to elevated chloride concentrations coinciding with Cl/Na molar ratios around 1.0.

Leachate Quality

The leachate quality at monitoring points within the site and at the Hartland Valve Chamber was typical for the site. The Cell 3 Pipe Outlet exhibited the most concentrated leachate.

Landfill Compliance with the Operating Certificate and Waste Discharge Authorization

The 2025/26 groundwater, surface water, and leachate quality data were used to assess compliance with the Amended Operational Certificate and Waste Discharge Authorization and are discussed individually below. Ultimately, the landfill did not meet all applicable regulatory criteria pertaining to groundwater, surface water, and leachate quality.

Leachate

Leachate quality met the Waste Discharge Authorization sewer use criteria on most sampling events, except for two chemical oxygen demand (COD) exceedances (July and August 2025) and one total suspended solids (TSS) exceedance (August 2025) that were reported at the Hartland Valve Chamber.

Groundwater

Thirty-eight compliance monitoring wells have been established in 20 locations at Hartland Landfill. The groundwater quality data were screened against the CSR AW and DW standards to evaluate landfill compliance with the Operational Certificate. Groundwater quality exceedances reported at compliance monitoring locations are summarized in **Table ES-1**.

Table ES-1. Groundwater Quality Exceedances at Compliance Monitoring Locations

Station	General Parameters	Nutrients	Metals	Comments
GW-112-1-1	None	None	Antimony (2[b])	• Elevated antimony concentrations have been periodically observed at this location since it was installed in 2024. It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the well was installed and have been steadily decreasing since.

Note:

( )[a] = Number of samples that exceed CSR AW standard for specified parameter

( )[b] = Number of samples that exceed CSR DW standard for specified parameter

Surface Water

Seven surface water monitoring locations have been identified as compliance monitoring points surrounding the landfill. These stations are concentrated along the southern and northern property boundaries, downgradient of areas that have the potential to be impacted by leachate or aggregate runoff. The surface water quality data were screened against BCWQG LTC and STA AW guidelines to assess compliance with the landfill's Operational Certificate. Surface water quality BCWQG STA exceedances reported at compliance monitoring locations are summarized in **Table ES-2**.

Table ES-2. Surface Water Quality Exceedances at Compliance Monitoring Locations

Station	General Parameters	Nutrients	Metals	Comments
SW-N-16	None	None	Dissolved Copper (1)	• Trace metal concentration exceedances may be related to flow conditions during sampling, or may reflect naturally unfavourable geochemical conditions (e.g., low hardness or DOC concentrations). It is unlikely that the elevated copper concentrations were influenced by landfill activities. Elevated copper concentrations are typical of background conditions. • pH was marginally below the STA guideline at SW-N-56 and could be due to instrument error as pH is typically circumneutral at this location.
SW-N-56	pH (1)	None	None	

Note:

( ) = Number of samples that exceed the BCWQG STA criteria for specified parameter

QA/QC and Data Reliability

The quality analysis of the 2025/26 groundwater, surface water, and leachate quality data indicated that replicate samples were collected at a frequency of approximately 13.9% (60/432 samples), exceeding the targeted replicate sampling rate of 10%. Furthermore, we determined that the sampling field techniques and laboratory analyses produced reliable results, but some replicate samples (e.g., GW-21-1-1 and GW-39-1-1) exhibited a relatively high number of relative percent difference (RPD) exceedances and should be interpreted with caution.

Recommendations

Based on the findings of this report, our recommendations were summarized as follows:

Table ES-3. Summary of Recommendations

	Leachate Collection System	Status
1	Closely monitor water levels and leachate quality in the North Purge Wells to verify the effectiveness of the leachate collection system. Water levels in well 52-3-0-P52, adjacent to purge well 52-4-0-P7 have slowly increased since 2021/22 and may indicate diminished drawdown and leachate collection in this area. A specific capacity test should be conducted on each North Purge Well to assess well performance. All procedures should follow the Standard Operating Procedure (SOP) – North Purge Well Drawdown Cone Verification (AECOM 2016), with interpretation of results by a qualified professional. The results should be compared to historical assessments to determine the need for well rehabilitation.	Ongoing

2	Closely monitor water levels and leachate quality in the South Purge Wells to verify the effectiveness of the leachate collection system and identify opportunities for improvements. These wells have not been rehabilitated since they were installed in 2001 and have likely accumulated sediment, diminishing their performance and/or requiring excessive maintenance. Pumping elevations in the South Purge Wells should be maintained at elevations below 140 m asl. Pumping elevations in P1 should be maintained near the top of the screened interval around 146 m asl, and about 1.5 m above the pump intake.	Ongoing
3	Groundwater monitoring wells in proximity to the Phase 2 Basin and Northwest Sedimentation Pond should be monitored closely to confirm that the hydraulic trap leachate collection system is effectively containing leachate north of Phase 2. Quarrying in the Toutle Valley resulted in greater connection between the groundwater flow system on the west side of the Highland Fault and the Phase 2 hydraulic trap, resulting in lowering of the surrounding groundwater levels.	Ongoing
4	Groundwater elevations around the Cell 4 liner should continue to be monitored closely in 2026/27 to evaluate whether the liner has an impact on the hydraulic trap, particularly beneath the North Ridge. The volume of groundwater discharge and groundwater quality in the Cell 4 underdrains should continue to be monitored monthly.	New
	Aggregate Runoff Impacts	
5	Minimize the spatial extent and volume of aggregate stockpiles outside of the leachate collection system. Where this is not feasible, stockpiles should be covered with low permeability temporary tarps to minimize sulphate, ammonia, nitrate, and TSS impacts on downgradient groundwater and surface water quality. Direct runoff from aggregate stockpiles away from natural watercourses as it is known to exceed BCWQ guidelines for sulphate and some nitrogenous compounds. This approach proved to be effective for mitigation of historical aggregate runoff impacts at the Hartland North Pad. Aggregate run-off mitigation and control is currently underway by the CRD, and additional measures are being evaluated/planned as part of an overall aggregate management plan.	Ongoing
	Groundwater Monitoring Program	
6	Elevated and non-compliant antimony concentrations were observed at compliance monitoring location GW-112-1-1. Concentrations have gradually decreased since the well was installed in 2024 but should continue to be monitored at this location. The source of the antimony should be investigated if concentrations increase.	New
7	Chloride concentrations at deep well GW-60-1-1 have rapidly increased since 2024 and are elevated compared to adjacent monitoring locations, including intermediate and shallow wells GW-60-1-2 and GW-60-1-3. The source is currently unknown but does not appear to be related to deep bypass of the leachate collection system due to low ammonia and metal concentrations. There may be a preferential pathway delivering impacted groundwater to this location from elsewhere on site where road salt is heavily applied or stored. Chloride concentrations should continue to be monitored at this location, and the source should be investigated if concentrations continue to increase.	New
8	Advance a network of boreholes into the bedrock west of Phase 2 to characterize and monitor groundwater levels and quality. This will also allow for establishment of a long-term groundwater monitoring network west and upslope of Phase 2 to support continued evaluations of hydraulic trap performance and monitor groundwater quality. This is required to monitor the lowering of the water table surrounding Phase 2 following completion of the Phase 2 Quarry. Water levels have dropped significantly over the past several years, and monitoring of the hydraulic trap is critical to confirming landfill performance.	Ongoing
9	Elevated boron concentrations continue to be observed at compliance monitoring location GW-20-1-1, though an improvement was noted in 2025/26. Although it is presently thought to originate from the Lower Lagoon clay berm or the bedrock at the north and south end of the Phase 1 landfill, boron concentrations should continue to be monitored at this location. The source of boron should be determined if concentrations increase.	New
10	Resurvey all of the groundwater wells located within the refuse footprint. These wells are known to settle over time and should be periodically surveyed (once every five years) to ensure the resultant groundwater elevations are accurate.	Ongoing
11	Leachate mounding should be investigated in Phase 1 and 2 because it has been over five years since this was assessed. It would be useful to construct a new cross section through the Phase 2 landfill to investigate and monitor this issue over time. If required, subsurface data can be obtained by drilling through the refuse to the base of the landfill and investigating leachate levels in new wells. Wells may need to periodically be replaced because the wells tend to shift and become damaged as the refuse settles over time.	Ongoing
12	As required by the Amended Operational Certificate, the results of the annual monitoring program should continue to be reviewed and interpreted by a Qualified Professional experienced in assessing the impacts of landfill leachate at large municipal landfills similar to Hartland.	Ongoing
	Surface Water Monitoring	
13	Investigate options to identify and establish an additional background surface water quality monitoring station. If a suitable location can be identified, a new background station should be added to supplement the existing background chemistry profile and ensure a sufficient number of representative background surface water quality samples are collected each year. Existing background station SW-S-52 should also be assessed to determine whether it can be relocated further upstream.	New
14	Investigate water quality impacts associated with the application of magnesium lignosulphonate. Understanding the volume of magnesium lignosulphonate used at the site will be important for determining the potential impact on local groundwater quality. Use of the dust suppressant should be limited to unpaved roads within leachate containment.	Ongoing
15	Repair and enhance the site weirs so accurate surface water flow measurements can be collected to inform and constrain the water and leachate balance.	Ongoing

16	Improve surface water management north of the Phase 2 landfill to minimize impacts of aggregate runoff on groundwater and surface water that is not captured by the leachate collection system.	Ongoing
Leachate Monitoring		
17	Characterize the chemistry of residual wastewater solids and stabilized biosolids (solids and leachate) to allow for establishment of indicator parameter thresholds and future evaluation of any impacts to leachate chemistry. This information may be available from pilot studies or operational monitoring programs.	Ongoing
18	Investigate the source of chloride in the area south of the landfill. Additional waste has been placed on the western and southern portions of Phase 2 over recent years and occasional leachate seeps and runoff from the former truck wash facility, which may carry road salt, have been noted in the past. Changes in activities at the south end of the landfill (including operation of the Materials Diversion Transfer Station) and management of impacted surface runoff may play a role.	Ongoing
19	In addition to the Sewer Use Criteria, leachate quality results for trace organic compounds and emerging contaminants should be compared to CSR standards to identify parameters in leachate that exceed CSR standards and guide any refinements to the monitoring program in future years.	Ongoing
Construction Management		
20	The placement of aggregate, road salt, dust suppressant, and herbicides should be carefully considered and documented to help understand the causes of potential future concentrations of conductivity, ammonia, chloride, nitrate, sulphate, and select metals at groundwater and surface water monitoring locations.	Ongoing
Quality Assurance and Quality Control		
21	Quality assurance for laboratory analyses should continue to be evaluated quarterly, and any discrepancies should be resolved with the laboratory and CRD sampling personnel within one month of receiving the laboratory results. The appropriate notation should be added to the data files to explain the reason for the low precision and the steps taken, if any, to improve the sampling or laboratory procedures.	Ongoing

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Appendix I. Leachate Pipeline Flow Data

1. Introduction

Hartland Landfill (landfill) is located in the District of Saanich at 1 Hartland Avenue, approximately 14 kilometres (km) north of Victoria (**Figure 1-1**). The current landfill footprint is approximately 40 hectares and is situated roughly in the centre of a 293-hectare property (site). Landfilling commenced at the site in the 1950s. The site was owned and operated by a private company until 1975, when the property was purchased by the Capital Regional District (CRD). The landfill is currently owned and operated by the CRD and is the primary solid waste disposal site for the 13 member municipalities and three electoral areas of the Capital Region.

The CRD initiated a surface water and groundwater monitoring program at the landfill in 1983. Since 1988, annual monitoring reports have been prepared and issued by Gartner Lee Limited (GLL) and AECOM Canada ULC (AECOM). The present Hartland Monitoring Program is part of an Amended Operational Certificate (#12659), required by the BC Ministry of Environment & Parks (ENV) and last amended January 21, 2013.

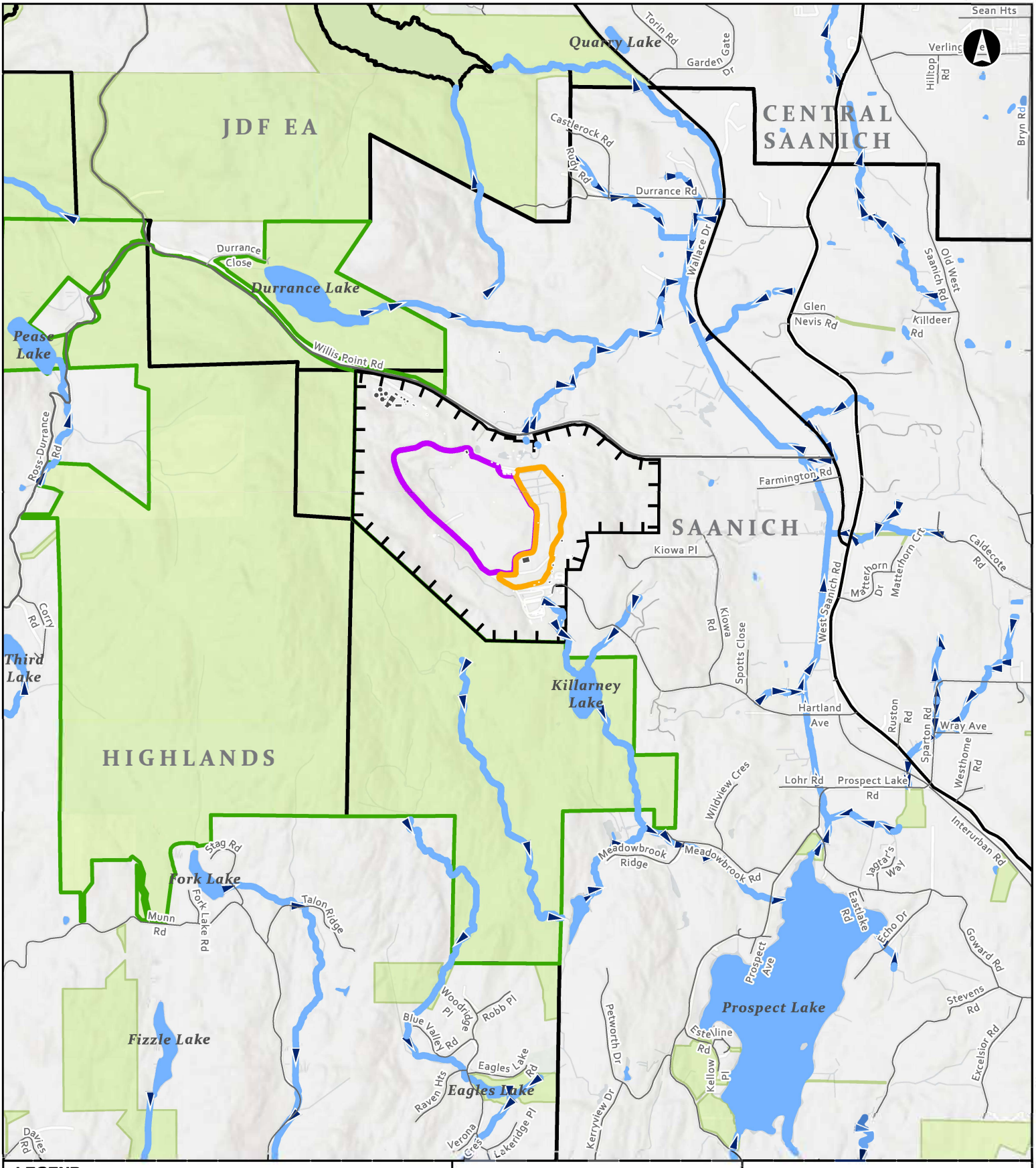
Hartland Landfill is divided into two distinct landfill areas referred to as Phase 1 and Phase 2. Waste was initially deposited in Phase 1 until it reached capacity in 1996 and was subsequently capped in 1997. Phase 2 is situated in the former Heal Lake basin which was drained and excavated for landfilling. The basin was engineered to operate as a “hydraulic trap” which provides leachate containment by maintaining upward groundwater gradients below the base of Phase 2 (CRD 2016). Landfilling commenced in Phase 2 in 1997 and continues to date. In 2004, filling of Phase 2 Cell 1 was completed and the west face of Phase 2 Cell 1 was capped with a geomembrane to reduce passive gas venting and provide an internal leachate collection system for future development of Phase 2 Cell 2. This area is referred to as the West Face closure. The remainder of Cell 1 was capped in 2011. In 2016, Phase 2 Cell 3 was developed on the west side of Phase 2 along with new leachate collection infrastructure. The Phase 2 Cell 4/5/6 quarry reached its maximum extents in September 2023, and construction and installation of a landfill liner system at the base of the quarry began in May 2024. Cell 4 received its first load of waste in January 2025 and is now fully operable. Landfilling commenced in Cell 5a in September 2025.

Leachate and surface runoff from the active landfill areas are directed to two leachate lagoons at the north end of the landfill. The leachate is transported by a pipeline through the northwest trunk sewer system to the McLoughlin Point Wastewater Treatment Plant. Leachate discharge to sewer is authorized by CRD Regional Source Control Program Waste Discharge Authorization SC97.001, last amended on June 21, 2021, and is subject to the CRD Sewer Use Bylaw (Bylaw No. 2922).

This report presents our interpretation of water quantity and quality data collected between April 2025 and March 2026 and aims to meet the following objectives:

1. Evaluate the effectiveness of the leachate containment and collection systems.
2. Assess the potential impact of landfill leachate and operational activities on groundwater and surface water quality.
3. Assess temporal trends in leachate, groundwater and surface water flow and quality.

Leachate, surface water, and groundwater data collected beyond the monitoring timeframe were not considered in this report.



LEGEND

Closure Areas
- Phase 1 Closure (1997)
- Phase 2 Base

Digital Roads Atlas
- Arterial minor; Major Collector
- Minor Collector
- Local; Lane; Ramp
- Restricted; Strata; Resource; Recreation
- Primary Stream or Ditch
- Structure
- Park
- Mount Work Regional Park Boundary
- Site Boundary
- Local Government Boundar

Hartland Landfill Monitoring Site Location Map

0 250 500 750 1000 1250 M

Figure 1-1	1:8,500 NAD83 UTM Zone 10N
P:60740388	June 2026

Basemaps provided by: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, NASA, NGA, USGS, FEMAand Capital Regional District

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2. Site Description

2.1 Physiography

Hartland Landfill is located in the Tod Creek watershed in the bedrock highlands of the Gowland Range, northwest of Victoria. The terrain is moderately rugged with relief of up to 446 metres (m). Undeveloped CRD property (about 320 hectares [ha] in total) lies to the west and south of the landfill site. Mount Work Regional Park lies to the west, and the Department of National Defence Rifle Range is located north of the landfill. Durrance Lake Regional Park is northwest of the landfill, and Killarney Lake Regional Park is southeast. Private residential properties are located to the east and southeast of the landfill.

Durrance Lake and Killarney Lake are two major surface water bodies located within one kilometre of the landfill. A lined perimeter ditch collects and diverts natural runoff from upslope areas around the landfill footprint. The water is discharged into ephemeral streams that report to Durrance Lake to the northwest and Killarney Lake to the southeast.

2.2 Geology

2.2.1 Surficial Geology

Locally surrounding the landfill, a veneer of till (Vashon Drift) composed of silty, gravelly sand, with interspersed cobbles and boulders overlies the bedrock on gently sloped terrain and in valley bottoms. Fluvial deposits consisting of well-sorted sands and gravels are observed in bedrock depressions and channels, including the channel that drained Heal Lake prior to development of the Phase 2 landfill. Within the landfill, the bedrock is mantled by a discontinuous veneer of Vashon Drift sediments. Vashon Drift is generally absent from the northwest corner of the site and the North Ridge, an elevated landform that lies between the north entrance of the site and the northern edge of Phase 2.

In 2022/23, AECOM supervised a drilling program in the northwest area of the landfill. During the drill program, a gully infilled with unconsolidated material was identified north of the Phase 2 landfill, between Phase 2 and the Northwest Sedimentation Pond (NWSP) (AECOM 2023a). The subsurface materials consisted of dense, silty diamicton and till with interspersed cobbles.

2.2.2 Bedrock Geology

The bedrock geology in the area surrounding the landfill is comprised of Wark Diorite Gneiss and Colquitz Gneiss, with Colquitz Gneiss outcropping in the northern and eastern margins of the landfill site. The Wark Diorite Gneiss is dark green to black in colour. It is competent, except in shear zones, where it has been chloritized and weathered into soft, sand-size particles and clay. Discontinuities, including joints, shear zones, and altered veins have been observed at outcrops and noted in borehole logs. Geologic mapping of an exposed bedrock outcrop north of the Phase 2 landfill characterized the undulating bedrock surface (AECOM 2018). The investigation also confirmed the presence of a complex network of lithologic contacts, faults, and fractures observed in exposed bedrock excavations (sub-vertical quarry walls), including the Highland Fault and other faults that were previously inferred based on lineaments identified on aerial photographs (Thurber 1987). Evidence supporting the presence of a major oblique-slip fault proximal to the trace of the Highland Fault was identified in this study and further validated by a drill investigation in the fall of 2019 (AECOM 2019a). Permeability testing and water level measurements have determined that faults and shear zones behave as conduits and/or barriers to groundwater flow which impart a degree of anisotropy in the hydrogeological properties of the bedrock (AECOM 2018).

2.3 Climate

The climate of this area is classified as “cool Mediterranean.” Long-term (1991–2020) average climatic data is available for the Victoria International Airport Climatological Station (Victoria International Airport CS) located approximately 9 km from the landfill. Average annual temperature is 10.3°C and mean monthly values range from a low of 4.4°C in December to a high of 17.2°C in July. Mean annual precipitation is approximately 901.2 mm.

In 1994, the CRD established a climate station (Victoria Hartland CS) at the landfill office. The original Hartland Landfill climate station was replaced in 2009/10 with new equipment at a location on top of Phase 1. The new weather station records temperature, precipitation, wind direction, wind speed, barometric pressure, and relative humidity directly to CRD's supervisory control and data acquisition (SCADA) system.

Daily precipitation recorded at Hartland Landfill for 2025/26 are provided in **Appendix A**. The precipitation measured at Victoria Hartland CS from April 2025 to March 2026 was 1111 mm, or about 23% higher than the 30-year average reported for Victoria International Airport CS (901.2 mm/year), and approximately 19% higher than the total precipitation recorded at Victoria Hartland CS (935.8 mm) in 2024/25. Precipitation during the 2025/26 wet season (i.e., October to February) was 807.8 mm, which is about 47.6% higher than in 2024/25 and contributed 72.7% of the total annual precipitation.

Climate change projections for the CRD were developed by the Pacific Climate Impacts Consortium to better understand the details of how climate may change in the Capital Region (CRD 2017a). Overall, the results indicate that the region can expect warmer winter temperatures, fewer days below freezing, more extreme hot days in the summer, longer dry spells in summer months, more precipitation in fall, winter and spring, and more intense, extreme weather events. A water surplus occurs primarily in the cool, wet winter months (November, December, and January) and a water deficit occurs in the warm, dry summer months (July, August, and September).

2.4 Landfill Operations

2.4.1 Landfill Development

Hartland Landfill is a complex landfill, with leachate collection and conveyance systems that have evolved over several decades in response to landfill development, operational practices, and site water quality management. Phase 1 is the original landfill area, covering approximately 11.9 hectares. Phase 1 reached capacity in 1996 and was capped with an impervious geomembrane and closed in 1997. Phase 1 was constructed directly over bedrock and incorporates engineered containment features, including clay berms and bedrock grout curtains, to limit lateral leachate migration to the north and south. Phase 2 covers an area of approximately 28.3 hectares and is situated within an unlined bedrock basin that historically contained Heal Lake. Phase 2 has been expanded progressively through quarrying over the past two decades to provide additional space for refuse placement and the development of new landfill cells. Quarried material is stockpiled in two locations: the Northwest Stockpile, located along the North Ridge (north of Phase 2 and south of Hartland North), and the Northeast Stockpile, located northeast of Phase 1. The current landfill configuration and locations of the aggregate stockpiles are shown in **Appendix B-1**.

Phase 2 is subdivided into six cells that have been developed sequentially. Cell 1 was progressively closed between the early 2000s and 2011. Atop Cell 1 is a controlled waste area, where higher-risk waste (e.g., asbestos) is deposited. A legacy controlled waste area is situated at the south end of Cell 1 and was capped and closed in the early 2000s. Phase 2 Cell 2 was constructed immediately west of Cell 1, remained active until 2016, and was progressively closed using a combination of geomembrane covers, intermediate cover, and temporary tarping. Active filling of Phase 2 Cell 3 began in 2016 and concluded in 2025. Quarrying in Phase 2 continued until 2024 to develop Phase 2 Cells 4 and 5. Installation of a basal liner system for Cells 4 and 5 began in 2023/24. Cell 4 became operational in January 2025, and landfilling commenced in Cell 5a in September 2025, with active filling of both cells ongoing. Future development of Phase 2 includes the construction of Cell 6 above the existing Phase 2 footprint, extending the peak landfill elevation to approximately 225 m asl. With the final closure of Cell 6, Phase 2 is anticipated to be fully capped and closed by 2062.

2.4.2 Leachate Collection and Conveyance Infrastructure

The current leachate management system reflects a combination of legacy infrastructure, incremental system expansions, and more recent engineered liner and drainage systems associated with Phase 2 development. Leachate and contaminated runoff from both active and closed landfill areas are routed to two leachate lagoons located at the north end of the site: a lined Upper Lagoon and an older, unlined Lower Lagoon. The lagoons are hydraulically connected, providing operational flexibility under fluctuating inflows and storage demands. Leachate from the Lower Lagoon discharges to the Hartland Valve Chamber (HVC), which serves as the leachate compliance monitoring point for the landfill. From the HVC, leachate is conveyed through the Centrate Return Line (CRL) to the regional sewer system, draining by gravity to the Marigold Pump Station, which then discharges via the Northwest Trunk Sewer to the McLoughlin Point Wastewater Treatment Plant (**Appendix B-2**). The CRL is approximately 19.3 km long, has a maximum flow capacity of 90 L/s, and is shared between the landfill and the neighbouring Residuals Treatment Facility (RTF). Hartland Landfill is allocated up to 45 L/s for routine operations, with higher short-term discharge rates (up to approximately 70 L/s) possible during emergency situations.

Leachate generated within Phase 1 is intercepted by two purge well systems located at the north and south ends of the landfill, as well as three toe drains referred to as the North, South, and East Toe collectors, which are situated around the perimeter of Phase 1 and convey leachate to the Lower Lagoon. At the south end of Phase 1, multiple collector wells (P1, P2, P3, P4, and P10), collectively referred to as the South Purge Wells (SPWs), have been operating since 2001 (except for P10, which was

outfitted with a pump in 2010) and intercept leachate migrating southward. Leachate collected by the SPWs is pumped to the crest of the landfill via the South Leachate Pump Station and then conveyed by gravity to the Lower Lagoon. At the north end of Phase 1, three additional purge wells (P7, P8, and P9), referred to as the North Purge Wells (NPWs), were installed and augmented between 1998 and 2016 to intercept leachate migrating northward. All purge wells, lagoons, and the HVC are monitored within a SCADA system that records leachate elevations, storage volumes, flows, and pump status on an hourly basis and provides automated alarms with distinct setpoints based on the maximum capacity of the lagoons.

The Phase 2 Basin is operated as a hydraulic trap, with a maximum storage capacity of approximately 32,000 m^3 corresponding to a maximum ground elevation of approximately 130.5 m asl. Inward hydraulic gradients promote leachate containment within the basin. Leachate drains from the basin by gravity through an underdrain system that directs leachate to a lined 233 m long micro-tunnel bored to the Lower Lagoon. A clay berm at the north end of the basin provides additional control on northward leachate migration. Leachate elevations within the Phase 2 Basin are monitored using pressure transducers installed at the base of the refuse, and SCADA-based alarm setpoints are used to signal potential hydraulic trap reversal and prevent leachate from migrating to the surrounding environment.

Early Phase 2 development of Cells 1 and 2 incorporated geomembrane capping and targeted drainage features to manage infiltration and collect leachate in advance of future cell construction. In particular, the west face of Cell 1 was capped with a geomembrane liner and equipped with a toe drain leading to the Upper Lagoon. This drainage feature, referred to as the West Face Closure Toe Drain, collects leachate migrating down the west face of Cell 1. Runoff from the controlled waste area in Cell 1 is collected and conveyed by gravity to the Lower Lagoon via the Controlled Waste Ditch. Phase 2 Cell 3 is equipped with a high-capacity leachate collection pipeline, referred to as the Toutle Drain, which conveys leachate through the Toutle Valley from the Cell 3 area to the Upper Lagoon and has a maximum flow capacity of approximately 1,000 L/s.

The Phase 2 Cell 4/5 liner system includes a leachate collection pipeline connected to the Toutle Drain, as well as an underdrain system designed to intercept groundwater migrating beneath the liner from the North Ridge toward the Phase 2 Basin. Underdrain discharge is routed either to the Upper Lagoon or to NWSP, depending on water quality. This optional routing control was implemented due to historical groundwater quality impacts associated with blasting reagent residue on quarried aggregate deposited in the Northwest Stockpile.

The NWSP is not a component of the leachate management system but represents an important hydraulic control for clean groundwater and surface runoff from the northern area of the site. The pond is unlined, has a maximum storage capacity of approximately 1,550 m^3, and is seated in sediments and bedrock. The NWSP receives surface runoff from the Phase 2 and North Ridge areas, seasonal groundwater inflows, discharge from the Cell 4 underdrain (when water quality is adequate), and potentially overflow from the Phase 2 Basin if the capacity of the basin is exceeded.

Following extreme rainfall events in November 2021, leachate migrating surficially along a perimeter ditch west of Phase 2 likely flowed outside of the Phase 2 Basin and impacted downgradient water quality. In response, the CRD implemented additional mitigation measures, including installation of a large leachate sump (referred to as Sumpzilla), a French drain, and two new purge wells (P11 and P12). The sump and French drain system were designed to reduce porewater pressures and to promote downward leachate migration within Phase 2. The new purge wells have been operated intermittently since 2023 and primarily target blasting-residue-impacted groundwater emanating from the Northwest Stockpile.

2.4.3 Other Site Infrastructure

The northwest corner of the site is referred to as the Hartland North Pad and hosts the North Commercial Scales and the RTF. The North Scale system was upgraded in 2024 and commercial traffic began being routed through the North Commercial Scales in 2025. The RTF became operational in September 2020 and was constructed to treat solids from the McLoughlin Point Wastewater Treatment Plant. Although the RTF is located within the Hartland Landfill Operating Area Boundary, it is managed by CRD as a separate site under a different provincial authorization.

A water reservoir was installed along the southeast boundary of the site in 2021 and is maintained and operated by the District of Saanich. A water main was installed along the East Perimeter Road to convey water from the reservoir to the area between the two leachate lagoons in the northwest corner of the property, and to supply water to the RTF and Pump Station No. 4, which are part of the Residual Solids Conveyance Line (RSCL). The RSCL was completed in 2020 and conveys processed wastewater from the McLoughlin Point Wastewater Treatment Plant to the RTF.

Construction of a biogas upgrading facility (BUF) immediately south of the two leachate lagoons was completed in 2024, and the facility was commissioned in January 2025. The BUF converts landfill biogas into renewable natural gas (RNG), which is then sold to FortisBC.

The southwest corner of the site hosts a variety of infrastructure, including a residential waste drop-off and recycling facility, which is accessed through the residential scales. The public drop-off facility accepts household hazardous wastes (HHW), electronics, demolition waste, and other materials. A kitchen scraps transfer station was previously located in the public drop-off area, but construction of a new transfer station north of Cell 5 commenced in 2022 and was completed in 2024. A Materials Diversion Transfer Station (MDTS) was constructed north of the public drop-off area atop the southern portion of the Phase 1 closure area. The MDTS became operational in 2024 and receives and processes wood waste and large plastics for beneficial use. Asphalt roofing materials, mattresses, and yard waste are stored and transported off-site for recycling. A biosolids mixing pad was completed as part of the MDTS to allow for blending of biosolids from the RTF prior to off-site transport.

2.4.4 Significant Site Activities in 2025/26

CRD staff maintain a log of landfill activities that are relevant to landfill operations, leachate containment, and compliance monitoring. Activities that were considered important with regard to compliance monitoring are summarized below:

- Heal Basin Maintenance: On April 2 2025, the valve at the termination of the micro-tunnel failed, causing elevated leachate levels in Heal Basin. The valve was repaired on April 9 and levels returned to normal. Additional maintenance was performed in August 2025 and from October to November 2025. Lower Lagoon levels were temporarily lowered to facilitate maintenance.
- South Kitchen Scraps Transfer Station Sump Failure: In April 2025, the CRD discovered that the sump behind the south kitchen scraps transfer station was not operational due to a tripped breaker. The sump was restored to operation. The CRD estimates that the sump was not operational since fall 2024 based on elevated total suspended solids concentrations at nearby surface water sampling station SW-S-04.
- South Purge Well Maintenance: Maintenance was performed in April 2025. The pump installed in P3 was replaced in response to pump failure.
- North Purge Well Maintenance: In May 2025, the pumps in purge wells P7 and P8 failed and were replaced in June 2025. Drawdown cone tests were conducted at the NPWs from August 17 to 23 and from January 25 to February 2 to measure the radius of influence associated with each of the pumping wells.
- West Face Drainage Line Maintenance: On May 27 2025, considerable fouling of the first 8 m of the West Face Drainage line was identified via camera inspection. The line was flushed and cleared up to 6 m on May 29. The line was showing considerable sagging, causing an accumulation of debris. Other sections appeared ovaloid and may indicate potential deformation.
- Cell 4 Surface Water Discharge: In July 2025, the CRD began discharging clean surface water runoff from Cell 4 into the NWSP following acceptable water quality results at surface water sampling station SW-N-57. The CRD is continuing to monitor water quality at this station to confirm ongoing compliance.
- Lower Lagoon: In June 2025 the Lower Lagoon level was raised to facilitate leachate system maintenance. From October to November 2025, a valve in the microtunnel at the discharge point to the Lower Lagoon underwent maintenance, during which time leachate from the Lower Lagoon was pumped into the Upper Lagoon, resulting in elevated leachate levels reported by the SCADA system at the Upper Lagoon.
- P1 Pump and Transducer Issues: The pressure transducer in purge well P1 was incorrectly installed onto the top of the pump in October 2025, which prevented the pump from operating properly. Pump function was restored following reinstallation of the transducer to the correct position in December 2025.
- Well 37 Transducer Noise: From October to December 2025 and from February to March 2026, temporary sharp increases in water level were recorded by the pressure transducer installed in well 37. An investigation concluded that the instrument was functioning properly, and the water level fluctuations were caused by construction of the adjacent commercial haul road, which rerouted surface water runoff towards well 37 and flooded the area around the well. The CRD has since improved surface water drainage in this area.

2.5 Applicable Regulatory Criteria

Hartland Landfill is required to operate in accordance with the monitoring requirements outlined in the following:

- Amended Operational Certificate (#12659) approved by ENV, last amended on January 21, 2013.
- Waste Discharge Authorization SC97.001 issued by the CRD Regional Source Control Program, last amended on June 21, 2021, and subject to the CRD Sewer Use Bylaw.
- Legally enforceable standards defined by the British Columbia Contaminated Sites Regulation (CSR).

The Stage 10 (Omnibus) and Stage 11 (Housekeeping) amendments to the CSR became effective on November 1, 2017. Stage 12 amendments to the CSR were issued January 24, 2019, and included clerical errors related to the Stage 10 and 11 amendments. The Stage 13 amendments came into force on February 1, 2021, and Stage 14 amendments came into effect on March 1, 2023.

As part of the Stage 10 and Stage 11 CSR amendments, a number of emerging contaminants were added to the water and soil schedules due to their persistence in the environment, toxicity, and relevance to contaminated sites in BC. In 2017, AECOM conducted a focused review on the applicability of emerging contaminant monitoring at the landfill. A sampling plan was issued to the CRD in 2018 and recommended quarterly sampling of contaminants of emerging concern (CECs) at the HVC in conjunction with the trace organics sampling program. A review of the sampling plan was recommended once every five years to ensure effectiveness and relevance.

In 2024, AECOM conducted the ensuing emerging contaminant review and recommended that the CRD continue sampling emerging contaminants on a quarterly basis and include additional background samples for comparison to the HVC analytical data. Emerging contaminant monitoring is ongoing.

In 2025, the CSR was amended under the provincial Better Regulations for BC Initiative with the amendments [B.C. Reg. 159/2025 and B.C. Reg. 171/2025] effective October 9 and 27, 2025, respectively. The amendments did not include any changes to applicable CSR standards. The latest amendments to the CSR (up to October 27, 2025) were considered in this report.

2.5.1 Groundwater

CSR Protocol 21 (P21), Water Use Determinations (version 2.0, effective October 31, 2017) was considered when determining applicable water use standards at Hartland Landfill. The CSR Schedule 3.2 Generic Numerical Water Standards for Freshwater Aquatic (Column 3) and Drinking Water (Column 6) are applicable to groundwater, based on P21 and the following rationale:

- Freshwater Aquatic Life Water Use (AW) standards apply because the landfill is “within 500 m of a surface water body containing aquatic life” (i.e., Heal Creek, Durrance Creek, Durrance Lake, Killarney Creek, and Killarney Lake).
- Drinking Water Use (DW) standards apply because the aquifer underlying the landfill has:
  - A hydraulic conductivity greater than 10^{-6} m/s and a yield greater than 1.3 L/min.
  - Groundwater with natural total dissolved solids (TDS) concentrations of less than 4,000 mg/L.
  - An average confined aquifer saturated thickness greater than 1 m.
  - An overlying silt or clay aquitard that is less than 5 m thick.

DW standards for iron and manganese do not apply to municipal landfills based on the Stage 8 Amendments to the CSR that came into effect on January 24, 2013, as presented on CSR Schedule 3.2.

Under CSR Protocol 9 (P9), groundwater that contains a substance concentration above the applicable CSR standard but below the regional background concentration is not considered contaminated. Table 1 of P9 lists regional groundwater background concentrations for inorganic substances. Regional background concentrations for Southern Vancouver Island were considered when assessing groundwater quality data collected at the landfill. Where regional background concentrations were greater than the applicable CSR DW standards and/or the most stringent CSR AW standards, the regional background concentration was used to evaluate compliance.

2.5.2 Surface Water

Surface water quality data were compared to the British Columbia Approved and Working Water Quality Guidelines (BCWQG) for the protection of AW because CSR Technical Guidance 15 (version 2.0, revised November 1, 2017) indicates that water in receiving environments should be compared to the BCWQG, and there are numerous nearby surface water bodies that receive runoff from the site. This report considers updates to the approved and working BCWQGs up to March 2026. There are two sets of BCWQG criteria for AW use:

- Long-term chronic (LTC)
- Short-term acute (STA)

The purpose of the LTC guideline is to protect the most sensitive species and life stages against chronic exposure to contaminants. The LTC concentration is typically calculated by averaging the results of five or more samples collected within a 30-day period. The STA BCWQGs are established to protect the most sensitive species and life stages against short-term (i.e., <96 hours) exposure to contaminants and assess risks associated with exposure.

The toxicity of some substances can be affected by water chemistry variables such as pH, temperature, hardness, and dissolved organic carbon (DOC). As a result, there are numerous BCWQG AW criteria that are unique to each sample and must be calculated using the dependent parameter concentrations measured for that sample. Calculated BCWQG AW criteria exist for ammonia, nitrite, sulphate, total aluminium, and dissolved cadmium, cobalt, copper, lead, manganese, nickel, and zinc, and are applied in this report.

Dissolved copper and nickel BCWQG AW criteria are determined using Biotic Ligand Models (BLMs) developed by ENV in 2019 and 2022, respectively. The toxicity of dissolved copper and nickel to aquatic life varies with temperature, DOC, pH, and hardness, and is difficult to determine manually. The BLM software uses a series of linked equations that predict the long-term chronic and short-term acute toxicity of a specified parameter to aquatic life under site-specific conditions. This report uses the simplified version of the BLM software which allows dissolved copper and nickel BCWQG AW criteria to be calculated using DOC, pH, and temperature only.

The BCWQG STA and LTC criteria for total suspended solids (TSS) are based on flow conditions and “the degree of change” from a background reference station. Historical TSS values recorded at background station SW-S-52 (typically <2.0 mg/L) were used to screen the TSS data in this report.

The BCWQGs apply to surface water on site and on adjacent sites under provincial jurisdiction. The Canadian Environmental Quality Guidelines (CEQGs) established by the Canadian Council of Ministers of the Environment (CCME) apply on the property owned by the federal government located north of the site and Willis Point Road. However, groundwater and surface water on federal land north of the site and Willis Point Road report back to provincial land, so CCME guidelines were not considered in this report. Neither the BCWQG nor CCME guidelines have the same regulatory force as the CSR standards.

2.5.3 Leachate

Discharge from the leachate pipeline is subject to the CRD Regional Source Control Program (RSCP) Waste Discharge Authorization (SC97.001), authorizing the discharge of non-domestic waste to the sanitary sewer, in accordance with the CRD’s Sewer Use Bylaw 2922. In June 2021, the discharge authorization was amended to reflect operation of the CRL and decommissioning of the Markham Valve Chamber.

The leachate compliance monitoring location at the site is the Hartland Valve Chamber, which is a flow detection chamber located near the Lower Lagoon. Leachate sampling is conducted on monthly basis, and discharge limits are identified within the authorization.

3. Methods and Quality Assurance

3.1 Field Techniques

All active leachate, surface water, and groundwater sampling and monitoring locations are shown in **Appendices B-3 to B-6**. Boreholes and monitoring wells are identified using a standard system adopted by the CRD, consisting of an acronym and three numbers (e.g., GW-02-02-01). The acronym refers to the sample type; GW indicates groundwater samples, and SW

indicates surface water samples. The first number refers to the monitoring site, the second number refers to the borehole at the monitoring site (in the case of multi-level groundwater wells, there may be more than one), and the third number refers to the monitoring well in that borehole (there may be two or three at different depths in older, nested installations). If the third number is a zero, it indicates an open borehole where no PVC monitoring well has been installed. Additionally, several leachate purge (collector) wells have been installed at the site, which are denoted with a “P” in front of the purge well number (e.g., P1).

Appendix C-1 provides monitoring well construction details (including location coordinates and elevations) and indicates the status of all the groundwater monitoring wells at the site, with comments describing any problems associated with each monitoring well. Monitoring wells are categorized as active (functioning) or inactive (non-functioning, decommissioned, or destroyed). In 2025/26, there were 140 active groundwater monitoring wells at 87 locations at the site; 10 are active purge wells and 13 are landfill gas wells.

The methods used to develop and sample each monitoring well are described in **Appendix C-2**. The Standard Operating Procedure (SOP) for groundwater sampling is updated periodically. A variety of sampling techniques are used depending on the depth of the monitoring well, the groundwater level in the monitoring well, and the permeability of the surrounding geologic formation. A number of dedicated submersible pumps have been installed in the deeper monitoring wells and open boreholes to facilitate more efficient sampling, resulting in improved data quality. Sampling events were scheduled to avoid heavy rainfall to avoid sample dilution.

Appendix C-3 provides location coordinates, location details, and sampling frequencies for active surface water stations at the landfill. In 2025/26, there were 35 active surface water stations at the site.

In 2025/26, the monitoring program consisted of the following:

- Quarterly collection of manual groundwater level measurements.
- Continuous water level monitoring with pressure transducers at north end of the Phase 2 landfill.
- Continuous water level monitoring with pressure transducers at the North Purge Well and South Purge Well systems.
- Continuous water level monitoring with pressure transducers east of Phase 1 landfill and Hartland North.
- Quarterly water quality monitoring of wells near the property boundary and key locations to assess the effectiveness of leachate containment.
- Semi-annual monitoring of stations with relatively stable long-term historical data.
- Annual sampling of 17 residential wells, including 14 wells within a 2 km radius of the landfill and five domestic wells located north of the Hartland North Pad.
- Quarterly sampling of surface water stations at property boundary points and other selected monitoring locations.
- Quarterly testing of leachate discharge for trace organic compounds.
- Monthly testing of leachate at the point of discharge and quarterly testing at select locations within the leachate collection system for conventional parameters and metals.
- Quarterly testing of leachate discharge for emerging contaminants.

The CRD has adopted a continuous improvement and quality assurance program that is reviewed regularly to ensure that it remains effective in monitoring the impacts of various landfill operations. As in previous years, CRD staff carried out groundwater level measurements and groundwater sampling at the locations shown in **Appendices B-3 and B-4**, respectively. Surface water samples were collected at monitoring locations shown in **Appendix B-5**. Leachate quality monitoring was conducted at the locations shown in **Appendix B-6**. Further information on the monitoring program field procedures is provided in the CRD Monitoring Procedure Manual.

3.2 Quality Assurance

In 2025/26, laboratory analyses of surface water, leachate, groundwater, and domestic well water chemistry were performed by Bureau Veritas Laboratory (BV) in Victoria and Burnaby, British Columbia. A quality assurance/quality control (QA/QC) program is in place to assess the validity of the laboratory results. The program involves the submission of randomly selected field replicate, field blank, travel blank, and "reference" Victoria municipal water samples to the laboratory for analysis.

Each set of field replicates was taken from the same source and/or sampling location and under the same conditions. In all cases, the field replicates were submitted 'blind' to the laboratory. Submission of replicate samples provides an estimate of total uncertainty associated with the data. Typically, one replicate sample is collected for every ten samples (10%) as part of quality control measures. Total uncertainty is the variability (precision plus bias) associated with sample collection and sample analyses. The CRD uses the relative percent difference (RPD) method described in Section A of the BC Environmental Laboratory Manual (BC ELM), which uses replicate analyses to determine precision of the analytical results (ENV 2023). This method expresses the percent of difference between two values as the ratio of their absolute difference to the average value of the replicate samples, as shown in the equation below:

$$RPD\ (\%) = \frac{|x_1 - x_2|}{(x_1 + x_2)/2} \times 100$$

where:

x_1 is the concentration measured in the first replicate sample (mg/L), and
x_2 is the concentration measured in the second replicate sample (mg/L).

Parameter RPDs were considered to exceed QA/QC criteria where both replicate concentrations were above the Limit of Quantification (LOQ) and the RPD exceeded Data Quality Objectives (DQOs). The LOQ was considered to be five times the Method Detection Limit (MDL) because analytical precision is known to be poor below this threshold for each parameter analyzed, as outlined in Part E of the BC Field Sampling Manual (BC FSM; ENV 2013). The LOQ represents the lowest concentration at which laboratory methods can produce accurate and precise results (i.e., reproducible).

Data Quality Objectives for field replicate RPD results were set to 1.5 times the values specified in the BC ELM for laboratory duplicate samples, as these are considered stringent for field replicates. Therefore, field replicate pairs with RPD values below 30% for general inorganics and metals and 45% for organic compounds were considered to meet DQOs. Parameter RPDs that exceeded DQOs but had one or more replicate concentrations below the LOQ were not considered to exceed QA/QC criteria and are not discussed in this report.

Field blanks and travel blanks were submitted each quarter alongside groundwater and surface water samples. Field blanks were collected by filling sterile laboratory-provided sample bottles with deionized water, following the same sampling procedures used for environmental samples. Travel blanks were provided by the laboratory as sealed bottles filled with deionized water prior to shipment. Travel blanks were carried into the field to accompany the sampling process and were submitted to the laboratory at the end of the field program.

Water quality results from field and travel blank samples were assessed for potential contamination that may have been introduced in the field, lab, or during transport. Per the BC FSM, DQOs for blanks preferably should not exceed the MDL for any parameter. However, by applying the same rationale used for RPD calculation, it is appropriate to use the LOQ as a DQO. Therefore, blanks were considered to show evidence of contamination where the analytical result for a parameter exceeded the LOQ.

3.2.1 Groundwater RPDs and Blanks

Table 3-1 presents calculated RPD values for replicate groundwater samples collected at or near the landfill. Parameters with RPD values exceeding QA/QC criteria are highlighted with an "a" in the table. Groundwater quality assurance results for 2025/26 are summarized as follows:

- A total of 43 replicate samples were collected and analyzed for 45 parameters, resulting in a replicate sampling frequency of 13.5% (43/318 samples).
- RPD values for nitrate (1 sample), nitrate plus nitrogen (1 sample), dissolved aluminium (3 samples), barium (3 samples), cadmium (1 sample), copper (1 sample), lead (1 sample), manganese (1 sample), molybdenum (2 samples), nickel (4 samples), strontium (1 sample), uranium (1 sample), and zinc (4 samples) exceeded DQOs when all concentrations were above the LOQ.
- Thirteen of the 43 replicate samples had at least one parameter with RPD values that did not meet DQOs when all concentrations were above the LOQ. Eleven samples had a single parameter exceedance. The replicate sample collected at GW-21-1-1 in September 2025 exceeded DQOs for four parameters, and the replicate sample collected at GW-39-1-1 in November 2025 had exceedances for seven parameters.

The groundwater field replicates generally showed good precision for most parameters, and the majority of RPD values for the 2025/26 monitoring year were within DQOs. Samples that exhibited multiple parameter RPD DQO exceedances (e.g., GW-39-1-1 in November 2025 and GW-21-1-1 in September 2025) suggest improper sampling technique, and sample results may be positively biased. However, parameter concentrations in these samples met all applicable CSR water quality standards. Overall, the precision of the groundwater quality data was considered acceptable for the purpose of this report.

Groundwater field and travel blank results are included in **Table 3-1** and results that exceeded parameter LOQs are highlighted with a "c". Three field blanks and three travel blanks were submitted alongside groundwater samples in 2025/26. Parameters were below the LOQs in the majority of field and travel blanks, and all conductivity values were below 18 µS/cm. However, two exceptions were identified:

- Concentrations of dissolved aluminium, barium, copper, iron, lead, and zinc exceeded LOQs in the field blank collected in October 2025.
- Dissolved aluminium concentrations exceeded the LOQ in the field blank collected in November 2025.

Evidence of contamination in these field blank results indicates the potential for positive bias in the corresponding parameter concentrations for groundwater samples collected during the same period. However, concentrations of these parameters in the associated groundwater samples were all below applicable CSR water quality standards. Overall, the field and travel blank results were considered acceptable for the purpose of this report.

3.2.2 Surface Water RPDs and Blanks

Calculated RPD values for replicate surface water samples collected at the landfill are presented in **Table 3-2**. Parameters with RPD values exceeding QA/QC criteria are highlighted with an "a" in the table. Surface water quality assurance results for 2025/26 are summarized as follows:

- A total of 9 replicate samples were collected and analyzed for 42 parameters, resulting in a replicate sampling frequency of 12.3% (9/73 samples).
- RPD values for total copper (1 sample), total lead (1 sample), dissolved aluminium (1 sample), and dissolved lead (1 sample) exceeded DQOs when all concentrations were above the LOQ.
- Three of the 9 replicate samples had one or two parameters with RPD values that exceeded DQOs when all concentrations were above the LOQ.

Overall, the surface water sample replicates showed good precision for most parameters, and the majority of RPD values for the 2025/26 monitoring year were within the acceptable range.

Surface water field and travel blank results are included in **Table 3-2** and results that exceeded parameter LOQs are highlighted with a "c". Three field blanks and three travel blanks were submitted alongside surface water samples in 2025/26. Parameters were below the LOQs in the majority of field and travel blanks, and conductivity values were low (<21 µS/cm). However, two exceptions were identified:

- Concentrations of dissolved hardness, aluminium, copper, iron, lead, manganese, nickel, sodium, and zinc exceeded LOQs in the field blank collected in September 2025.
- Dissolved iron concentrations exceeded the LOQ in the field blank collected in December 2025.

These field blank results indicate the potential for positive bias in the corresponding parameter concentrations for surface samples collected during the same period. Concentrations of these parameters in the associated surface samples were below applicable BCWQGs, except for dissolved copper, which exceeded the LTC BCWQG in 14 surface water samples. Therefore, exceedances of the dissolved copper LTC BCWQG in September and December 2025 should be interpreted with caution. Overall, the field and travel blank results were considered acceptable for the purpose of this report.

3.2.3 Leachate RPDs

In 2025/26, three sets of leachate replicate samples were collected and analyzed for 56 parameters, and one replicate sample set was collected and analyzed for 69 parameters (**Table 3-3**). This resulted in a replicate sampling frequency of 25.0% (4/16 samples) for the Hartland Valve Chamber compliance point, and 16.0% (4/25 samples) for the overall leachate sampling program. All replicate samples had RPD values that exceeded DQOs for one or more parameters when all parameters exceeded the LOQ. RPD exceedances were reported for total sulphide (1 sample), dissolved sulphide (1 sample), TSS (1

sample), sulphate (2 samples), strong acid dissociable (SAD) cyanide (1 sample), weak acid dissociable (WAD) cyanide (2 samples), ammonia (1 sample), and nitrite (1 sample). Overall, the leachate field replicates showed good precision for most parameters, and the quality of the data is considered acceptable for the purposes of this report.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	pH (Field)	Conductivity (Actual - Field)	Temperature (Field)	Alkalinity	Hardness (As CaCO3)	Chloride	Nitrogen - Ammonia	Nitrogen - Nitrite	Nitrogen - Nitrate	Nitrogen - Nitrate plus Nitrite	Sulphate	Aluminum	Antimony	Arsenic	Barium
				Fraction	TOT	TOT	TOT	TOT	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	pH	µS/cm	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.1	1	0.1	1	0.5	1	0.015	0.005	0.02	0.02	1	0.5	0.02	0.02	0.02
				Limit of Quantification (5x DL)	0.5	5	0.5	5	2.5	5	0.075	0.025	0.1	0.1	5	2.5	0.10	0.10	0.1
18-1-1	FR1	Y	2025-05-29	Field replicate 1	7.74	264	10.8	150	150	2.60	< 0.015	< 0.005	< 0.020	< 0.020	26.0	6.19		0.696	2.66	12.7
18-1-1	FR2	Y	2025-05-29	Field replicate 2	7.74	264	10.8	150	156	2.70	< 0.015	< 0.005	< 0.020	< 0.020	26.0	5.37		0.713	2.71	12.5
18-1-1	FRM	Y	2025-05-29	Mean of replicates	7.74	264	10.8	150	153	2.65	< 0.015	< 0.005	< 0.020	< 0.020	26.0	5.78		0.705	2.69	12.6
18-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	3.92%	3.77%	0.00%	0.00%	0.00%	0.00%	0.00%	14.19%	2.41%	1.86%	1.59%
18-1-1	FR1	Y	2025-10-03	Field replicate 1	7.71	271	11.7	140	156	3.60	< 0.015	< 0.005	< 0.020	< 0.020	27.0	3.84		0.564	3.08	12.1
18-1-1	FR2	Y	2025-10-03	Field replicate 2	7.71	271	11.7	140	157	3.30	< 0.015	< 0.005	< 0.020	< 0.020	27.0	3.72		0.591	3.08	12.0
18-1-1	FRM	Y	2025-10-03	Mean of replicates	7.71	271	11.7	140	157	3.45	< 0.015	< 0.005	< 0.020	< 0.020	27.0	3.78		0.588	3.07	12.1
18-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.64%	8.70%	0.00%	0.00%	0.00%	0.00%	0.00%	3.17%	1.19%	0.65%	0.83%
21-1-1	FR1	Y	2025-05-22	Field replicate 1	8.48	138	11.3	72.0	66.7	3.00	< 0.015	< 0.005	< 0.020	< 0.020	11.0	4.00	< 0.100	1.68	1.83
21-1-1	FR2	Y	2025-05-22	Field replicate 2	8.48	138	11.3	72.0	66.0	2.90	< 0.015	< 0.005	< 0.020	< 0.020	11.0	3.20	< 0.100	1.83	1.65
21-1-1	FRM	Y	2025-05-22	Mean of replicates	8.48	138	11.3	72.0	66.4	2.95	< 0.015	< 0.005	< 0.020	< 0.020	11.0	3.60	< 0.100	1.76	1.74
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.06%	3.39%	0.00%	0.00%	0.00%	0.00%	0.00%	22.22%	0.00%	8.55%	10.34%
21-1-1	FR1	Y	2025-09-26	Field replicate 1	8.29	149	12.6	67.0	65.5	3.20	0.022	< 0.005	0.038	0.038	11.0	15.1	< 0.100	0.490	1.87
21-1-1	FR2	Y	2025-09-26	Field replicate 2	8.29	149	12.6	68.0	65.9	3.40	< 0.015	< 0.005	0.034	0.034	10.0	4.00	< 0.100	0.500	1.91
21-1-1	FRM	Y	2025-09-26	Mean of replicates	8.29	149	12.6	67.5	65.7	3.30	0.019	< 0.005	0.036	0.036	10.5	9.55	< 0.100	0.495	1.89
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	1.48%	0.61%	6.06%	**37.84%** b	0.00%	11.11%	11.11%	9.52%	**116.23%** a	0.00%	2.02%	2.12%
21-1-1	FR1	Y	2025-11-14	Field replicate 1	8.15	154	11.6	72.0	69.3	3.20	< 0.015	< 0.005	< 0.020	< 0.020	10.0	1.70	< 0.040	2.16	1.26
21-1-1	FR2	Y	2025-11-14	Field replicate 2	8.15	154	11.6	71.0	71.2	3.10	< 0.015	< 0.005	< 0.020	< 0.020	10.0	1.70	< 0.040	2.36	1.45
21-1-1	FRM	Y	2025-11-14	Mean of replicates	8.15	154	11.6	71.5	70.3	3.15	< 0.015	< 0.005	< 0.020	< 0.020	10.0	1.70	< 0.040	2.26	1.36
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	1.40%	2.70%	3.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.85%	14.02%
21-1-1	FR1	Y	2026-02-24	Field replicate 1	8.24	147	10.7	73.0	70.5	3.30	< 0.015	< 0.005	< 0.020	< 0.020	10.0	11.9	< 0.100	1.76	1.59
21-1-1	FR2	Y	2026-02-24	Field replicate 2	8.24	147	10.7	72.0	69.0	3.30	< 0.015	< 0.005	< 0.020	< 0.020	10.0	8.90	< 0.040	1.77	1.56
21-1-1	FRM	Y	2026-02-24	Mean of replicates	8.24	147	10.7	72.5	69.8	3.30	< 0.015	< 0.005	< 0.020	< 0.020	10.0	10.4	< 0.070	1.77	1.58
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	1.38%	2.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.85%	**85.71%** b	0.57%	1.90%
21-1-2	FR1	Y	2025-05-22	Field replicate 1	6.97	449	12.2	160	182	41.0	5.20	< 0.005	< 0.020	< 0.020	51.0	1.07	< 0.020	1.20	17.1
21-1-2	FR2	Y	2025-05-22	Field replicate 2	6.97	449	12.2	160	181	41.0	5.20	< 0.005	< 0.020	< 0.020	53.0	1.58	< 0.020	1.20	17.4
21-1-2	FRM	Y	2025-05-22	Mean of replicates	6.97	449	12.2	160	182	41.0	5.20	< 0.005	< 0.020	< 0.020	52.0	1.33	< 0.020	1.20	17.3
21-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.55%	0.00%	0.00%	0.00%	0.00%	0.00%	3.85%	**38.46%** b	0.00%	0.00%	1.74%
21-1-2	FR1	Y	2025-11-14	Field replicate 1	6.66	555	11.3	190	238	61.0	5.00	< 0.005	< 0.020	< 0.020	41.0	0.740	< 0.020	1.32	22.0
21-1-2	FR2	Y	2025-11-14	Field replicate 2	6.66	555	11.3	190	240	61.0	5.10	< 0.005	< 0.020	< 0.020	41.0	0.660	< 0.020	1.29	22.3
21-1-2	FRM	Y	2025-11-14	Mean of replicates	6.66	555	11.3	190	239	61.0	5.05	< 0.005	< 0.020	< 0.020	41.0	0.700	< 0.020	1.31	22.2
21-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.84%	0.00%	1.98%	0.00%	0.00%	0.00%	0.00%	11.43%	0.00%	2.30%	1.35%
21-1-2	FR1	Y	2026-02-23	Field replicate 1	6.84	528	11.5	160	184	32.0	4.70	< 0.005	< 0.020	< 0.020	56.0	0.520	< 0.020	1.16	17.7
21-1-2	FR2	Y	2026-02-23	Field replicate 2	6.84	528	11.5	160	182	32.0	4.80	< 0.005	< 0.020	< 0.020	55.0	0.790	< 0.020	1.19	17.5
21-1-2	FRM	Y	2026-02-23	Mean of replicates	6.84	528	11.5	160	183	32.0	4.75	< 0.005	< 0.020	< 0.020	55.5	0.655	< 0.020	1.18	17.6
21-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.09%	0.00%	2.11%	0.00%	0.00%	0.00%	1.80%	**41.22%** b	0.00%	2.55%	1.14%
21-2-1	FR1	Y	2025-05-22	Field replicate 1	6.94	459	11.4	150	191	43.0	4.80	0.012	0.509	0.521	52.0	1.90	< 0.020	1.36	15.4
21-2-1	FR2	Y	2025-05-22	Field replicate 2	6.94	459	11.4	150	193	44.0	4.80	0.011	0.512	0.522	52.0	2.38	< 0.020	1.43	15.5
21-2-1	FRM	Y	2025-05-22	Mean of replicates	6.94	459	11.4	150	192	43.5	4.80	0.011	0.511	0.522	52.0	2.14	< 0.020	1.40	15.5
21-2-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.04%	2.30%	0.00%	12.28%	0.59%	0.19%	0.00%	22.43%	0.00%	5.02%	0.63%
21-2-1	FR1	Y	2025-09-26	Field replicate 1	6.74	547	12.2	190	239	67.0	5.40	< 0.005	0.089	0.089	43.0	0.950		0.105	1.82	18.9
21-2-1	FR2	Y	2025-09-26	Field replicate 2	6.74	547	12.2	190	246	67.0	4.40	< 0.005	0.079	0.079	42.0	1.30		0.099	1.83	20.0
21-2-1	FRM	Y	2025-09-26	Mean of replicates	6.74	547	12.2	190	243	67.0	4.90	< 0.005	0.084	0.084	42.5	1.13		0.102	1.83	19.5
21-2-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	2.89%	0.00%	20.41%	0.00%	11.90%	11.90%	2.35%	**31.11%** b	5.88%	0.55%	5.66%
25-1-1	FR1	Y	2026-02-12	Field replicate 1	7.03	656	10.7	190	387	13.0	0.061	< 0.005	0.128	0.128	220	9.52		0.043	0.190	21.1
25-1-1	FR2	Y	2026-02-12	Field replicate 2	7.03	656	10.7	190	389	13.0	0.061	< 0.005	0.130	0.130	220	1.79		0.035	0.191	21.9
25-1-1	FRM	Y	2026-02-12	Mean of replicates	7.03	656	10.7	190	388	13.0	0.061	< 0.005	0.129	0.129	220	5.66		0.039	0.191	21.5
25-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.52%	0.00%	0.00%	0.00%	1.55%	1.55%	0.00%	**136.69%** b	20.51%	0.52%	3.72%
28-1-0	FR1	Y	2026-02-12	Field replicate 1	6.88	351	11.4	180	201	7.20	< 0.015	< 0.005	0.283	0.283	30.0	0.500		0.034	0.107	1.09
28-1-0	FR2	Y	2026-02-12	Field replicate 2	6.88	351	11.4	180	200	7.30	< 0.015	< 0.005	0.286	0.286	29.0	0.640		0.034	0.105	1.10
28-1-0	FRM	Y	2026-02-12	Mean of replicates	6.88	351	11.4	180	201	7.25	< 0.015	< 0.005	0.285	0.285	29.5	0.570		0.034	0.106	1.10
28-1-0	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.50%	1.38%	0.00%	0.00%	1.05%	3.39%	24.56%		0.00%	1.89%	0.91%
30-1-1	FR1	Y	2025-05-14	Field replicate 1	7.68	436	10.5	170	217	49.0	0.043	< 0.005	< 0.020	< 0.020	33.0	1.31		0.029	0.362	48.2
30-1-1	FR2	Y	2025-05-14	Field replicate 2	7.68	436	10.5	130	217	50.0	0.028	< 0.005	< 0.020	< 0.020	33.0	1.86		0.033	0.352	48.4
30-1-1	FRM	Y	2025-05-14	Mean of replicates	7.68	436	10.5	150	217	49.5	0.036	< 0.005	< 0.020	< 0.020	33.0	1.59		0.031	0.357	48.3
30-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	26.67%	0.00%	2.02%	**42.25%** b	0.00%	0.00%	0.00%	0.00%	**34.70%** b	12.90%	2.80%	0.41%

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Molybdenum	Nickel
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.01	0.005	10	0.005	0.05	0.1	0.005	0.05	1	0.005	0.5	0.05	0.05	0.05	0.02
				Limit of Quantification (5x DL)	0.05	0.025	50	0.025	0.25	0.5	0.025	0.25	5	0.025	2.5	0.25	0.25	0.25	0.1
18-1-1	FR1	Y	2025-05-29	Field replicate 1	< 0.010	< 0.005	34.0	0.050	49.1	< 0.100	0.028	0.141	5.50	0.007	1.43	6.62	9.86	0.852	0.167
18-1-1	FR2	Y	2025-05-29	Field replicate 2	< 0.010	< 0.005	34.0	0.055	51.0	< 0.100	0.022	0.137	6.50	0.011	1.52	6.91	10.0	0.728	0.178
18-1-1	FRM	Y	2025-05-29	Mean of replicates	< 0.010	< 0.005	34.0	0.052	50.1	< 0.100	0.025	0.139	6.00	0.009	1.48	6.77	9.83	0.690	0.173
18-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	9.00%	3.80%	0.00%	26.51%	2.88%	16.67%	43.85% b	6.10%	4.29%	3.46%	11.01%	6.38%
18-1-1	FR1	Y	2025-10-03	Field replicate 1	< 0.010	< 0.005	29.0	0.071	51.0	< 0.100	< 0.005	0.296	1.30	0.021	1.86	7.02	0.575	0.787	0.103
18-1-1	FR2	Y	2025-10-03	Field replicate 2	< 0.010	< 0.005	29.0	0.068	51.6	< 0.100	< 0.005	0.269	3.80	0.019	1.83	6.93	0.575	0.806	0.074
18-1-1	FRM	Y	2025-10-03	Mean of replicates	< 0.010	< 0.005	29.0	0.069	51.3	< 0.100	< 0.005	0.283	2.55	0.020	1.85	6.98	0.575	0.797	0.089
18-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	4.20%	1.17%	0.00%	0.00%	9.56%	98.04% b	11.11%	1.63%	1.29%	0.00%	2.39%	32.77% b
21-1-1	FR1	Y	2025-05-22	Field replicate 1	< 0.050	< 0.025	4200	< 0.025	21.0	< 0.500	< 0.025	< 0.250	< 5.00	< 0.025	< 2.50	3.49	2.92	0.750	< 0.100
21-1-1	FR2	Y	2025-05-22	Field replicate 2	< 0.050	< 0.025	4050	< 0.025	20.5	< 0.500	< 0.025	< 0.250	< 5.00	< 0.025	< 2.50	3.58	2.79	0.530	< 0.100
21-1-1	FRM	Y	2025-05-22	Mean of replicates	< 0.050	< 0.025	4125	< 0.025	20.8	< 0.500	< 0.025	< 0.250	< 5.00	< 0.025	< 2.50	3.54	2.86	0.640	< 0.100
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	3.64%	0.00%	2.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.55%	4.55%	34.38% a	0.00%
21-1-1	FR1	Y	2025-09-26	Field replicate 1	< 0.050	< 0.025	4310	< 0.025	20.3	< 0.500	< 0.025	0.260	25.1	0.068	< 2.50	3.61	3.23	0.400	0.280
21-1-1	FR2	Y	2025-09-26	Field replicate 2	< 0.050	< 0.025	4290	< 0.025	20.4	< 0.500	< 0.025	< 0.250	< 5.00	0.040	< 2.50	3.61	1.77	0.510	< 0.100
21-1-1	FRM	Y	2025-09-26	Mean of replicates	< 0.050	< 0.025	4300	< 0.025	20.4	< 0.500	< 0.025	0.255	15.1	0.054	< 2.50	3.61	2.50	0.455	0.190
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.47%	0.00%	0.49%	0.00%	0.00%	3.92%	133.55% b	51.85% a	0.00%	0.00%	58.40% a	24.18%	84.74% b
21-1-1	FR1	Y	2025-11-14	Field replicate 1	< 0.020	< 0.010	3880	< 0.010	21.8	< 0.200	< 0.010	< 0.100	< 2.00	< 0.010	< 1.00	3.60	3.11	0.430	< 0.040
21-1-1	FR2	Y	2025-11-14	Field replicate 2	< 0.020	< 0.010	4180	< 0.010	21.9	< 0.200	< 0.010	< 0.100	2.10	< 0.010	1.00	3.99	3.38	0.480	0.052
21-1-1	FRM	Y	2025-11-14	Mean of replicates	< 0.020	< 0.010	4030	< 0.010	21.9	< 0.200	< 0.010	< 0.100	2.05	< 0.010	1.00	3.80	3.25	0.455	0.046
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	7.44%	0.00%	0.46%	0.00%	0.00%	0.00%	4.88%	0.00%	0.00%	10.28%	8.32%	10.99%	26.09%
21-1-1	FR1	Y	2026-02-24	Field replicate 1	< 0.050	< 0.025	4300	< 0.025	22.1	< 0.500	< 0.025	< 0.250	8.70	< 0.025	< 2.50	3.72	11.7	0.500	0.220
21-1-1	FR2	Y	2026-02-24	Field replicate 2	< 0.020	< 0.010	3960	< 0.010	21.3	< 0.200	< 0.010	< 0.100	8.40	0.012	1.10	3.82	11.1	0.440	0.172
21-1-1	FRM	Y	2026-02-24	Mean of replicates	< 0.035	< 0.018	4130	< 0.018	21.7	< 0.350	< 0.018	< 0.175	8.55	0.019	1.80	3.77	11.4	0.470	0.196
21-1-1	RPD	Y		RPD of replicates	85.71% b	85.71% b	8.23%	85.71% b	3.69%	85.71% b	85.71% b	85.71% b	3.51%	70.27% b	77.78% b	2.65%	5.26%	12.77%	24.49%
21-1-2	FR1	Y	2025-05-22	Field replicate 1	< 0.010	< 0.005	752	0.005	54.8	0.310	1.05	0.303	1130	< 0.005	< 0.500	11.0	2130	0.659	1.29
21-1-2	FR2	Y	2025-05-22	Field replicate 2	< 0.010	< 0.005	720	0.007	54.5	0.280	1.03	0.300	1160	0.005	< 0.500	10.9	2120	0.667	1.31
21-1-2	FRM	Y	2025-05-22	Mean of replicates	< 0.010	< 0.005	736	0.006	54.7	0.295	1.04	0.302	1145	0.005	< 0.500	11.0	2125	0.663	1.30
21-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	4.35%	33.33% b	0.55%	10.17%	1.92%	1.00%	2.62%	0.00%	0.00%	0.91%	0.47%	1.21%	1.54%
21-1-2	FR1	Y	2025-11-14	Field replicate 1	< 0.010	< 0.005	859	0.006	71.0	0.170	1.24	0.224	1540	0.007	< 0.500	14.8	2630	0.579	2.13
21-1-2	FR2	Y	2025-11-14	Field replicate 2	< 0.010	< 0.005	858	0.005	71.7	0.180	1.24	0.214	1470	0.007	< 0.500	14.7	2610	0.605	2.21
21-1-2	FRM	Y	2025-11-14	Mean of replicates	< 0.010	< 0.005	859	0.006	71.4	0.175	1.24	0.219	1505	0.007	< 0.500	14.8	2620	0.592	2.17
21-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	0.12%	15.93%	0.98%	5.71%	0.00%	4.57%	4.65%	1.42%	0.00%	0.68%	0.76%	4.39%	3.69%
21-1-2	FR1	Y	2026-02-23	Field replicate 1	< 0.010	< 0.005	834	< 0.005	55.0	0.160	0.958	0.259	1080	< 0.005	< 0.500	11.3	2010	0.664	1.11
21-1-2	FR2	Y	2026-02-23	Field replicate 2	< 0.010	< 0.005	855	< 0.005	55.0	0.150	0.973	0.267	1090	< 0.005	< 0.500	10.9	2040	0.687	1.16
21-1-2	FRM	Y	2026-02-23	Mean of replicates	< 0.010	< 0.005	845	< 0.005	55.0	0.155	0.966	0.263	1085	< 0.005	< 0.500	11.1	2025	0.686	1.14
21-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	2.49%	0.00%	0.00%	6.45%	1.55%	3.04%	0.92%	0.00%	0.00%	3.60%	1.48%	0.44%	4.41%
21-2-1	FR1	Y	2025-05-22	Field replicate 1	< 0.010	< 0.005	654	0.015	57.4	0.190	1.07	0.393	1020	< 0.005	< 0.500	11.7	2250	0.614	1.42
21-2-1	FR2	Y	2025-05-22	Field replicate 2	< 0.010	< 0.005	640	0.013	58.2	0.170	1.06	0.406	1070	< 0.005	< 0.500	11.5	2220	0.641	1.36
21-2-1	FRM	Y	2025-05-22	Mean of replicates	< 0.010	< 0.005	647	0.014	57.8	0.180	1.07	0.400	1045	< 0.005	< 0.500	11.6	2235	0.628	1.39
21-2-1	RPD	Y		RPD of replicates	0.00%	0.00%	2.16%	14.29%	1.38%	11.11%	0.94%	3.25%	4.78%	0.00%	0.00%	1.72%	1.34%	4.30%	4.32%
21-2-1	FR1	Y	2025-09-26	Field replicate 1	< 0.010	< 0.005	798	0.103	71.4	0.200	1.48	0.429	1080	0.010	< 0.500	14.8	2910	0.588	2.59
21-2-1	FR2	Y	2025-09-26	Field replicate 2	< 0.010	< 0.005	823	0.087	73.7	0.170	1.52	0.435	1090	0.013	< 0.500	15.1	2970	0.650	2.53
21-2-1	FRM	Y	2025-09-26	Mean of replicates	< 0.010	< 0.005	811	0.095	72.6	0.185	1.50	0.432	1085	0.012	< 0.500	15.0	2940	0.619	2.56
21-2-1	RPD	Y		RPD of replicates	0.00%	0.00%	3.08%	16.84%	3.17%	16.22%	2.67%	1.39%	0.92%	26.09%	0.00%	2.01%	2.04%	10.02%	2.34%
25-1-1	FR1	Y	2026-02-12	Field replicate 1	< 0.010	< 0.005	214	0.008	136	< 0.100	0.181	0.115	334	0.025	< 0.500	11.6	436	1.08	0.188
25-1-1	FR2	Y	2026-02-12	Field replicate 2	< 0.010	< 0.005	213	< 0.005	137	< 0.100	0.185	0.089	335	0.012	< 0.500	11.6	450	1.06	0.177
25-1-1	FRM	Y	2026-02-12	Mean of replicates	< 0.010	< 0.005	214	0.007	137	< 0.100	0.183	0.102	335	0.019	< 0.500	11.6	443	1.07	0.183
25-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.47%	48.48% b	0.73%	0.00%	2.19%	25.49%	0.30%	68.80% b	0.00%	0.00%	3.16%	1.87%	6.03%
28-1-0	FR1	Y	2026-02-12	Field replicate 1	< 0.010	< 0.005	1340	< 0.005	66.9	0.300	0.043	0.202	11.4	0.006	< 0.500	8.14	4.97	1.04	0.457
28-1-0	FR2	Y	2026-02-12	Field replicate 2	< 0.010	< 0.005	1350	< 0.005	66.6	0.300	0.040	0.215	10.3	< 0.005	< 0.500	8.22	4.82	1.05	0.497
28-1-0	FRM	Y	2026-02-12	Mean of replicates	< 0.010	< 0.005	1345	< 0.005	66.8	0.300	0.041	0.209	10.9	0.005	< 0.500	8.18	4.90	1.05	0.477
28-1-0	RPD	Y		RPD of replicates	0.00%	0.00%	0.74%	0.00%	0.45%	0.00%	5.31%	6.24%	10.14%	11.32%	0.00%	0.98%	3.06%	0.95%	8.39%
30-1-1	FR1	Y	2025-05-14	Field replicate 1	< 0.010	< 0.005	387	0.013	74.0	< 0.100	0.038	0.093	1.80	0.014	1.79	7.81	20.0	0.753	0.257
30-1-1	FR2	Y	2025-05-14	Field replicate 2	< 0.010	< 0.005	381	0.016	74.3	< 0.100	0.040	0.106	2.10	0.016	1.80	7.75	20.0	0.762	0.273
30-1-1	FRM	Y	2025-05-14	Mean of replicates	< 0.010	< 0.005	384	0.014	74.2	< 0.100	0.039	0.100	1.85	0.015	1.80	7.78	20.0	0.758	0.265
30-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	1.56%	21.28%	0.40%	0.00%	6.39%	13.07%	27.03%	12.08%	0.56%	0.77%	0.00%	1.19%	6.04%

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	Phosphorus	Potassium	Selenium	Silicon	Silver	Sodium	Strontium	Sulphur	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Zirconium
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	2	0.05	0.04	50	0.005	0.05	0.05	3	0.002	0.2	0.5	0.002	0.2	0.1	0.1
				Limit of Quantification (5x DL)	10	0.25	0.2	250	0.025	0.25	0.3	15.00	0.01	1	2.5	0.01	1	0.5	0.5
18-1-1	FR1	Y	2025-05-29	Field replicate 1	4.40	0.273	0.040	8090	< 0.005	5.27	88.4	7.80	0.002	< 0.200	< 0.500	0.136	0.860	1.05	< 0.100
18-1-1	FR2	Y	2025-05-29	Field replicate 2	4.70	0.283	0.040	8350	< 0.005	5.45	91.4	8.20	0.002	< 0.200	< 0.500	0.138	0.860	0.900	< 0.100
18-1-1	FRM	Y	2025-05-29	Mean of replicates	4.55	0.278	0.040	8220	< 0.005	5.36	89.9	8.00	0.002	< 0.200	< 0.500	0.137	0.860	0.975	< 0.100
18-1-1	RPD	Y		RPD of replicates	6.59%	3.60%	0.00%	3.16%	0.00%	3.36%	3.34%	5.00%	0.00%	0.00%	0.00%	1.46%	0.00%	15.38%	0.00%
18-1-1	FR1	Y	2025-10-03	Field replicate 1	3.70	0.324	0.040	8690	< 0.005	5.78	94.1	8.00	0.002	< 0.200	< 0.500	0.120	0.780	1.69	< 0.100
18-1-1	FR2	Y	2025-10-03	Field replicate 2	5.90	0.333	0.040	8600	< 0.005	5.80	93.8	7.70	0.003	< 0.200	< 0.500	0.120	0.760	1.34	< 0.100
18-1-1	FRM	Y	2025-10-03	Mean of replicates	4.80	0.329	0.040	8645	< 0.005	5.79	94.0	7.85	0.003	< 0.200	< 0.500	0.120	0.770	1.52	< 0.100
18-1-1	RPD	Y		RPD of replicates	45.83% b	2.74%	0.00%	1.04%	0.00%	0.35%	0.32%	3.82%	26.42%	0.00%	0.00%	0.00%	2.60%	23.10%	0.00%
21-1-1	FR1	Y	2025-05-22	Field replicate 1	27.0	< 0.250	< 0.200	18200	< 0.025	8.51	456	< 15.0	< 0.010	< 1.00	< 2.50	0.015	< 1.00	< 0.500	< 0.500
21-1-1	FR2	Y	2025-05-22	Field replicate 2	27.0	< 0.250	< 0.200	17600	< 0.025	8.83	439	< 15.0	< 0.010	< 1.00	< 2.50	0.012	< 1.00	< 0.500	< 0.500
21-1-1	FRM	Y	2025-05-22	Mean of replicates	27.0	< 0.250	< 0.200	17900	< 0.025	8.67	448	< 15.0	< 0.010	< 1.00	< 2.50	0.014	< 1.00	< 0.500	< 0.500
21-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	3.35%	0.00%	3.69%	3.80%	0.00%	0.00%	0.00%	0.00%	22.22%	0.00%	0.00%	0.00%
21-1-1	FR1	Y	2025-09-26	Field replicate 1	< 10.0	0.320	< 0.200	19000	< 0.025	8.91	421	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	7.44	< 0.500
21-1-1	FR2	Y	2025-09-26	Field replicate 2	15.0	0.310	< 0.200	18800	< 0.025	8.96	422	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	4.00	< 0.500
21-1-1	FRM	Y	2025-09-26	Mean of replicates	12.5	0.315	< 0.200	18900	< 0.025	8.94	422	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	5.72	< 0.500
21-1-1	RPD	Y		RPD of replicates	40.00% b	3.17%	0.00%	1.06%	0.00%	0.56%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	60.14% a	0.00%
21-1-1	FR1	Y	2025-11-14	Field replicate 1	< 4.00	0.190	< 0.080	19300	< 0.010	8.43	436	< 6.00	< 0.004	< 0.400	< 1.00	0.015	< 0.400	0.680	< 0.200
21-1-1	FR2	Y	2025-11-14	Field replicate 2	< 4.00	0.210	< 0.080	19500	< 0.010	9.33	484	< 6.00	< 0.004	< 0.400	< 1.00	0.016	< 0.400	0.650	< 0.200
21-1-1	FRM	Y	2025-11-14	Mean of replicates	< 4.00	0.200	< 0.080	19400	< 0.010	8.88	460	< 6.00	< 0.004	< 0.400	< 1.00	0.015	< 0.400	0.665	< 0.200
21-1-1	RPD	Y		RPD of replicates	0.00%	10.00%	0.00%	1.03%	0.00%	10.14%	10.43%	0.00%	0.00%	0.00%	0.00%	6.49%	0.00%	4.51%	0.00%
21-1-1	FR1	Y	2026-02-24	Field replicate 1	11.0	< 0.250	< 0.200	19100	< 0.025	9.07	408	< 15.0	< 0.010	< 1.00	< 2.50	0.025	< 1.00	0.970	< 0.500
21-1-1	FR2	Y	2026-02-24	Field replicate 2	5.90	0.220	< 0.080	19500	< 0.010	8.91	453	< 6.00	< 0.004	< 0.400	< 1.00	0.027	< 0.400	0.670	< 0.200
21-1-1	FRM	Y	2026-02-24	Mean of replicates	8.45	0.235	< 0.140	19300	< 0.018	8.99	431	< 10.5	< 0.007	< 0.700	< 1.75	0.026	< 0.700	0.820	< 0.350
21-1-1	RPD	Y		RPD of replicates	60.36% b	12.77%	85.71% b	2.07%	85.71% b	1.78%	10.45%	85.71% b	85.71% b	85.71% b	85.71% b	7.32%	85.71% b	36.58% a	85.71% b
21-1-2	FR1	Y	2025-05-22	Field replicate 1	4.90	5.89	< 0.040	12700	< 0.005	23.6	512	17.1	0.003	< 0.200	< 0.500	0.066	0.320	0.610	< 0.100
21-1-2	FR2	Y	2025-05-22	Field replicate 2	5.50	5.73	< 0.040	12500	< 0.005	23.3	519	17.6	0.003	< 0.200	< 0.500	0.058	0.290	0.610	< 0.100
21-1-2	FRM	Y	2025-05-22	Mean of replicates	5.20	5.81	< 0.040	12600	< 0.005	23.5	516	17.4	0.003	< 0.200	< 0.500	0.062	0.305	0.610	< 0.100
21-1-2	RPD	Y		RPD of replicates	11.54%	2.75%	0.00%	1.59%	0.00%	1.28%	1.36%	2.88%	0.00%	0.00%	0.00%	12.90%	9.84%	0.00%	0.00%
21-1-2	FR1	Y	2025-11-14	Field replicate 1	8.20	6.12	< 0.040	13100	< 0.005	25.9	646	14.5	0.003	< 0.200	< 0.500	0.096	0.220	0.250	< 0.100
21-1-2	FR2	Y	2025-11-14	Field replicate 2	6.90	6.26	< 0.040	13300	< 0.005	26.0	651	14.6	0.003	< 0.200	< 0.500	0.098	0.220	0.260	< 0.100
21-1-2	FRM	Y	2025-11-14	Mean of replicates	7.55	6.19	< 0.040	13200	< 0.005	26.0	649	14.6	0.003	< 0.200	< 0.500	0.097	0.220	0.255	< 0.100
21-1-2	RPD	Y		RPD of replicates	17.22%	2.26%	0.00%	1.52%	0.00%	0.39%	0.77%	0.69%	0.00%	0.00%	0.00%	1.97%	0.00%	3.92%	0.00%
21-1-2	FR1	Y	2026-02-23	Field replicate 1	5.70	5.53	< 0.040	13300	< 0.005	23.0	491	19.7	0.003	< 0.200	< 0.500	0.050	0.210	0.380	< 0.100
21-1-2	FR2	Y	2026-02-23	Field replicate 2	6.30	5.45	< 0.040	13200	< 0.005	22.4	505	19.6	0.003	< 0.200	< 0.500	0.051	0.200	0.420	< 0.100
21-1-2	FRM	Y	2026-02-23	Mean of replicates	6.00	5.49	< 0.040	13250	< 0.005	22.7	498	19.7	0.003	< 0.200	< 0.500	0.050	0.205	0.400	< 0.100
21-1-2	RPD	Y		RPD of replicates	10.00%	1.46%	0.00%	0.75%	0.00%	2.64%	2.81%	0.51%	7.14%	0.00%	0.00%	1.19%	4.88%	10.00%	0.00%
21-2-1	FR1	Y	2025-05-22	Field replicate 1	4.00	6.08	< 0.040	12300	< 0.005	23.7	522	18.1	0.003	< 0.200	< 0.500	0.071	0.230	0.420	< 0.100
21-2-1	FR2	Y	2025-05-22	Field replicate 2	4.20	5.96	< 0.040	12400	< 0.005	23.1	523	17.3	0.003	< 0.200	< 0.500	0.079	0.210	0.560	< 0.100
21-2-1	FRM	Y	2025-05-22	Mean of replicates	4.10	6.02	< 0.040	12350	< 0.005	23.4	523	17.7	0.003	< 0.200	< 0.500	0.075	0.220	0.490	< 0.100
21-2-1	RPD	Y		RPD of replicates	4.88%	1.99%	0.00%	0.81%	0.00%	2.56%	0.19%	4.52%	0.00%	0.00%	0.00%	10.67%	9.09%	28.57%	0.00%
21-2-1	FR1	Y	2025-09-26	Field replicate 1	6.70	6.55	< 0.040	13800	< 0.005	29.3	614	16.6	0.010	< 0.200	< 0.500	0.148	0.400	1.66	< 0.100
21-2-1	FR2	Y	2025-09-26	Field replicate 2	6.20	6.73	< 0.040	14100	< 0.005	29.7	622	14.6	0.011	< 0.200	< 0.500	0.145	0.390	1.56	< 0.100
21-2-1	FRM	Y	2025-09-26	Mean of replicates	6.45	6.64	< 0.040	13950	< 0.005	29.5	618	15.6	0.011	< 0.200	< 0.500	0.147	0.395	1.61	< 0.100
21-2-1	RPD	Y		RPD of replicates	7.75%	2.71%	0.00%	2.15%	0.00%	1.36%	1.29%	12.82%	9.52%	0.00%	0.00%	2.05%	2.53%	6.21%	0.00%
25-1-1	FR1	Y	2026-02-12	Field replicate 1	7.70	0.448	0.086	10300	< 0.005	8.25	450	76.6	< 0.002	< 0.200	< 0.500	0.146	< 0.200	0.810	< 0.100
25-1-1	FR2	Y	2026-02-12	Field replicate 2	5.80	0.482	0.076	10200	< 0.005	8.50	465	80.1	< 0.002	< 0.200	< 0.500	0.150	< 0.200	0.560	< 0.100
25-1-1	FRM	Y	2026-02-12	Mean of replicates	6.75	0.455	0.081	10250	< 0.005	8.38	458	78.4	< 0.002	< 0.200	< 0.500	0.148	< 0.200	0.685	< 0.100
25-1-1	RPD	Y		RPD of replicates	28.15%	3.08%	12.35%	0.98%	0.00%	2.99%	3.28%	4.47%	0.00%	0.00%	0.00%	2.70%	0.00%	36.50% a	0.00%
28-1-0	FR1	Y	2026-02-12	Field replicate 1	2.20	0.214	0.136	10300	< 0.005	3.99	382	9.80	< 0.002	< 0.200	< 0.500	0.201	0.780	0.150	< 0.100
28-1-0	FR2	Y	2026-02-12	Field replicate 2	2.30	0.214	0.129	10200	< 0.005	4.05	382	9.20	< 0.002	< 0.200	< 0.500	0.205	0.760	0.170	< 0.100
28-1-0	FRM	Y	2026-02-12	Mean of replicates	2.25	0.214	0.133	10250	< 0.005	4.02	382	9.50	< 0.002	< 0.200	< 0.500	0.203	0.770	0.160	< 0.100
28-1-0	RPD	Y		RPD of replicates	4.44%	0.00%	5.28%	0.98%	0.00%	1.49%	0.00%	6.32%	0.00%	0.00%	0.00%	1.97%	2.60%	12.50%	0.00%
30-1-1	FR1	Y	2025-05-14	Field replicate 1	8.00	0.565	< 0.040	7690	< 0.005	19.8	535	11.7	0.006	< 0.200	< 0.500	0.291	< 0.200	0.530	< 0.100
30-1-1	FR2	Y	2025-05-14	Field replicate 2	8.80	0.561	< 0.040	7930	< 0.005	19.9	549	11.4	0.005	< 0.200	< 0.500	0.288	< 0.200	0.560	< 0.100
30-1-1	FRM	Y	2025-05-14	Mean of replicates	8.40	0.563	< 0.040	7810	< 0.005	19.9	542	11.6	0.006	< 0.200	< 0.500	0.290	< 0.200	0.545	< 0.100
30-1-1	RPD	Y		RPD of replicates	9.52%	0.71%	0.00%	3.07%	0.00%	0.50%	2.58%	2.60%	10.71%	0.00%	0.00%	1.04%	0.00%	5.50%	0.00%

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	pH (Field)	Conductivity (Actual - Field)	Temperature (Field)	Alkalinity	Hardness (As CaCO3)	Chloride	Nitrogen - Ammonia	Nitrogen - Nitrite	Nitrogen - Nitrate	Nitrogen - Nitrate plus Nitrite	Sulphate	Aluminum	Antimony	Arsenic	Barium
				Fraction	TOT	TOT	TOT	TOT	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	pH	µS/cm	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.1	1	0.1	1	0.5	1	0.015	0.005	0.02	0.02	1	0.5	0.02	0.02	0.02
				Limit of Quantification (5x DL)	0.5	5	0.5	5	2.5	5	0.075	0.025	0.1	0.1	5	2.5	0.10	0.10	0.1
30-1-1	FR1	Y	2025-11-06	Field replicate 1	7.49	458	11.1	170	231	50.0	0.028	< 0.005	< 0.020	< 0.020	36.0	1.11	0.030	0.392	47.5
30-1-1	FR2	Y	2025-11-06	Field replicate 2	7.49	458	11.1	170	233	50.0	0.025	< 0.005	< 0.020	< 0.020	36.0	1.24	0.027	0.396	47.6
30-1-1	FRM	Y	2025-11-06	Mean of replicates	7.49	458	11.1	170	232	50.0	0.027	< 0.005	< 0.020	< 0.020	36.0	1.18	0.029	0.394	47.6
30-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.86%	0.00%	11.32%	0.00%	0.00%	0.00%	0.00%	11.06%	10.53%	1.02%	0.21%
30-1-2	FR1	Y	2025-09-11	Field replicate 1	7.14	508	12.2	170	220	64.0	< 0.015	< 0.005	0.031	0.031	50.0	3.27	0.098	0.342	8.36
30-1-2	FR2	Y	2025-09-11	Field replicate 2	7.14	508	12.2	170	220	63.0	< 0.015	< 0.005	0.025	0.025	50.0	1.55	0.084	0.353	8.35
30-1-2	FRM	Y	2025-09-11	Mean of replicates	7.14	508	12.2	170	220	63.5	< 0.015	< 0.005	0.028	0.028	50.0	2.41	0.091	0.348	8.36
30-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	1.57%	0.00%	0.00%	21.43%	21.43%	0.00%	**71.37%** b	15.38%	3.17%	0.12%
31-1-1	FR1	Y	2025-09-05	Field replicate 1	7.06	630	11.9	160	407	9.10	< 0.015	0.006	3.67	3.67	210	0.780	0.106	0.208	5.14
31-1-1	FR2	Y	2025-09-05	Field replicate 2	7.06	630	11.9	160	406	8.90	< 0.015	0.006	3.77	3.77	210	2.01	0.106	0.190	5.15
31-1-1	FRM	Y	2025-09-05	Mean of replicates	7.06	630	11.9	160	407	9.00	< 0.015	0.006	3.72	3.72	210	1.40	0.106	0.199	5.15
31-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.20%	2.22%	0.00%	9.84%	2.69%	2.69%	0.00%	**88.17%** b	0.00%	9.05%	0.19%
39-1-1	FR1	Y	2025-05-27	Field replicate 1	7.92	386	12.3	96.0	185	13.0	< 0.015	0.019	5.76	5.77	76.0	3.90	0.637	0.318	8.72
39-1-1	FR2	Y	2025-05-27	Field replicate 2	7.92	386	12.3	95.0	194	12.0	< 0.015	0.019	5.80	5.82	75.0	3.71	0.698	0.328	9.30
39-1-1	FRM	Y	2025-05-27	Mean of replicates	7.92	386	12.3	95.5	190	12.5	< 0.015	0.019	5.78	5.80	75.5	3.81	0.668	0.323	9.01
39-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	1.05%	4.75%	8.00%	0.00%	2.08%	0.68%	0.86%	1.32%	4.99%	9.14%	3.10%	6.44%
39-1-1	FR1	Y	2025-10-03	Field replicate 1	7.71	359	11.8	94.0	200	14.0	< 0.015	< 0.005	3.20	3.20	83.0	4.11	0.673	0.332	9.14
39-1-1	FR2	Y	2025-10-03	Field replicate 2	7.71	359	11.8	94.0	197	13.0	< 0.015	< 0.005	3.11	3.11	80.0	4.11	0.682	0.325	9.05
39-1-1	FRM	Y	2025-10-03	Mean of replicates	7.71	359	11.8	94.0	199	13.5	< 0.015	< 0.005	3.16	3.16	81.5	4.11	0.678	0.329	9.10
39-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.51%	7.41%	0.00%	0.00%	2.85%	2.85%	3.68%	0.00%	1.33%	2.13%	0.99%
39-1-1	FR1	Y	2025-11-20	Field replicate 1	7.59	347	11.3	94.0	193	13.0	< 0.015	< 0.005	1.10	1.10	85.0	2.32	0.631	0.366	8.52
39-1-1	FR2	Y	2025-11-20	Field replicate 2	7.59	347	11.3	100.00	203	13.0	< 0.015	< 0.005	2.18	2.18	84.0	1.03	0.046	0.392	3.79
39-1-1	FRM	Y	2025-11-20	Mean of replicates	7.59	347	11.3	97.0	198	13.0	< 0.015	< 0.005	1.64	1.64	84.5	1.68	0.339	0.379	6.16
39-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	6.19%	5.05%	0.00%	0.00%	0.00%	**65.85%** a	**65.85%** a	1.18%	**77.01%** b	**172.82%** b	6.86%	**76.85%** a
41-1-1	FR1	Y	2025-05-14	Field replicate 1	7.33	328	10.9	150	185	10.0	0.031	< 0.005	< 0.020	< 0.020	43.0	1.42	0.050	2.65	1.39
41-1-1	FR2	Y	2025-05-14	Field replicate 2	7.33	328	10.9	150	186	10.0	0.035	< 0.005	< 0.020	< 0.020	44.0	0.830	0.042	2.69	1.42
41-1-1	FRM	Y	2025-05-14	Mean of replicates	7.33	328	10.9	150	186	10.0	0.033	< 0.005	< 0.020	< 0.020	43.5	1.13	0.046	2.67	1.41
41-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.54%	0.00%	12.12%	0.00%	0.00%	0.00%	2.30%	**52.44%** b	17.39%	1.50%	2.14%
41-1-1	FR1	Y	2025-09-09	Field replicate 1	7.02	376	12.4	150	198	10.0	0.041	< 0.005	0.099	0.099	55.0	0.610	0.061	1.92	1.89
41-1-1	FR2	Y	2025-09-09	Field replicate 2	7.02	376	12.4	150	196	10.0	0.038	< 0.005	0.106	0.106	60.0	0.500	0.053	1.86	1.97
41-1-1	FRM	Y	2025-09-09	Mean of replicates	7.02	376	12.4	150	197	10.0	0.040	< 0.005	0.103	0.103	57.5	0.555	0.057	1.89	1.93
41-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.02%	0.00%	7.59%	0.00%	6.83%	6.83%	8.70%	19.82%	14.04%	3.17%	4.15%
42-1-1	FR1	Y	2025-05-13	Field replicate 1	7.00	446	10.3	180	246	33.0	0.067	< 0.005	< 0.020	< 0.020	55.0	22.5	< 0.020	0.145	14.2
42-1-1	FR2	Y	2025-05-13	Field replicate 2	7.00	446	10.3	180	246	34.0	0.067	< 0.005	< 0.020	< 0.020	55.0	25.0	< 0.020	0.139	14.1
42-1-1	FRM	Y	2025-05-13	Mean of replicates	7.00	446	10.3	180	246	33.5	0.067	< 0.005	< 0.020	< 0.020	55.0	23.8	< 0.020	0.142	14.2
42-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	2.99%	0.00%	0.00%	0.00%	0.00%	0.00%	10.53%	0.00%	4.23%	0.71%
42-1-1	FR1	Y	2025-09-09	Field replicate 1	7.04	491	11.1	200	290	31.0	0.077	< 0.005	< 0.020	< 0.020	69.0	2.43	< 0.020	0.170	16.1
42-1-1	FR2	Y	2025-09-09	Field replicate 2	7.04	491	11.1	200	294	31.0	0.083	< 0.005	< 0.020	< 0.020	68.0	2.77	< 0.020	0.171	16.1
42-1-1	FRM	Y	2025-09-09	Mean of replicates	7.04	491	11.1	200	292	31.0	0.080	< 0.005	< 0.020	< 0.020	68.5	2.60	< 0.020	0.171	16.1
42-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.37%	0.00%	7.50%	0.00%	0.00%	0.00%	1.46%	13.08%	0.00%	0.59%	0.00%
71-1-1	FR1	Y	2025-05-29	Field replicate 1	7.76	267	11.1	140	150	6.60	< 0.015	< 0.005	< 0.020	< 0.020	24.0	2.76	0.049	0.402	6.06
71-1-1	FR2	Y	2025-05-29	Field replicate 2	7.76	267	11.1	140	150	6.70	< 0.015	< 0.005	< 0.020	< 0.020	24.0	1.45	0.046	0.395	5.94
71-1-1	FRM	Y	2025-05-29	Mean of replicates	7.76	267	11.1	140	150	6.65	< 0.015	< 0.005	< 0.020	< 0.020	24.0	2.11	0.048	0.399	6.00
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	0.00%	0.00%	0.00%	0.00%	0.00%	**62.23%** b	6.32%	1.76%	2.00%
71-1-1	FR1	Y	2025-09-18	Field replicate 1	7.68	267	10.4	160	201	8.00	< 0.015	0.006	< 0.020	< 0.020	24.0	2.98	0.062	0.332	7.02
71-1-1	FR2	Y	2025-09-18	Field replicate 2	7.68	267	10.4	160	199	8.10	< 0.015	0.006	0.026	0.031	25.0	1.06	0.060	0.325	6.68
71-1-1	FRM	Y	2025-09-18	Mean of replicates	7.68	267	10.4	160	200	8.05	< 0.015	0.006	0.023	0.026	24.5	2.02	0.061	0.329	6.85
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	1.24%	0.00%	3.57%	26.09%	**43.14%** b	4.08%	**95.05%** b	3.28%	2.13%	4.96%
71-1-1	FR1	Y	2025-11-25	Field replicate 1	7.56	308	9.60	170	185	7.90	0.020	< 0.005	< 0.020	< 0.020	27.0	0.880	0.075	0.498	8.49
71-1-1	FR2	Y	2025-11-25	Field replicate 2	7.56	308	9.60	170	188	8.00	< 0.015	< 0.005	< 0.020	< 0.020	27.0	1.95	0.077	0.487	9.82
71-1-1	FRM	Y	2025-11-25	Mean of replicates	7.56	308	9.60	170	187	7.95	0.018	< 0.005	< 0.020	< 0.020	27.0	1.42	0.076	0.493	9.16
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.26%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	**75.62%** b	2.63%	2.23%	14.53%
71-1-1	FR1	Y	2026-02-23	Field replicate 1; well purged Feb.18	7.52	274	10.4	150	155	7.30	< 0.015	< 0.005	< 0.020	< 0.020	23.0	0.930	0.050	0.416	6.79
71-1-1	FR2	Y	2026-02-23	Field replicate 2	7.52	274	10.4	150	153	7.10	< 0.015	< 0.005	0.022	0.022	23.0	1.14	0.043	0.406	6.50
71-1-1	FRM	Y	2026-02-23	Mean of replicates	7.52	274	10.4	150	154	7.20	< 0.015	< 0.005	0.021	0.021	23.0	1.04	0.047	0.411	6.65
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	0.00%	9.52%	9.52%	0.00%	20.29%	15.05%	2.43%	4.36%

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Molybdenum	Nickel
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.01	0.005	10	0.005	0.05	0.1	0.005	0.05	1	0.005	0.5	0.05	0.05	0.05	0.02
				Limit of Quantification (5x DL)	0.05	0.025	50	0.025	0.25	0.5	0.025	0.25	5	0.025	2.5	0.25	0.25	0.25	0.1
30-1-1	FR1	Y	2025-11-06	Field replicate 1	< 0.010	< 0.005	419	0.009	78.9	< 0.100	0.032	< 0.050	1.80	0.011	1.71	8.27	29.9	0.740	0.216
30-1-1	FR2	Y	2025-11-06	Field replicate 2	< 0.010	< 0.005	432	0.009	79.8	< 0.100	0.036	< 0.050	1.70	0.010	1.74	8.30	30.8	0.756	0.239
30-1-1	FRM	Y	2025-11-06	Mean of replicates	< 0.010	< 0.005	426	0.009	79.4	< 0.100	0.034	< 0.050	1.75	0.011	1.73	8.29	30.4	0.748	0.228
30-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	3.06%	4.49%	1.13%	0.00%	11.94%	0.00%	5.71%	8.53%	1.74%	0.36%	2.97%	2.14%	10.11%
30-1-2	FR1	Y	2025-09-11	Field replicate 1	< 0.010	< 0.005	314	0.063	75.6	< 0.100	0.077	0.469	3.50	0.012	< 0.500	7.49	2.26	4.35	0.688
30-1-2	FR2	Y	2025-09-11	Field replicate 2	< 0.010	< 0.005	317	0.060	75.7	< 0.100	0.075	0.415	1.20	0.007	< 0.500	7.49	2.24	4.33	0.758
30-1-2	FRM	Y	2025-09-11	Mean of replicates	< 0.010	< 0.005	316	0.061	75.7	< 0.100	0.076	0.442	2.35	0.009	< 0.500	7.49	2.25	4.34	0.723
30-1-2	RPD	Y		RPD of replicates	0.00%	0.00%	0.95%	5.05%	0.13%	0.00%	3.68%	12.22%	**97.87%** b	**52.75%** b	0.00%	0.00%	0.89%	0.46%	9.68%
31-1-1	FR1	Y	2025-09-05	Field replicate 1	< 0.010	< 0.005	59.0	0.044	143	< 0.100	0.153	0.353	1.10	0.005	< 0.500	12.5	28.3	0.974	0.262
31-1-1	FR2	Y	2025-09-05	Field replicate 2	< 0.010	< 0.005	59.0	0.040	142	< 0.100	0.149	0.716	2.60	0.012	< 0.500	12.5	28.3	1.00	0.288
31-1-1	FRM	Y	2025-09-05	Mean of replicates	< 0.010	< 0.005	59.0	0.042	143	< 0.100	0.151	0.535	1.85	0.008	< 0.500	12.5	28.3	0.987	0.275
31-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	8.55%	0.70%	0.00%	2.65%	**67.91%** a	**81.08%** b	**79.52%** b	0.00%	0.00%	0.00%	2.63%	9.45%
39-1-1	FR1	Y	2025-05-27	Field replicate 1	< 0.010	< 0.005	22.0	0.020	65.5	< 0.100	0.030	0.199	1.80	0.015	0.520	5.15	0.072	2.59	0.196
39-1-1	FR2	Y	2025-05-27	Field replicate 2	< 0.010	< 0.005	18.0	0.019	66.9	< 0.100	0.032	0.235	2.30	0.015	0.550	5.33	0.087	2.70	0.203
39-1-1	FRM	Y	2025-05-27	Mean of replicates	< 0.010	< 0.005	20.0	0.019	67.2	< 0.100	0.031	0.217	2.05	0.015	0.535	5.24	0.080	2.85	0.200
39-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	20.00%	2.60%	5.08%	0.00%	4.50%	16.56%	24.39%	1.97%	5.61%	3.44%	18.87%	4.16%	3.51%
39-1-1	FR1	Y	2025-10-03	Field replicate 1	< 0.010	< 0.005	21.0	0.016	70.6	< 0.100	0.032	0.218	2.60	0.007	< 0.500	5.75	0.056	3.03	0.201
39-1-1	FR2	Y	2025-10-03	Field replicate 2	< 0.010	< 0.005	18.0	0.015	69.6	< 0.100	0.034	0.268	17.4	0.012	< 0.500	5.68	0.198	2.99	0.205
39-1-1	FRM	Y	2025-10-03	Mean of replicates	< 0.010	< 0.005	19.5	0.016	70.1	< 0.100	0.033	0.243	10.0	0.010	< 0.500	5.72	0.127	3.01	0.203
39-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	15.38%	4.50%	1.43%	0.00%	7.88%	20.58%	**148.00%** b	**52.31%** b	0.00%	1.22%	**111.81%** b	1.33%	1.97%
39-1-1	FR1	Y	2025-11-20	Field replicate 1	< 0.010	< 0.005	17.0	0.016	67.8	< 0.100	0.032	0.190	< 1.00	0.005	< 0.500	5.85	< 0.050	2.63	0.214
39-1-1	FR2	Y	2025-11-20	Field replicate 2	< 0.010	< 0.005	72.0	0.014	69.7	< 0.100	0.042	1.54	< 1.00	0.006	< 0.500	7.11	1.71	0.228	0.468
39-1-1	FRM	Y	2025-11-20	Mean of replicates	< 0.010	< 0.005	44.5	0.015	66.8	< 0.100	0.037	0.865	< 1.00	0.005	< 0.500	6.48	0.880	1.43	0.341
39-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	**123.60%** b	10.67%	2.76%	0.00%	26.16%	**156.07%** b	0.00%	7.55%	0.00%	19.44%	**188.64%** b	**168.09%** b	**74.49%** a
41-1-1	FR1	Y	2025-05-14	Field replicate 1	< 0.010	< 0.005	38.0	0.006	63.4	< 0.100	0.039	0.225	4.10	0.005	< 0.500	6.54	106	1.69	0.119
41-1-1	FR2	Y	2025-05-14	Field replicate 2	< 0.010	< 0.005	34.0	0.006	63.6	< 0.100	0.037	0.198	2.80	< 0.005	< 0.500	6.66	107	1.69	0.095
41-1-1	FRM	Y	2025-05-14	Mean of replicates	< 0.010	< 0.005	36.0	0.006	63.5	< 0.100	0.038	0.212	3.45	0.005	< 0.500	6.60	107	1.69	0.107
41-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	11.11%	1.57%	0.31%	0.00%	5.55%	12.77%	**37.68%** b	0.00%	0.00%	1.82%	0.94%	0.00%	22.43%
41-1-1	FR1	Y	2025-09-09	Field replicate 1	< 0.010	< 0.005	28.0	0.010	67.3	< 0.100	0.073	0.273	3.40	0.008	< 0.500	7.24	369	2.08	0.146
41-1-1	FR2	Y	2025-09-09	Field replicate 2	< 0.010	< 0.005	29.0	0.008	66.6	< 0.100	0.070	0.268	3.20	0.005	< 0.500	7.21	359	2.12	0.133
41-1-1	FRM	Y	2025-09-09	Mean of replicates	< 0.010	< 0.005	28.5	0.009	67.0	< 0.100	0.072	0.271	3.30	0.007	< 0.500	7.23	364	2.10	0.140
41-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	3.51%	13.48%	1.05%	0.00%	4.31%	1.85%	6.06%	**42.34%** b	0.00%	0.42%	2.75%	1.90%	9.32%
42-1-1	FR1	Y	2025-05-13	Field replicate 1	0.016	< 0.005	66.0	< 0.005	89.5	0.180	0.088	0.177	716	0.073	< 0.500	5.54	155	0.252	0.210
42-1-1	FR2	Y	2025-05-13	Field replicate 2	0.013	< 0.005	68.0	< 0.005	89.1	0.180	0.086	0.114	712	0.063	< 0.500	5.68	152	0.241	0.139
42-1-1	FRM	Y	2025-05-13	Mean of replicates	0.015	< 0.005	67.0	< 0.005	89.3	0.180	0.087	0.146	714	0.068	< 0.500	5.61	154	0.247	0.175
42-1-1	RPD	Y		RPD of replicates	20.69%	0.00%	2.99%	0.00%	0.45%	0.00%	2.08%	**43.30%** b	0.56%	13.96%	0.00%	2.50%	1.95%	4.46%	**40.69%** a
42-1-1	FR1	Y	2025-09-09	Field replicate 1	< 0.010	< 0.005	66.0	< 0.005	105	0.130	0.037	< 0.050	670	0.007	< 0.500	6.78	159	0.412	0.119
42-1-1	FR2	Y	2025-09-09	Field replicate 2	0.015	< 0.005	68.0	< 0.005	107	0.140	0.038	< 0.050	678	0.009	< 0.500	6.57	156	0.404	0.126
42-1-1	FRM	Y	2025-09-09	Mean of replicates	0.013	< 0.005	67.0	< 0.005	106	0.135	0.037	< 0.050	674	0.008	< 0.500	6.68	158	0.408	0.123
42-1-1	RPD	Y		RPD of replicates	**40.00%** b	0.00%	2.99%	0.00%	1.89%	7.41%	3.75%	0.00%	1.19%	22.22%	0.00%	3.15%	1.90%	1.96%	5.71%
71-1-1	FR1	Y	2025-05-29	Field replicate 1	< 0.010	< 0.005	540	< 0.005	49.1	< 0.100	0.091	0.065	43.5	0.010	0.590	6.68	82.8	0.472	0.287
71-1-1	FR2	Y	2025-05-29	Field replicate 2	< 0.010	< 0.005	545	< 0.005	49.0	< 0.100	0.094	0.115	41.2	< 0.005	0.590	6.68	83.3	0.472	0.338
71-1-1	FRM	Y	2025-05-29	Mean of replicates	< 0.010	< 0.005	543	< 0.005	49.1	< 0.100	0.092	0.090	42.4	0.008	0.590	6.68	83.1	0.472	0.313
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.92%	0.00%	0.20%	0.00%	3.36%	**55.56%** b	5.43%	**70.13%** b	0.00%	0.00%	0.60%	0.00%	16.32%
71-1-1	FR1	Y	2025-09-18	Field replicate 1	< 0.010	< 0.005	531	0.005	66.4	< 0.100	0.092	0.108	49.3	0.012	0.550	8.48	98.7	0.395	0.327
71-1-1	FR2	Y	2025-09-18	Field replicate 2	< 0.010	< 0.005	510	< 0.005	65.7	< 0.100	0.096	0.075	39.0	0.010	< 0.500	8.58	96.2	0.373	0.329
71-1-1	FRM	Y	2025-09-18	Mean of replicates	< 0.010	< 0.005	521	0.005	66.1	< 0.100	0.094	0.092	44.2	0.011	0.525	8.53	97.5	0.384	0.328
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	4.03%	0.00%	1.06%	0.00%	4.49%	**36.07%** b	23.33%	20.37%	9.52%	1.17%	2.57%	5.73%	0.61%
71-1-1	FR1	Y	2025-11-25	Field replicate 1	< 0.010	< 0.005	458	< 0.005	60.6	< 0.100	0.128	0.052	44.9	0.006	0.590	8.15	147	0.688	0.898
71-1-1	FR2	Y	2025-11-25	Field replicate 2	< 0.010	< 0.005	454	< 0.005	61.4	< 0.100	0.134	0.073	45.6	0.010	0.570	8.32	150	0.684	0.941
71-1-1	FRM	Y	2025-11-25	Mean of replicates	< 0.010	< 0.005	456	< 0.005	61.0	< 0.100	0.131	0.083	45.3	0.008	0.580	8.24	149	0.686	0.920
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.88%	0.00%	1.31%	0.00%	4.58%	**33.60%** b	1.55%	**47.85%** b	3.45%	2.06%	2.02%	0.58%	4.68%
71-1-1	FR1	Y	2026-02-23	Field replicate 1; well purged Feb.18	< 0.010	< 0.005	514	0.029	50.0	< 0.100	0.059	0.054	7.70	< 0.005	< 0.500	7.33	81.5	0.614	0.594
71-1-1	FR2	Y	2026-02-23	Field replicate 2	< 0.010	< 0.005	528	0.028	49.9	< 0.100	0.056	0.063	8.00	< 0.005	< 0.500	6.96	78.7	0.592	0.589
71-1-1	FRM	Y	2026-02-23	Mean of replicates	< 0.010	< 0.005	521	0.029	50.0	< 0.100	0.058	0.059	7.85	< 0.005	< 0.500	7.15	80.1	0.603	0.592
71-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	2.69%	4.54%	0.20%	0.00%	6.61%	15.38%	3.82%	0.00%	0.00%	5.18%	3.50%	3.65%	0.85%

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	Phosphorus	Potassium	Selenium	Silicon	Silver	Sodium	Strontium	Sulphur	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Zirconium
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	2	0.05	0.04	50	0.005	0.05	0.05	3	0.002	0.2	0.5	0.002	0.2	0.1	0.1
				Limit of Quantification (5x DL)	10	0.25	0.2	250	0.025	0.25	0.3	15.00	0.01	1	2.5	0.01	1	0.5	0.5
30-1-1	FR1	Y	2025-11-06	Field replicate 1	7.20	0.525	< 0.040	8050	< 0.005	19.1	521	11.8	0.005	< 0.200	< 0.500	0.273	< 0.200	0.340	< 0.100
30-1-1	FR2	Y	2025-11-06	Field replicate 2	7.20	0.538	< 0.040	8040	< 0.005	18.8	521	12.0	0.005	< 0.200	< 0.500	0.274	< 0.200	0.350	< 0.100
30-1-1	FRM	Y	2025-11-06	Mean of replicates	7.20	0.532	< 0.040	8045	< 0.005	19.0	521	11.9	0.005	< 0.200	< 0.500	0.274	< 0.200	0.345	< 0.100
30-1-1	RPD	Y		RPD of replicates	0.00%	2.45%	0.00%	0.12%	0.00%	1.58%	0.00%	1.68%	5.83%	0.00%	0.00%	0.37%	0.00%	2.90%	0.00%
30-1-2	FR1	Y	2025-09-11	Field replicate 1	14.5	2.11	0.099	5390	< 0.005	36.3	317	17.7	0.003	< 0.200	< 0.500	0.263	0.300	7.65	< 0.100
30-1-2	FR2	Y	2025-09-11	Field replicate 2	13.4	2.12	0.102	5440	< 0.005	35.5	313	18.5	0.002	< 0.200	< 0.500	0.258	0.320	7.32	< 0.100
30-1-2	FRM	Y	2025-09-11	Mean of replicates	14.0	2.12	0.101	5415	< 0.005	35.9	315	18.1	0.002	< 0.200	< 0.500	0.261	0.310	7.49	< 0.100
30-1-2	RPD	Y		RPD of replicates	7.89%	0.47%	2.99%	0.92%	0.00%	2.23%	1.27%	4.42%	22.22%	0.00%	0.00%	1.92%	6.45%	4.41%	0.00%
31-1-1	FR1	Y	2025-09-05	Field replicate 1	5.50	0.755	0.112	5700	< 0.005	8.15	430	75.7	< 0.002	< 0.200	< 0.500	0.507	0.350	0.350	< 0.100
31-1-1	FR2	Y	2025-09-05	Field replicate 2	6.20	0.744	0.087	5740	< 0.005	7.95	437	76.7	< 0.002	< 0.200	< 0.500	0.510	0.330	0.420	< 0.100
31-1-1	FRM	Y	2025-09-05	Mean of replicates	5.85	0.750	0.100	5720	< 0.005	8.05	434	76.2	< 0.002	< 0.200	< 0.500	0.509	0.340	0.385	< 0.100
31-1-1	RPD	Y		RPD of replicates	11.97%	1.47%	25.13%	0.70%	0.00%	2.48%	1.61%	1.31%	0.00%	0.00%	0.00%	0.59%	5.88%	18.18%	0.00%
39-1-1	FR1	Y	2025-05-27	Field replicate 1	3.00	0.327	0.528	4890	< 0.005	5.55	395	25.0	< 0.002	< 0.200	< 0.500	0.271	1.51	0.900	< 0.100
39-1-1	FR2	Y	2025-05-27	Field replicate 2	< 2.00	0.339	0.524	5070	< 0.005	5.68	417	24.3	0.002	< 0.200	< 0.500	0.278	1.53	1.04	< 0.100
39-1-1	FRM	Y	2025-05-27	Mean of replicates	2.50	0.333	0.526	4980	< 0.005	5.62	406	24.7	0.002	< 0.200	< 0.500	0.275	1.52	0.970	< 0.100
39-1-1	RPD	Y		RPD of replicates	40.00% b	3.60%	0.76%	3.61%	0.00%	2.32%	5.42%	2.84%	0.00%	0.00%	0.00%	2.55%	1.32%	14.43%	0.00%
39-1-1	FR1	Y	2025-10-03	Field replicate 1	2.20	0.342	0.600	5050	< 0.005	5.74	405	28.1	< 0.002	< 0.200	< 0.500	0.298	1.56	0.660	< 0.100
39-1-1	FR2	Y	2025-10-03	Field replicate 2	2.20	0.339	0.577	5140	< 0.005	5.81	406	29.4	< 0.002	< 0.200	< 0.500	0.293	1.54	0.790	< 0.100
39-1-1	FRM	Y	2025-10-03	Mean of replicates	2.20	0.341	0.589	5095	< 0.005	5.78	406	28.8	< 0.002	< 0.200	< 0.500	0.296	1.55	0.725	< 0.100
39-1-1	RPD	Y		RPD of replicates	0.00%	0.88%	3.91%	1.77%	0.00%	1.21%	0.25%	4.52%	0.00%	0.00%	0.00%	1.69%	1.29%	17.93%	0.00%
39-1-1	FR1	Y	2025-11-20	Field replicate 1	2.40	0.322	0.571	5160	< 0.005	5.84	378	28.4	< 0.002	< 0.200	< 0.500	0.354	1.65	0.550	< 0.100
39-1-1	FR2	Y	2025-11-20	Field replicate 2	3.40	0.416	0.072	5890	< 0.005	5.75	258	27.3	0.003	< 0.200	< 0.500	0.055	0.330	0.780	< 0.100
39-1-1	FRM	Y	2025-11-20	Mean of replicates	2.90	0.369	0.322	5525	< 0.005	5.80	318	27.9	0.003	< 0.200	< 0.500	0.205	0.990	0.665	< 0.100
39-1-1	RPD	Y		RPD of replicates	34.48% b	25.47%	155.21% b	13.21%	0.00%	1.55%	37.74% a	3.95%	43.14% b	0.00%	0.00%	146.21% a	133.33% b	34.58% a	0.00%
41-1-1	FR1	Y	2025-05-14	Field replicate 1	2.10	0.869	0.046	7260	< 0.005	6.10	188	15.2	< 0.002	< 0.200	< 0.500	0.164	< 0.200	0.320	< 0.100
41-1-1	FR2	Y	2025-05-14	Field replicate 2	3.20	0.878	0.044	7310	< 0.005	6.17	189	15.1	< 0.002	< 0.200	< 0.500	0.162	< 0.200	0.150	< 0.100
41-1-1	FRM	Y	2025-05-14	Mean of replicates	2.65	0.874	0.045	7285	< 0.005	6.14	189	15.2	< 0.002	< 0.200	< 0.500	0.163	< 0.200	0.235	< 0.100
41-1-1	RPD	Y		RPD of replicates	41.51% b	1.03%	4.44%	0.69%	0.00%	1.14%	0.53%	0.66%	0.00%	0.00%	0.00%	1.23%	0.00%	72.34% b	0.00%
41-1-1	FR1	Y	2025-09-09	Field replicate 1	< 2.00	1.23	0.082	7260	< 0.005	7.21	198	19.2	0.003	< 0.200	< 0.500	0.252	< 0.200	0.120	< 0.100
41-1-1	FR2	Y	2025-09-09	Field replicate 2	< 2.00	1.22	0.077	7180	< 0.005	7.09	199	19.1	0.003	< 0.200	< 0.500	0.254	< 0.200	< 0.100	< 0.100
41-1-1	FRM	Y	2025-09-09	Mean of replicates	< 2.00	1.23	0.080	7220	< 0.005	7.15	199	19.2	0.003	< 0.200	< 0.500	0.253	< 0.200	0.110	< 0.100
41-1-1	RPD	Y		RPD of replicates	0.00%	0.82%	6.29%	1.11%	0.00%	1.68%	0.50%	0.52%	10.17%	0.00%	0.00%	0.79%	0.00%	18.18%	0.00%
42-1-1	FR1	Y	2025-05-13	Field replicate 1	5.10	1.04	0.064	5570	< 0.005	8.91	362	19.3	< 0.002	< 0.200	0.750	0.054	0.750	0.370	< 0.100
42-1-1	FR2	Y	2025-05-13	Field replicate 2	6.10	1.03	0.053	5570	< 0.005	8.84	353	19.4	< 0.002	< 0.200	0.600	0.059	0.750	0.260	< 0.100
42-1-1	FRM	Y	2025-05-13	Mean of replicates	5.60	1.04	0.059	5570	< 0.005	8.88	358	19.4	< 0.002	< 0.200	0.675	0.056	0.750	0.315	< 0.100
42-1-1	RPD	Y		RPD of replicates	17.86%	0.97%	18.80%	0.00%	0.00%	0.79%	2.52%	0.52%	0.00%	0.00%	22.22%	9.42%	0.00%	34.92% b	0.00%
42-1-1	FR1	Y	2025-09-09	Field replicate 1	5.80	1.06	< 0.040	6670	< 0.005	10.2	446	27.4	< 0.002	< 0.200	< 0.500	0.109	0.630	< 0.100	< 0.100
42-1-1	FR2	Y	2025-09-09	Field replicate 2	6.80	1.05	< 0.040	6820	< 0.005	10.0	450	26.6	< 0.002	< 0.200	< 0.500	0.108	0.600	< 0.100	< 0.100
42-1-1	FRM	Y	2025-09-09	Mean of replicates	6.30	1.06	< 0.040	6745	< 0.005	10.1	448	27.0	< 0.002	< 0.200	< 0.500	0.109	0.615	< 0.100	< 0.100
42-1-1	RPD	Y		RPD of replicates	15.87%	0.95%	0.00%	2.22%	0.00%	1.98%	0.89%	2.96%	0.00%	0.00%	0.00%	0.92%	4.88%	0.00%	0.00%
71-1-1	FR1	Y	2025-05-29	Field replicate 1	12.9	0.264	< 0.040	11600	0.010	7.87	132	7.60	0.004	< 0.200	< 0.500	0.256	0.320	1.86	< 0.100
71-1-1	FR2	Y	2025-05-29	Field replicate 2	14.6	0.264	< 0.040	11900	< 0.005	7.84	132	7.10	0.003	< 0.200	< 0.500	0.253	0.330	0.340	< 0.100
71-1-1	FRM	Y	2025-05-29	Mean of replicates	13.8	0.264	< 0.040	11850	0.007	7.86	132	7.35	0.004	< 0.200	< 0.500	0.255	0.325	1.10	< 0.100
71-1-1	RPD	Y		RPD of replicates	12.36%	0.00%	0.00%	0.84%	62.07% b	0.38%	0.00%	6.80%	13.70%	0.00%	0.00%	1.18%	3.08%	138.18% b	0.00%
71-1-1	FR1	Y	2025-09-18	Field replicate 1	15.6	0.277	< 0.040	13800	< 0.005	7.96	173	8.30	0.004	< 0.200	< 0.500	0.262	0.300	0.460	< 0.100
71-1-1	FR2	Y	2025-09-18	Field replicate 2	16.9	0.268	< 0.040	13600	< 0.005	7.69	172	8.20	0.004	< 0.200	< 0.500	0.260	0.290	0.180	< 0.100
71-1-1	FRM	Y	2025-09-18	Mean of replicates	16.3	0.273	< 0.040	13700	< 0.005	7.83	173	8.25	0.004	< 0.200	< 0.500	0.261	0.295	0.320	< 0.100
71-1-1	RPD	Y		RPD of replicates	8.00%	3.30%	0.00%	1.46%	0.00%	3.45%	0.58%	1.21%	12.99%	0.00%	0.00%	0.77%	3.39%	87.50% b	0.00%
71-1-1	FR1	Y	2025-11-25	Field replicate 1	17.1	0.286	< 0.040	12100	< 0.005	7.94	169	8.30	0.005	< 0.200	< 0.500	0.252	0.400	0.340	< 0.100
71-1-1	FR2	Y	2025-11-25	Field replicate 2	18.6	0.297	< 0.040	12300	< 0.005	8.08	164	8.20	0.006	< 0.200	< 0.500	0.255	0.410	0.510	< 0.100
71-1-1	FRM	Y	2025-11-25	Mean of replicates	17.9	0.292	< 0.040	12200	< 0.005	8.01	167	8.25	0.005	< 0.200	< 0.500	0.254	0.405	0.425	< 0.100
71-1-1	RPD	Y		RPD of replicates	8.40%	3.77%	0.00%	1.64%	0.00%	1.75%	3.00%	1.21%	22.64%	0.00%	0.00%	1.18%	2.47%	40.00% b	0.00%
71-1-1	FR1	Y	2026-02-23	Field replicate 1; well purged Feb.18	10.4	0.277	< 0.040	12400	< 0.005	7.26	128	8.00	0.005	< 0.200	< 0.500	0.204	0.270	2.55	< 0.100
71-1-1	FR2	Y	2026-02-23	Field replicate 2	12.3	0.248	< 0.040	12200	< 0.005	6.99	123	6.90	0.005	< 0.200	< 0.500	0.193	0.280	2.47	< 0.100
71-1-1	FRM	Y	2026-02-23	Mean of replicates	11.4	0.263	< 0.040	12300	< 0.005	7.13	126	7.45	0.005	< 0.200	< 0.500	0.199	0.275	2.51	< 0.100
71-1-1	RPD	Y		RPD of replicates	16.74%	11.05%	0.00%	1.63%	0.00%	3.79%	3.98%	14.77%	1.90%	0.00%	0.00%	5.54%	3.64%	3.19%	0.00%

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	pH (Field)	Conductivity (Actual - Field)	Temperature (Field)	Alkalinity	Hardness (As CaCO3)	Chloride	Nitrogen - Ammonia	Nitrogen - Nitrite	Nitrogen - Nitrate	Nitrogen - Nitrate plus Nitrite	Sulphate	Aluminum	Antimony	Arsenic	Barium
				Fraction	TOT	TOT	TOT	TOT	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	pH	µS/cm	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.1	1	0.1	1	0.5	1	0.015	0.005	0.02	0.02	1	0.5	0.02	0.02	0.02
				Limit of Quantification (5x DL)	0.5	5	0.5	5	2.5	5	0.075	0.025	0.1	0.1	5	2.5	0.10	0.10	0.1
72-1-1	FR1	Y	2025-05-29	Field replicate 1	7.88	481	11.6	150	264	67.0	0.018	< 0.005	< 0.020	< 0.020	46.0	0.940	< 0.020	0.142	12.4
72-1-1	FR2	Y	2025-05-29	Field replicate 2	7.88	481	11.6	150	263	67.0	< 0.015	< 0.005	< 0.020	< 0.020	46.0	1.61	0.022	0.130	12.5
72-1-1	FRM	Y	2025-05-29	Mean of replicates	7.88	481	11.6	150	264	67.0	0.017	< 0.005	< 0.020	< 0.020	46.0	1.28	0.021	0.136	12.5
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.38%	0.00%	18.18%	0.00%	0.00%	0.00%	0.00%	**52.55%** b	9.52%	8.82%	0.80%
72-1-1	FR1	Y	2025-09-18	Field replicate 1	7.81	478	11.1	150	277	68.0	< 0.015	< 0.005	< 0.020	< 0.020	46.0	1.40	< 0.040	0.107	12.6
72-1-1	FR2	Y	2025-09-18	Field replicate 2	7.81	478	11.1	150	261	69.0	< 0.015	< 0.005	< 0.020	< 0.020	46.0	1.10	< 0.040	0.106	11.8
72-1-1	FRM	Y	2025-09-18	Mean of replicates	7.81	478	11.1	150	269	68.5	< 0.015	< 0.005	< 0.020	< 0.020	46.0	1.25	< 0.040	0.107	12.2
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	1.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	24.00%	0.00%	0.94%	6.56%
72-1-1	FR1	Y	2025-11-25	Field replicate 1	7.57	490	10.4	150	267	68.0	0.019	< 0.005	< 0.020	< 0.020	47.0	0.770	< 0.020	0.114	12.0
72-1-1	FR2	Y	2025-11-25	Field replicate 2	7.57	490	10.4	150	260	68.0	< 0.015	< 0.005	< 0.020	< 0.020	46.0	0.680	< 0.020	0.118	12.3
72-1-1	FRM	Y	2025-11-25	Mean of replicates	7.57	490	10.4	150	264	68.0	0.017	< 0.005	< 0.020	< 0.020	46.5	0.725	< 0.020	0.116	12.2
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.53%	0.00%	0.00%	0.00%	2.15%	12.41%	0.00%	3.45%	2.47%
72-1-1	FR1	Y	2026-02-18	Field replicate 1	7.62	498	9.90	150	219	67.0	0.015	< 0.005	< 0.020	< 0.020	46.0	1.15	< 0.020	0.127	12.1
72-1-1	FR2	Y	2026-02-18	Field replicate 2	7.62	498	9.90	150	225	67.0	< 0.015	< 0.005	< 0.020	< 0.020	46.0	14.9	0.025	0.135	12.3
72-1-1	FRM	Y	2026-02-18	Mean of replicates	7.62	498	9.90	150	222	67.0	0.015	< 0.005	< 0.020	< 0.020	46.0	8.03	0.023	0.131	12.2
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**171.34%** b	22.22%	6.11%	1.64%
73-2-1	FR1	Y	2026-02-24	Field replicate 1	7.01	519	10.3	160	274	29.0	< 0.015	< 0.005	0.374	0.374	33.0	0.700	< 0.020	0.067	9.44
73-2-1	FR2	Y	2026-02-24	Field replicate 2	7.01	519	10.3	160	270	29.0	< 0.015	< 0.003	0.345	0.345	33.0	2.20	< 0.020	0.069	9.47
73-2-1	FRM	Y	2026-02-24	Mean of replicates	7.01	519	10.3	160	272	29.0	< 0.015	< 0.004	0.360	0.360	33.0	1.45	< 0.020	0.068	9.46
73-2-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**46.15%** b	8.07%	8.07%	0.00%	**103.45%** b	0.00%	2.94%	0.32%
95-1-1	FR1	Y	2025-05-27	Field replicate 1	6.76	841	10.3	160	554	28.0	0.085	< 0.005	0.405	0.405	390	4.25	0.247	0.173	12.6
95-1-1	FR2	Y	2025-05-27	Field replicate 2	6.76	841	10.3	150	556	28.0	0.075	< 0.005	0.401	0.401	380	5.75	0.252	0.176	12.6
95-1-1	FRM	Y	2025-05-27	Mean of replicates	6.76	841	10.3	155	555	28.0	0.080	< 0.005	0.403	0.403	385	5.00	0.250	0.175	12.6
95-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	6.45%	0.00%	0.00%	12.50%	0.00%	0.99%	0.99%	2.60%	30.00%	2.00%	1.72%	0.00%
95-1-1	FR1	N	2025-10-06	Field replicate 1	6.72	929	13.1	150	567	37.0	< 0.015	< 0.005	1.43	1.43	400	4.34	0.164	0.122	11.2
95-1-1	FR2	N	2025-10-06	Field replicate 2	6.72	929	13.1	150	571	37.0	< 0.015	< 0.005	1.50	1.50	400	4.74	0.185	0.133	11.7
95-1-1	FRM	N	2025-10-06	Mean of replicates	6.72	929	13.1	150	569	37.0	< 0.015	< 0.005	1.47	1.47	400	4.54	0.175	0.128	11.5
95-1-1	RPD	N		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.78%	4.78%	0.00%	8.81%	12.03%	8.63%	4.37%
95-1-1	FR1	N	2025-11-28	Field replicate 1	6.49	895	11.4	120	539	30.0	0.024	< 0.005	5.98	5.98	350	3.90	0.092	0.064	6.85
95-1-1	FR2	N	2025-11-28	Field replicate 2	6.49	895	11.4	120	561	29.0	0.029	< 0.005	5.86	5.86	340	2.65	0.096	0.081	7.04
95-1-1	FRM	N	2025-11-28	Mean of replicates	6.49	895	11.4	120	550	29.5	0.027	< 0.005	5.92	5.92	345	3.28	0.094	0.073	6.95
95-1-1	RPD	N		RPD of replicates	0.00%	0.00%	0.00%	0.00%	3.39%	18.87%	0.00%	2.03%	2.03%	2.90%	**38.17%** a	4.26%	23.45%	2.74%
95-1-1	FR1	N	2026-02-26	Field replicate 1	6.62	874	9.60	140	614	23.0	0.084	< 0.005	2.63	2.63	410	2.06	0.144	0.123	10.5
95-1-1	FR2	N	2026-02-26	Field replicate 2	6.62	874	9.60	140	620	23.0	0.082	< 0.005	2.67	2.67	420	1.51	0.141	0.108	10.4
95-1-1	FRM	N	2026-02-26	Mean of replicates	6.62	874	9.60	140	617	23.0	0.083	< 0.005	2.65	2.65	415	1.79	0.143	0.116	10.5
95-1-1	RPD	N		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.41%	0.00%	1.51%	1.51%	2.41%	**30.81%** b	2.11%	12.99%	0.96%
108-1-1	FR1	N	2025-11-28	Field replicate 1	7.42	740	12.5	200	456	16.0	< 0.015	< 0.005	< 0.020	< 0.020	230	4.06	0.033	0.274	48.5
108-1-1	FR2	N	2025-11-28	Field replicate 2	7.42	740	12.5	200	456	16.0	0.018	< 0.005	< 0.020	< 0.020	240	3.69	0.027	0.262	48.6
108-1-1	FRM	N	2025-11-28	Mean of replicates	7.42	740	12.5	200	456	16.0	0.017	< 0.005	< 0.020	< 0.020	235	3.88	0.030	0.268	48.6
108-1-1	RPD	N		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	18.18%	0.00%	0.00%	0.00%	4.26%	9.55%	20.00%	4.48%	0.21%
109-1-1	FR1	N	2025-10-08	Field replicate 1	8.93	584	15.7	160	6.10	18.0	0.260	< 0.005	0.039	0.039	120	7.30	0.233	7.72	1.16
109-1-1	FR2	N	2025-10-08	Field replicate 2	8.93	584	15.7	170	6.09	19.0	0.270	< 0.005	0.038	0.038	110	5.42	0.237	7.79	1.11
109-1-1	FRM	N	2025-10-08	Mean of replicates	8.93	584	15.7	165	6.10	18.5	0.265	< 0.005	0.039	0.039	115	6.36	0.235	7.76	1.14
109-1-1	RPD	N		RPD of replicates	0.00%	0.00%	0.00%	6.06%	0.00%	5.41%	3.77%	0.00%	2.60%	2.60%	8.70%	29.56%	1.70%	0.90%	4.41%
111-1-1	FR1	Y	2025-05-21	Field replicate 1	7.74	401	10.1	160	233	6.90	< 0.015	0.017	8.79	8.81	48.0	4.59	0.181	0.269	25.6
111-1-1	FR2	Y	2025-05-21	Field replicate 2	7.74	401	10.1	160	236	7.40	< 0.015	0.025	8.66	8.68	47.0	2.53	0.179	0.243	26.2
111-1-1	FRM	Y	2025-05-21	Mean of replicates	7.74	401	10.1	160	235	7.15	< 0.015	0.021	8.73	8.75	47.5	3.56	0.180	0.256	25.9
111-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	6.99%	0.00%	**38.85%** b	1.49%	1.49%	2.11%	**57.87%** a	1.11%	10.16%	2.32%
111-1-1	FR1	Y	2025-09-08	Field replicate 1	7.55	409	10.6	150	245	7.10	0.017	0.127	7.85	8.04	66.0	1.49	0.210	0.255	26.2
111-1-1	FR2	Y	2025-09-08	Field replicate 2	7.55	409	10.6	150	241	7.30	0.018	0.129	7.89	8.02	65.0	1.53	0.230	0.257	26.6
111-1-1	FRM	Y	2025-09-08	Mean of replicates	7.55	409	10.6	150	243	7.20	0.018	0.128	7.87	8.03	65.5	1.51	0.220	0.256	26.4
111-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	5.71%	1.56%	0.51%	0.25%	1.53%	2.65%	9.09%	0.78%	1.52%
111-1-1	FR1	Y	2026-02-06	Field replicate 1	7.38	460	10.0	150	257	8.00	< 0.015	0.016	6.95	6.96	82.0	2.27	0.174	0.237	16.2
111-1-1	FR2	Y	2026-02-06	Field replicate 2	7.38	460	10.0	150	254	8.00	< 0.015	0.015	6.92	6.94	81.0	2.57	0.172	0.227	16.6
111-1-1	FRM	Y	2026-02-06	Mean of replicates	7.38	460	10.0	150	256	8.00	< 0.015	0.016	6.94	6.95	81.5	2.42	0.173	0.232	16.4
111-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.87%	0.43%	0.29%	1.23%	12.40%	1.16%	4.31%	2.44%
113-1-1	FR1	N	2026-02-10	Field replicate 1	7.45	1034	10.5	120	687	4.20	< 0.015	0.007	< 0.020	0.024	550	7.34	1.53	0.739	31.2
113-1-1	FR2	N	2026-02-10	Field replicate 2	7.45	1034	10.5	120	680	4.00	< 0.015	< 0.006	0.020	0.020	555	9.02	1.52	0.715	30.7
113-1-1	FRM	N	2026-02-10	Mean of replicates	7.45	1034	10.5	120	684	4.10	< 0.015	0.006	0.020	0.022	553	8.18	1.53	0.727	31.0
113-1-1	RPD	N		RPD of replicates	0.00%	0.00%	0.00%	0.00%	0.00%	4.88%	0.00%	8.00%	0.00%	18.18%	0.90%	20.54%	0.66%	3.30%	1.62%
FB	FB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FB	FB	N	2025-10-07	Field blank	9.27	3.70	2.40	1.00	0.500	1.00	< 0.015	< 0.005	< 0.020	< 0.020	< 1.00	**4.63** c	0.020	0.020	**0.434** c
FB	FB	N	2025-11-14	Field blank	8.60	17.7	2.70	1.00	0.500	1.00	< 0.015	< 0.005	< 0.020	< 0.020	< 1.00	**6.92** c	0.020	0.020	0.023
FB	FB	N	2026-02-10	Field blank	8.45	11.9	3.30	1.50	0.500	1.00	< 0.015	< 0.005	< 0.020	< 0.020	< 1.00	0.500	0.020	0.020	0.026
TB	TB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TB	TB	N	2025-10-07	Travel blank	—	—	—	1.00	0.500	1.00	< 0.015	< 0.005	< 0.020	< 0.020	< 1.00	0.500	0.020	0.020	0.020
TB	TB	N	2025-11-14	Travel blank	—	—	—	1.00	0.500	1.00	< 0.015	< 0.005	< 0.020	< 0.020	< 1.00	0.500	0.020	0.020	0.020
TB	TB	N	2026-02-10	Travel blank	—	—	—	1.00	0.500	1.00	< 0.015	< 0.005	< 0.020	< 0.020	< 1.00	0.500	0.020	0.020	0.020

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

Bold *c - Field/travel blank parameter concentration exceeds the LOQ.*

FB Field blank.

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

TB Travel blank.

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Molybdenum	Nickel
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.01	0.005	10	0.005	0.05	0.1	0.005	0.05	1	0.005	0.5	0.05	0.05	0.05	0.02
				Limit of Quantification (5x DL)	0.05	0.025	50	0.025	0.25	0.5	0.025	0.25	5	0.025	2.5	0.25	0.25	0.25	0.1
72-1-1	FR1	Y	2025-05-29	Field replicate 1	< 0.010	< 0.005	1780	< 0.005	84.6	< 0.100	0.035	< 0.050	373	< 0.005	0.580	12.9	114	0.723	1.47
72-1-1	FR2	Y	2025-05-29	Field replicate 2	< 0.010	< 0.005	1760	< 0.005	83.3	0.110	0.040	< 0.050	370	0.006	0.550	13.2	115	0.744	1.63
72-1-1	FRM	Y	2025-05-29	Mean of replicates	< 0.010	< 0.005	1770	< 0.005	84.0	0.105	0.037	< 0.050	372	0.006	0.565	13.1	115	0.734	1.55
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	1.13%	0.00%	1.55%	9.52%	13.48%	0.00%	0.81%	21.43%	5.31%	2.30%	0.87%	2.86%	10.32%
72-1-1	FR1	Y	2025-09-18	Field replicate 1	< 0.020	< 0.010	1810	< 0.010	88.1	< 0.200	0.031	< 0.100	374	< 0.010	< 1.00	14.0	114	0.720	1.43
72-1-1	FR2	Y	2025-09-18	Field replicate 2	< 0.020	< 0.010	1760	< 0.010	82.8	< 0.200	0.031	< 0.100	357	< 0.010	< 1.00	13.2	109	0.670	1.36
72-1-1	FRM	Y	2025-09-18	Mean of replicates	< 0.020	< 0.010	1785	< 0.010	85.5	< 0.200	0.031	< 0.100	366	< 0.010	< 1.00	13.6	112	0.695	1.40
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	2.80%	0.00%	6.20%	0.00%	0.00%	0.00%	4.65%	0.00%	0.00%	5.88%	4.48%	7.19%	5.02%
72-1-1	FR1	Y	2025-11-25	Field replicate 1	< 0.010	< 0.005	1680	< 0.005	84.6	< 0.100	0.028	< 0.050	354	< 0.005	0.540	13.5	110	0.685	1.36
72-1-1	FR2	Y	2025-11-25	Field replicate 2	< 0.010	< 0.005	1680	< 0.005	82.0	< 0.100	0.029	< 0.050	349	< 0.005	0.550	13.3	110	0.727	1.34
72-1-1	FRM	Y	2025-11-25	Mean of replicates	< 0.010	< 0.005	1680	< 0.005	83.3	< 0.100	0.028	< 0.050	352	< 0.005	0.545	13.4	110	0.706	1.35
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	0.00%	3.12%	0.00%	5.27%	0.00%	1.42%	0.00%	1.83%	1.49%	0.00%	5.95%	1.48%
72-1-1	FR1	Y	2026-02-18	Field replicate 1	< 0.010	< 0.005	1850	< 0.005	87.2	< 0.100	0.027	< 0.050	371	< 0.005	0.570	13.6	109	0.772	1.47
72-1-1	FR2	Y	2026-02-18	Field replicate 2	< 0.010	< 0.005	1550	0.016	86.3	< 0.100	0.037	0.094	380	0.022	0.530	13.2	109	0.760	1.53
72-1-1	FRM	Y	2026-02-18	Mean of replicates	< 0.010	< 0.005	1600	0.010	86.8	< 0.100	0.032	0.072	378	0.014	0.550	13.4	109	0.766	1.50
72-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	6.25%	**103.38%** b	1.04%	0.00%	29.64%	**61.11%** b	2.40%	**126.74%** b	7.27%	2.99%	0.00%	1.57%	4.00%
73-2-1	FR1	Y	2026-02-24	Field replicate 1	< 0.010	< 0.005	87.0	0.009	68.9	< 0.100	0.087	0.251	4.90	0.006	< 0.500	11.4	46.4	0.988	0.294
73-2-1	FR2	Y	2026-02-24	Field replicate 2	< 0.010	< 0.005	84.0	0.009	70.8	< 0.100	0.085	0.289	6.20	0.009	< 0.500	11.7	47.2	0.948	0.328
73-2-1	FRM	Y	2026-02-24	Mean of replicates	< 0.010	< 0.005	85.5	0.009	69.9	< 0.100	0.086	0.270	5.55	0.007	< 0.500	11.6	46.8	0.958	0.311
73-2-1	RPD	Y		RPD of replicates	0.00%	0.00%	3.51%	4.44%	2.72%	0.00%	2.33%	14.07%	23.42%	**32.88%** b	0.00%	2.60%	1.71%	2.40%	10.93%
95-1-1	FR1	Y	2025-05-27	Field replicate 1	< 0.010	< 0.005	292	0.040	195	< 0.100	1.01	1.11	77.6	0.013	< 0.500	16.1	46.6	2.92	4.24
95-1-1	FR2	Y	2025-05-27	Field replicate 2	< 0.010	< 0.005	277	0.255	198	0.150	1.02	1.12	84.4	0.013	0.520	15.1	47.0	2.85	4.28
95-1-1	FRM	Y	2025-05-27	Mean of replicates	< 0.010	< 0.005	285	0.148	197	0.125	1.02	1.12	81.0	0.013	0.510	15.6	46.8	2.89	4.26
95-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	5.27%	**145.29%** a	1.53%	**40.00%** b	0.99%	0.90%	8.40%	2.33%	3.92%	6.41%	0.85%	2.43%	0.94%
95-1-1	FR1	N	2025-10-06	Field replicate 1	< 0.010	< 0.005	335	0.029	198	< 0.100	0.555	0.752	4.30	0.005	< 0.500	17.7	46.5	0.924	2.14
95-1-1	FR2	N	2025-10-06	Field replicate 2	< 0.010	< 0.005	319	0.031	199	< 0.100	0.561	0.785	8.60	0.008	< 0.500	17.8	47.6	0.995	2.13
95-1-1	FRM	N	2025-10-06	Mean of replicates	< 0.010	< 0.005	327	0.030	199	< 0.100	0.558	0.769	6.45	0.007	< 0.500	17.8	47.1	0.960	2.14
95-1-1	RPD	N		RPD of replicates	0.00%	0.00%	4.89%	8.99%	0.50%	0.00%	1.06%	4.29%	**66.67%** b	**42.96%** b	0.00%	0.56%	2.34%	7.40%	0.47%
95-1-1	FR1	N	2025-11-28	Field replicate 1	< 0.010	< 0.005	242	0.027	184	< 0.100	0.175	0.938	6.00	0.007	< 0.500	19.3	2.27	0.262	1.17
95-1-1	FR2	N	2025-11-28	Field replicate 2	< 0.010	< 0.005	233	0.026	193	< 0.100	0.188	0.977	2.40	0.007	< 0.500	19.0	2.09	0.302	1.33
95-1-1	FRM	N	2025-11-28	Mean of replicates	< 0.010	< 0.005	238	0.026	189	< 0.100	0.181	0.958	4.20	0.007	< 0.500	19.2	2.18	0.282	1.25
95-1-1	RPD	N		RPD of replicates	0.00%	0.00%	3.79%	3.07%	4.77%	0.00%	6.09%	4.07%	**85.71%** b	0.00%	0.00%	1.57%	8.26%	14.18%	12.80%
95-1-1	FR1	N	2026-02-26	Field replicate 1	< 0.010	< 0.005	280	0.049	211	< 0.100	0.669	0.930	16.2	0.009	< 0.500	21.2	26.4	0.563	2.83
95-1-1	FR2	N	2026-02-26	Field replicate 2	< 0.010	< 0.005	275	0.048	215	< 0.100	0.641	0.908	15.4	0.008	< 0.500	20.3	25.5	0.565	2.74
95-1-1	FRM	N	2026-02-26	Mean of replicates	< 0.010	< 0.005	278	0.048	213	< 0.100	0.655	0.919	15.8	0.009	< 0.500	20.8	26.0	0.564	2.79
95-1-1	RPD	N		RPD of replicates	0.00%	0.00%	1.80%	3.72%	1.88%	0.00%	4.27%	2.39%	5.06%	14.12%	0.00%	4.34%	3.47%	0.35%	3.23%
108-1-1	FR1	N	2025-11-28	Field replicate 1	< 0.010	< 0.005	143	0.009	120	< 0.100	0.042	0.272	2.80	0.008	1.58	37.9	10.1	2.56	0.518
108-1-1	FR2	N	2025-11-28	Field replicate 2	< 0.010	< 0.005	146	0.009	121	< 0.100	0.043	0.220	3.50	0.008	1.60	37.4	10.2	2.59	0.540
108-1-1	FRM	N	2025-11-28	Mean of replicates	< 0.010	< 0.005	145	0.009	121	< 0.100	0.043	0.246	3.15	0.008	1.59	37.7	10.2	2.58	0.529
108-1-1	RPD	N		RPD of replicates	0.00%	0.00%	2.08%	4.60%	0.83%	0.00%	1.87%	21.14%	22.22%	1.26%	1.26%	1.33%	0.99%	1.17%	4.16%
109-1-1	FR1	N	2025-10-08	Field replicate 1	< 0.010	< 0.005	209	< 0.005	1.41	< 0.100	0.026	0.102	5.80	0.060	7.48	0.626	2.33	12.8	0.468
109-1-1	FR2	N	2025-10-08	Field replicate 2	< 0.010	< 0.005	212	< 0.005	1.40	< 0.100	0.025	0.096	7.00	0.053	7.38	0.629	2.17	12.9	22.5
109-1-1	FRM	N	2025-10-08	Mean of replicates	< 0.010	< 0.005	211	< 0.005	1.41	< 0.100	0.025	0.099	6.40	0.057	7.43	0.628	2.25	12.9	11.5
109-1-1	RPD	N		RPD of replicates	0.00%	0.00%	1.43%	0.00%	0.71%	0.00%	4.37%	6.06%	18.75%	12.70%	1.35%	0.48%	7.11%	0.78%	**191.85%** a
111-1-1	FR1	Y	2025-05-21	Field replicate 1	< 0.010	< 0.005	52.0	0.008	83.1	< 0.100	0.066	0.109	7.90	0.011	< 0.500	6.19	19.7	0.336	0.194
111-1-1	FR2	Y	2025-05-21	Field replicate 2	< 0.010	< 0.005	29.0	< 0.005	84.0	< 0.100	0.065	0.099	2.50	0.010	< 0.500	6.31	20.3	0.330	0.191
111-1-1	FRM	Y	2025-05-21	Mean of replicates	< 0.010	< 0.005	40.5	0.007	83.6	< 0.100	0.066	0.104	5.20	0.011	< 0.500	6.25	20.0	0.333	0.193
111-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	**56.79%** b	**46.15%** b	1.08%	0.00%	1.53%	9.62%	**103.85%** b	9.52%	0.00%	1.92%	3.00%	1.80%	1.56%
111-1-1	FR1	Y	2025-09-08	Field replicate 1	< 0.010	< 0.005	15.0	0.006	84.9	< 0.100	0.059	0.075	1.50	0.008	0.750	6.67	19.5	0.492	0.207
111-1-1	FR2	Y	2025-09-08	Field replicate 2	< 0.010	< 0.005	15.0	0.005	85.6	< 0.100	0.060	0.077	1.30	0.008	0.730	6.68	19.9	0.499	0.205
111-1-1	FRM	Y	2025-09-08	Mean of replicates	< 0.010	< 0.005	15.0	0.005	85.3	< 0.100	0.059	0.076	1.40	0.008	0.740	6.68	19.7	0.496	0.206
111-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	3.70%	0.82%	0.00%	1.52%	2.63%	14.29%	3.64%	2.70%	0.15%	2.03%	1.41%	0.97%
111-1-1	FR1	Y	2026-02-06	Field replicate 1	< 0.010	< 0.005	12.0	0.007	92.0	< 0.100	0.035	0.066	1.10	< 0.005	< 0.500	6.51	7.81	0.265	0.332
111-1-1	FR2	Y	2026-02-06	Field replicate 2	< 0.010	< 0.005	12.0	0.007	91.1	< 0.100	0.039	0.067	4.10	< 0.005	< 0.500	6.52	7.94	0.266	0.190
111-1-1	FRM	Y	2026-02-06	Mean of replicates	< 0.010	< 0.005	12.0	0.007	91.6	< 0.100	0.037	0.067	2.60	< 0.005	< 0.500	6.52	7.88	0.266	0.261
111-1-1	RPD	Y		RPD of replicates	0.00%	0.00%	0.00%	2.86%	0.98%	0.00%	10.61%	1.50%	**115.38%** b	0.00%	0.00%	0.15%	1.65%	0.38%	**54.41%** a
113-1-1	FR1	N	2026-02-10	Field replicate 1	< 0.010	< 0.005	173	0.012	229	< 0.100	0.577	< 0.050	13.1	0.015	2.85	27.7	266	3.15	2.10
113-1-1	FR2	N	2026-02-10	Field replicate 2	< 0.010	< 0.005	164	0.012	220	< 0.100	0.553	0.050	13.2	0.012	< 2.79	26.6	258	2.09	2.09
113-1-1	FRM	N	2026-02-10	Mean of replicates	< 0.010	< 0.005	169	0.012	225	< 0.100	0.565	0.050	13.2	0.014	2.82	27.2	262	2.62	2.10
113-1-1	RPD	N		RPD of replicates	0.00%	0.00%	5.34%	2.51%	4.01%	0.00%	4.25%	0.00%	0.76%	16.30%	2.13%	4.05%	3.05%	**40.46%** a	0.48%
FB	FB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FB	FB	N	2025-10-07	Field blank	< 0.010	< 0.005	10.0	0.005	0.050	< 0.100	0.006	**0.459** c	**10.7** c	**0.056** c	< 0.500	< 0.050	0.151	< 0.050	0.094
FB	FB	N	2025-11-14	Field blank	< 0.010	< 0.005	10.0	0.005	0.050	< 0.100	0.005	0.050	1.10	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020
FB	FB	N	2026-02-10	Field blank	< 0.010	< 0.005	10.0	0.005	0.050	< 0.100	0.005	0.050	1.00	0.007	< 0.500	< 0.050	0.101	< 0.050	0.022
TB	TB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TB	TB	N	2025-10-07	Travel blank	< 0.010	< 0.005	10.0	0.005	0.050	< 0.100	0.005	0.050	1.00	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020
TB	TB	N	2025-11-14	Travel blank	< 0.010	< 0.005	10.0	0.005	0.050	< 0.100	0.005	0.050	1.00	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020
TB	TB	N	2026-02-10	Travel blank	< 0.010	< 0.005	10.0	0.005	0.050	< 0.100	0.005	0.050	1.00	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020

Notes:

Bold a - *RPD greater than DQO and all replicates greater than the LOQ.*

Bold b - *RPD greater than DQO with some replicates less than the LOQ.*

Bold c - *Field/travel blank parameter concentration exceeds the LOQ.*

FB *Field blank.*

FR1 *Field replicate 1.*

FR2 *Field replicate 2.*

FRM *Field replicate mean (average of field replicates).*

LOQ *Limit of quantification.*

RPD *Relative percent difference of field replicates.*

TB *Travel blank.*

Table 3-1. Groundwater Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Well (Y/N)?	Date Sampled	Parameter	Phosphorus	Potassium	Selenium	Silicon	Silver	Sodium	Strontium	Sulphur	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Zirconium
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	2	0.05	0.04	50	0.005	0.05	0.05	3	0.002	0.2	0.5	0.002	0.2	0.1	0.1
				Limit of Quantification (5x DL)	10	0.25	0.2	250	0.025	0.25	0.3	15.00	0.01	1	2.5	0.01	1	0.5	0.5
72-1-1	FR1	Y	2025-05-29	Field replicate 1	5.90	0.232	< 0.040	19000	< 0.005	8.62	275	15.1	< 0.002	< 0.200	< 0.500	0.016	< 0.200	0.320	< 0.100
72-1-1	FR2	Y	2025-05-29	Field replicate 2	7.00	0.233	< 0.040	18800	< 0.005	8.71	279	14.5	< 0.002	< 0.200	< 0.500	0.016	< 0.200	0.630	< 0.100
72-1-1	FRM	Y	2025-05-29	Mean of replicates	6.45	0.233	< 0.040	18900	< 0.005	8.67	277	14.8	< 0.002	< 0.200	< 0.500	0.016	< 0.200	0.475	< 0.100
72-1-1	RPD	Y		RPD of replicates	17.05%	0.43%	0.00%	1.06%	0.00%	1.04%	1.44%	4.05%	0.00%	0.00%	0.00%	1.27%	0.00%	**65.26%** b	0.00%
72-1-1	FR1	Y	2025-09-18	Field replicate 1	10.0	0.230	< 0.080	21400	< 0.010	9.77	290	14.7	< 0.004	< 0.400	< 1.00	0.018	< 0.400	0.280	< 0.200
72-1-1	FR2	Y	2025-09-18	Field replicate 2	8.40	0.220	< 0.080	20200	< 0.010	9.39	277	14.4	< 0.004	< 0.400	< 1.00	0.019	< 0.400	0.210	< 0.200
72-1-1	FRM	Y	2025-09-18	Mean of replicates	9.20	0.225	< 0.080	20800	< 0.010	9.58	284	14.6	< 0.004	< 0.400	< 1.00	0.018	< 0.400	0.245	< 0.200
72-1-1	RPD	Y		RPD of replicates	17.39%	4.44%	0.00%	5.77%	0.00%	3.97%	4.59%	2.06%	0.00%	0.00%	0.00%	5.43%	0.00%	28.57%	0.00%
72-1-1	FR1	Y	2025-11-25	Field replicate 1	5.80	0.237	< 0.040	19800	< 0.005	9.30	287	15.3	< 0.002	< 0.200	< 0.500	0.011	< 0.200	< 0.100	< 0.100
72-1-1	FR2	Y	2025-11-25	Field replicate 2	5.80	0.240	< 0.040	19600	< 0.005	9.38	291	15.4	< 0.002	< 0.200	< 0.500	0.012	< 0.200	< 0.100	< 0.100
72-1-1	FRM	Y	2025-11-25	Mean of replicates	5.80	0.239	< 0.040	19700	< 0.005	9.34	289	15.4	< 0.002	< 0.200	< 0.500	0.011	< 0.200	< 0.100	< 0.100
72-1-1	RPD	Y		RPD of replicates	0.00%	1.26%	0.00%	1.02%	0.00%	0.86%	1.38%	0.65%	0.00%	0.00%	0.00%	0.87%	0.00%	0.00%	0.00%
72-1-1	FR1	Y	2026-02-18	Field replicate 1	6.10	0.241	< 0.040	18700	< 0.005	9.02	281	14.8	< 0.002	< 0.200	< 0.500	0.014	< 0.200	0.250	< 0.100
72-1-1	FR2	Y	2026-02-18	Field replicate 2	6.70	0.247	< 0.040	18700	< 0.005	8.92	283	14.9	< 0.002	< 0.200	< 0.500	0.013	< 0.200	3.21	< 0.100
72-1-1	FRM	Y	2026-02-18	Mean of replicates	6.40	0.244	< 0.040	18700	< 0.005	8.97	282	14.9	< 0.002	< 0.200	< 0.500	0.013	< 0.200	1.73	< 0.100
72-1-1	RPD	Y		RPD of replicates	9.38%	2.46%	0.00%	0.00%	0.00%	1.11%	0.71%	0.67%	0.00%	0.00%	0.00%	7.46%	0.00%	**171.10%** b	0.00%
73-2-1	FR1	Y	2026-02-24	Field replicate 1	3.80	0.357	< 0.040	8740	< 0.005	6.92	178	11.2	< 0.002	< 0.200	< 0.500	0.254	0.600	0.410	< 0.100
73-2-1	FR2	Y	2026-02-24	Field replicate 2	3.60	0.364	< 0.040	8950	< 0.005	6.88	169	11.7	< 0.002	< 0.200	< 0.500	0.250	0.610	0.570	< 0.100
73-2-1	FRM	Y	2026-02-24	Mean of replicates	3.70	0.361	< 0.040	8845	< 0.005	6.90	174	11.5	< 0.002	< 0.200	< 0.500	0.252	0.605	0.490	< 0.100
73-2-1	RPD	Y		RPD of replicates	5.41%	1.94%	0.00%	2.37%	0.00%	0.58%	5.19%	4.37%	0.00%	0.00%	0.00%	1.59%	1.65%	**32.65%** b	0.00%
95-1-1	FR1	Y	2025-05-27	Field replicate 1	3.80	0.358	0.099	6700	< 0.005	7.67	508	133	0.009	< 0.200	< 0.500	1.11	0.420	1.15	< 0.100
95-1-1	FR2	Y	2025-05-27	Field replicate 2	3.80	0.355	0.092	6780	< 0.005	7.41	487	134	0.008	< 0.200	< 0.500	1.11	0.430	1.30	< 0.100
95-1-1	FRM	Y	2025-05-27	Mean of replicates	3.80	0.357	0.096	6740	< 0.005	7.54	498	134	0.008	< 0.200	< 0.500	1.11	0.425	1.23	< 0.100
95-1-1	RPD	Y		RPD of replicates	0.00%	0.84%	7.33%	1.19%	0.00%	3.45%	4.22%	0.75%	9.64%	0.00%	0.00%	0.00%	2.35%	12.24%	0.00%
95-1-1	FR1	N	2025-10-06	Field replicate 1	3.60	0.400	0.110	7220	< 0.005	8.01	510	136	0.009	< 0.200	< 0.500	0.809	0.440	0.860	< 0.100
95-1-1	FR2	N	2025-10-06	Field replicate 2	5.80	0.411	0.099	7280	< 0.005	7.93	507	133	0.007	< 0.200	< 0.500	0.835	0.410	0.920	< 0.100
95-1-1	FRM	N	2025-10-06	Mean of replicates	4.70	0.406	0.105	7250	< 0.005	7.97	509	135	0.008	< 0.200	< 0.500	0.822	0.425	0.890	< 0.100
95-1-1	RPD	N		RPD of replicates	**46.81%** b	2.71%	10.53%	0.83%	0.00%	1.00%	0.59%	2.23%	19.75%	0.00%	0.00%	3.16%	7.06%	6.74%	0.00%
95-1-1	FR1	N	2025-11-28	Field replicate 1	3.20	0.323	0.361	8050	< 0.005	8.15	432	118	0.006	< 0.200	< 0.500	0.294	0.410	0.890	< 0.100
95-1-1	FR2	N	2025-11-28	Field replicate 2	3.00	0.319	0.380	8650	< 0.005	8.36	434	131	0.007	< 0.200	< 0.500	0.340	0.460	0.890	< 0.100
95-1-1	FRM	N	2025-11-28	Mean of replicates	3.10	0.321	0.371	8350	< 0.005	8.26	433	125	0.006	< 0.200	< 0.500	0.317	0.435	0.890	< 0.100
95-1-1	RPD	N		RPD of replicates	6.45%	1.25%	5.13%	7.19%	0.00%	2.54%	0.46%	10.44%	7.75%	0.00%	0.00%	14.51%	11.49%	0.00%	0.00%
95-1-1	FR1	N	2026-02-26	Field replicate 1	3.70	0.340	0.230	7780	< 0.005	8.79	512	157	0.006	< 0.200	< 0.500	0.498	0.370	1.77	< 0.100
95-1-1	FR2	N	2026-02-26	Field replicate 2	2.80	0.327	0.278	7960	< 0.005	8.32	505	150	0.006	< 0.200	< 0.500	0.485	0.340	1.62	< 0.100
95-1-1	FRM	N	2026-02-26	Mean of replicates	3.25	0.334	0.254	7870	< 0.005	8.56	509	154	0.006	< 0.200	< 0.500	0.492	0.355	1.70	< 0.100
95-1-1	RPD	N		RPD of replicates	27.69%	3.90%	18.90%	2.29%	0.00%	5.49%	1.38%	4.56%	1.63%	0.00%	0.00%	2.64%	8.45%	8.85%	0.00%
108-1-1	FR1	N	2025-11-28	Field replicate 1	7.60	0.851	0.050	15700	< 0.005	6.84	1460	78.4	0.015	< 0.200	< 0.500	0.085	0.500	0.330	< 0.100
108-1-1	FR2	N	2025-11-28	Field replicate 2	8.40	0.874	0.048	15600	< 0.005	6.91	1420	78.8	0.015	< 0.200	< 0.500	0.085	0.500	0.250	< 0.100
108-1-1	FRM	N	2025-11-28	Mean of replicates	8.00	0.863	0.049	15650	< 0.005	6.88	1440	78.6	0.015	< 0.200	< 0.500	0.085	0.500	0.290	< 0.100
108-1-1	RPD	N		RPD of replicates	10.00%	2.67%	4.08%	0.64%	0.00%	1.02%	2.78%	0.51%	2.72%	0.00%	0.00%	0.47%	0.00%	27.59%	0.00%
109-1-1	FR1	N	2025-10-08	Field replicate 1	22.9	0.834	0.094	12100	< 0.005	114	27.4	27.1	0.003	< 0.200	< 0.500	1.07	0.280	0.210	< 0.100
109-1-1	FR2	N	2025-10-08	Field replicate 2	25.0	0.852	0.091	12100	< 0.005	114	27.6	27.0	0.003	< 0.200	< 0.500	1.07	0.270	0.160	< 0.100
109-1-1	FRM	N	2025-10-08	Mean of replicates	24.0	0.843	0.093	12100	< 0.005	114	27.5	27.1	0.003	< 0.200	< 0.500	1.07	0.275	0.185	< 0.100
109-1-1	RPD	N		RPD of replicates	8.77%	2.14%	3.24%	0.00%	0.00%	0.00%	0.73%	0.37%	6.45%	0.00%	0.00%	0.00%	3.64%	27.03%	0.00%
111-1-1	FR1	Y	2025-05-21	Field replicate 1	6.80	0.649	0.090	6640	< 0.005	4.53	167	15.1	0.008	< 0.200	< 0.500	0.449	< 0.200	0.530	< 0.100
111-1-1	FR2	Y	2025-05-21	Field replicate 2	5.40	0.647	0.091	6680	< 0.005	4.63	170	15.6	0.008	< 0.200	< 0.500	0.460	< 0.200	0.600	< 0.100
111-1-1	FRM	Y	2025-05-21	Mean of replicates	6.10	0.648	0.091	6660	< 0.005	4.58	169	15.4	0.008	< 0.200	< 0.500	0.455	< 0.200	0.565	< 0.100
111-1-1	RPD	Y		RPD of replicates	22.95%	0.31%	1.10%	0.60%	0.00%	2.18%	1.78%	3.26%	0.00%	0.00%	0.00%	2.42%	0.00%	12.39%	0.00%
111-1-1	FR1	Y	2025-09-08	Field replicate 1	6.30	0.742	0.189	5942	< 0.005	4.47	188	24.5	0.008	< 0.200	< 0.500	0.712	0.230	0.370	< 0.100
111-1-1	FR2	Y	2025-09-08	Field replicate 2	6.10	0.744	0.182	5940	< 0.005	4.46	183	24.2	0.007	< 0.200	< 0.500	0.715	0.240	0.330	< 0.100
111-1-1	FRM	Y	2025-09-08	Mean of replicates	6.20	0.743	0.186	5941	< 0.005	4.47	186	24.4	0.007	< 0.200	< 0.500	0.714	0.235	0.350	< 0.100
111-1-1	RPD	Y		RPD of replicates	3.23%	0.27%	3.77%	0.03%	0.00%	0.22%	2.70%	1.23%	5.41%	0.00%	0.00%	0.42%	4.26%	11.43%	0.00%
111-1-1	FR1	Y	2026-02-06	Field replicate 1	3.30	0.588	0.150	6300	< 0.005	4.61	184	28.2	0.006	< 0.200	< 0.500	0.371	0.230	0.780	< 0.100
111-1-1	FR2	Y	2026-02-06	Field replicate 2	3.10	0.588	0.145	6210	< 0.005	4.69	189	28.0	0.006	< 0.200	< 0.500	0.388	0.230	1.03	< 0.100
111-1-1	FRM	Y	2026-02-06	Mean of replicates	3.20	0.588	0.148	6255	< 0.005	4.65	187	28.1	0.006	< 0.200	< 0.500	0.380	0.230	0.905	< 0.100
111-1-1	RPD	Y		RPD of replicates	6.25%	0.00%	3.39%	1.44%	0.00%	1.72%	2.68%	0.71%	8.55%	0.00%	0.00%	4.48%	0.00%	27.62%	0.00%
113-1-1	FR1	N	2026-02-10	Field replicate 1	3.70	1.60	0.125	7410	< 0.005	17.9	695	204	0.018	< 0.200	< 0.500	5.52	0.450	0.400	< 0.100
113-1-1	FR2	N	2026-02-10	Field replicate 2	3.20	1.55	0.122	7000	< 0.005	18.8	686	196	< 0.018	< 0.200	< 0.500	5.51	< 0.430	0.420	< 0.100
113-1-1	FRM	N	2026-02-10	Mean of replicates	3.45	1.58	0.124	7205	< 0.005	18.3	691	200	0.018	< 0.200	< 0.500	5.52	0.440	0.410	< 0.100
113-1-1	RPD	N		RPD of replicates	14.49%	3.17%	2.43%	5.69%	0.00%	3.84%	1.30%	4.00%	0.54%	0.00%	0.00%	0.18%	4.55%	4.88%	0.00%
FB	FB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FB	FB	N	2025-10-07	Field blank	4.50	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	0.068	< 3.00	< 0.002	< 0.200	< 0.500	0.003	< 0.200	**2.59** c	< 0.100
FB	FB	N	2025-11-14	Field blank	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	< 0.100	< 0.100
FB	FB	N	2026-02-10	Field blank	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	< 0.230	< 0.100
TB	TB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TB	TB	N	2025-10-07	Travel blank	2.10	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	< 0.100	< 0.100
TB	TB	N	2025-11-14	Travel blank	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	0.160	< 0.100
TB	TB	N	2026-02-10	Travel blank	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	< 0.100	< 0.100

Notes:

Bold	*a - RPD greater than DQO and all replicates greater than the LOQ.*
Bold	*b - RPD greater than DQO with some replicates less than the LOQ.*
Bold	*c - Field/travel blank parameter concentration exceeds the LOQ.*
FB	*Field blank.*
FR1	*Field replicate 1.*
FR2	*Field replicate 2.*
FRM	*Field replicate mean (average of field replicates).*
LOQ	*Limit of quantification.*
RPD	*Relative percent difference of field replicates.*
TB	*Travel blank.*

Table 3-2. Surface Water Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Point (Y/N)?	Date Sampled	Parameter	pH (Field)		Conductivity (Actual - Field)		Temperature (Field)		Hardness (As $CaCO_3$)		Hardness (As $CaCO_3$)		Total Suspended Solids (TSS)		Dissolved Organic Carbon (DOC)		Chloride	
				Fraction	---		TOT		TOT		TOT		DIS		TOT		DIS		DIS	
				Unit	pH		µS/cm		°C		mg/L		mg/L		mg/L		mg/L		mg/L	
				RPD Data Quality Objective (DQO)	30%		30%		30%		30%		30%		30%		45%		30%	
				Detection Limit (DL)	0.01		0.1		0		0.5		0.5		1		0.5		1	
				Limit of Quantification (5x DL)	0.05		0.5		0		2.5		2.5		5		2.5		5	
SW-N-05	FR1	Y	2025-09-23	Field replicate 1	7.07		644		14.4		414		391		1.20		1.60		6.30	
SW-N-05	FR2	Y	2025-09-23	Field replicate 2	7.07		644		14.4		406		392		2.00		1.60		6.30	
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	7.07		644		14.4		410		392		1.60		1.60		6.30	
SW-N-05	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		2.0%		0.3%		**50.0%**	b	0.0%		0.0%	
SW-N-05	FR1	Y	2025-12-02	Field replicate 1	7.32		777		10.4		492		522	<	1.00		4.10		17.0	
SW-N-05	FR2	Y	2025-12-02	Field replicate 2	7.32		777		10.4		493		521		2.00		3.70		17.0	
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	7.32		777		10.4		493		522	<	1.50		3.90		17.0	
SW-N-05	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		0.2%		0.2%		**66.7%**	b	10.3%		0.0%	
SW-N-05	FR1	Y	2026-02-03	Field replicate 1	6.71		661		10.4		374		441	<	1.00		2.10		8.10	
SW-N-05	FR2	Y	2026-02-03	Field replicate 2	6.71		661		10.4		403		432	<	1.00		2.20		9.10	
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	6.71		661		10.4		389		437	<	1.00		2.15		8.60	
SW-N-05	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		7.5%		2.1%		0.0%		4.7%		11.6%	
SW-N-41S1	FR1	Y	2025-12-03	Field replicate 1	7.78		321		8.50		195		206		7.20		2.00		7.30	
SW-N-41S1	FR2	Y	2025-12-03	Field replicate 2	7.78		321		8.50		200		206		6.00		2.00		7.40	
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	7.78		321		8.50		198		206		6.60		2.00		7.35	
SW-N-41S1	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		2.5%		0.0%		18.2%		0.0%		1.4%	
SW-N-41S1	FR1	Y	2026-02-03	Field replicate 1	7.52		235		9.50		144		155		8.80		2.40		5.90	
SW-N-41S1	FR2	Y	2026-02-03	Field replicate 2	7.52		235		9.50		140		155		8.00		2.60		6.00	
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	7.52		235		9.50		142		155		8.40		2.50		5.95	
SW-N-41S1	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		2.8%		0.0%		9.5%		8.0%		1.7%	
SW-N-42S1	FR1	Y	2025-05-05	Field replicate 1	7.76		417		9.90		212		217		2.40		3.10		58.0	
SW-N-42S1	FR2	Y	2025-05-05	Field replicate 2	7.76		417		9.90		207		216		1.20		3.10		56.0	
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	7.76		417		9.90		210		217		1.80		3.10		57.0	
SW-N-42S1	RPD	Y		RPD of replicates	0.0%		1.8%		0.0%		2.4%		0.5%		**66.7%**	b	0.0%		3.5%	
SW-S-04	FR1	Y	2025-05-05	Field replicate 1	6.97		277		11.0		111		112	<	1.00		2.60		43.0	
SW-S-04	FR2	Y	2025-05-05	Field replicate 2	6.97		277		11.0		110		111	<	1.00		2.80		43.0	
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	6.97		277		11.0		111		112	<	1.00		2.70		43.0	
SW-S-04	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		0.9%		0.9%		0.0%		7.4%		0.0%	
SW-S-04	FR1	Y	2025-12-03	Field replicate 1	7.72		267		8.80		116		116		1.60		3.80		34.0	
SW-S-04	FR2	Y	2025-12-03	Field replicate 2	7.72		267		8.80		113		116	<	1.00		3.80		35.0	
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	7.72		267		8.80		115		116	<	1.30		3.80		34.5	
SW-S-04	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		2.6%		0.0%		**46.2%**	b	0.0%		2.9%	
SW-S-04	FR1	Y	2026-02-04	Field replicate 1	7.31		153		8.70		67.5		67.9	<	1.10		4.20		14.0	
SW-S-04	FR2	Y	2026-02-04	Field replicate 2	7.31		153		8.70		65.6		68.9	<	1.30		4.10		15.0	
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	7.31		153		8.70		66.6		68.4	<	1.20		4.15		14.5	
SW-S-04	RPD	Y		RPD of replicates	0.0%		0.0%		0.0%		2.9%		1.5%		16.7%		2.4%		6.9%	
SW-TB	NS	N	2025-05-06	Missed - not sampled	---		---		---		---		---		---		---		---	
SW-TB	TB	N	2025-09-23	Travel blank (sealed blank water from BV)	---		---		---	<	0.50	<	0.50	<	1.00	<	0.50	<	1.00	
SW-TB	TB	N	2025-12-03	Travel blank (sealed blank water from BV)	---		---		---	<	0.50	<	0.50	<	1.00	<	0.50	<	1.00	
SW-TB	TB	N	2026-02-04	Travel blank (sealed blank water from BV)	---		---		---	<	0.50	<	0.50	<	1.00	<	0.50	<	1.00	
SW-FB	NS	N	2025-05-06	Missed - not sampled	---		---		---		---		---		---		---		---	
SW-FB	FB	N	2025-09-23	Field blank; decanted on the tailgate at Hartland North	8.66	<	9.60		6.70	<	0.50		**4.94**	c	< 1.00		0.78	<	1.00	
SW-FB	FB	N	2025-12-03	Field blank	8.84		21.00		3.10	<	0.50	<	0.50	<	1.00	<	0.50	<	1.00	
SW-FB	FB	N	2026-02-04	Field blank	---		---		---	<	0.50	<	0.50	<	1.00	<	0.50	<	1.00	

Notes:

Bold *a - RPD greater than DQO and all replicates greater than the LOQ.*

Bold *b - RPD greater than DQO with some replicates less than the LOQ.*

Bold *c - Field/travel blank parameter concentration exceeds the LOQ.*

FB *Field blank.*

FR1 *Field replicate 1.*

FR2 *Field replicate 2.*

FRM *Field replicate mean (average of field replicates).*

LOQ *Limit of quantification.*

RPD *Relative percent difference of field replicates.*

TB *Travel blank.*

Table 3-2. Surface Water Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Point (Y/N)?	Date Sampled	Parameter	Nitrogen - Ammonia	Nitrogen - Nitrite	Nitrogen - Nitrate	Sulphate	Aluminum	Arsenic	Boron	Cadmium	Cobalt
				Fraction	TOT	DIS	DIS	DIS	TOT	TOT	TOT	TOT	TOT
				Unit	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.03	0.005	0.02	1	3	0.02	10	0.005	0.005
				Limit of Quantification (5x DL)	0.15	0.025	0.1	5	15	0.1	50	0.025	0.025
SW-N-05	FR1	Y	2025-09-23	Field replicate 1	< 0.02	< 0.01	0.22	160	38.6	0.168	41.0	0.014	0.071
SW-N-05	FR2	Y	2025-09-23	Field replicate 2	< 0.02	< 0.01	0.23	150	40.5	0.170	41.0	0.014	0.072
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	< 0.02	< 0.01	0.22	155	39.6	0.169	41.0	0.014	0.072
SW-N-05	RPD	Y		RPD of replicates	0.0%	0.0%	2.7%	6.5%	4.8%	1.2%	0.0%	2.9%	1.4%
SW-N-05	FR1	Y	2025-12-02	Field replicate 1	0.03	< 0.01	2.67	310	70.8	0.164	105	0.023	0.132
SW-N-05	FR2	Y	2025-12-02	Field replicate 2	< 0.02	< 0.01	2.65	300	81.8	0.162	105	0.021	0.142
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	< 0.02	< 0.01	2.66	305	76.3	0.163	105	0.022	0.137
SW-N-05	RPD	Y		RPD of replicates	**66.7%** b	0.0%	0.8%	3.3%	14.4%	1.2%	0.0%	11.0%	7.3%
SW-N-05	FR1	Y	2026-02-03	Field replicate 1	< 0.02	< 0.01	1.36	260	46.5	0.110	52.0	0.026	0.100
SW-N-05	FR2	Y	2026-02-03	Field replicate 2	< 0.02	< 0.01	1.36	260	53.6	0.122	57.0	0.019	0.102
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	< 0.02	< 0.01	1.36	260	50.1	0.116	54.5	0.023	0.101
SW-N-05	RPD	Y		RPD of replicates	0.0%	0.0%	0.0%	0.0%	14.2%	10.3%	9.2%	**33.1%** b	2.0%
SW-N-41S1	FR1	Y	2025-12-03	Field replicate 1	< 0.02	< 0.01	0.61	76.0	143	0.301	21.0	0.006	0.182
SW-N-41S1	FR2	Y	2025-12-03	Field replicate 2	0.02	< 0.01	0.62	75.0	135	0.308	21.0	0.007	0.181
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	< 0.02	< 0.01	0.62	75.5	139	0.305	21.0	0.006	0.182
SW-N-41S1	RPD	Y		RPD of replicates	28.6%	0.0%	1.1%	1.3%	5.8%	2.3%	0.0%	9.4%	0.6%
SW-N-41S1	FR1	Y	2026-02-03	Field replicate 1	< 0.02	< 0.01	0.42	45.0	156	0.237	18.0	0.006	0.143
SW-N-41S1	FR2	Y	2026-02-03	Field replicate 2	< 0.02	< 0.01	0.41	45.0	158	0.244	18.0	0.005	0.151
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	< 0.02	< 0.01	0.42	45.0	157	0.241	18.0	0.005	0.147
SW-N-41S1	RPD	Y		RPD of replicates	0.0%	0.0%	2.4%	0.0%	1.3%	2.9%	0.0%	9.3%	5.4%
SW-N-42S1	FR1	Y	2025-05-05	Field replicate 1	< 0.02	< 0.01	0.11	59.0	21.6	0.081	39.0	< 0.005	0.067
SW-N-42S1	FR2	Y	2025-05-05	Field replicate 2	< 0.02	< 0.01	0.06	58.0	21.5	0.074	38.0	< 0.005	0.067
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	< 0.02	< 0.01	0.09	58.5	21.6	0.078	38.5	< 0.005	0.067
SW-N-42S1	RPD	Y		RPD of replicates	0.0%	0.0%	**65.1%** b	1.7%	0.5%	9.0%	2.6%	0.0%	0.0%
SW-S-04	FR1	Y	2025-05-05	Field replicate 1	< 0.02	< 0.01	0.37	25.0	45.5	0.079	54.0	0.015	0.104
SW-S-04	FR2	Y	2025-05-05	Field replicate 2	< 0.02	< 0.01	0.36	25.0	44.8	0.083	56.0	0.011	0.094
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	< 0.02	< 0.01	0.36	25.0	45.2	0.081	55.0	0.013	0.099
SW-S-04	RPD	Y		RPD of replicates	0.0%	0.0%	0.8%	0.0%	1.6%	4.9%	3.6%	**30.8%** b	10.1%
SW-S-04	FR1	Y	2025-12-03	Field replicate 1	0.02	< 0.01	1.13	39.0	33.9	0.131	89.0	0.014	0.099
SW-S-04	FR2	Y	2025-12-03	Field replicate 2	< 0.02	< 0.01	1.14	38.0	35.0	0.134	90.0	0.012	0.094
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	< 0.02	< 0.01	1.14	38.5	34.5	0.133	89.5	0.013	0.096
SW-S-04	RPD	Y		RPD of replicates	6.5%	0.0%	0.9%	2.6%	3.2%	2.3%	1.1%	14.4%	4.7%
SW-S-04	FR1	Y	2026-02-04	Field replicate 1	0.02	0.01	0.91	15.0	67.1	0.138	44.0	0.008	0.085
SW-S-04	FR2	Y	2026-02-04	Field replicate 2	0.02	0.01	0.91	16.0	62.8	0.131	44.0	0.007	0.085
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	0.02	0.01	0.91	15.5	65.0	0.135	44.0	0.008	0.085
SW-S-04	RPD	Y		RPD of replicates	4.9%	1.0%	0.1%	6.5%	6.6%	5.2%	0.0%	9.3%	0.0%
SW-TB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---	---	---
SW-TB	TB	N	2025-09-23	Travel blank (sealed blank water from BV)	< 0.02	< 0.01	< 0.02	< 1.00	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01
SW-TB	TB	N	2025-12-03	Travel blank (sealed blank water from BV)	< 0.02	< 0.01	< 0.02	< 1.00	< 3.00	< 0.02	< 10.00	< 0.01	< 0.01
SW-TB	TB	N	2026-02-04	Travel blank (sealed blank water from BV)	< 0.02	< 0.01	< 0.02	< 1.00	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01
SW-FB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---	---	---
SW-FB	FB	N	2025-09-23	Field blank; decanted on the tailgate at Hartland North	< 0.02	< 0.01	< 0.02	< 1.00	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01
SW-FB	FB	N	2025-12-03	Field blank	< 0.02	< 0.01	0.03	< 1.00	< 3.00	< 0.02	< 10.00	< 0.01	< 0.01
SW-FB	FB	N	2026-02-04	Field blank	< 0.02	< 0.01	< 0.02	< 1.00	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01

Notes:

Bold	a - *RPD greater than DQO and all replicates greater than the LOQ.*
Bold	b - *RPD greater than DQO with some replicates less than the LOQ.*
Bold	c - *Field/travel blank parameter concentration exceeds the LOQ.*
FB	*Field blank.*
FR1	*Field replicate 1.*
FR2	*Field replicate 2.*
FRM	*Field replicate mean (average of field replicates).*
LOQ	*Limit of quantification.*
RPD	*Relative percent difference of field replicates.*
TB	*Travel blank.*

Table 3-2. Surface Water Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Point (Y/N)?	Date Sampled	Parameter	Copper	Iron	Lead	Manganese	Molybdenum	Nickel	Selenium	Silver	Sodium
				Fraction	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
				Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.05	5	0.02	0.1	0.05	0.02	0.04	0.005	0.05
				Limit of Quantification (5x DL)	0.25	25	0.1	0.5	0.25	0.1	0.2	0.025	0.25
SW-N-05	FR1	Y	2025-09-23	Field replicate 1	1.76	47.1	< 0.020	3.44	2.97	0.67	0.31	< 0.01	5.86
SW-N-05	FR2	Y	2025-09-23	Field replicate 2	1.81	62.1	< 0.020	3.54	2.87	0.72	0.30	< 0.01	5.88
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	1.79	54.6	< 0.020	3.49	2.92	0.70	0.30	< 0.01	5.87
SW-N-05	RPD	Y		RPD of replicates	2.8%	27.5%	0.0%	2.9%	3.4%	7.2%	4.0%	0.0%	0.3%
SW-N-05	FR1	Y	2025-12-02	Field replicate 1	2.54	94.4	< 0.020	4.24	2.42	1.03	0.43	< 0.01	7.13
SW-N-05	FR2	Y	2025-12-02	Field replicate 2	2.49	107	0.020	5.40	2.50	1.04	0.43	< 0.01	7.35
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	2.52	101	< 0.020	4.82	2.46	1.04	0.43	< 0.01	7.24
SW-N-05	RPD	Y		RPD of replicates	2.0%	12.5%	0.0%	24.1%	3.3%	1.0%	0.2%	0.0%	3.0%
SW-N-05	FR1	Y	2026-02-03	Field replicate 1	1.97	69.7	0.020	2.35	0.98	1.01	0.47	< 0.01	5.55
SW-N-05	FR2	Y	2026-02-03	Field replicate 2	1.87	77.5	0.033	2.37	1.08	1.13	0.47	< 0.01	5.96
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	1.92	73.6	0.027	2.36	1.03	1.07	0.47	< 0.01	5.76
SW-N-05	RPD	Y		RPD of replicates	5.2%	10.6%	**49.1%** b	0.8%	9.9%	11.2%	0.4%	0.0%	7.1%
SW-N-41S1	FR1	Y	2025-12-03	Field replicate 1	0.510	308	0.099	136	0.34	0.25	0.14	< 0.01	5.13
SW-N-41S1	FR2	Y	2025-12-03	Field replicate 2	0.540	303	0.101	139	0.35	0.28	0.14	< 0.01	5.43
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	0.525	306	0.100	138	0.34	0.27	0.14	< 0.01	5.28
SW-N-41S1	RPD	Y		RPD of replicates	5.7%	1.6%	2.0%	2.2%	1.2%	11.3%	0.0%	0.0%	5.7%
SW-N-41S1	FR1	Y	2026-02-03	Field replicate 1	0.590	232	0.098	81.2	0.28	0.27	0.11	< 0.01	4.54
SW-N-41S1	FR2	Y	2026-02-03	Field replicate 2	0.960	242	0.186	82.9	0.31	0.31	0.12	< 0.01	4.38
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	0.775	237	0.142	82.1	0.30	0.29	0.12	< 0.01	4.46
SW-N-41S1	RPD	Y		RPD of replicates	**47.7%** a	4.2%	**62.0%** a	2.1%	10.2%	13.8%	5.1%	0.0%	3.6%
SW-N-42S1	FR1	Y	2025-05-05	Field replicate 1	0.350	57.1	0.041	27.6	0.45	0.16	< 0.04	< 0.01	12.20
SW-N-42S1	FR2	Y	2025-05-05	Field replicate 2	0.480	56.4	0.044	25.6	0.46	0.16	< 0.04	< 0.01	12.00
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	0.415	56.8	0.043	26.6	0.46	0.16	< 0.04	< 0.01	12.10
SW-N-42S1	RPD	Y		RPD of replicates	**31.3%** b	1.2%	7.1%	7.5%	3.1%	0.0%	0.0%	0.0%	1.7%
SW-S-04	FR1	Y	2025-05-05	Field replicate 1	1.24	58.6	0.080	10.1	0.11	0.33	< 0.04	< 0.01	18.50
SW-S-04	FR2	Y	2025-05-05	Field replicate 2	1.20	58.1	0.081	10.3	0.12	0.32	0.04	< 0.01	17.80
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	1.22	58.4	0.081	10.2	0.11	0.33	< 0.04	< 0.01	18.15
SW-S-04	RPD	Y		RPD of replicates	3.3%	0.9%	1.2%	2.0%	5.3%	2.8%	7.2%	0.0%	3.9%
SW-S-04	FR1	Y	2025-12-03	Field replicate 1	1.96	39.2	0.049	3.43	0.17	0.56	0.06	< 0.01	21.70
SW-S-04	FR2	Y	2025-12-03	Field replicate 2	1.86	41.9	0.050	3.35	0.15	0.56	0.06	< 0.01	19.10
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	1.91	40.6	0.050	3.39	0.16	0.56	0.06	< 0.01	20.40
SW-S-04	RPD	Y		RPD of replicates	5.2%	6.7%	2.0%	2.4%	10.7%	0.2%	1.7%	**66.7%** b	12.7%
SW-S-04	FR1	Y	2026-02-04	Field replicate 1	2.20	84.9	0.080	7.82	0.13	0.47	0.06	< 0.01	9.01
SW-S-04	FR2	Y	2026-02-04	Field replicate 2	2.21	78.0	0.073	7.59	0.12	0.45	0.05	< 0.01	8.87
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	2.21	81.5	0.077	7.71	0.13	0.46	0.06	< 0.01	8.94
SW-S-04	RPD	Y		RPD of replicates	0.5%	8.5%	9.2%	3.0%	6.4%	4.3%	7.1%	0.0%	1.6%
SW-TB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---	---	---
SW-TB	TB	N	2025-09-23	Travel blank (sealed blank water from BV)	< 0.05	< 1.00	< 0.01	< 0.05	< 0.05	< 0.02	< 0.04	< 0.01	< 0.05
SW-TB	TB	N	2025-12-03	Travel blank (sealed blank water from BV)	< 0.10	< 5.00	< 0.02	< 0.10	< 0.05	< 0.10	< 0.04	< 0.01	< 0.25
SW-TB	TB	N	2026-02-04	Travel blank (sealed blank water from BV)	< 0.05	< 1.00	< 0.01	< 0.05	< 0.05	0.04	< 0.04	< 0.01	< 0.05
SW-FB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---	---	---
SW-FB	FB	N	2025-09-23	Field blank; decanted on the tailgate at Hartland North	< 0.05	< 1.00	< 0.01	< 0.05	< 0.05	< 0.02	< 0.04	< 0.01	< 0.05
SW-FB	FB	N	2025-12-03	Field blank	< 0.10	< 5.00	< 0.02	< 0.10	< 0.05	< 0.10	< 0.04	< 0.01	< 0.25
SW-FB	FB	N	2026-02-04	Field blank	< 0.05	< 1.00	< 0.01	< 0.05	< 0.05	< 0.02	< 0.04	< 0.01	< 0.05

Notes:

Bold ***a*** *- RPD greater than DQO and all replicates greater than the LOQ.*

Bold ***b*** *- RPD greater than DQO with some replicates less than the LOQ.*

Bold ***c*** *- Field/travel blank parameter concentration exceeds the LOQ.*

FB *Field blank.*

FR1 *Field replicate 1.*

FR2 *Field replicate 2.*

FRM *Field replicate mean (average of field replicates).*

LOQ *Limit of quantification.*

RPD *Relative percent difference of field replicates.*

TB *Travel blank.*

Table 3-2. Surface Water Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Point (Y/N)?	Date Sampled	Parameter	Zinc	Aluminum	Arsenic	Boron	Cadmium	Cobalt	Copper	Iron	Lead
				Fraction	TOT	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.1	0.5	0.02	10	0.005	0.005	0.05	1	0.005
				Limit of Quantification (5x DL)	0.5	2.5	0.1	50	0.025	0.025	0.25	5	0.025
SW-N-05	FR1	Y	2025-09-23	Field replicate 1	2.00	3.96	0.159	42.0	0.014	0.035	1.48	8.90	0.081
SW-N-05	FR2	Y	2025-09-23	Field replicate 2	2.20	5.76	0.172	41.0	0.014	0.031	1.57	4.40	0.054
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	2.10	4.86	0.166	41.5	0.014	0.033	1.53	6.65	0.067
SW-N-05	RPD	Y		RPD of replicates	9.5%	**37.0%** a	7.9%	2.4%	2.9%	11.2%	5.9%	**67.7%** b	**38.9%** a
SW-N-05	FR1	Y	2025-12-02	Field replicate 1	5.90	16.3	0.168	105	0.021	0.074	2.21	11.2	0.013
SW-N-05	FR2	Y	2025-12-02	Field replicate 2	3.20	14.8	0.171	108	0.022	0.075	2.30	9.80	0.014
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	4.55	15.6	0.170	107	0.021	0.075	2.26	10.5	0.013
SW-N-05	RPD	Y		RPD of replicates	**59.3%** b	9.6%	1.8%	2.8%	8.4%	0.7%	4.0%	13.3%	7.5%
SW-N-05	FR1	Y	2026-02-03	Field replicate 1	3.70	10.1	0.135	59.0	0.020	0.069	1.58	5.80	< 0.005
SW-N-05	FR2	Y	2026-02-03	Field replicate 2	3.20	9.93	0.137	58.0	0.018	0.068	1.57	5.60	0.006
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	3.45	10.0	0.136	58.5	0.019	0.068	1.58	5.70	< 0.005
SW-N-05	RPD	Y		RPD of replicates	14.5%	1.7%	1.5%	1.7%	10.2%	0.3%	0.6%	3.5%	11.3%
SW-N-41S1	FR1	Y	2025-12-03	Field replicate 1	1.50	3.81	0.186	20.0	< 0.005	0.059	0.213	28.4	0.005
SW-N-41S1	FR2	Y	2025-12-03	Field replicate 2	1.70	3.86	0.192	22.0	< 0.005	0.061	0.215	29.0	0.009
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	1.60	3.84	0.189	21.0	< 0.005	0.060	0.214	28.7	0.007
SW-N-41S1	RPD	Y		RPD of replicates	12.5%	1.3%	3.2%	9.5%	0.0%	3.3%	0.9%	2.1%	**53.2%** b
SW-N-41S1	FR1	Y	2026-02-03	Field replicate 1	1.00	6.98	0.156	19.0	< 0.005	0.035	0.234	15.1	< 0.005
SW-N-41S1	FR2	Y	2026-02-03	Field replicate 2	1.20	6.04	0.155	19.0	< 0.005	0.035	0.190	14.0	< 0.005
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	1.10	6.51	0.156	19.0	< 0.005	0.035	0.212	14.6	< 0.005
SW-N-41S1	RPD	Y		RPD of replicates	18.2%	14.4%	0.6%	0.0%	0.0%	2.3%	20.8%	7.6%	0.0%
SW-N-42S1	FR1	Y	2025-05-05	Field replicate 1	< 1.00	5.76	0.089	42.0	< 0.005	0.056	0.325	16.6	0.049
SW-N-42S1	FR2	Y	2025-05-05	Field replicate 2	< 1.00	6.57	0.082	41.0	< 0.005	0.056	0.330	17.1	0.038
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	< 1.00	6.17	0.086	41.5	< 0.005	0.056	0.328	16.9	0.044
SW-N-42S1	RPD	Y		RPD of replicates	0.0%	13.1%	8.2%	2.4%	0.0%	0.0%	1.5%	3.0%	25.3%
SW-S-04	FR1	Y	2025-05-05	Field replicate 1	1.93	9.11	0.186	53.0	0.013	0.057	1.04	3.40	< 0.005
SW-S-04	FR2	Y	2025-05-05	Field replicate 2	2.07	10.6	0.069	54.0	< 0.005	0.053	1.08	3.80	< 0.005
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	2.00	9.86	0.128	53.5	< 0.009	0.055	1.06	3.60	< 0.005
SW-S-04	RPD	Y		RPD of replicates	7.0%	15.1%	**91.8%** b	1.9%	**88.9%** b	7.3%	3.8%	11.1%	0.0%
SW-S-04	FR1	Y	2025-12-03	Field replicate 1	2.09	13.3	0.142	91.0	0.016	0.077	1.79	8.10	0.016
SW-S-04	FR2	Y	2025-12-03	Field replicate 2	2.30	14.0	0.140	93.0	0.012	0.079	1.80	8.40	0.020
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	2.20	13.7	0.141	92.0	0.014	0.078	1.80	8.25	0.018
SW-S-04	RPD	Y		RPD of replicates	9.6%	5.1%	1.4%	2.2%	25.5%	2.2%	0.6%	3.6%	23.6%
SW-S-04	FR1	Y	2026-02-04	Field replicate 1	5.00	23.9	0.116	46.0	0.005	0.052	1.86	24.1	0.010
SW-S-04	FR2	Y	2026-02-04	Field replicate 2	5.00	24.3	0.121	47.0	0.006	0.051	1.89	18.0	0.010
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	5.00	24.1	0.119	46.5	0.005	0.051	1.88	21.1	0.010
SW-S-04	RPD	Y		RPD of replicates	0.0%	1.7%	4.2%	2.2%	5.5%	0.4%	1.6%	29.0%	8.0%
SW-TB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---	---	---
SW-TB	TB	N	2025-09-23	Travel blank (sealed blank water from BV)	< 0.10	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01	< 0.05	< 1.00	< 0.01
SW-TB	TB	N	2025-12-03	Travel blank (sealed blank water from BV)	< 1.00	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01	< 0.05	< 1.00	< 0.01
SW-TB	TB	N	2026-02-04	Travel blank (sealed blank water from BV)	< 0.10	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01	< 0.05	< 1.00	< 0.01
SW-FB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---	---	---
SW-FB	FB	N	2025-09-23	Field blank; decanted on the tailgate at Hartland North	< 0.10	**4.70** c	< 0.02	< 10.00	0.01	0.01	**0.40** c	**12.30** c	**0.17** c
SW-FB	FB	N	2025-12-03	Field blank	< 1.00	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01	0.07	**22.50** c	< 0.01
SW-FB	FB	N	2026-02-04	Field blank	< 0.10	< 0.50	< 0.02	< 10.00	< 0.01	< 0.01	< 0.05	< 1.00	0.01

Notes:

Bold	*a - RPD greater than DQO and all replicates greater than the LOQ.*
Bold	*b - RPD greater than DQO with some replicates less than the LOQ.*
Bold	*c - Field/travel blank parameter concentration exceeds the LOQ.*
FB	*Field blank.*
FR1	*Field replicate 1.*
FR2	*Field replicate 2.*
FRM	*Field replicate mean (average of field replicates).*
LOQ	*Limit of quantification.*
RPD	*Relative percent difference of field replicates.*
TB	*Travel blank.*

Table 3-2. Surface Water Quality QA/QC - Relative Percent Difference 2025-2026

AECOM

Station	Sample Type	Compliance Point (Y/N)?	Date Sampled	Parameter	Manganese	Molybdenum	Nickel	Selenium	Silver	Sodium	Zinc
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L
				RPD Data Quality Objective (DQO)	30%	30%	30%	30%	30%	30%	30%
				Detection Limit (DL)	0.05	0.05	0.02	0.04	0.005	0.05	0.1
				Limit of Quantification (5x DL)	0.25	0.25	0.1	0.2	0.025	0.25	0.5
SW-N-05	FR1	Y	2025-09-23	Field replicate 1	0.411	2.61	0.667	0.290	< 0.005	5.93	4.30
SW-N-05	FR2	Y	2025-09-23	Field replicate 2	0.368	2.63	0.634	0.277	< 0.005	5.80	3.85
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	0.390	2.62	0.651	0.284	< 0.005	5.87	4.08
SW-N-05	RPD	Y		RPD of replicates	11.0%	0.8%	5.1%	4.6%	0.0%	2.2%	11.0%
SW-N-05	FR1	Y	2025-12-02	Field replicate 1	1.20	2.52	0.988	0.470	< 0.005	7.66	2.55
SW-N-05	FR2	Y	2025-12-02	Field replicate 2	1.10	2.55	1.00	0.452	< 0.005	7.70	2.59
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	1.15	2.54	0.992	0.461	< 0.005	7.68	2.57
SW-N-05	RPD	Y		RPD of replicates	8.7%	1.2%	0.8%	3.9%	0.0%	0.5%	1.6%
SW-N-05	FR1	Y	2026-02-03	Field replicate 1	1.34	1.10	1.04	0.498	< 0.005	6.52	2.98
SW-N-05	FR2	Y	2026-02-03	Field replicate 2	1.28	1.06	1.05	0.510	< 0.005	6.47	2.90
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	1.31	1.08	1.05	0.504	< 0.005	6.50	2.94
SW-N-05	RPD	Y		RPD of replicates	4.6%	3.7%	1.0%	2.4%	0.0%	0.8%	2.7%
SW-N-41S1	FR1	Y	2025-12-03	Field replicate 1	58.1	0.341	0.102	0.140	< 0.005	5.47	0.370
SW-N-41S1	FR2	Y	2025-12-03	Field replicate 2	58.1	0.337	0.104	0.145	< 0.005	5.46	0.380
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	58.1	0.339	0.103	0.143	< 0.005	5.47	0.375
SW-N-41S1	RPD	Y		RPD of replicates	0.0%	1.2%	1.9%	3.5%	0.0%	0.2%	2.7%
SW-N-41S1	FR1	Y	2026-02-03	Field replicate 1	24.1	0.288	0.080	0.123	< 0.005	4.73	0.470
SW-N-41S1	FR2	Y	2026-02-03	Field replicate 2	23.6	0.279	0.075	0.112	< 0.005	4.79	0.350
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	23.9	0.284	0.078	0.118	< 0.005	4.76	0.410
SW-N-41S1	RPD	Y		RPD of replicates	2.1%	3.2%	6.5%	9.4%	0.0%	1.3%	29.3%
SW-N-42S1	FR1	Y	2025-05-05	Field replicate 1	18.3	0.433	0.151	0.044	< 0.005	12.4	1.60
SW-N-42S1	FR2	Y	2025-05-05	Field replicate 2	18.2	0.463	0.151	0.040	< 0.005	12.1	0.730
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	18.3	0.448	0.151	0.042	< 0.005	12.3	1.17
SW-N-42S1	RPD	Y		RPD of replicates	0.5%	6.7%	0.0%	9.5%	0.0%	2.4%	**74.7%** a
SW-S-04	FR1	Y	2025-05-05	Field replicate 1	1.21	0.109	0.239	0.047	< 0.005	19.1	1.46
SW-S-04	FR2	Y	2025-05-05	Field replicate 2	1.16	0.126	0.257	0.041	< 0.005	18.2	1.36
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	1.19	0.118	0.248	0.044	< 0.005	18.7	1.41
SW-S-04	RPD	Y		RPD of replicates	4.2%	14.5%	7.3%	13.6%	0.0%	4.8%	7.1%
SW-S-04	FR1	Y	2025-12-03	Field replicate 1	0.683	0.176	0.524	0.065	< 0.005	19.4	2.30
SW-S-04	FR2	Y	2025-12-03	Field replicate 2	0.605	0.171	0.571	0.057	< 0.005	20.2	2.83
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	0.644	0.174	0.548	0.061	< 0.005	19.8	2.57
SW-S-04	RPD	Y		RPD of replicates	12.1%	2.9%	8.6%	13.1%	0.0%	4.0%	20.7%
SW-S-04	FR1	Y	2026-02-04	Field replicate 1	2.28	0.117	0.387	0.049	< 0.005	9.07	4.05
SW-S-04	FR2	Y	2026-02-04	Field replicate 2	2.22	0.117	0.418	0.050	< 0.005	9.06	4.03
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	2.25	0.117	0.403	0.050	< 0.005	9.07	4.04
SW-S-04	RPD	Y		RPD of replicates	2.7%	0.0%	7.7%	2.0%	0.0%	0.1%	0.5%
SW-TB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---
SW-TB	TB	N	2025-09-23	Travel blank (sealed blank water from BV)	< 0.05	< 0.05	< 0.02	< 0.04	< 0.01	< 0.05	< 0.10
SW-TB	TB	N	2025-12-03	Travel blank (sealed blank water from BV)	< 0.05	< 0.05	< 0.02	< 0.04	< 0.01	< 0.05	< 0.10
SW-TB	TB	N	2026-02-04	Travel blank (sealed blank water from BV)	< 0.05	< 0.05	< 0.02	< 0.04	< 0.01	< 0.05	< 0.10
SW-FB	NS	N	2025-05-06	Missed - not sampled	---	---	---	---	---	---	---
SW-FB	FB	N	2025-09-23	Field blank; decanted on the tailgate at Hartland North	**1.02** c	< 0.05	**0.21** c	< 0.04	< 0.01	**0.53** c	**7.34** c
SW-FB	FB	N	2025-12-03	Field blank	0.20	< 0.05	0.02	< 0.04	< 0.01	< 0.05	0.17
SW-FB	FB	N	2026-02-04	Field blank	< 0.05	< 0.05	< 0.02	< 0.04	< 0.01	< 0.05	0.49

Notes:

Bold ***a*** *- RPD greater than DQO and all replicates greater than the LOQ.*

Bold ***b*** *- RPD greater than DQO with some replicates less than the LOQ.*

Bold ***c*** *- Field/travel blank parameter concentration exceeds the LOQ.*

FB *Field blank.*

FR1 *Field replicate 1.*

FR2 *Field replicate 2.*

FRM *Field replicate mean (average of field replicates).*

LOQ *Limit of quantification.*

RPD *Relative percent difference of field replicates.*

TB *Travel blank.*

Table 3-3. Hartland Valve Chamber Leachate Chemistry QA/QC - Relative Percent Difference 2025-2026

AECOM

State	Parameter	Units	Detection Limit (DL)	Limit of Quantification (5x DL)	RPD Data Quality Objective (DQO)	Hartland Valve Chamber FR1 22-May-2025	Hartland Valve Chamber FR2 22-May-2025	Hartland Valve Chamber FRM 22-May-2025	RPD %	Hartland Valve Chamber FR1 15-Aug-2025	Hartland Valve Chamber FR2 15-Aug-2025	Hartland Valve Chamber FRM 15-Aug-2025	RPD %	Hartland Valve Chamber FR1 26-Nov-2025	Hartland Valve Chamber FR2 26-Nov-2025	Hartland Valve Chamber FRM 26-Nov-2025	RPD %	Hartland Valve Chamber FR1 11-Feb-2026	Hartland Valve Chamber FR2 11-Feb-2026	Hartland Valve Chamber FRM 11-Feb-2026	RPD %
CONVENTIONALS																					
TOT	Total Sulphide	mg/L	0.0018	0.009	30%	0.067	0.0580	0.06250	14.4%	0.490	0.420	0.46	15.4%	0.035	0.042	0.039	18.1%	0.045	0.110	0.065	**83.9%** a
DISS	Dissolved Sulphide	mg/L	0.009	0.0450	30%	0.054	0.076	0.065	**33.9%** a	0.150	0.150	0.15		0.028	0.027	0.028	3.6%	0.066	0.069	0.068	4.4%
TOT	Total Suspended Solids	mg/L	1	5	30%	43.00	54.00	48.50	22.7%	470.00	720.00	595.00	**42.0%** a	35.00	38.00	36.50	8.2%	31.00	31.00	31.00	
TOT	Biochemical Oxygen Demand	mg/L	2	10	30%	24	22	23	8.7%	380	340	360	11.1%	53	60	57	12.4%	43	47	45	8.9%
TOT	Chemical Oxygen Demand	mg/L	10	50	30%	662	602	632	9.5%	1180	1210	1195	2.5%	508	523	516	2.9%	642	662	652	3.1%
DISS	Chloride	mg/L	1	5	30%	320	320	320		390	390	390		240	240	240		300	290	295	3.4%
DISS	Sulphate	mg/L	1	5	30%	36	23	30	**44.1%** a	27	34	31	23.0%	160	150	155	6.5%	37	25	31	**38.7%** a
TOT	Oil & Grease, Total	mg/L	1	5	30%	< 2.5	< 2.5	< 2.5		1.2	4.6	2.9	**117.2%** b	< 1.0	1.0	1.0		1.2	2.0	1.6	**50.0%** b
TOT	Oil & Grease, Mineral	mg/L	2	10	45%	< 5.0	< 5.0	< 5.0		< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0	
TOT	Strong Acid Dissociable Cyanide	mg/L	0.0005	0.0025	30%	0.02	0.01	0.02	7.8%	0.02	0.02	0.02	6.2%	0.01	0.01	0.01	13.0%	0.02	0.01	0.01	**159.6%** a
TOT	Weak Acid Dissociable Cyanide	mg/L	0.0005	0.0025	30%	0.0066	0.0056	0.0061	16.4%	0.0082	0.0100	0.0091	19.8%	0.0084	0.0060	0.0072	**33.3%** a	0.0080	0.0032	0.0056	**85.0%** a
TOT	Phenols	mg/L	0.015	0.075	45%	< 0.01	< 0.01	< 0.01	28.6%	0.03	0.03	0.30	3.3%	0.03	0.02	0.02	36.7%	0.02	0.02	0.02	
TOT	Ammonia	mg/L	1.5	7.5	30%	220	260	240.0	16.7%	310	310	310		160	230	195	**35.9%** a	280	280	280	
TOT	Nitrite	mg/L	0.005	0.025	30%	0.15	0.15	0.15	2.0%	2.47	2.30	2.39	7.1%	0.01	0.02	0.01	10.7%	0.12	0.12	0.12	0.9%
TOT	Nitrate	mg/L	0.02	0.10	30%	10.40	10.30	10.35	1.0%	3.60	22.90	13.25	**145.7%** a	< 0.02	< 0.02	< 0.02		0.98	0.97	0.98	1.0%
TOT	pH	pH	0.01	0.05	30%	8.16	8.16	8.16		8.66	8.66	8.66		8.11	8.11	8.11		8.24	8.24	8.24	
TOT	Conductivity	µS/cm	0.1	0.5	30%	2780	2780	2780		1798	1798	1798		4765	4765	4765		1538	1538	769	
TOT	Temperature	°C	0.1	0.5	30%	14.50	14.50	14.50		19.80	19.80	19.80		17.90	17.90	17.90		16.80	16.80	16.80	
TOT	Dissolved Oxygen	mg/L	0.01	0.05	30%	1.21	1.21	1.21		2.86	2.86	2.86		0.24	0.24	0.24		2.21	2.21	1.11	
TOT	Oxidation-ReductionPotential	mV	1	5	30%	124	124	124		114.2	114.2	114.2		81.2	81.2	81.2		110.1	110.1	55.1	
METALS																					
TOT	Arsenic	µg/L	0.04	0.20	30%	9.52	9.85	9.69	3.4%	15.60	15.60	15.60		11.40	11.20	11.30	1.8%	11.30	11.30	11.30	
TOT	Cadmium	µg/L	0.01	0.05	30%	0.06	0.07	0.07	13.5%	0.06	0.05	0.05	15.2%	0.08	0.06	0.07	23.8%	0.09	0.09	0.09	7.7%
TOT	Chromium	µg/L	0.2	1.0	30%	68.50	71.70	70.10	4.6%	62.90	68.70	65.80	8.8%	60.50	58.20	59.35	3.9%	74.60	76.00	75.30	1.9%
TOT	Cobalt	µg/L	0.02	0.10	30%	12.90	13.10	13.00	1.5%	15.50	15.80	15.65	1.9%	13.30	12.70	13.00	4.6%	11.90	12.50	12.20	4.9%
TOT	Copper	µg/L	0.2	1.0	30%	11.90	12.40	12.15	4.1%	13.80	13.60	13.70	1.5%	15.80	15.00	15.40	5.2%	10.90	11.60	11.25	6.2%
TOT	Iron	µg/L	10	50	30%	1870	1930	1900	3.2%	1480	1610	1545	8.4%	2170	2130	2150	1.9%	2180	2230	2205	2.3%
TOT	Lead	µg/L	0.04	0.20	30%	0.95	0.99	0.97	3.2%	0.87	0.85	0.86	2.6%	1.85	1.75	1.80	5.6%	1.23	1.28	1.26	4.0%
TOT	Manganese	µg/L	0.2	1.0	30%	438	450	444.0	2.7%	388	390	389	0.5%	546	525	536	3.9%	609	643	626	5.4%
TOT	Mercury	µg/L	0.019	0.095	30%	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01		< 0.02	0.03	0.02	**41.7%** b
TOT	Molybdenum	µg/L	0.1	0.5	30%	2.45	2.74	2.60	11.2%	1.06	1.29	1.18	19.6%	2.84	2.70	2.77	5.1%	2.62	2.29	2.46	13.4%
TOT	Nickel	µg/L	0.2	1.0	30%	36.50	37.30	36.90	2.2%	47.50	49.00	48.25	3.1%	30.80	30.00	30.40	2.6%	34.10	35.70	34.90	4.6%
TOT	Selenium	µg/L	0.08	0.40	30%	0.46	0.52	0.49	10.6%	0.41	0.4	0.42	1.2%	0.46	0.42	0.44	7.5%	0.59	0.64	0.61	8.5%
TOT	Sodium	µg/L	0.5	2.5	30%	262	270	266	3.0%	373	383	378	2.6%	229	217	223	5.4%	283	293	288	3.5%
TOT	Silver	µg/L	0.02	0.10	30%	< 0.02	< 0.02	< 0.02		0.01	0.02	0.02	**37.5%** b	< 0.02	< 0.02	< 0.02		< 0.02	< 0.05	< 0.04	**85.7%** b
TOT	Zinc	µg/L	2	10	30%	23.10	23.10	23.10		32.20	28.90	30.55	10.8%	20.00	19.30	19.65	3.6%	23.10	23	23.15	0.4%
BTEX																					
DISS	Benzene	µg/L	0.4	2	45%	< 0.4	< 0.4	< 0.4		< 0.4	< 0.4	< 0.4		< 0.4	< 0.4	< 0.4		< 0.4	< 0.4	< 0.4	
DISS	Toluene	µg/L	0.4	2	45%	< 0.4	< 0.4	< 0.4		15.0	16.0	15.5	6.5%	1.00	1.20	1.10	18.2%	1.60	1.50	1.55	6.5%
DISS	Ethylbenzene	µg/L	0.4	2	45%	< 0.4	< 0.4	< 0.4		< 0.4	< 0.4	< 0.4		0.6	0.8	0.6	1.7%	0.9	0.9	0.9	7.8%
DISS	Xylenes	µg/L	0.4	2	45%	< 0.4	< 0.4	< 0.4		< 0.4	< 0.4	< 0.4		3.3	3.4	3.4	3.0%	3.5	3.4	3.5	2.9%
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)																					
TOT	TotalPAH	µg/L	0.01	0.05	45%	7.90	7.10	7.50	10.7%	8.60	9.70	9.15	12.0%	13.00	12.00	12.50	8.0%	30.00	34.00	32.00	12.5%
TOT	Acenaphthene	µg/L	0.01	0.05	45%	1.70	1.70	1.70		1.00	1.00	1.00		2.10	2.20	2.15	4.7%	5.10	5.70	5.40	11.1%
TOT	Acenaphthylene	µg/L	0.01	0.05	45%	0.074	0.068	0.071	8.5%	< 0.100	< 0.100	< 0.100		0.029	0.028	0.029	3.5%	0.067	0.074	0.071	9.9%
TOT	Anthracene	µg/L	0.01	0.05	45%	0.97	0.75	0.86	25.6%	0.36	0.46	0.41	24.4%	0.42	0.43	0.43	2.4%	0.76	0.93	0.85	20.1%
TOT	Benzo(a)anthracene	µg/L	0.01	0.05	45%	0.16	0.13	0.15	20.7%	0.29	0.34	0.32	15.9%	0.16	0.15	0.16	6.5%	0.07	0.09	0.08	22.0%
TOT	Benzo(a)pyrene	µg/L	0.005	0.025	45%	0.035	0.028	0.032	22.2%	0.074	0.089	0.082	18.4%	0.065	0.050	0.058	26.1%	0.018	0.021	0.020	15.4%
TOT	Benzo(b,j)fluoranthene	µg/L	0.01	0.05	45%	0.063	0.048	0.056	27.0%	0.110	0.100	0.105	9.5%	0.100	0.082	0.091	19.8%	0.016	0.033	0.025	**69.4%** b
TOT	Benzo(g,h,i)perylene	µg/L	0.02	0.10	45%	< 0.02	< 0.02	< 0.02		< 0.20	< 0.20	< 0.20		0.04	0.03	0.03	**43.8%**	< 0.02	< 0.02	< 0.02	
TOT	Benzo(k)fluoranthene	µg/L	0.01	0.05	45%	0.022	0.015	0.019	37.8%	< 0.100	< 0.100	< 0.100		0.058	0.030	0.044	**63.6%** b	< 0.010	< 0.010	< 0.010	
TOT	Chrysene	µg/L	0.01	0.05	45%	0.18	0.16	0.170	11.8%	0.29	0.36	0.325	21.5%	0.18	0.15	0.165	18.2%	0.09	0.09	0.092	2.2%
TOT	Dibenzo(a,h)anthracene	µg/L	0.02	0.10	45%	< 0.02	< 0.02	< 0.02		< 0.20	< 0.20	< 0.20		0.04	< 0.02	0.03	**62.1%** b	< 0.02	< 0.02	< 0.02	
TOT	Fluoranthene	µg/L	0.01	0.05	45%	1.20	1.10	1.15	8.7%	1.30	1.60	1.45	20.7%	1.10	1.10	1.10		0.70	0.88	0.79	22.8%
TOT	Fluorene	µg/L	0.01	0.05	45%	1.30	1.30	1.30		0.83	0.92	0.88	10.3%	1.50	1.50	1.50		3.00	3.40	3.20	12.5%
TOT	Indeno(1,2,3-c,d)pyrene	µg/L	0.02	0.10	45%	< 0.02	< 0.02	< 0.02		< 0.20	< 0.20	< 0.20		0.03	0.02	0.03	37.0%	< 0.02	< 0.02	< 0.02	
TOT	Naphthalene	µg/L	0.01	0.05	45%	0.12	0.09	0.11	24.3%	1.70	1.70	1.70		2.70	2.50	2.60	7.7%	12.00	13.00	12.50	8.0%
TOT	Phenanthrene	µg/L	0.01	0.05	45%	0.820	0.740	0.780	10.3%	1.200	1.4	1.300	15.4%	1.80	1.80	1.80		3.20	3.70	3.45	14.5%
TOT	Pyrene	µg/L	0.01	0.05	45%	0.81	0.72	0.77	11.8%	0.90	1.10	1.00	20.0%	0.69	0.69	0.69		0.42	0.57	0.50	30.3%
CHLORINATED PHENOLS																					
TOT	Chlorinated Phenols (total)	µg/L	0.41	2.05	45%	0.3	0.3	0.3	17.5%	—	—	—	—	—	—	—	—	—	—	—	—
TOT	Total Dichlorophenols	µg/L	0.22	1.10	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	Total Monochlorophenols	µg/L	0.09	0.45	45%	0.31	0.26	0.29	17.5%	—	—	—	—	—	—	—	—	—	—	—	—
TOT	Total Nonchlorinated phenols	µg/L	1.6	8.0	45%	< 10	< 10	< 10		—	—	—	—	—	—	—	—	—	—	—	—
TOT	Total Phenolic Compounds	µg/L	0.17	0.85	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	Total Tetrachlorophenols	µg/L	0.17	0.85	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	Total Trichlorophenols	µg/L	0.24	1.20	45%	< 0.08	< 0.08	< 0.08		—	—	—	—	—	—	—	—	—	—	—	—
TOT	2-Chlorophenol	µg/L	0.05	0.25	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	2,4 + 2,5 Dichlorophenol	µg/L	0.1	0.5	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	2,4,6-Trichlorophenol	µg/L	0.1	0.5	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	Pentachlorophenol	µg/L	0.1	0.5	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	2,3,4,5-Tetrachlorophenol	µg/L	0.1	0.5	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—
TOT	2,3,4,6-Tetrachlorophenol	µg/L	0.1	0.5	45%	< 0.1	< 0.1	< 0.1		—	—	—	—	—	—	—	—	—	—	—	—

Notes:

Bold a - *RPD greater than DQO and all replicates greater than the LOQ.*

Bold b - *RPD greater than DQO with some replicates less than the LOQ.*

DISS Dissolved state.

FR1 Field replicate 1.

FR2 Field replicate 2.

FRM Field replicate mean (average of field replicates).

LOQ Limit of quantification.

RPD Relative percent difference of field replicates.

TOT Total state.

3.3 Statistical Assessment of Temporal Trends

Seasonal variability in water quality parameters can mask the overall trend of parameters in groundwater, surface water and leachate quality data. A non-parametric statistical analysis (the Mann-Kendall analysis) has been used to evaluate long-term water and leachate quality trends at Hartland since 2005. The analysis does not require normally distributed data and allows for missing data (non-detects) and irregularly spaced measurement periods in the dataset. The Mann-Kendall test provides a quantitative means of identifying statistically significant monotonic (consistent direction) trends over time.

The Mann-Kendall analysis was conducted using the 'EnvStats' package in R statistical programming software. All tests were conducted at a significance level of 0.05 (i.e., there is a 5% chance of declaring a statistically significant trend where no trend exists). Where Mann-Kendall analysis was unable to identify a statistically significant trend, the coefficient of variance (CV) was calculated and used to assess the variability of the dataset. A CV value is the standard deviation divided by the average and is presented as a percent. A CV of ≤1 indicates stability in parameter concentrations (i.e., stable), whereas a value >1 indicates a greater degree of scatter (i.e., no trend). The process of determining a statistically significant trend and trend stability is provided below in **Table 3-4**. 'No trend' and 'stable' both indicate that neither an increasing nor a decreasing trend could be discerned within the specified confidence limit. However, a 'stable' result also signifies that data had minimal scatter (CV ≤1), which further emphasizes that the concentrations remained relatively unchanging over time.

Table 3-4. Mann-Kendall Analysis Decision Matrix

Mann-Kendall Results	Coefficient of Variance (CV)	Concentration Trend Interpretation
Statistically Increasing	-	Increasing
Statistically Decreasing	-	Decreasing
No Trend	CV > 1	No Trend
No Trend	CV ≤ 1	Stable

For this report, the Mann-Kendall analysis was conducted utilizing data collected between April 2021 and March 2026. A five-year time frame is consistent with the interval over which most water quality data is plotted within this report and is anticipated to provide an ideal balance between seasonal variation and the detection of long-term trends in water quality. However, the analysis will provide a result for a monitoring location that has been analyzed quarterly for at least two years, as per trend analysis guidelines described in the CSR.

The analysis was conducted using data collected from a total of 93 groundwater monitoring wells (38 compliance and 55 routine), 10 purge wells, 29 surface water monitoring stations (5 compliance and 24 routine), and the leachate compliance monitoring station (Hartland Valve Chamber). The rest of the locations are either inactive or do not have sufficient data for Mann-Kendall analysis. Replicate samples were not included in the Mann-Kendall analysis, as a requirement of the test is that the data be serially independent. Conductivity, ammonia, and chloride concentrations were tested for trends using the Mann-Kendall test because they are considered key indicators of leachate at the landfill. Sulphate and nitrate concentrations were also evaluated because they are key indicators of aggregate runoff. Non-detect measurements were assigned the value of the detection limit.

The results of the statistical trend analysis for groundwater, surface water and leachate are provided in **Appendices D-1, D-2, and D-3**, respectively, and are discussed in relevant sections of this report.

3.4 Summary

In summary, the 2025/26 quality assurance analysis indicates the following:

- The replicate sampling frequencies were 13.5% (43/318 samples) for groundwater, 12.3% (9/73 samples) for surface water, 25.0% (4/16 samples) for the Hartland Valve Chamber, and 16.0% (4/25 samples) for the overall leachate sampling program, for a total frequency of 13.9% (60/432 samples), which all exceed the targeted replicate sampling rate of 10%.
- Groundwater sampling methods and the laboratory analyses produced reliable results. RPD values for a total of 13 samples and 24 analytical results across 45 parameters exceeded DQOs when all parameter concentrations were above the LOQ. Replicate samples collected at GW-21-1-1 in September 2025 and GW-39-1-1 in November 2025 exhibited a relatively high number of DQO exceedances (4 to 7 analytical results each) and should be interpreted with caution.

- Surface water sampling methods and laboratory analyses produced reliable results. The QA results indicated a total of 3 samples and 5 analytical results across 42 parameters had RPD values that exceeded DQOs when all parameters were above the LOQ.
- Leachate sampling and laboratory analysis produced reliable results. A total of 4 samples and 10 analytical results across 69 parameters had RPD values that exceeded DQOs when concentrations in both duplicates were above the LOQ.

4. Groundwater Flow

4.1 Data

Interpretation of groundwater flow patterns at the landfill is based on analysis and synthesis of several data sources. Groundwater levels are impacted primarily by the regional geology, drawdown induced by the North and South Purge Wells, drawdown induced by the Phase 2 leachate collection system, and the presence of bedrock fractures and faults.

In 2025/26, the following data was provided:

- Continuous water and leachate level monitoring from the SCADA system installed in the Lower Leachate Lagoon, Upper Leachate Lagoon, Phase 2 basin (i.e., Heal Basin), wells GW-36-1-1 and GW-37-1-1, and one monitoring well located north of Phase 1 (GW-40-1-1).
- Continuous groundwater level monitoring using the SCADA system installed in five purge wells south of Phase 1 (P1, P2, P3, P4 and P10).
- Continuous water level monitoring in four monitoring wells east of Phase 1 (GW-17-1-1, GW-18-1-1, GW-54-1-1, and GW-76-1-1) and one monitoring well within Phase 1 (GW-89-1-1).
- Continuous groundwater level and flow monitoring using the SCADA system installed in the North Purge Wells (GW-80-1-0-P8, GW-81-1-0-P9 and GW-52-4-0-P7) and two monitoring wells located north of Phase 1 (GW-52-3-0 and GW-52-1-1).
- Continuous water level monitoring in 13 wells north of Phase 2, including 10 wells installed in the Hartland North Ridge area (GW-62-1-1, GW-77-1-1, GW-87-1-1, GW-87-2-1, GW-88-1-1, GW-88-2-1, GW-91-1-1, GW-92-1-1, GW-94-1-1, and GW-113-1-1) and three wells installed in the Hartland North Pad area (GW-41-1-1, GW-43-1-1, and GW-44-1-1).
- The presence and elevation of topography, refuse, engineered covers, temporary tarps, ditches, and surface water features.
- Daily precipitation data collected from the Hartland Climate Station (Victoria Hartland CS).

Manually measured groundwater elevations from 2025/26 are presented in **Appendix E**. The groundwater flow patterns illustrated in **Figure 4-1** were interpreted based on the groundwater elevations measured in September 2025. The data indicate that there are two separate groundwater flow systems at the landfill. One is a regional groundwater flow system in the bedrock surrounding and underlying the landfill; the second is a perched system contained within Phase 1. Although the flow systems are separate, the presence of the leachate mound within Phase 1 influences groundwater flow in underlying bedrock. Understanding these two flow systems is important for evaluating the effectiveness of leachate control and containment systems.

4.2 Regional Groundwater Flow in the Bedrock

Figure 4-1 presents an interpretation of the regional groundwater flow regime based on manual groundwater level measurements collected from wells screened in bedrock and deep wells completed in refuse, as observed in September 2025. **Figure 4-2** is a cross-section that extends from north of the leachate lagoons to the south of Phase 1 and depicts groundwater flow in a north-south direction. **Figure 4-3** shows groundwater flow in section along an east-west transect extending from the bedrock ridge northwest of Phase 2 to the eastern property boundary.

Within the landfill footprint, several wells (GW-75-1-1, VLGW-02-D, VLGW-03-D, VLGW-08-D, VLGW-15-D, VLGW-16-D, and VLGW-17-D) are screened at or near the bottom of the waste and their water levels are interpreted as being partly representative of the regional groundwater flow system within bedrock underlying the landfill. Geological structures including the Highland Fault and another inferred fault near monitoring well GW-77-1-1 are shown in plan on **Figure 4-1** and in cross-section in **Figure 4-2** and **Figure 4-3**. Measured groundwater elevations and hydrogeologic testing indicated that these structures influence local-scale groundwater flow patterns.

Regional groundwater flow near the landfill is influenced by bedrock structures, topography, and the presence of surface water features. The regional groundwater flow direction is from southwest to northeast (i.e., from Mount Work toward the north-south trending valley that underlies the northern portions of the Phase 1 and Phase 2 landfills). Leachate-impacted groundwater in

the landfill is collected and discharged to the Lower Leachate Lagoon via the Phase 2 basin leachate collection system, micro-tunnel, and the North Purge Wells located north of Phase 1 (GW-52-4-0-P7, GW-80-1-0-P8, and GW-81-1-0-P9).

As shown on **Figure 4-1**, there is an inferred groundwater flow divide located near the south end of the landfill and a small portion of groundwater below the south portion of Phase 1 flows toward the southeast. This flow divide trends roughly along a bedrock high in the valley floor beneath the landfill. Southeastward groundwater flow below the landfill is constrained by a constructed clay berm/bedrock grout curtain that was installed at the south end of the landfill in the 1980s, and by five purge wells (P1, P2, P3, P4, and P10) that began pumping leachate in 2001. Leachate collected by the South Purge Well network is pumped from the south pumping station to the Lower Leachate Lagoon.

Groundwater flows outwards from a groundwater divide parallel to the axis of the North Ridge and is directed to the north, east, and south of the ridge. Groundwater flowing north and northeast migrates offsite, and the remaining groundwater is captured by the Phase 2 leachate collection system. North of the site, groundwater flows toward Durrance Creek.

East of the landfill, along the bedrock ridge between the site and Kiowa Place Road, groundwater flows toward the northern portion of the Phase 1 landfill. Further to the east, the topography begins to slope eastward towards the Tod Creek valley, and the groundwater flow direction is inferred to be eastward toward Tod Creek.

4.3 Leachate Elevations in Phase 1 and Phase 2

4.3.1 Phase 1

Groundwater monitoring wells installed at varying depths in Phase 1 allow for measurement of leachate levels and interpretation of flow directions within the refuse. In addition to the monitoring wells, groundwater level data is collected manually from select landfill gas wells in Phase 1. The leachate plume in Phase 1 is depicted along a north-south cross section (transect A-A') in **Figure 4-2,** based on groundwater and leachate level measurements collected in September 2025. Many wells shown in section on **Figure 4-2** are located into and out of the page by tens of metres, and leachate levels fluctuate in both directions. Furthermore, leachate levels rise both into and out of the section around the purge wells because of the drawdown cone they induce.

During the operating years of the Phase 1 landfill, the leachate mound within Phase 1 reached an elevation of approximately 160 m asl. A final cover that incorporated a geomembrane liner was installed on Phase 1 in 1997 to limit infiltration. In 2025/26, leachate elevations within Phase 1 were generally below 155 m asl, reflecting an approximate 5 m decrease in the elevation of the leachate mound since capping of the Phase 1 landfill. As shown on **Figure 4-2**, the leachate mound in the refuse is above the regional bedrock groundwater flow system and the hydraulic gradient is downward. The downward gradient in the central portion of the landfill reverses to inward/upward in the north and south areas of the landfill due to pumping at the leachate collection purge wells.

Figure 4-4 presents leachate elevations in 12 landfill gas monitors in the Phase 1 landfill. Leachate levels at most shallow monitoring points continued to exhibit minor variability, except for VLGW-04-D and VLGW-18-D, which have exhibited greater variability since 2024. Like previous years, leachate levels in the deep gas monitors (VLGW-02-D, VLGW-03-D, VLGW-08-D, VLGW-15-D, VLGW-16-D and VLGW-17-D) fluctuated in response to seasonal variability in groundwater recharge, indicating that the lower portions of the Phase 1 landfill are connected hydraulically to the regional groundwater flow system.

In November 2018, well GW-89-1-1 was completed at the bottom of the refuse to facilitate monitoring of the leachate mound and replace the decommissioned well GW-74-1-1. The pressure transducer installed in GW-89-1-1 has malfunctioned occasionally over the past few monitoring years, but data collected from the transducer in 2025/26 indicated that the average leachate elevation was approximately 152.07 m asl, and the maximum leachate elevation was 153.83 m asl.

Well GW-75-1-1 is located on the north end of Phase 1, downgradient of wells GW-89-1-1 and GW-89-2-1 and is used to monitor the deep regional water table. At this location, groundwater levels have decreased slowly over the past several monitoring years. In 2025/26, groundwater elevations in GW-75-1-1 averaged 128.33 m asl, and in 2024/25, the annual average was 129.06 m asl.

VLGW-21-D and VLGW-26-D were completed approximately 50 m upgradient of GW-75-1-1. Historically, groundwater elevations were higher at VLGW-26-D than they were at VLGW-21-D, but in early 2023, groundwater levels at VLGW-21-D increased and have remained elevated since. This trend indicates a greater component of groundwater flow toward the Phase 1 landfill from topographic high east of Phase 1, as illustrated by the potentiometric contours in **Figure 4-1**.

4.3.2 Phase 2 Basin

The Phase 2 landfill is in a bedrock basin situated immediately west of the Phase 1 landfill. Phase 2 is segregated into multiple cells: Cell 1 and Cell 2 are complete, and Cells 3, 4, and 5 are active. Leachate from Cell 1 and Cell 2 is captured in a 350 mm diameter micro-tunnel that drains by gravity to the Lower Leachate Lagoon. All leachate from the Lower Lagoon is discharged to the sanitary sewer via the leachate pipeline. A geomembrane liner separates Cell 2 and Cell 3. Leachate from Cell 3 is captured via the Toutle Drain, which discharges to the Upper Leachate Lagoon. Groundwater in cells 4 and 5 is captured by the Phase 2 basin and the Leachate Drain, which convey leachate to the Lower Lagoon.

Figure 4-5 presents hydrographs for the groundwater monitoring wells and leachate wells located north of the Phase 2 basin, as well as leachate elevations in the Upper and Lower Leachate lagoons and the Phase 2 Basin. Groundwater levels north of Phase 2 must be higher than leachate levels within Phase 2 for the hydraulic trap to operate. Leachate elevations within the Phase 2 basin are typically around 113-114 m asl, or 8 to 10 m lower than groundwater elevations outside the basin (AECOM 2020b). In 2025/26, the average leachate elevation in Phase 2 was 113.85 m asl, as indicated by the SCADA system.

Important groundwater level monitoring points north of Phase 2 include locations 38, 39, 62, 77, and 113. Groundwater elevations in all monitoring wells north of Phase 2 continued to exceed leachate elevations within Phase 2, indicating that the leachate collection system functioned effectively. Since 2022, groundwater levels in GW-62-1-1 and GW-77-1-1 have decreased slowly, likely in response to quarrying in the Toutle Valley. The lowest groundwater levels at these locations were observed in late 2023 and although levels remain below historical values, they have been relatively stable from 2024 onwards. This suggests that the liner and underdrain system installed in Cell 4 in early 2025 are not impacting the groundwater flow regime in this area and along the North Ridge, but groundwater levels should continue to be monitored closely to assess for potential impacts.

Leachate monitoring wells GW-82-1-1, GW-83-1-1, GW-90-1-1, and GW-90-2-1 were installed in the Phase 2 Basin to investigate and verify leachate capture. Drilling observations and long-term monitoring have indicated that the waste mass was moist but largely unsaturated. In 2025/26, leachate levels were slightly higher at GW-90-1-1 and GW-90-2-1 than they were in 2024/25, and downward hydraulic gradients persisted. Leachate levels in GW-82-1-1 and GW-83-1-1 were consistent with historical measurements. These observations suggest that leachate levels were low and that leachate was contained by the Phase 2 basin.

It is imperative that leachate levels in each phase of the landfill are closely monitored to verify seismic stability, confirm that the Leachate Collection System and the Phase 2 hydraulic trap are functioning effectively, and determine if additional leachate containment measures should be implemented. AECOM previously recommended investigating leachate mounding in Phase 2 on a five-year basis. The next investigation was scheduled for 2025.

4.4 Groundwater Flow in the Bedrock Aquifer Near the Landfill

4.4.1 East of Phase 1

Figure 4-6 shows groundwater elevations at monitoring locations 17, 18, 54, and 76, which are situated on the bedrock ridge east of Phase 1. Changes in water levels at monitoring location 18 have occurred occasionally since 2001. In 2016/17, groundwater levels at location 18 increased by approximately 8 m relative to years prior, resulting in lower westward hydraulic gradients. In 2018, groundwater levels at monitoring location 18 returned to historical values, indicating that westward hydraulic gradients restabilized. As per the 2018/19 annual monitoring report recommendations (AECOM 2019a), pressure transducers were installed in wells GW-18-1-1, GW-76-1-1, GW-17-1-1, and GW-54-1-1 to monitor groundwater elevations continuously and confirm groundwater flow toward the landfill.

In 2025/26, groundwater levels in GW-18-1-1 were approximately 6 to 7 m lower than those observed in GW-76-1-1, and groundwater levels at GW-54-1-1 were consistently higher than those in GW-17-1-1, confirming a westward component of groundwater flow east of Phase 1. Like previous years, downward hydraulic gradients were observed at monitoring locations 18 and 76.

4.4.2 North of Phase 1

Historically, groundwater quality data collected from wells located downgradient of the North Purge Wells (e.g., monitoring locations 20 and 30) has been used to verify that the purge well system prevented northward migration of leachate from Phase 1. The drawdown cone induced by the purge wells is highlighted by the 115 m asl contour in **Figure 4-1**.

Figure 4-7 presents precipitation and groundwater elevation data for monitoring wells located near the North Purge Well System. Leachate discharge rates from the North Purge Wells (GW-52-4-0-P7, GW-80-1-0-P8, and GW-81-1-0-P9) are presented to illustrate the volume of leachate extracted in response to precipitation events. Well GW-52-3-0-P52 is the oldest purge well (installed in 1998), and it is located within 2 m of well GW-52-4-0-P7. Water levels in well GW-52-3-0-P52 are affected by pumping of GW-52-4-0-P7 and seasonal variations in groundwater recharge. Pressure transducers connected to SCADA are installed in wells GW-40-1-1, GW-52-3-0-P52, GW-52-4-0-P7, GW-80-1-0-P8, and GW-81-1-0-P9 to provide long-term monitoring of purge well performance north of Phase 1.

In 2025/26, leachate discharge volumes from the North Purge Wells continued to decline; a total of 4,220.7 m^3 of leachate was discharged in 2025/26, as compared to 14,277 m^3 in 2022/23. The greatest leachate flow rate (78.9 m^3/day) was observed in December 2025, and the average daily leachate flow was approximately 11.6 m^3/day. In 2024/25, the average daily leachate flow was 13.2 m^3/day, and in 2022/23, the average daily leachate flow rate was 39.1 m^3/day. Hence, average daily leachate flows have decreased by about 70% since 2022/23. These trends likely reflect diminishing pump performance or biofouling of the wells. Groundwater levels at GW-52-3-0-P52 have also been increasing for five years (**Figure 4-7**), further suggesting diminishing pump performance of the purge wells in that area. The pump at adjacent purge well GW-52-4-0-P7 appears to be able to maintain leachate levels within the purge wells at the target elevation, so specific capacity testing should be conducted on GW-52-4-0-P7 to determine if well performance has degraded. It is possible that this well requires rehabilitation as it has several times in the past.

In 2025/26, groundwater elevations in GW-80-1-0-P8 and GW-81-1-0-P9 were consistent with historical values, with annual averages of 113.61 and 118.98 m asl, respectively. Groundwater elevations in GW-52-4-0-P7 were consistent with historical values, with some fluctuations attributed to maintenance performed throughout the monitoring period. The average groundwater elevation in GW-52-4-0-P7 was 112.66 m asl.

4.4.3 South of Phase 1

In August 2000, the CRD installed six leachate collection wells at the south end of the Phase 1 landfill to intercept leachate migrating south. Pneumatic pumps were installed in four of the wells (P1, P2, P3, and P4), and they began operating in September 2001. The remaining two wells (P5 and P6) were not outfitted with pumps due to low well yields. An additional well (P10) was installed in 2010 and outfitted with a pneumatic pump to augment pumping capacity south of the landfill. P1 has since been altered and outfitted with an electric submersible pump.

Groundwater elevations in the South Purge Wells have fluctuated since 2007. Although elevations have remained somewhat higher than the targeted pumping elevations, the installation of P10 in September 2010 and the pump upgrades to P1 between 2015 and 2017 resulted in significantly improved drawdown. Unfortunately, P1 required considerable maintenance due to well fouling by leachate due to the well/pump design. In November 2018, P1 was re-installed and produced approximately 1.01 L/s of leachate. The replacement well was screened in refuse from 6.10 to 12.19 m below ground surface (bgs). Despite the shallower installation depth, the well removes a similar volume of leachate. In November 2020, the pump in P1 was rebuilt and the pressure transducer was re-installed. The lower set point was changed to 147.3 m asl, which is the lowest possible depth that could be achieved without overheating the pump.

Groundwater elevations in five of the South Purge Wells (P1, P2, P3, P4, and P10) are plotted on **Figure 4-8** and generally ranged from approximately 131 to 148 m asl. Groundwater levels were similar to historical values among all the purge wells, with some fluctuations attributed to pump failures and maintenance.

In 2025/26, a total of 40,520.8 m^3 of leachate was collected from the South Purge Wells, which is approximately 12.3% more than in 2024/25. The average daily flow in 2025/26 was 111.02 m^3/day, and the maximum daily flow was 539.32 m^3/day, as observed in December 2025. Overall, the 2025/26 groundwater elevation and flow data indicated that the South Purge Well system functioned effectively.

4.4.4 North of Phase 2

A detailed assessment of hydrogeologic conditions below the North Ridge was conducted in 2016, culminating in a hydrogeological conceptual model (AECOM 2016). The report stated that subvertical strike-slip faults (e.g., the Highland Fault) near groundwater monitoring stations 87 and 88 and an inferred fault near station 77 behave as barriers to groundwater flow, creating a compartmentalized groundwater flow system in the North Ridge area. Conversely, sub-horizontal tensile fractures behave as preferential conduits for groundwater flow. It is likely that bedrock discontinuities contribute to the large fluctuations in groundwater elevations beneath the North Ridge in response to seasonal precipitation and infiltration events. Geologic

mapping of exposed bedrock on the North Ridge (AECOM 2018a) revealed an undulating bedrock surface with several closed depressions that allow for surface water pooling and enhanced recharge during wet weather.

Figure 4-9 presents groundwater elevations in North Ridge area. Since 2006, groundwater levels have been recorded continuously at monitoring locations GW-77-1-1, GW-87-1-1, GW-87-2-1, GW-88-1-1, and GW-88-2-1 to better understand the temporal and spatial variability in groundwater elevations over time and across the Highland Fault. Since 2019, groundwater levels have been recorded continuously at monitoring locations GW-91-1-1, GW-92-1-1, and GW-94-1-1. Since 2021, groundwater elevations along the North Ridge have decreased, especially in the dry seasons, and these patterns have been attributed to quarrying and expansion of the Phase 2 landfill in the Toutle Valley. The largest decreases in groundwater elevations have been observed at monitoring locations 77, 87, 88, and 94, where dry season groundwater levels have decreased by several metres.

Historically, groundwater elevations at GW-88-1-1 and GW-87-1-1 have ranged between approximately 165 and 185 m asl. Since 2022, water levels in these wells have been relatively low during the dry season and have not reached 185 m asl during the wet season. Furthermore, the range between wet and dry season water levels in these wells has increased since 2022; for example, at GW-87-1-1, seasonal water levels have differed by about 25-30 m since 2022, while the historical range was typically less than 20 m. Similar patterns have been observed among GW-94-1-1, GW-92-1-1, GW-77-1-1, and GW-62-1-1. Despite the lower groundwater levels, groundwater flow patterns were consistent with previous years, and the hydraulic trap remained intact in 2025/26.

Figure 4-10 presents groundwater elevations at monitoring locations north of Phase 2 near the NWSP. Groundwater elevations in this area generally ranged from approximately 118 to 126 m asl and were similar to historical values. Like previous years, downward hydraulic gradients were observed in this area.

In August 2022, two purge wells (P11 and P12) were installed immediately south of the NWSP. P11 was completed in bedrock, and P12 was screened in overburden approximately 2 m above the upper surface of the bedrock. Groundwater levels were measured quarterly in P12, but P11 was dry and/or undergoing maintenance throughout the monitoring year, so no groundwater levels were recorded. Groundwater levels in P12 ranged from 120.84 m asl in September 2025 to 126.88 m asl in January 2026.

4.5 Summary

4.5.1 Leachate Flow

In 2025/26, leachate elevations and flow patterns at Hartland were consistent with historical interpretations. The perched leachate mound in Phase 1 persisted, but leachate levels continued to decrease slowly. The most notable change in leachate flow patterns occurred at the North Purge Wells, where leachate discharge volumes continued to decrease. Groundwater levels at GW-52-3-0-P52, adjacent to purge well GW-52-4-0-P7, have been increasing for five years, so P7 should be tested to confirm that the pump is performing adequately. Based on historical data and the 2025/26 leachate flow data, AECOM has made the following interpretations:

- The highest leachate elevations (approximately 156 to 159 m asl) were observed in the east/southeast area of the Phase 1 (GW-46-2-1, VLGW-004D and VLGW-017D), an area with elevated topography and refuse heights.
- Leachate elevations observed at monitoring stations within the Heal Basin (i.e., Phase 2) were comparable to historical values, implying that leachate levels were stable and the hydraulic trap was maintained.
- Groundwater levels at critical monitoring locations north of the Phase 2 Basin were consistently higher than leachate levels in Phase 2, indicating that the hydraulic trap was maintained.
- A total of 40,520.8 m^3 of leachate was collected from the South Purge Wells, which is approximately 12.3% more than in 2024/25. The average daily leachate flow from the South Purge Wells was 111.02 m^3/day in 2025/26, and the maximum daily flow was 439.32 m^3/day, as observed after heavy rainfall in December 2025. Overall, the 2025/26 groundwater elevation and leachate flow data indicated that the South Purge Well system functioned effectively.
- A total of 4,220.7 m^3 of leachate was collected from the North Purge Wells, which is considerably lower than the past three years. The greatest leachate flow rate (78.9 m^3/day) was observed in December 2025, and the average daily flow rate was approximately 11.6 m^3/day. These decreasing trends may reflect diminishing pump performance or

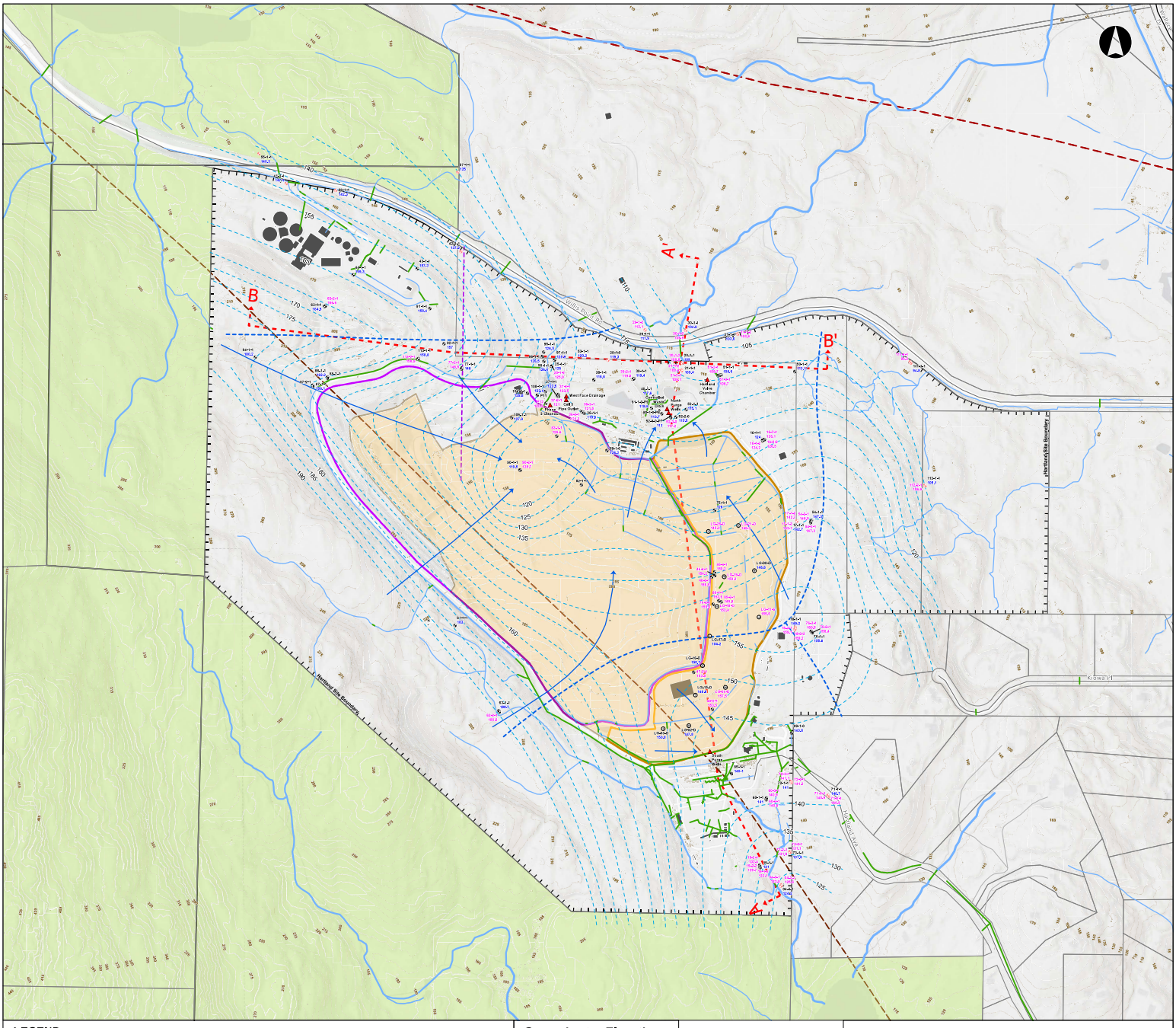
biofouling of the collector wells, especially at GW-52-4-0-P7, where groundwater levels have been increasing in adjacent well GW-52-3-0-P52 since 2021.

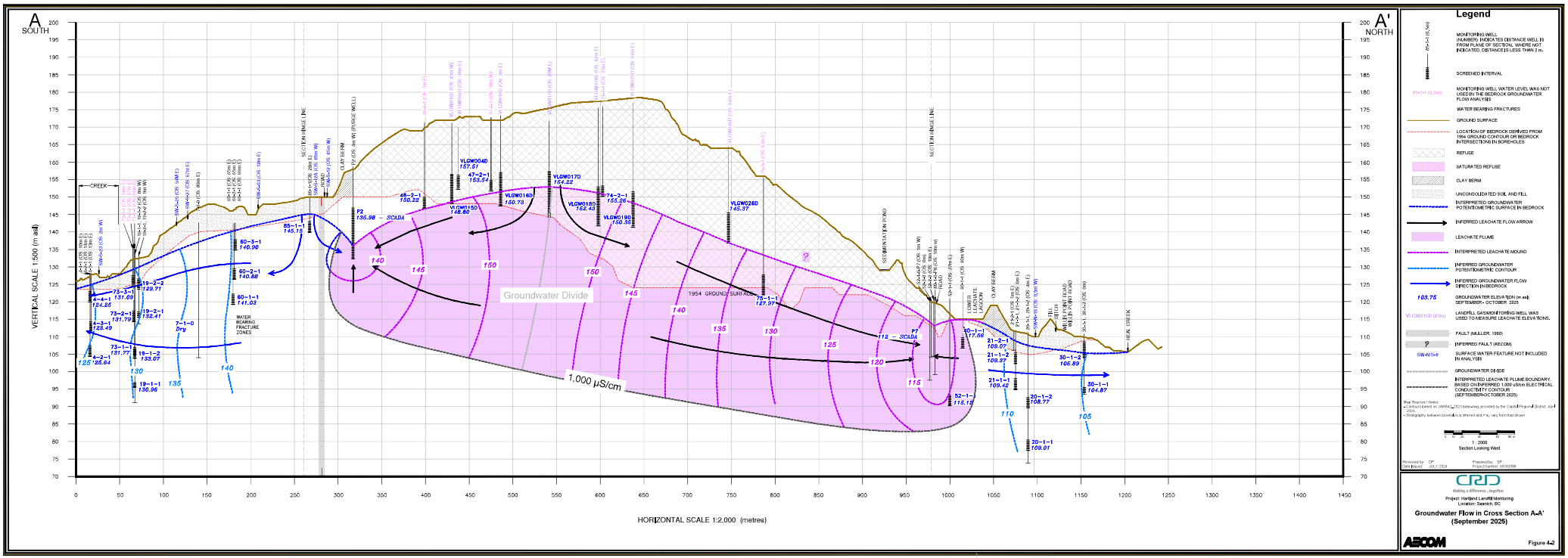
- Standard leachate elevations and discharge rates recorded at the two purge well systems indicate that they performed adequately throughout the 2025/26 monitoring period.

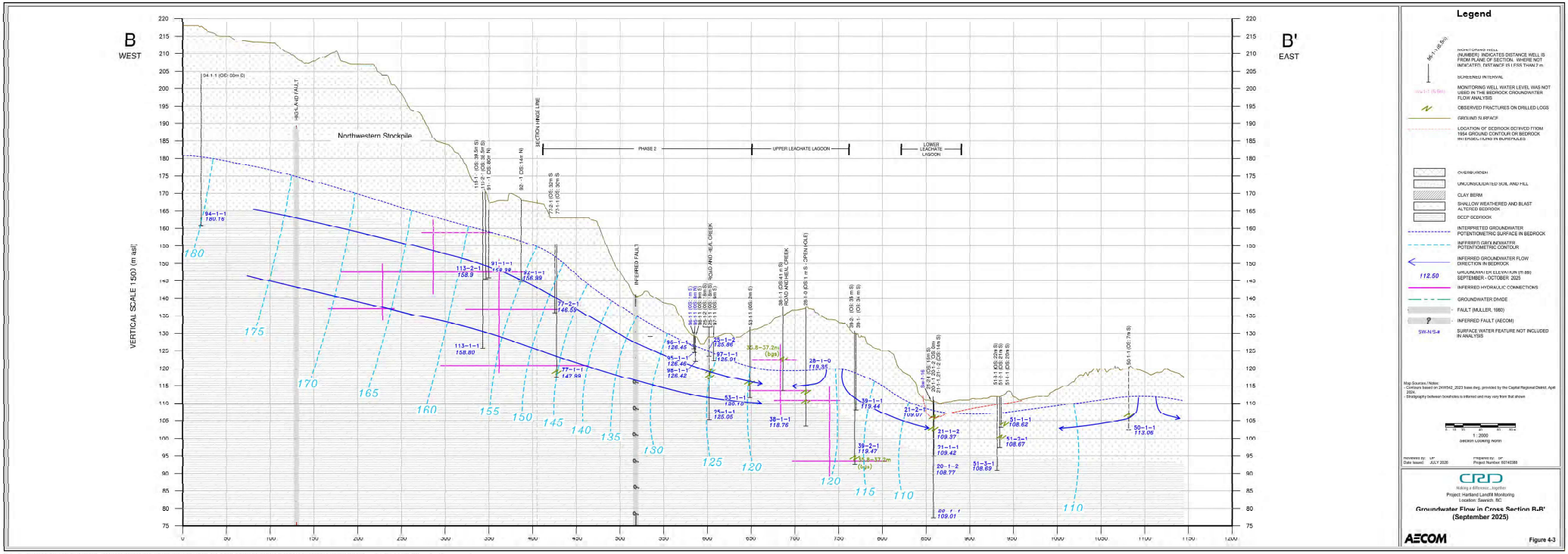
4.5.2 Groundwater Flow

In 2025/26, groundwater flow patterns at Hartland were generally consistent with historical interpretations. The most notable change in groundwater flow patterns was the continued decrease in groundwater levels along the North Ridge, particularly in the dry season. We believe that most groundwater in the bedrock below the landfill was captured by the Toutle Valley Underdrain, Phase 2 Basin Leachate Collection System, springs discharging to the Lower Lagoon, or the North and South Purge well systems. Based on the 2025/26 groundwater flow data, AECOM has made the following interpretations:

- Groundwater monitors east of Phase 1 (e.g., GW-54-1-1, GW-76-1-1, GW-17-1-1, and GW-18-1-1) confirmed that groundwater flows west (toward the landfill), suggesting that there was no offsite migration to the east.
- From 2021 to 2024, quarrying and blasting activities performed in the Toutle Valley have resulted in substantive changes to the topography and lowering of the Toutle Valley ground surface. These landscape alterations resulted in lowering of the potentiometric surface in the bedrock comprising the North Ridge and High-Wall, particularly in the dry season, as observed at monitoring locations 62, 77, 82, 87, 88, and 94. Despite these impacts, inward hydraulic gradients were maintained throughout the 2025/26.
- No substantive changes to hydraulic gradients have been observed in the Cell 4 area since the liner was installed in early 2025, but hydraulic gradients in this area should continue to be monitored closely in 2026/27 to assess if the liner is impacting the groundwater flow regime.


A
A'
B
B'
Hartland Site Boundary
Kiowa Pl
Kiowa Pl
Hartland Site Boundary
Hartland Site Boundary
Hartland Site Boundary


A
SOUTH
A'
NORTH
VERTICAL SCALE 1:500 (m asl)
HORIZONTAL SCALE 1:2,000 (metres)
CREEK
SECTION HINGE LINE
CLAY BERM
P2
135.98 — SCADA
P1
118 — SCADA
Groundwater Divide
1,000 µS/cm
1954 GROUND SURFACE
SEDIMENTATION POND
LOWER LEACHATE COLLECTION MODIFIED
WATER FRONT ROAD
HEAL CREEK
WATER BEARING FRACTURE ZONES
Dry
VLGW004D
157.51
VLGW016D
160.75
VLGW017D
154.22
VLGW015D
148.80
VLGW018D
152.43
VLGW019D
150.35
VLGW026D
145.37
47-2-1
153.54
45-2-1
150.32
74-2-1
152.96
85-1-1
145.15
60-3-1
140.90
60-2-1
140.88
60-1-1
141.03
73-3-1
131.09
73-2-1
131.78
73-1-1
131.77
4-4-1
124.85
4-3-1
123.49
4-2-1
125.64
19-2-2
129.71
19-2-1
132.41
19-1-2
133.07
19-1-1
130.96
7-1-0
72-1-1
127.97
10-1-1
117.66
52-1-1
116.18
21-2-1
109.07
21-1-2
109.37
21-1-1
109.42
20-1-2
108.77
20-1-1
109.01
30-1-2
105.89
30-1-1
104.87
Legend
MONITORING WELL (NUMBER) INDICATES DISTANCE WELL IS FROM PLANE OF SECTION, WHERE NOT INDICATED, DISTANCE IS LESS THAN 2 m.
SCREENED INTERVAL
MONITORING WELL WATER LEVEL WAS NOT USED IN THE BEDROCK GROUNDWATER FLOW ANALYSIS
WATER BEARING FRACTURES
GROUND SURFACE
LOCATION OF BEDROCK DERIVED FROM 1954 GROUND CONTOUR OR BEDROCK INTERSECTIONS IN BOREHOLES
REFUSE
SATURATED REFUSE
CLAY BERM
UNCONSOLIDATED SOIL AND FILL
INTERPRETED GROUNDWATER POTENTIOMETRIC SURFACE IN BEDROCK
INFERRED LEACHATE FLOW ARROW
LEACHATE PLUME
INTERPRETED LEACHATE MOUND
INFERRED GROUNDWATER POTENTIOMETRIC CONTOUR
INFERRED GROUNDWATER FLOW DIRECTION IN BEDROCK
103.75
GROUNDWATER ELEVATION (m asl) SEPTEMBER - OCTOBER, 2025
LANDFILL GAS/MONITORING WELL WAS USED TO MEASURE LEACHATE ELEVATIONS.
FAULT (MULLER, 1980)
INFERRED FAULT (AECOM)
SURFACE WATER FEATURE NOT INCLUDED IN ANALYSIS
GROUNDWATER DIVIDE
INTERPRETED LEACHATE PLUME BOUNDARY, BASED ON INFERRED 1,000 uS/cm ELECTRICAL CONDUCTIVITY CONTOUR (SEPTEMBER-OCTOBER 2025)
Map Sources / Notes:
• Contours based on 2m/5M (_TEI) base-map, provided by the Capital Regional District, April 2024.
• Stratigraphy between boreholes is inferred and may vary from that shown
1 : 2000
Section Looking West
Reviewed by: CP
Date Issued: JULY 2026
Prepared by: SP
Project Number: 60743398
Project: Hartland Landfill Monitoring
Location: Saanich, BC
Groundwater Flow in Cross Section A-A' (September 2025)
AECOM
Figure 4-2



File Location: C:\USERS\RUSAKA.P\DWELLING\DRIVE - AECOM\AECOM\TOPICS\TOPI_WP\WBTN\SSB-HARTLAND\800_CAD_GIS\802_SUS\002-FIGURES\CAD FILES\FIG4-3-CW SECTION B-B\60740389-2025.DWG Date Plotted: July 29, 2026 Saved By: rusaka.p.pwell

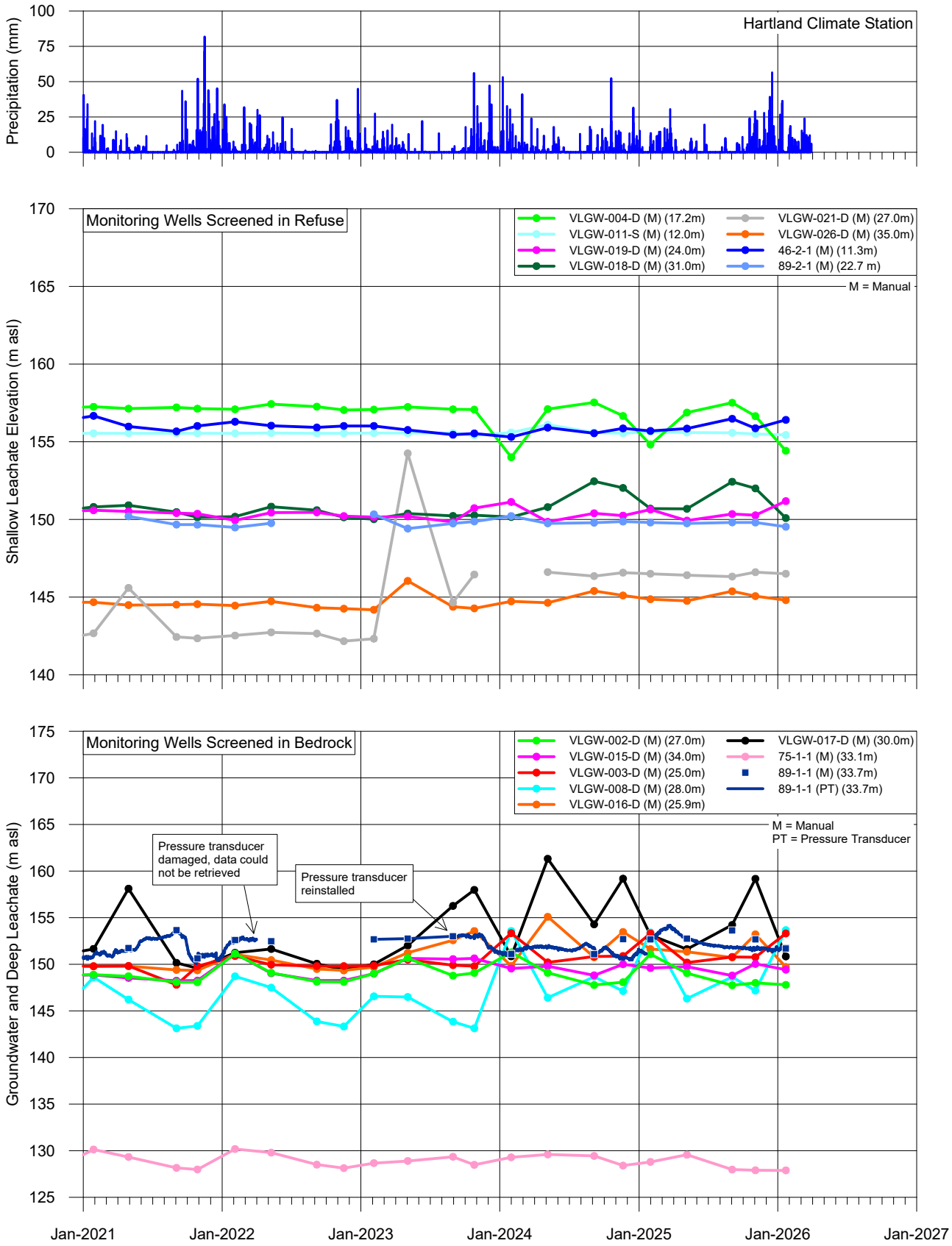


Figure 4-4. Leachate and Groundwater Elevations Within Phase 1

AECOM

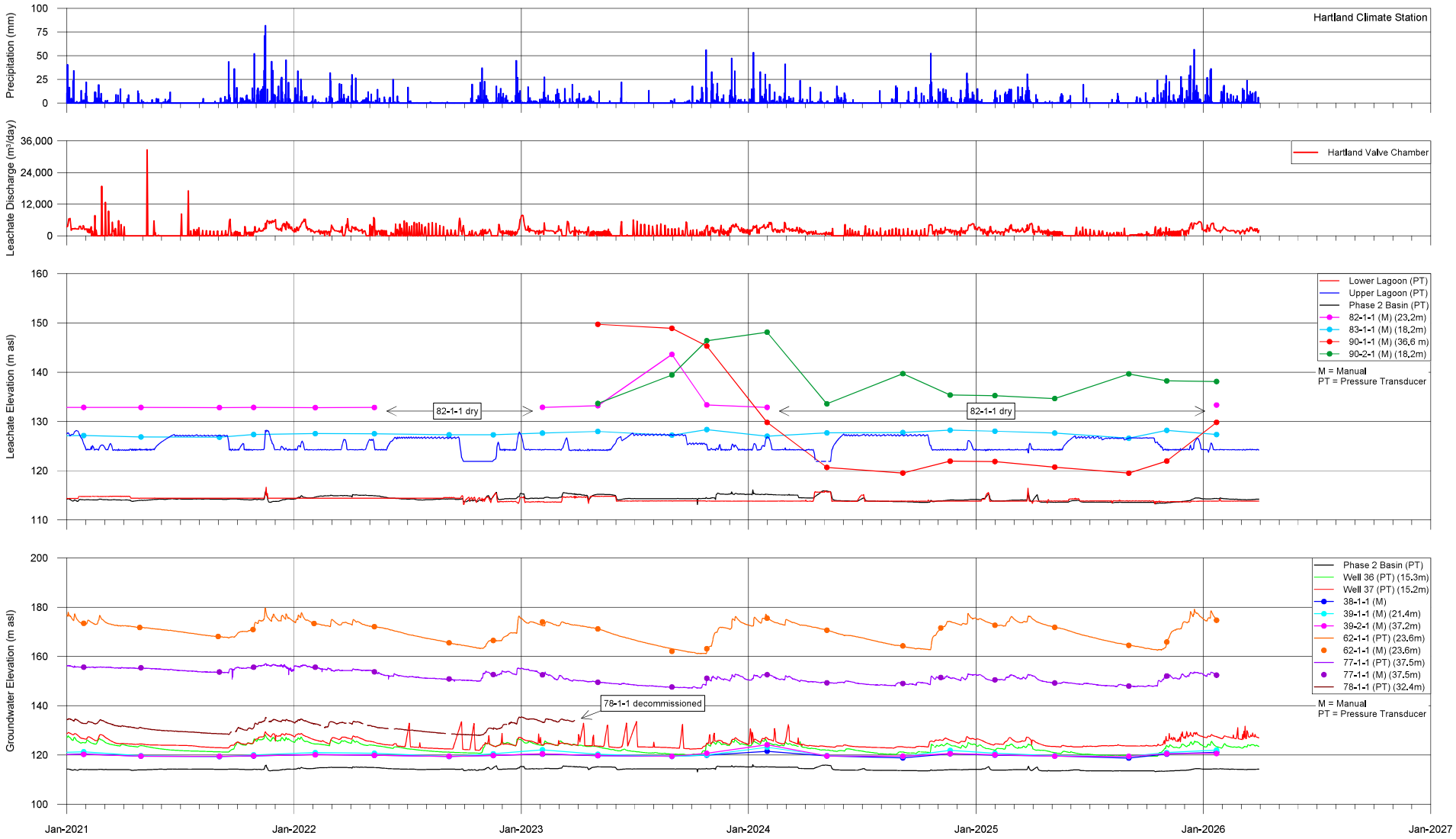


Figure 4-5. Water Elevations Within the Leachate Conveyance System and Surrounding the Phase 2 Basin

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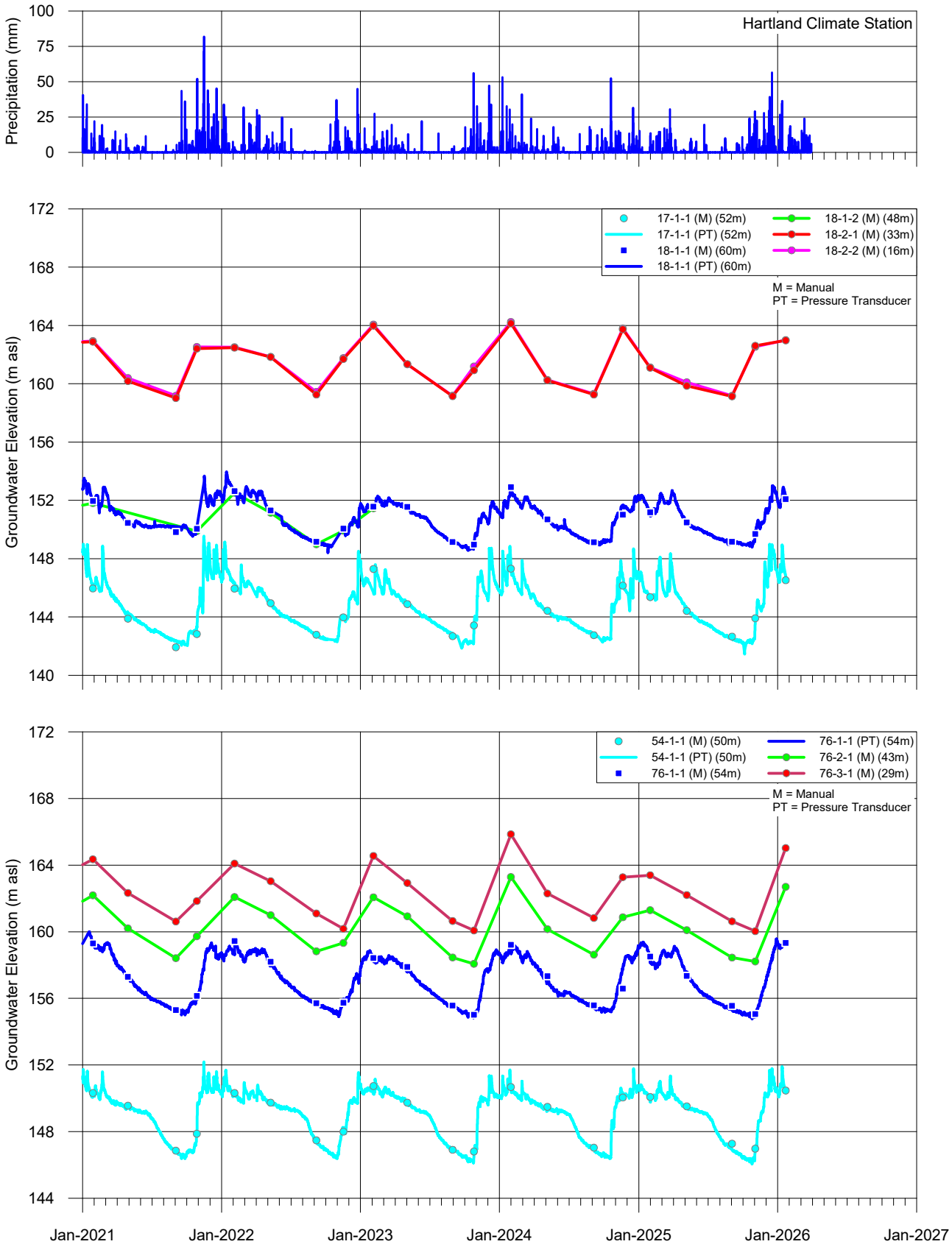


Figure 4-6. Groundwater Elevations East of Phase 1

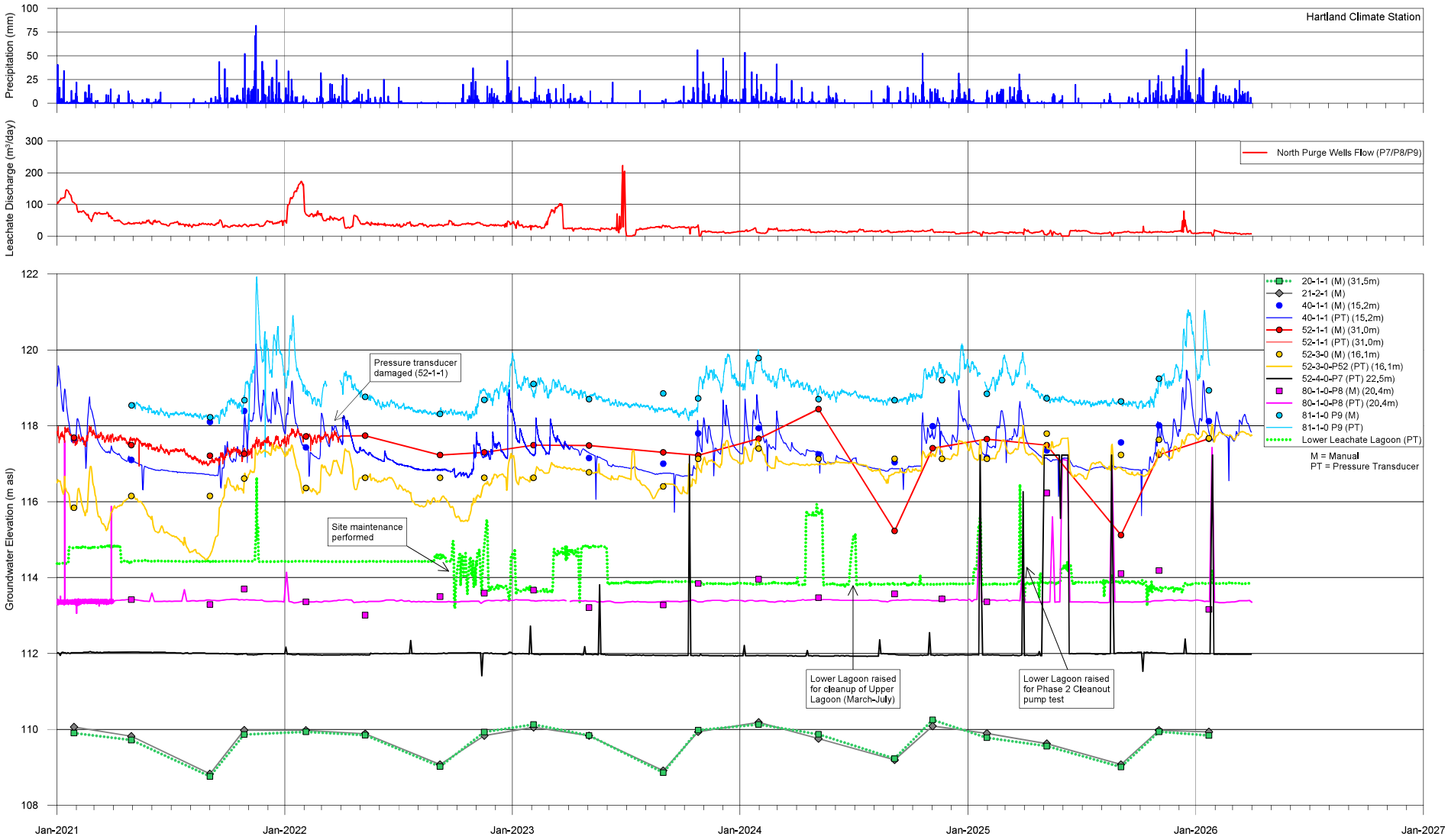


Figure 4-7. Groundwater Elevations Surrounding the North Purge Wells

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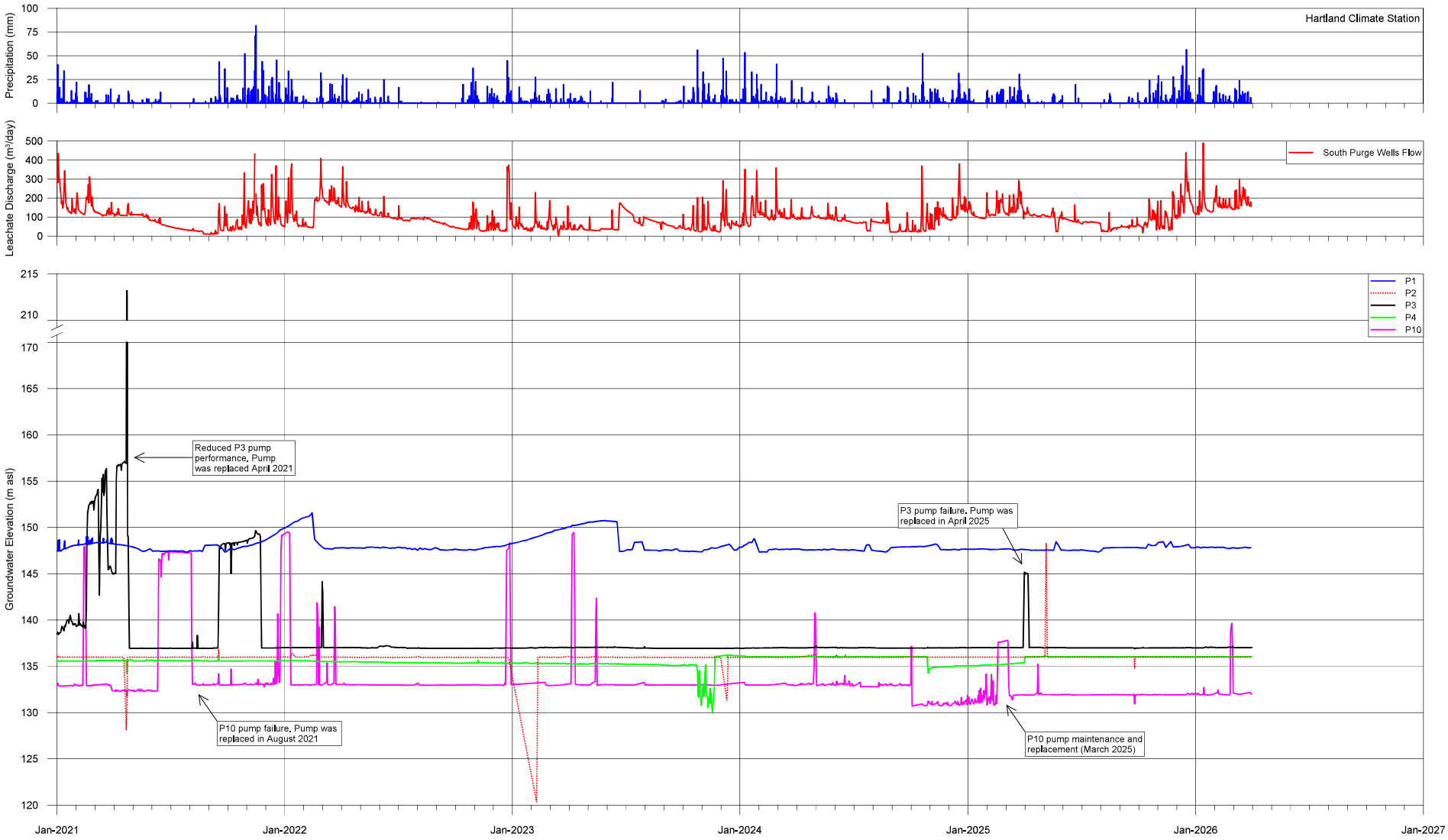


Figure 4-8. Groundwater Elevations in the South Purge Wells

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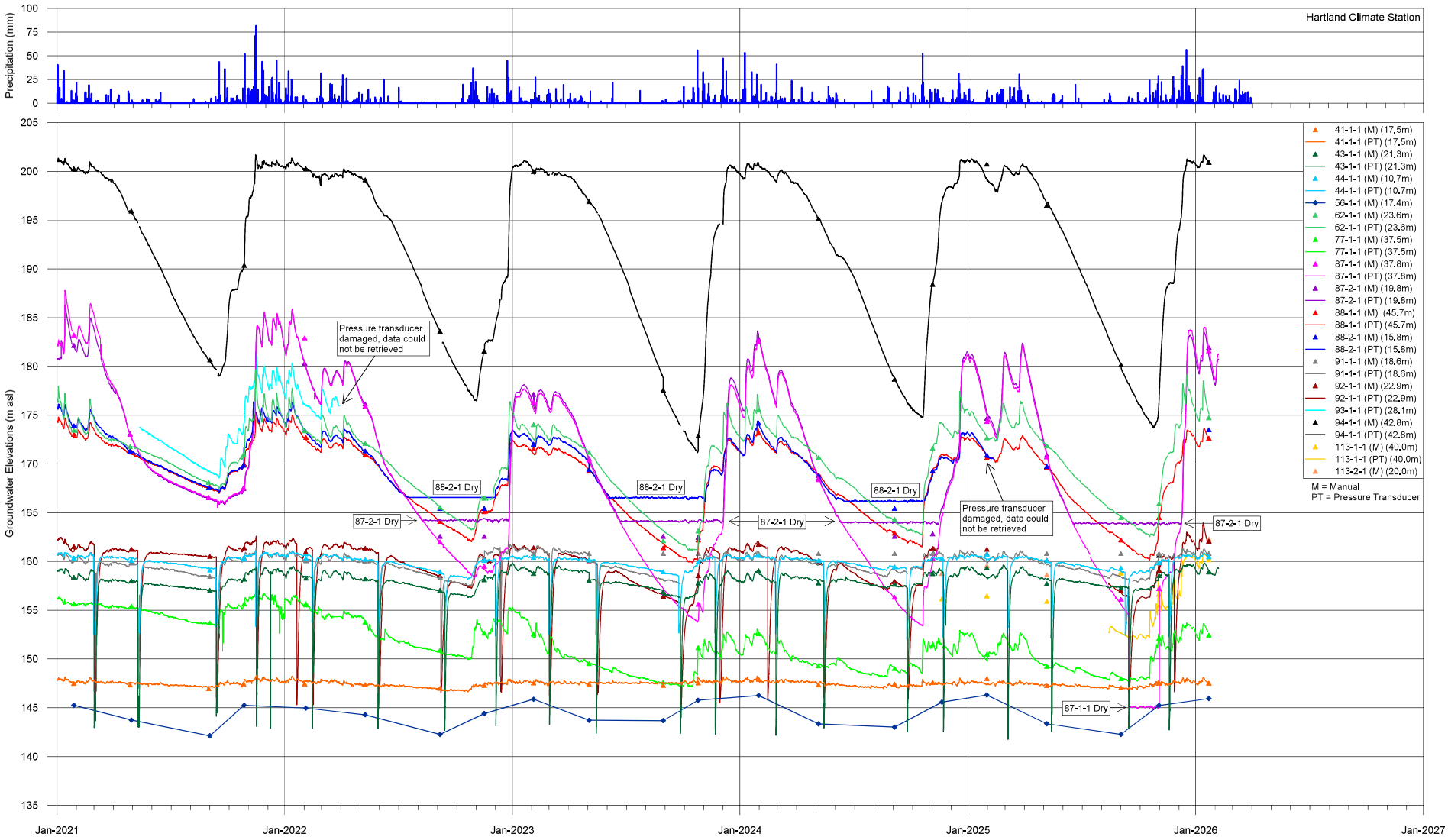


Figure 4-9. Groundwater Elevations in the North Ridge Area

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Figure 4-10. Groundwater Elevations North of the Phase 2 Landfill

AECOM

5. Groundwater Quality

5.1 Data

The groundwater monitoring network at the landfill is broad, consisting of 140 active groundwater monitoring wells at 87 locations; 10 are active purge wells, and 13 are landfill gas wells (**Appendix C-1**). Of the 140 monitoring wells, 38 are used to monitor landfill compliance with the Operational Certificate, and the rest are used to monitor groundwater quality at strategic locations within the site. **Appendix C-2** provides sampling frequencies for all active groundwater monitoring wells in 2025/26.

A detailed review of the groundwater sampling network was conducted by AECOM in 2024. Following recommendations from the review, two wells (GW-113-1-1 and GW-113-2-1) were installed on the North Ridge to replace monitoring wells GW-78-1-1 and GW-78-2-1, and two sets of nested monitoring wells (GW-111-1-1, GW-111-2-1, GW-112-1-1, and GW-112-2-1) were installed at two locations downgradient of the Northeast Stockpile to monitor for potential aggregate runoff impacts along the northeast property boundary. Sampling of the newly installed wells commenced in Q4 2024.

5.2 Compliance and Background Monitoring Locations

Thirty-eight boundary compliance monitoring wells have been established in 20 locations at the Hartland Landfill (**Figure 4-1**). These wells are concentrated along the south, east, and northern property boundaries, and downgradient of areas that have the potential to be impacted by leachate or runoff from the site. The majority of compliance monitoring wells are sampled on a quarterly basis, with some exceptions indicated below:

South of the Landfill (10)

- 04-3-1, 04-4-1
- 71-1-1, 71-2-1, 71-3-1
- 72-1-1, 72-3-1
- 73-1-1, 73-2-1, 73-3-1

East of the Landfill (10)

- 17-1-1, 17-1-2, 17-1-3 (sampled bi-annually)
- 18-1-1, 18-2-1, 18-2-2
- 111-1-1, 111-2-1
- 112-1-1, 112-2-1

Background (2)

- 63-1-1, 63-2-1 (sampled bi-annually)

North of the Landfill (13)

- 20-1-1, 20-1-2
- 21-1-1, 21-1-2, 21-2-1
- 28-1-0
- 29-1-1, 29-1-2
- 30-1-1, 30-1-2
- 31-1-1, 31-1-2
- 53-1-1

North of the Hartland North Pad (5)

- 41-1-1
- 42-1-1
- 55-1-1 (sampled bi-annually)
- 56-1-1
- 57-1-1 (sampled bi-annually)

Background groundwater quality is monitored at location 63, south of Phase 2 and upgradient of the landfill. This location consists of monitoring wells GW-63-1-1 and GW-63-2-1, which are sampled bi-annually.

5.3 Assessment of Groundwater Quality

The primary causes of groundwater quality degradation at the site include leachate, road salt, aggregate runoff, and the use of a magnesium lignosulphonate dust suppressant. The parameters used to identify impacts from various landfill activities include electrical conductivity, ammonia, chloride, sulphate, and nitrate concentrations. Professional judgement is used to differentiate between different contaminant sources and to assess the nature and severity of any impacts. Groundwater quality may be judged to be impacted relative to background without exceeding regulatory criteria.

If parameter concentrations exceed CSR AW or DW groundwater quality standards at the property boundary, standard protocols for notification of the affected property owners should be followed.

The 2025/26 groundwater quality data was interpreted with consideration of the following:

Background Conditions:

- Background conductivity is typically below 500 µS/cm but has been observed in some background wells (e.g., GW-78-1-1) at concentrations up to 1,000 µS/cm immediately after well installation or following prolonged dry periods.
- Background ammonia and nitrate concentrations are typically below 0.1 mg/L but occasionally reach 0.5 mg/L downgradient of wetland areas.
- Background chloride concentrations are typically below 20 mg/L.
- Background sulphate concentrations are typically below 50 mg/L but are regularly observed at concentrations up to 100 mg/L in wells screened within weathered bedrock and near mineralized zones in the bedrock.

Impact Criteria:

- Leachate: Groundwater is considered to be impacted by leachate when conductivity is above 1,000 µS/cm, ammonia concentrations are above 1 mg/L, and chloride concentrations are above 20 mg/L. Peak concentrations in leachate-impacted wells are typically observed during the dry summer and early fall months, when there is limited dilution by precipitation.
- Aggregate Runoff: Groundwater is considered impacted by aggregate runoff (e.g., production, stockpiling, or site construction works) when nitrate concentrations are greater than background levels (~0.1 mg/L) and leachate indicator concentrations are low. In recent years, elevated nitrate concentrations have been observed in the absence of elevated sulphate concentrations. However, elevated sulphate concentrations (>75 mg/L) may occur over a greater period and potentially after nitrate concentrations have subsided. Peak nitrate and sulphate concentrations are typically observed during the first sampling event following the onset of wet weather in the fall months after recent blasting and aggregate stockpiling. Aggregate geochemistry results from 2023 are provided in **Appendix F**.
- Road Salt: Groundwater is considered impacted by road salt when chloride concentration is elevated above background levels (i.e., 20 mg/L), and the molar ratio of chloride to sodium is around 1.0 or greater. Cl/Na molar ratios in road salt are generally 1:1, assuming 100% compositional purity. In groundwater, Cl/Na ratios may be greater than 1.0 due to differential ion mobility, cation exchange, and inputs from natural or anthropogenic sources. Road salt-impacted sites must also be located downgradient (or downstream) of surfaces where road salt is known to be applied. Conductivity and chloride concentrations typically exhibit peaks following cold weather periods when de-icing salt is often applied to roadways.
- Magnesium Lignosulphonate: Magnesium lignosulphonate has been used as a dust suppressant at the site and likely has an impact on groundwater quality similar to that of aggregate runoff because it contains nitrogen and sulphur. Additionally, it exhibits elevated iron and manganese concentrations. Laboratory testing indicated that the dust suppressant exhibited elevated conductivity (520 µS/cm), ammonia (51 mg/L), and total sulphur concentrations (83.7 mg/L) in the aqueous phase (**Appendix G**). Between July and September 2025, approximately 7,000 litres of magnesium lignosulphonate was applied at the site.

The CRD determined that ammonia concentration data collected throughout 2023 was invalid because the bottles used to collect the samples were over-preserved. Hence, ammonia concentration data collected in 2023 has been excluded from any interpretation/analysis and removed from groundwater and surface water quality plots over that timeframe.

5.4 Overview of Exceedances

The 2025/26 groundwater quality data were compared to BC CSR AW and DW standards (**Appendix H-1**). Values that exceeded the AW standard are labelled with an “a,” and values that exceeded the DW standard are labelled with a “b.” A summary of exceedances is presented in **Table 5-1**.

Most CSR exceedances were observed in groundwater samples collected from leachate purge wells or near leachate collection infrastructure. In 2025/26, groundwater samples collected from compliance locations generally met CSR AW and DW standards, with one exception. Antimony concentrations exceeded the DW standard at GW-112-1-1 (downgradient of the Northeast Stockpile) during two sampling events (September 2025 and February 2026). It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the well was installed and have been steadily decreasing since. Antimony concentrations should continue to be monitored at this location for continued improvement.

Boron concentrations exceeded the CSR DW standard at compliance monitoring station GW-20-1-1 in 2024/25, prompting an investigation to determine the source of the elevated concentrations. It was found that monitoring locations 20, 52, and the North and South Purge Wells exhibit a localized and distinct chemical signature characterized by elevated boron and silicon concentrations. It was hypothesized that the elevated silicon and boron concentrations were potentially caused by mobilization of boron and silicon from the Lower Lagoon clay berm, or leachate reacting with the bedrock below the Phase 1 landfill. Silicate mineral dissolution of the clays is likely to result in elevated silicon concentrations, and the mobility of boron is pH/redox-dependent. The source of the boron has yet to be determined but is likely attributed to a natural source, as the boron concentrations observed at GW-20-1-1 were higher than those observed in the North Purge Wells and correlated with very low conductivity and low leachate and aggregate runoff parameters. In 2025/26, boron concentrations at GW-20-1-1 remained elevated but were marginally below the CSR DW standard. Continued monitoring of boron concentrations and oxidation reduction potential (ORP) in this area is recommended.

In 2023/24, elevated and non-compliant nitrate concentrations reported at compliance monitoring location 31 prompted the CRD to submit a Notice of Offsite Contaminant Migration to the BC Ministry of Environment and Parks. Elevated and non-compliant nitrate concentrations persisted at this location through 2024/25, as well as the new compliance monitoring wells installed along the northeast property boundary downgradient of the Northeast Stockpile (GW-111-1-1, GW-111-2-1). In general, elevated nitrate concentrations occurred immediately downgradient of aggregate stockpiles. Nitrate concentrations at these locations were compliant in 2025/26, as well as at all other monitoring locations at the site.

Table 5-1. Groundwater Quality Exceedances 2025-2026

AECOM

BC CSR				AW Maximum (1)	1500		1.31-18.4 (3)		1280-4290 (4)		90		50		10000	12000	40	250-1500 (4)		
				DW Maximum (2)	250				500		6		10		1000	5000	14 (6)	80	2500	20
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	Chloride		Nitrogen - ammonia		Sulphate		Antimony		Arsenic		Barium	Boron	Cobalt	Nickel	Strontium	Vanadium
				Fraction	DIS		DIS		DIS		DIS		DIS		DIS	DIS	DIS	DIS	DIS	DIS
				Unit	mg/L		mg/L		mg/L		µg/L		µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				Method Detection Limit	1		0.015		1		0.02		0.02		0.02	10	0.005	0.02	0.05	0.2
Gw-52-1-1	SS	N	2025-05-22	Clear and colourless	170		28.0 a	<	1.00		0.063		0.263		104	3400	2.21	10.9	3020 b	0.880
Gw-52-1-1	SS	N	2025-10-01	Clear and colourless	170		29.0 a	<	1.00		0.100		0.230		116	3530	2.20	12.0	3490 b	< 1.00
Gw-52-1-1	SS	N	2025-11-07	Clear and colourless	170		27.0 a	<	1.00		0.100		0.140		109	3300	2.16	11.4	2990 b	< 1.00
Gw-52-1-1	SS	N	2026-02-13	Clear and colourless	170		27.0 a	<	1.00		0.060		0.192		101	3600	2.12	10.7	2890 b	0.720
Gw-52-4-0 (P7)	SS	N	2025-05-22	Clear and colourless	270 b		190 a	<	1.00		0.564		9.69		174	3120	10.1	18.8	1090	15.5
Gw-52-4-0 (P7)	SS	N	2025-10-07	Clear and colourless	320 b		160 a	<	1.00		0.115		4.85		460	2900	5.67	16.4	1470	2.49
Gw-52-4-0 (P7)	SS	N	2025-11-07	Clear, very slightly yellow	310 b		130 a		7.00		0.305		6.19		415	2730	5.72	20.4	1260	4.07
Gw-52-4-0 (P7)	SS	N	2026-02-13	Clear, very slightly yellow	270 b		170 a		7.30		0.109		3.67		403	2940	4.62	13.9	1200	2.50
Gw-58-1-0	SS	N	2025-10-07	Clear, moderately yellow	1100 b		140 a		130		0.681		1.89		45.6	4750	57.4 b	100.0 b	5360 b	42.2 b
Gw-58-1-0	SS	N	2025-11-28	Clear, moderately yellow	1100 b		190 a		97.0		0.650		2.53		56.7	5080 b	61.1 b	114 b	5150 b	62.7 b
Gw-58-1-0	SS	N	2026-02-23	Purged dry Feb.12, sample delayed	960 b		140 a		120		0.570		1.53		37.5	4230	53.7 b	102 b	4110 b	27.3 b
Gw-60-1-1	SS	N	2025-05-29	Clear and colourless	250 b	<	0.015		40.0		0.029		0.144		41.1	166	0.066	0.824	789	< 0.200
Gw-60-1-1	SS	N	2025-09-18	Clear and colourless	280 b	<	0.015		41.0		0.033		0.141		53.8	204	0.028	0.535	834	< 0.200
Gw-60-1-1	SS	N	2025-11-25	Clear and colourless	350 b		0.018		40.0		0.020		0.183		46.4	169	0.076	2.03	820	< 0.200
Gw-60-1-1	SS	N	2026-02-18	Clear and colourless	340 b	<	0.015		40.0		0.020		0.232		43.4	175	0.112	2.72	784	< 0.200
Gw-80-1-0 (P8)	SS	N	2025-05-22	Clear and colourless	280 b		200 a	<	1.00		0.537		9.22		182	3080	9.88	18.9	1050	15.3
Gw-80-1-0 (P8)	SS	N	2025-10-07	Clear and colourless	270 b		210 a		91.0		0.813		10.3 b		123	2860	9.98	22.2	1270	13.5
Gw-80-1-0 (P8)	SS	N	2025-11-07	Moderately turbid, moderately orange	250 b		170 a		110		0.512		8.25		78.1	2840	9.47	21.6	1110	15.7
Gw-80-1-0 (P8)	SS	N	2026-02-20	Clear, very brown	310 b		290 a		100.0		2.11		13.8 b		108	5540 b	15.2	34.9	858	46.4 b
Gw-104-1-1	SS	N	2025-05-27	Clear and colourless	26.0		0.041		270		0.155		0.105		6.14	96.0	30.3 b	5.32	344	1.74
Gw-104-1-1	SS	N	2025-10-07	Clear and colourless	33.0		0.190		370		0.206		0.131		19.1	133	49.9 a	6.66	471	1.93
Gw-104-1-1	SS	N	2026-02-26	Clear, very slightly yellow	15.0		0.038		200		0.161		0.091		4.99	87.0	15.7 b	2.46	265	1.05
Gw-112-1-1	SS	Y	2025-09-26	Clear and colourless	10.00		0.028		250		19.0 b		1.17		55.8	56.0	0.098	0.790	531	0.260
Gw-112-1-1	SS	Y	2026-02-25	Clear, colourless	10.00	<	0.015		270		16.9 b		0.728		54.6	59.0	0.019	0.522	671	< 0.200
Gw-113-1-1	SS	N	2025-05-21	Clear and colourless	7.40		0.020		670 b		2.16		1.18		36.3	172	1.28	5.75	773	1.62
Gw-113-1-1	SS	N	2025-09-18	Clear and colourless	5.30	<	0.015		630 b		1.61		0.890		37.9	190	0.868	5.37	909	0.720
Gw-113-1-1	SS	N	2025-11-28	Clear and colourless	4.00	<	0.015		540 b		0.658		1.16		22.4	180	0.520	1.77	685	< 0.200
Gw-113-1-1	FRM	N	2026-02-10	Mean of replicates	4.10	<	0.015		553 b		1.53		0.727		31.0	169	0.565	2.10	691	0.440
Gw-113-2-1	SS	N	2025-11-28	Clear and colourless	4.10	<	0.015		570 b		0.161		0.509		49.6	194	0.128	2.11	815	0.260
Gw-113-2-1	SS	N	2026-02-10	Clear and colourless	4.00	<	0.015		620 b		0.132		0.504		43.9	176	0.181	2.22	811	0.330
Gw-P1	SS	N	2025-05-22	Clear, very slightly orange	130		81.0 a	<	1.00		0.064		1.08		565	2670	3.29	6.90	846	1.79
Gw-P1	SS	N	2025-11-27	Clear and colourless	92.0		47.0 a	<	1.00		0.067		8.85		1500 b	1890	1.86	4.93	875	0.510
Gw-P1	SS	N	2026-02-20	Clear, very slightly orange	50.0		28.0 a	<	1.00		0.040		5.52		1510 b	1270	1.05	3.05	796	< 0.400
Gw-P2	SS	N	2025-05-22	Clear, very slightly yellow	160		81.0 a	<	1.00		0.061		2.05		645	3710	4.90	9.82	898	3.03
Gw-P2	SS	N	2025-10-08	Clear, very slightly yellow	160		69.0 a	<	1.00		0.053		0.715		462	3050	3.93	7.98	981	2.22
Gw-P2	SS	N	2025-11-27	Clear, very slightly yellow	160		80.0 a	<	1.00		0.043		2.33		661	2910	3.73	7.84	955	3.37
Gw-P2	SS	N	2026-02-20	Clear, very slightly orange	160		84.0 a	<	1.00		0.040		0.858		496	3570	4.09	8.60	832	2.24
Gw-P3	SS	N	2025-05-22	Clear, slightly yellow	200		110 a	<	1.00		0.064		2.90		759	4040	5.09	10.7	945	3.30
Gw-P3	SS	N	2025-10-08	Clear, slightly yellow	200		89.0 a	<	1.00		0.053		1.72		654	3840	4.32	9.17	1070	2.72
Gw-P3	SS	N	2025-11-27	Clear, slightly yellow	160		87.0 a		12.0		0.041		2.23		692	3040	3.73	7.81	974	3.39
Gw-P3	SS	N	2026-02-20	Clear, very slightly yellow	180		110 a	<	1.00		0.049		2.12		788	4350	4.31	9.05	973	2.61
Gw-P4	SS	N	2025-05-22	Clear, slightly yellow	190		110 a	<	1.00		0.100		2.56		733	3920	4.51	10.5	858	2.90
Gw-P4	SS	N	2025-10-08	Clear, slightly yellow	170		66.0 a	<	1.00		0.051		0.626		141	2130	2.51	7.29	962	1.61
Gw-P4	SS	N	2025-11-27	Clear, slightly yellow	140		72.0 a		9.40		0.075		1.06		150	1990	2.92	6.34	887	2.52
Gw-P4	SS	N	2026-02-20	Clear, very slightly orange	140		83.0 a		5.40		0.040		0.653		128	2340	2.82	5.96	877	1.56
Gw-P10	SS	N	2025-05-27	Clear, very slightly yellow	58.0		32.0 a	<	1.00		0.042		0.884		701	1300	1.30	3.16	855	0.720
Gw-P10	SS	N	2025-10-08	Clear, very slightly yellow	92.0		37.0 a	<	1.00		0.040		1.07		801	1330	1.19	3.87	954	0.600
Gw-P10	SS	N	2025-11-27	Clear, very slightly yellow	100.0		42.0 a	<	1.00		0.173		0.218		17.0	12.0	0.048	0.137	199	0.270
Gw-P10	SS	N	2026-02-20	Clear, very slightly yellow	48.0		32.0 a	<	1.00		0.023		0.641		639	1160	1.18	2.91	752	0.640

Notes:

a — *Above CSR Schedule 3.2 AW Standard.*

b — *Above CSR Schedule 3.2 DW Standard.*

BC CSR — *CSR-Sch3.2: BC Contaminated Site Regulation - Schedule 3.2 - Generic Numerical Water Standards, last amended October 27, 2025.*

FRM — *Field replicate mean (average of field replicates).*

SS — *Single sample.*

(1) — *Aquatic Life (AW) Freshwater Standard, Column 3 in CSR-Sch3.2*

(2) — *Drinking Water (DW) Standard, Column 6 in CSR-Sch3.2*

(3) — *Standard varies with pH.*

(4) — *Standard varies with hardness.*

(5) — *Standard is based on the trivalent [Cr(III)] species. Cr(III) is the most common form of chromium.*

(6) — *CSR Stage 13 amendments, Protocol 9, background concentration is higher than the applicable CSR DW and/or most stringent CSR a standard. A concentration above the CSR DW or most stringent CSR AW standard but below the regional background concentration (South Vancouver Island Region) is not considered contaminated and is not highlighted as a CSR DW or AW exceedance.*

5.5 Background Groundwater Quality

Background groundwater quality is monitored at location 63, south of Phase 2 and upgradient of the landfill. In 2025/26, background groundwater quality was characterized by low average conductivity (289 µS/cm), chloride (5.03 mg/L), nitrate (0.02 mg/L), and sulphate (10.3 mg/L) concentrations. Ammonia concentrations were non-detectable.

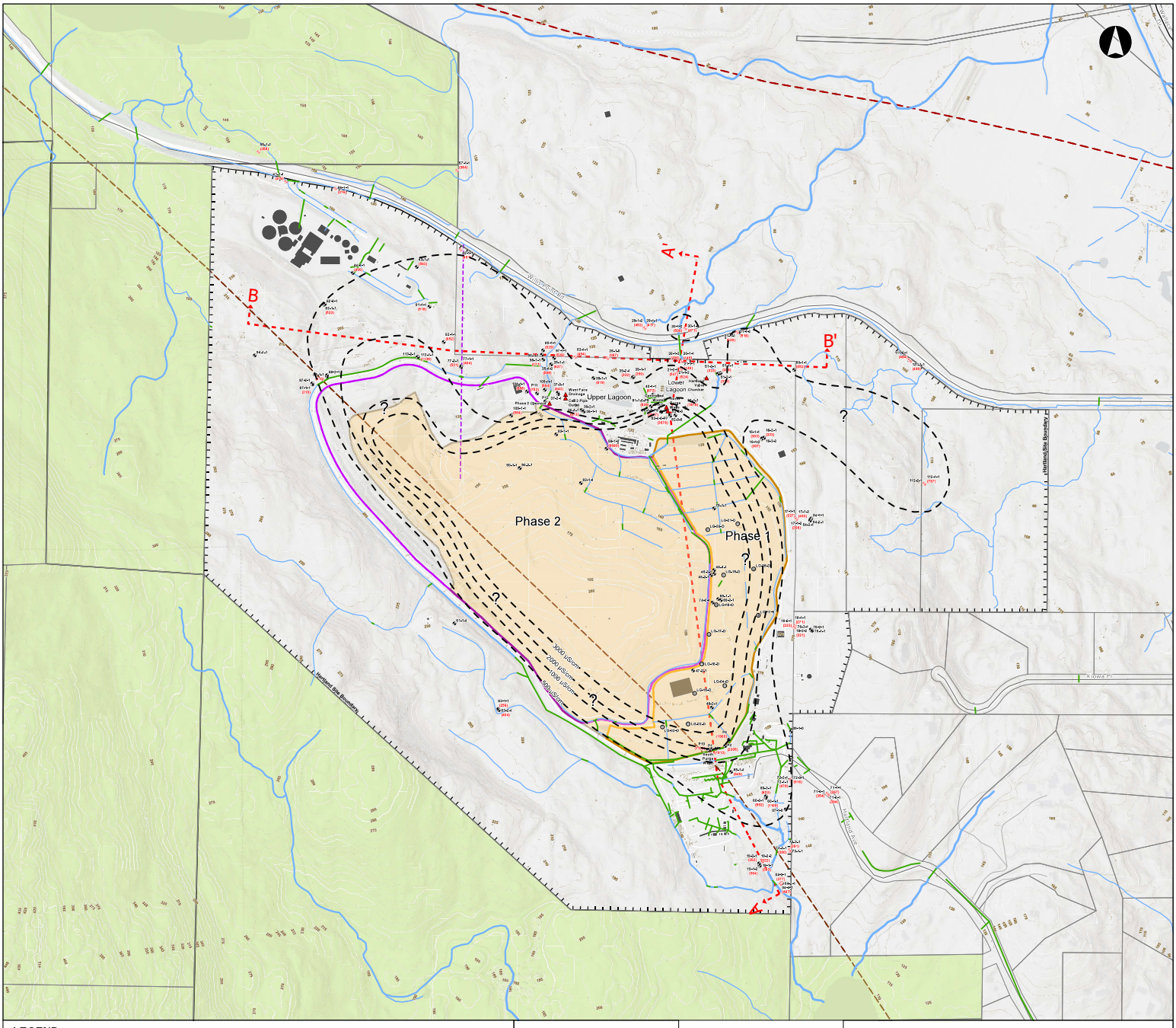
5.6 Electrical Conductivity

Figure 5-1 presents electrical conductivity values in plan, and **Figures 5-2 and 5-3** show north-south and east-west cross-sections showing conductivity through the landfill, respectively. The contours in these figures were plotted based on our interpretation of groundwater quality in late-September/early-October during dry season conditions. Electrical conductivity was plotted because it is a good indicator of leachate contamination when elevated ammonia and chloride are present, and it can also be used to identify aggregate runoff impacts associated with sulphide oxidation.

The 500 µS/cm conductivity contour is considered indicative of background groundwater quality. In 2025/26, the 500 µS/cm conductivity contour along the northern boundary of the landfill was expanded around the Northeast Stockpile, North Commercial Scales, and east of these areas on the south side of Willis Point Road. These changes to the 500 µS/cm were interpreted as aggregate runoff impacts because of their proximity to aggregate stockpiles and position along groundwater flow paths. Like previous years, the 500 µS/cm contour extended around the Northeast Stockpile. The extent of the 500 µS/cm conductivity contour was confined to the property boundary, except for a small, isolated area around GW-30-1-2, where the conductivity value was 508 µS/cm.

Electrical conductivity values greater than 1,000 µS/cm in groundwater have been used to identify areas of the site where leachate impacts are present. Figure 5-1 shows that the 1,000 µS/cm contour closely resembles the outline of current refuse disposal, indicating that groundwater in these areas has been affected by leachate. In **Figures 4-2 and 5-2**, the 1,000 µS/cm contour was used to illustrate the interpreted extent of the Phase 1 leachate plume. North of Phase 2, a high conductivity value (1,139 µS/cm) was observed at 113-1-1, so the 1,000 µS/cm contour was interpreted to extend to the Northwest Stockpile. Groundwater in this area reports to the Heal Basin.

Conductivity values in the North and South Purge Wells were generally above 1,000 µS/cm. Among the North Purge Wells, conductivity values were highest in GW-80-1-0-P8, reaching 3,827 µS/cm in October 2025. Conductivity values at purge wells GW-81-1-0-P9, P11, and P12 were relatively low, ranging from 501 to 885 µS/cm. Conductivity values in the South Purge Wells were generally above 1,100 µS/cm, with the highest conductivity (2,305 µS/cm) observed at P3 in October 2025. Like previous years, conductivity contours near the North and South Purge Wells indicated that leachate-impacted groundwater was contained within the landfill.



LEGEND

- Monitoring Well
- Compliance Well
- Gas Well
- Leachate Collection Well
- 18-1-1 (255) Groundwater Electrical Conductivity (µS/cm) Measured September/October 2025

Hydrology
- Primary Stream or Ditch
- Secondary Stream or Ditch
- Tertiary Stream or Ditch
- Gravity Main
- Contours (5m)
- Inferred Groundwater Electrical Conductivity Contour (µS/cm)
- Inferred Fault (AECOM, 2020)
- Durrance Lake Fault (Muller, 2020)
- Cross Sections
- Highland Fault (Muller, 2020)

- Phase 1 Closure (1997)
- Phase 2 Base
- Existing Waste Footprint
- Lot Lines
- Structure
- Park
- Local Government Boundary
- Site Boundary

Electrical Conductivity Plan (September - October 2025)	**Hartland Landfill Monitoring Report**
Figure 5-1	1:3,500 NAD83 UTM Zone 10N
P:60740388	**June 2026**

0 125 250 500 M

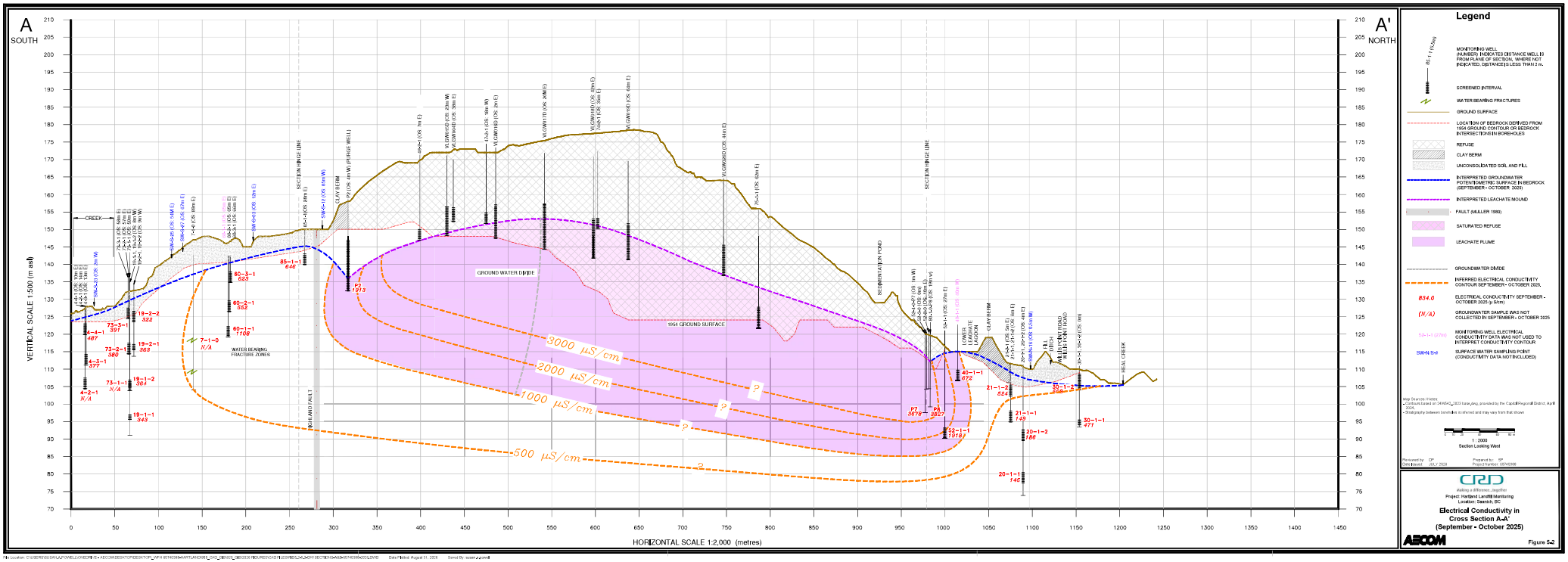
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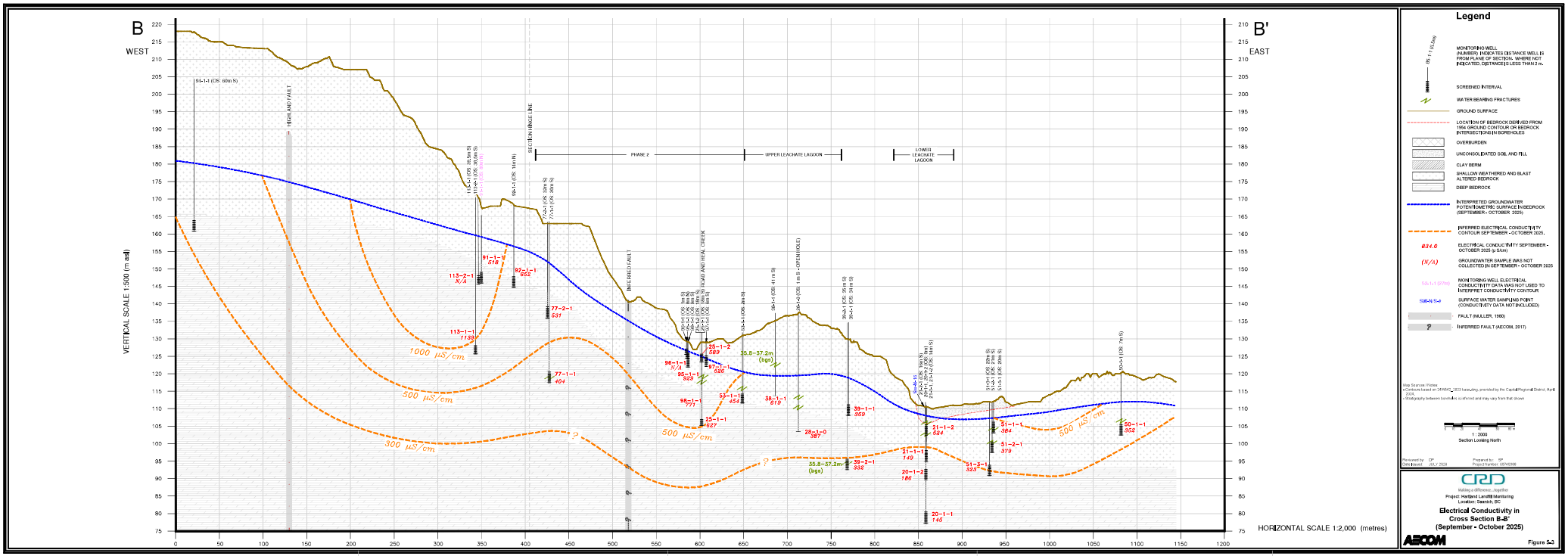
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Project Location: L:\CRD\60740388\07 GIS\60740388_Hartland_2025_Reporting\2025_2026 Monitoring Report\60740388_Hartland_2026MonitoringReport.aprx Layout: Figure 5-1_v2
Date Saved: 2026-07-29 9:09 AM User: paige.cossarini


A
SOUTH
A'
NORTH
VERTICAL SCALE 1:500 (m asl)
HORIZONTAL SCALE 1:2,000 (metres)
CREEK
SECTION HINGE LINE
CLAY BERM
GROUND WATER DIVIDE
1954 GROUND SURFACE
WATER BEARING FRACTURE ZONES
BEAR LAND FAULT
SEDIMENTATION POND
LOWER LEACHATE LAGOON
BEAR CREEK
3000 µS/cm
2000 µS/cm
1000 µS/cm
500 µS/cm
Legend
MONITORING WELL (NUMBER) INDICATES DISTANCE WELL IS FROM PLANE OF SECTION, WHERE NOT INDICATED, DISTANCE IS LESS THAN 2 m.
SCREENED INTERVAL
WATER BEARING FRACTURES
GROUND SURFACE
LOCATION OF BEDROCK DERIVED FROM 1954 GROUND CONTOUR OR BEDROCK INTERSECTION IN BOREHOLES
REFUSE
CLAY BERM
UNCONSOLIDATED SOIL AND FILL
INTERPRETED GROUNDWATER POTENTIOMETRIC SURFACE IN BEDROCK (SEPTEMBER - OCTOBER 2025)
INTERPRETED LEACHATE MOUND
FAULT (MULLER 1980)
SATURATED REFUSE
LEACHATE PLUME
GROUNDWATER DIVIDE
INFERRED ELECTRICAL CONDUCTIVITY CONTOUR SEPTEMBER- OCTOBER 2025.
834.0
ELECTRICAL CONDUCTIVITY SEPTEMBER - OCTOBER 2025 (µ S/cm)
(N/A)
GROUNDWATER SAMPLE WAS NOT COLLECTED IN SEPTEMBER - OCTOBER 2025
MONITORING WELL ELECTRICAL CONDUCTIVITY DATA WAS NOT USED TO INTERPRET CONDUCTIVITY CONTOUR
SURFACE WATER SAMPLING POINT (CONDUCTIVITY DATA NOT INCLUDED)
1 : 2000
Section Looking West
Project: Hartland Landfill Monitoring
Location: Saanich, BC
Electrical Conductivity in Cross Section A-A'
(September - October 2025)
AECOM
Figure 5-2


B
WEST
B'
EAST
VERTICAL SCALE 1:500 (m asl)
HORIZONTAL SCALE 1:2,000 (metres)
HIGHLAND FAULT
SECTION HINGE LINE
PHASE 2
UPPER LEACHATE LAGOON
LOWER LEACHATE LAGOON
INFERRED FAULT
ROAD AND HEAL CREEK
1000 µS/cm
500 µS/cm
300 µS/cm
?
35.8–37.2m (bgs)
Legend
MONITORING WELL (NUMBER) INDICATES DISTANCE WELL IS FROM PLANE OF SECTION. WHERE NOT INDICATED, DISTANCE IS LESS THAN 2 m.
SCREENED INTERVAL
WATER BEARING FRACTURES
GROUND SURFACE
LOCATION OF BEDROCK DERIVED FROM 1954 GROUND CONTOUR OR BEDROCK INTERSECTIONS IN BOREHOLES
OVERBURDEN
UNCONSOLIDATED SOIL AND FILL
CLAY BERM
SHALLOW WEATHERED AND BLAST ALTERED BEDROCK
DEEP BEDROCK
INTERPRETED GROUNDWATER POTENTIOMETRIC SURFACE IN BEDROCK (SEPTEMBER - OCTOBER 2025)
INFERRED ELECTRICAL CONDUCTIVITY CONTOUR SEPTEMBER - OCTOBER 2025.
834.0
ELECTRICAL CONDUCTIVITY SEPTEMBER - OCTOBER 2025 (µ S/cm)
(N/A)
GROUNDWATER SAMPLE WAS NOT COLLECTED IN SEPTEMBER - OCTOBER 2025
MONITORING WELL ELECTRICAL CONDUCTIVITY DATA WAS NOT USED TO INTERPRET CONDUCTIVITY CONTOUR
SURFACE WATER SAMPLING POINT (CONDUCTIVITY DATA NOT INCLUDED)
FAULT (MULLER, 1980)
INFERRED FAULT (AECOM, 2017)
1 : 2000
Section Looking North
Project: Hartland Landfill Monitoring
Location: Saanich, BC
Electrical Conductivity in Cross Section B-B'
(September - October 2025)
AECOM
Figure 5-3

5.7 Groundwater Quality North of the Landfill

Figures 5-4 to 5-7 illustrate long-term groundwater quality trends north of the landfill.

5.7.1 Compliance Monitoring Locations North of Phase 1

5.7.1.1 Location 20

Monitoring location 20 consist of wells GW-20-1-1 and GW-20-1-2, which were both screened in bedrock. These wells are north of Phase 1, immediately downgradient of the Lower Leachate Lagoon and monitoring location 21, and approximately 5 to 15 m from the landfill property boundary. The wells are positioned along the most probable path of subsurface leachate migration from Phase 1.

In 2025/26, groundwater quality at location 20 met CSR AW and DW standards. As shown in **Appendix D-1**, Mann-Kendall analysis found stable or decreasing trends in all aggregate runoff and leachate indicator parameters, and concentrations of these parameters remained low, similar to previous years.

Boron concentrations have been monitored at this location since 2016 and have been slowly increasing over time. As discussed in **Section 5.4**, It is thought that the boron originates from the Lower Lagoon clay berm or the bedrock below the Phase 1 landfill because nearby wells and the purge wells exhibit a distinct geochemical signature characterized by high silicon and boron concentrations and similar silicon-boron ratios. Boron concentrations at location 20 fluctuate seasonally, and the CSR DW standard was exceeded during each dry season sampling event between 2020 and 2024. In 2025/26, boron concentrations remained elevated but were below the CSR DW standard during all four sampling events. Boron concentrations should continue to be monitored at this location.

5.7.1.2 Location 21

Monitoring location 21 consists of wells GW-21-1-1, GW-21-1-2, and GW-21-2-1, which were all screened in weathered bedrock. These wells are north of Phase 1, immediately downgradient of the Lower Leachate Lagoon. The wells are positioned along the most probable path of subsurface leachate migration from Phase 1.

In 2025/26, groundwater quality at location 21 met all applicable CSR standards. Aggregate runoff and leachate indicator parameter concentrations remained elevated in shallow wells GW-21-1-2 and GW-21-2-1. Nitrate concentrations exceeded aggregate runoff indicator criteria at GW-21-2-1 during three of four sampling events, and sulphate concentrations were occasionally elevated above 50 mg/L in both shallow wells. Increasing trends in nitrate and sulphate GW-21-1-2 and GW-21-2-1 were identified by Mann-Kendall analysis. Conductivity was moderate to elevated (449 to 555 µS/cm), and ammonia and chloride concentrations exceeded leachate indicator thresholds; however, Mann-Kendall analysis found stable or decreasing trends in all leachate indicator parameters. Concentrations of aggregate runoff and leachate indicator parameters were low or below detection in deep well GW-21-1-1, indicating that impacts were confined to shallow bedrock.

The elevated leachate indicator parameters observed in shallow groundwater at monitoring location 21 reflect dilute leachate impacts and represent the furthest extent of leachate north of Phase 1, as leachate indicator parameter concentrations at adjacent boundary compliance location 20 to the north are all well below background levels. The elevated nitrate and sulphate concentrations at location 21 reflect aggregate runoff impacts that have slowly worsened since 2023 (**Figure 5-4**). Nitrate and sulphate concentrations may continue to increase at this location as sulphide oxidation and leaching of nitrates from ammonium nitrate/fuel oil explosives (ANFO) occurs in the Northeast Stockpile. Nitrate concentrations are expected to subside before sulphate concentrations as sulphide oxidation will likely occur at a slower rate.

5.7.1.3 Location 30

Monitoring location 30 consists of wells GW-30-1-1 and GW-30-1-2, which are both screened in bedrock. These wells are located across Willis Point Road, beyond the northern property boundary of the site, and downgradient of compliance monitoring locations 20 and 21.

In 2025/26, groundwater at monitoring location 30 met applicable CSR standards, but nitrate concentrations (0.207 to 0.855 mg/L) were elevated during the two wet season sampling events at GW-30-1-2. Average chloride concentrations were elevated (52 mg/L), and sulphate concentrations were moderate, averaging 40.1 mg/L. Ammonia concentrations were low. Mann-Kendall analysis detected a statistically significant increasing trend in sulphate concentrations at GW-30-1-1, but concentrations of indicator parameters were otherwise stable at monitoring location 30. Overall, there was no sign of landfill leachate at location 30, but dilute aggregate runoff impacts were observed, particularly in the shallow bedrock.

5.7.1.4 Location 31

Monitoring location 31 consists of wells GW-31-1-1 and GW-31-1-2, screened in the deep bedrock and across the overburden-bedrock contact, respectively. Monitoring location 31 is downgradient and northeast of monitoring locations 20 and 21, just inside the northern property boundary. In 2023/24, nitrate concentrations at GW-31-1-1 and GW-31-1-2 exceeded the CSR DW during two sampling events, prompting the CRD to issue a Notice of Offsite Migration to the BC Ministry of Environment. The water quality impacts were attributed to aggregate runoff.

In 2025/26, groundwater quality at location 31 improved and met all applicable CSR standards. Nitrate concentrations remained elevated but have continued to decrease relative to 2024/25 and ranged from 3.06 to 4.32 mg/L at GW-31-1-1 and from 2.31 to 4.21 mg/L at GW-31-2-1 (**Figure 5-5**). Conductivity and sulphate concentrations were elevated, averaging 576 µS/cm and 210 mg/L, respectively. Mann-Kendall analysis found stable trends in all indicator parameters. The groundwater quality trends at monitoring location 31 reflect aggregate runoff impacts, and do not suggest any impacts from leachate.

5.7.1.5 Location 111

Monitoring location 111 consists of two wells, GW-111-1-1 and GW-111-2-1, which were completed in bedrock and across the bedrock-overburden contact in September 2024. The purpose of installing these monitoring wells was to monitor groundwater quality immediately downgradient of the Northeast Stockpile, at the northern property boundary. The lowest groundwater elevations measured on site occur at this location.

In 2025/26, all parameter concentrations met applicable CSR standards at location 111. Nitrate concentrations previously exceeded the CSR DW standard at both GW-111-1-1 and GW-111-2-1 in October 2024, and although the average nitrate concentration (6.49 mg/L) remained elevated above the aggregate runoff indicator threshold in 2025/26 (0.1 mg/L), it has decreased relative to 2024/2025 (10.3 mg/L). Conductivity and sulphate concentrations were moderately elevated in both wells and ranged from 345 to 484 µS/cm and 47.5 to 97.0 mg/L, respectively. Chloride and ammonia concentrations were low to non-detectable. Water quality impacts at this location are attributed to aggregate runoff and not to leachate.

5.7.2 Other Monitoring Locations North of Phase 1

5.7.2.1 Locations 39 and 40

Monitoring well GW-40-1-1 was screened in bedrock between the Upper and Lower Leachate Lagoons and is located adjacent to the North Purge Wells. Groundwater quality impacts associated with leachate have been investigated at this location and were subject of a previous report (AECOM 2009a). Monitoring wells GW-39-1-1 and GW-39-2-1 were screened in bedrock about 50 m northeast of GW-40-1-1.

In 2025/26, no CSR AW/DW exceedances were reported at monitoring locations 39 and 40. At GW-40-1-1, ammonia concentrations were below 1 mg/L, conductivity was moderate and ranged from 476 to 672 µS/cm, chloride concentrations were moderate to slightly elevated (16 to 23 mg/L), and average nitrate and sulphate concentrations were elevated (2.1 and 61.3 mg/L, respectively). Groundwater quality was similar at monitoring location 39, with slightly lower concentrations of leachate indicator parameters. Nitrate and sulphate concentrations were elevated above background levels in both GW-39-1-1 and GW-39-2-1, with the highest average concentrations (3.36 mg/L) observed in shallow well GW-39-1-1. Mann-Kendall analysis detected statistically significant increasing trends in chloride and sulphate concentrations and a statistically significant decreasing trend in ammonia concentrations at GW-40-1-1. Conductivity, chloride, and sulphate concentrations exhibited statistically significant increasing trends at location 39, while all other parameters were stable. Overall groundwater quality at these locations is attributed to impacts from aggregate runoff and potentially from dilute leachate, but low leachate indicator concentrations suggest leachate impacts do not extend further north.

5.7.2.2 Location 50

Monitoring well GW-50-1-1 is located immediately downgradient of the Northeast Stockpile and was completed in weathered bedrock. This location was reactivated in Q1 2024 to monitor aggregate runoff impacts associated with the Northeast Stockpile. In 2025/26, groundwater quality at GW-50-1-1 met all applicable CSR standards. Average conductivity (339 µS/cm), chloride (6.33 mg/L), ammonia (0.02 mg/L), nitrate (0.03 mg/L), and sulphate (29.3 mg/L) concentrations were below background levels, and Mann-Kendall analysis indicated stable or decreasing trends in these parameters. Groundwater quality at location 50 was not impacted by aggregate runoff or leachate.

5.7.2.3 Location 51

Monitoring location 51 consists of shallow wells GW-51-1-1 and GW-51-2-1, which are screened in weathered bedrock, and GW-51-3-1, which is screened in deep bedrock. These wells are located immediately northwest of the Northeast Stockpile and approximately 140 m west of GW-50-1-1.

In 2025/26, no CSR AW/DW exceedances were reported at monitoring location 51. Ammonia concentrations were low (<0.02 mg/L), and conductivity ranged from 323 to 384 µS/cm. Average chloride concentrations increased with depth, from 13.0 mg/L at GW-51-1-1 to 63.5 mg/L at GW-51-3-1. Sulphate concentrations exhibited the opposite trend, decreasing from an average of 90.0 mg/L at GW-51-1-1 to an average of 16.0 mg/L at GW-51-3-1. Nitrate concentrations were variable with depth, with the highest average concentration observed at shallow well GW-51-1-1 (1.30 mg/L). Mann-Kendall analysis identified increasing trends in conductivity and sulphate at GW-51-1-1, and in chloride at GW-51-1-1 and 51-2-1. Overall, there was no sign of impacts from leachate at location 51, but aggregate runoff impacts were present in the shallow bedrock.

5.7.2.4 The North Purge Wells (P7, P8, and P9) and Location 52

Monitoring locations 52 (GW-52-1-1 and GW-52-4-0-P7), GW-80-1-0-P8, and GW-81-1-0-P9 (i.e., the North Purge Wells) are positioned at the edge of the Phase 1 leachate plume, south of the Lower Leachate Lagoon, and approximately 100 m from the property boundary (see **Figure 4-2**). Leachate flows along the bedrock/refuse interface underlying Phase 1 toward the Lower Leachate Lagoon and the North Purge Wells. The North Purge Wells intercept and capture this leachate-impacted groundwater for discharge to the leachate containment system, preventing northward migration of leachate. As a result, groundwater quality at these wells has been impacted by leachate since monitoring began in the 1980s. Monitoring well GW-52-1-1 is located immediately northeast of P7 and intercepts leachate-impacted groundwater from relatively deep bedrock.

The pump at P9 was not functional for an undetermined period of time between 2024 and Spring 2026. As a result, samples were collected from stagnant water. Results are unreliable and have been omitted from this report.

In 2025/26, ammonia concentrations at GW-52-1-1, P7, and P8 were generally above the CSR AW standard, with the highest concentration (290 mg/L) observed at P8 in Q1 2026. Chloride concentrations at P7, P8, and GW-52-1-1 were elevated, ranging from 170 to 320 mg/L, and exceeded the CSR DW standard at P7 and P8. Arsenic, boron, and vanadium exceeded CSR DW standards at P8 during one or more sampling events. Similar to previous years, elevated strontium concentrations at GW-52-1-1 exceeded the CSR DW standard throughout the year. Conductivity was elevated in all three wells, ranging from 1771 to 3,827 µS/cm, with the highest conductivity recorded at P8 in Q3 2025. Sulphate concentrations were typically elevated at P8, while nitrate concentrations were below aggregate runoff indicator threshold at all three wells. Mann-Kendall analysis detected statistically significant decreasing or stable trends in all indicator parameter concentrations at P7, P8, and GW-52-1-1. The groundwater in this area was impacted directly by landfill leachate, and elevated sulphate concentrations at P8 suggest potential influence from aggregate runoff.

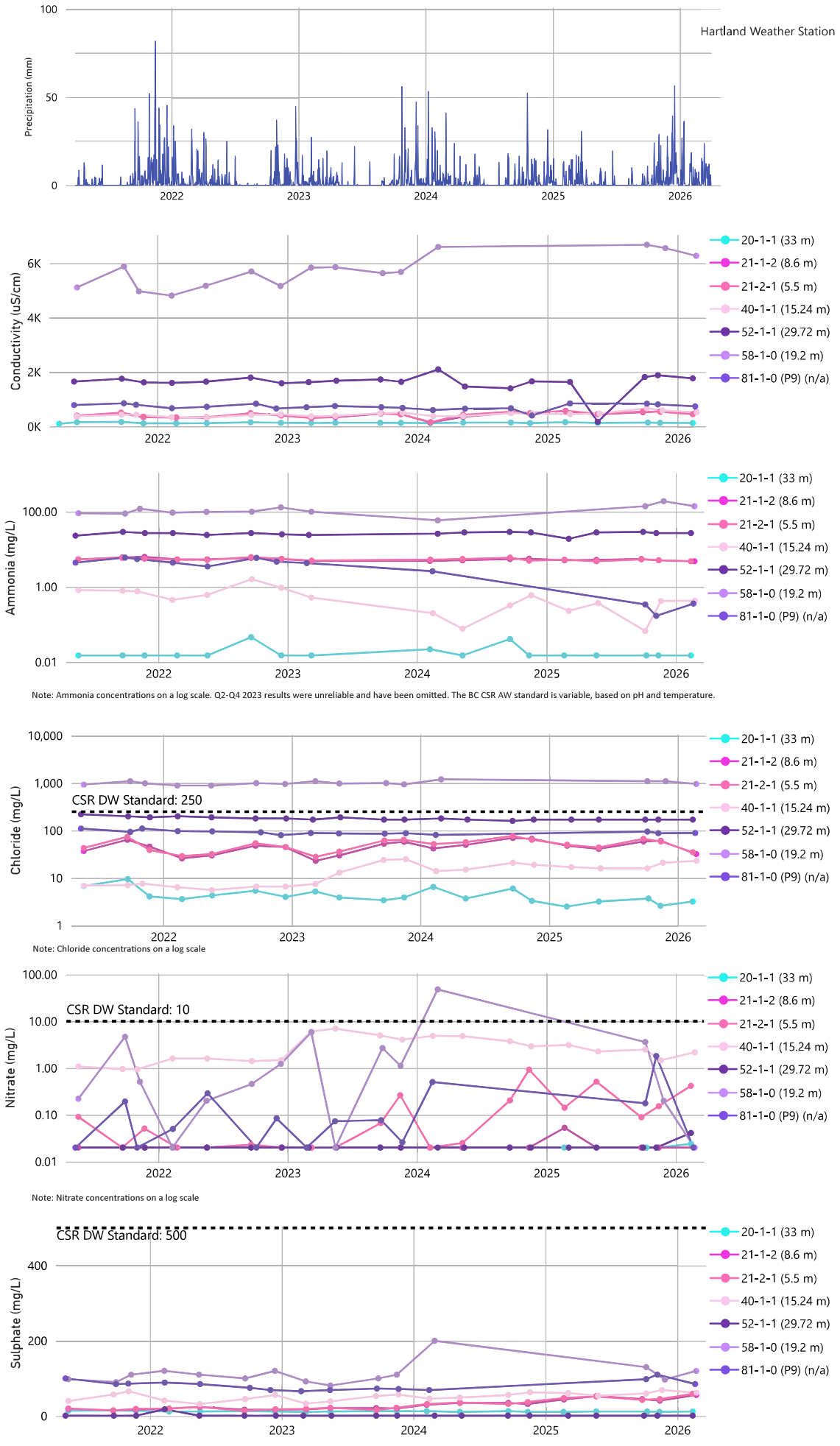
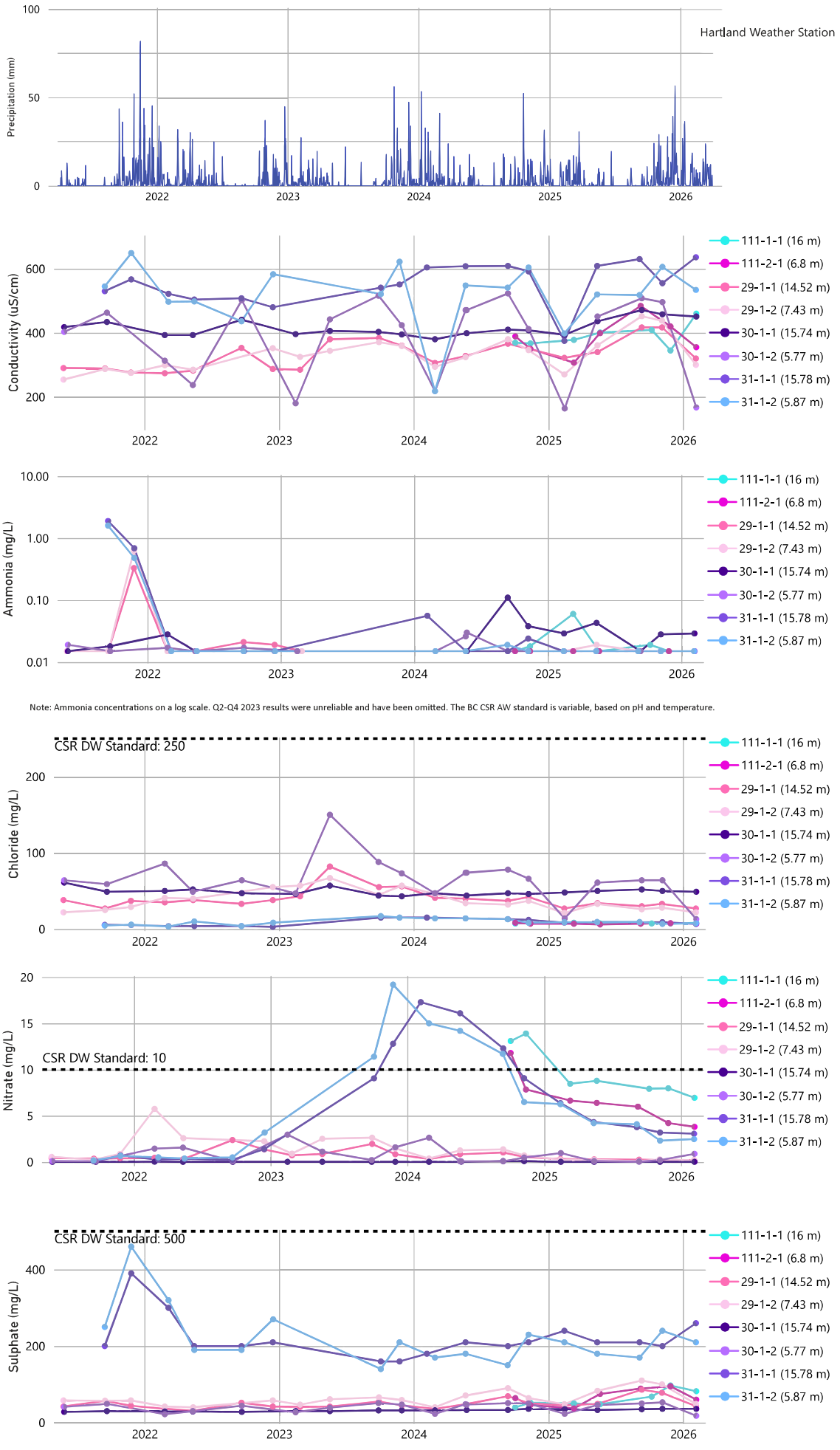


Figure 5-4. Groundwater Quality North of Phase 1

AECOM



Note: Ammonia concentrations on a log scale. Q2-Q4 2023 results were unreliable and have been omitted. The BC CSR AW standard is variable, based on pH and temperature.

Figure 5-5. Groundwater Quality North of Willis Point Road

AECOM

5.7.3 Compliance Monitoring Locations North of Phase 2

5.7.3.1 Location 28

Monitoring location 28 consists of a single monitoring well completed in relatively deep bedrock downgradient of Phase 2, and east of monitoring location 53. In 2025/26, groundwater quality at GW-28-1-0 met all applicable CSR standards, and there were no signs of leachate impacts. Mann-Kendall analysis detected statistically significant increasing trends in conductivity, chloride, and nitrate concentrations. Elevated nitrate and sulphate concentrations observed at this location since 2024 are coincident with construction of a road through this area to facilitate aggregate hauling. Nitrate concentrations began increasing in early 2024 and were above 1 mg/L by the end of the year, but decreased below 0.5 mg/L in 2025/26. Elevated sulphate concentrations (62.0 to 64.0 mg/L) followed in October and November 2025 but decreased to 29.5 mg/L in February 2026. These trends indicate water quality at GW-28-1-0 was temporarily impacted by aggregate runoff from the road following construction, and recent improvements in groundwater quality should continue to be monitored.

5.7.3.2 Location 29

Monitoring location 29 consists of two monitoring wells, GW-29-1-1 and GW-29-2-1, screened in bedrock and across the overburden-bedrock contact, respectively. These wells were installed north of Willis Point Road, beyond the northern property boundary of the site and downgradient of compliance monitoring location 28.

In 2025/26, groundwater quality at monitoring location 29 met all applicable CSR standards, and there was no evidence of leachate impacts. Aggregate runoff impacts have been observed at this location since construction and operation of the Northeast Stockpile (**Figure 5-5**). Nitrate concentrations remained slightly elevated at both wells, ranging between 0.100 to 0.286 mg/L. The average sulphate concentration was 64.0 mg/L at GW-29-1-1 and 85.5 mg/L at GW-29-2-1. Mann-Kendall analysis found an increasing trend in nitrate concentrations and a decreasing trend in sulphate concentrations at GW-29-1-2, while deep groundwater quality at GW-29-1-1 was stable. The trends indicate that groundwater quality at monitoring location 29 continues to be impacted by aggregate runoff.

5.7.3.3 Location 53

Monitoring location 53 consists of a single monitoring well completed in relatively deep bedrock downgradient of Phase 2. The well is located on an east-west trending ridge about 100 m north of the Phase 2 basin, close to the northern property boundary. In 2025/26, groundwater quality at GW-53-1-1 met all applicable CSR standards. No leachate impacts have been observed at this location, and concentrations of leachate indicator parameters remained low. Sulphate concentrations were elevated, reaching 100 mg/L in Q1 2026, and an increasing trend in concentrations was identified as statistically significant by Mann-Kendall analysis. The elevated sulphate concentrations may reflect aggregate runoff, although nitrate concentrations at GW-53-1-1 have remained low or below detection over time.

5.7.4 Other Monitoring Locations North of Phase 2

In 2021/22, a number of wells were installed in several areas north of Phase 2 as part of an investigation to determine the source of elevated nitrate and ammonia concentrations observed in the NWSP and in Heal Creek (AECOM 2023a). The investigation concluded that a small amount of leachate likely escaped Phase 2 following an extreme precipitation event in November 2021. Nitrate impacts were attributed to the aggregate stockpiles at the site, which were leaching dissolved nitrogen species into the local environment. Since then, no leachate impacts have been observed in this area of the landfill, but aggregate runoff impacts have persisted.

5.7.4.1 Locations 104, 108, and 109

Monitoring locations 104, 108, and 109 consist of individual monitoring wells all screened in relatively shallow bedrock immediately northwest of the Phase 2 basin. These wells were drilled during the NWSP investigation. In 2025/26, groundwater quality at these locations met all applicable CSR standards except for cobalt at GW-104-1-1, which exceeded the AW standard during two sampling events and the DW standard during one sampling event. Cobalt concentrations have remained elevated at this well since reaching 120 µg/L in September 2023 but have decreased to an average of 27.4 µg/L in 2025/26.

Sulphate concentrations were relatively high in this area, with the highest concentrations observed at GW-104-1-1 and GW-108-1-1 (X). Nitrate concentrations were highest at GW-104-1-1 (1.40 to 3.09 mg/L) but were below the aggregate runoff indicator threshold limit at locations 108 and 109. Ammonia concentrations were below the leachate indicator threshold at all three locations. Conductivity was elevated and ranged from 548 to 888 µS/cm. Mann-Kendall analysis detected a statistically significant increasing trend in sulphate concentrations at locations 104 and 108, as well as increasing trends in conductivity at location 108 and chloride concentrations at location 109. Historically, groundwater quality in this area has been impacted by aggregate runoff and magnesium lignosulphonate (e.g., GW-104-1-1), and those impacts persisted in 2025/26.

5.7.4.2 Purge Wells P11 and P12

Purge wells P11 and P12 were installed immediately north of Phase 2 during the NWSP investigation. Since installation, the wells have been intermittently dry but have exhibited aggregate runoff impacts when water levels are high enough to collect a sample. In May of 2023, pumping of P11 began, with an average discharge rate of 0.75 L/min. In 2025/26, groundwater quality at P11 and P12 met all applicable CSR standards. Conductivity, nitrate, and sulphate concentrations were elevated on all successful sampling events, and chloride concentrations were elevated during one sampling event. Ammonia concentrations were low. The Mann-Kendall analysis detected statistically significant decreasing trends in ammonia concentrations at P11 and nitrate concentrations at P11 and P12. Overall, the groundwater quality was impacted by aggregate runoff, but no leachate impacts were apparent.

5.7.4.3 Locations 36, 37, and 38

Monitoring locations 36, 37, and 38 are located immediately north of the Phase 2 basin. Monitoring locations 37 and 36 consist of two to three monitoring wells that were all completed in bedrock. Two wells at each location are integrated into the landfill's SCADA system, so groundwater quality is only monitored at GW-36-3-1 and GW-37-3-1. These monitoring locations are critical for monitoring hydraulic gradients at the site, and they are good monitoring points for determining if leachate has migrated north of Phase 2. GW-38-1-1 is completed in bedrock downgradient of locations 36 and 37 and upgradient of compliance monitoring location 28.

Nitrate concentrations were elevated at locations 36 and 38 but were non-detectable at 37. Elevated sulphate concentrations were observed at locations 36 and 37. Ammonia concentrations ranged between 0.24 to 0.59 mg/L at GW-37-3-1 but were low to non-detectable at locations 36 and 38. Conductivity and chloride concentrations were moderate to elevated at all three locations (**Figure 5-6**). Mann-Kendall statistical analysis identified an increasing trend in chloride concentrations at locations 36 and 38. Groundwater quality in this area was impacted by aggregate runoff and potentially by dilute leachate impacts at GW-37-3-1. Magnesium lignosulphonate application and de-icing activities may have also impacted groundwater quality.

5.7.4.4 Location 58

Monitoring location 58 consists of a single well (GW-58-1-0) located in the transition area between the Phase 1 and Phase 2 landfills, approximately 200 m south of from the property boundary. GW-58-1-0 is 19 m deep and screened in bedrock underlying refuse. Well GW-58-1-0 has exhibited elevated concentrations of leachate indicator parameters since landfilling upslope of the well began in 2001, reflecting leachate-impacted groundwater flowing toward the Lower Leachate Lagoon and the North Purge Wells. Since 2021, concentrations of key leachate indicator parameters (e.g., conductivity, ammonia, and chloride) have exhibited greater variability and higher magnitudes. Water quality at this location reflects leachate-impacted groundwater flowing toward the Lower Leachate Lagoon and the North Purge Wells.

No groundwater samples were collected from GW-58-1-0 between Q2 2024 and Q2 2025 as the well was inaccessible due to construction. In 2025/26, three groundwater sampling events were conducted at GW-58-1-0. During all three sampling events, ammonia concentrations exceeded the CSR AW standard and chloride, cobalt, nickel, strontium, and vanadium concentrations exceeded CSR DW standard, similar to previous years. Boron marginally exceeded the DW standard of 5,000 µg/L during one sampling event. Elevated concentrations of boron have been observed at this well since 2005.

Nitrate concentrations at this location tend to be variable. The highest concentration was observed in Q3 2025 (3.60 mg/L) but concentrations decreased below detection limits during subsequent sampling events. Sulphate concentrations ranged from 97 to 130 mg/L. Since Q1 2020, sulphate concentrations have risen progressively from approximately 60 mg/L to a maximum of 200 mg/L. The elevated sulphate concentrations likely reflect aggregate runoff impacts. Continued water quality monitoring at this well is important because it provides an indication of the quality of impacted groundwater migrating toward the Lower Leachate Lagoon and the North Purge Well System.

5.7.4.5 Locations 25, 95, 96, 97 and 98

Monitoring location 25 consists of two wells (GW-25-1-1 and GW-25-1-2) that were both screened in bedrock. The wells are located on an east-west trending ridge about 100 m north of the Phase 2 basin, and about 10 m north of the NWSP. Wells GW-95-1-1, GW-96-1-1 and GW-98-1-1 were installed meters apart and are located along the north edge of Heal Creek, east and downgradient of the NWSP. Well GW-97-1-1 was installed just south of Heal Creek and north of the NWSP.

In 2025/26, groundwater quality in this area met all applicable CSR standards. Conductivity, chloride, nitrate, and sulphate concentrations remained moderate to elevated in all wells except GW-97-1-1 (**Figure 5-7**). Ammonia concentrations in this area were low to non-detectable. Mann-Kendall analysis identified statistically significant increasing trends in conductivity, chloride, and sulphate concentrations at locations 95, 96, and 98. Ammonia and chloride concentrations exhibited statistically

significant increasing trends at GW-25-1-1, and a statistically significant increasing trend in conductivity was identified at GW-25-1-2. This area of the landfill was impacted by aggregate runoff.

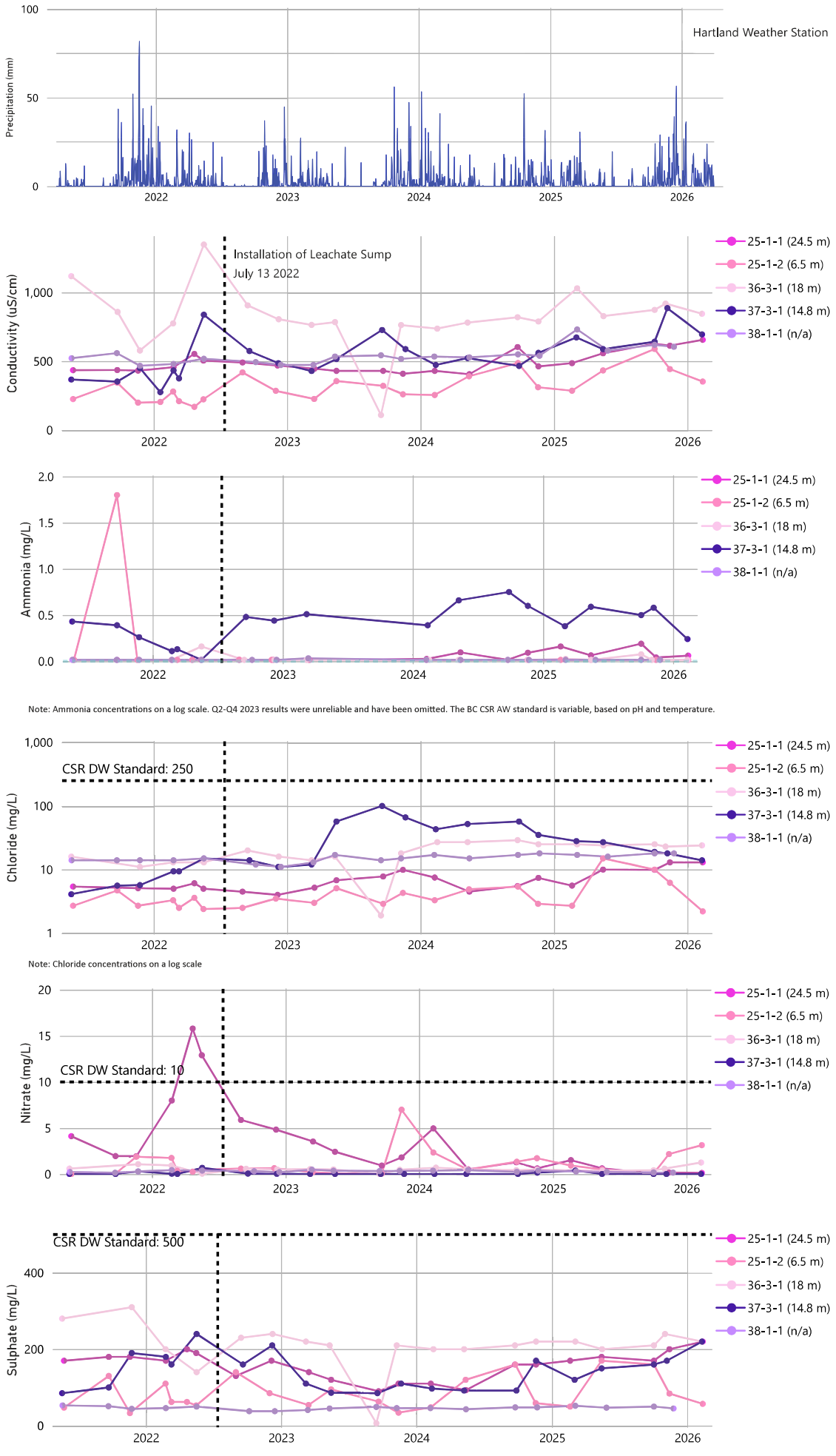


Figure 5-6. Groundwater Quality North of Phase 2 - Landfill Leachate Impacts

AECOM

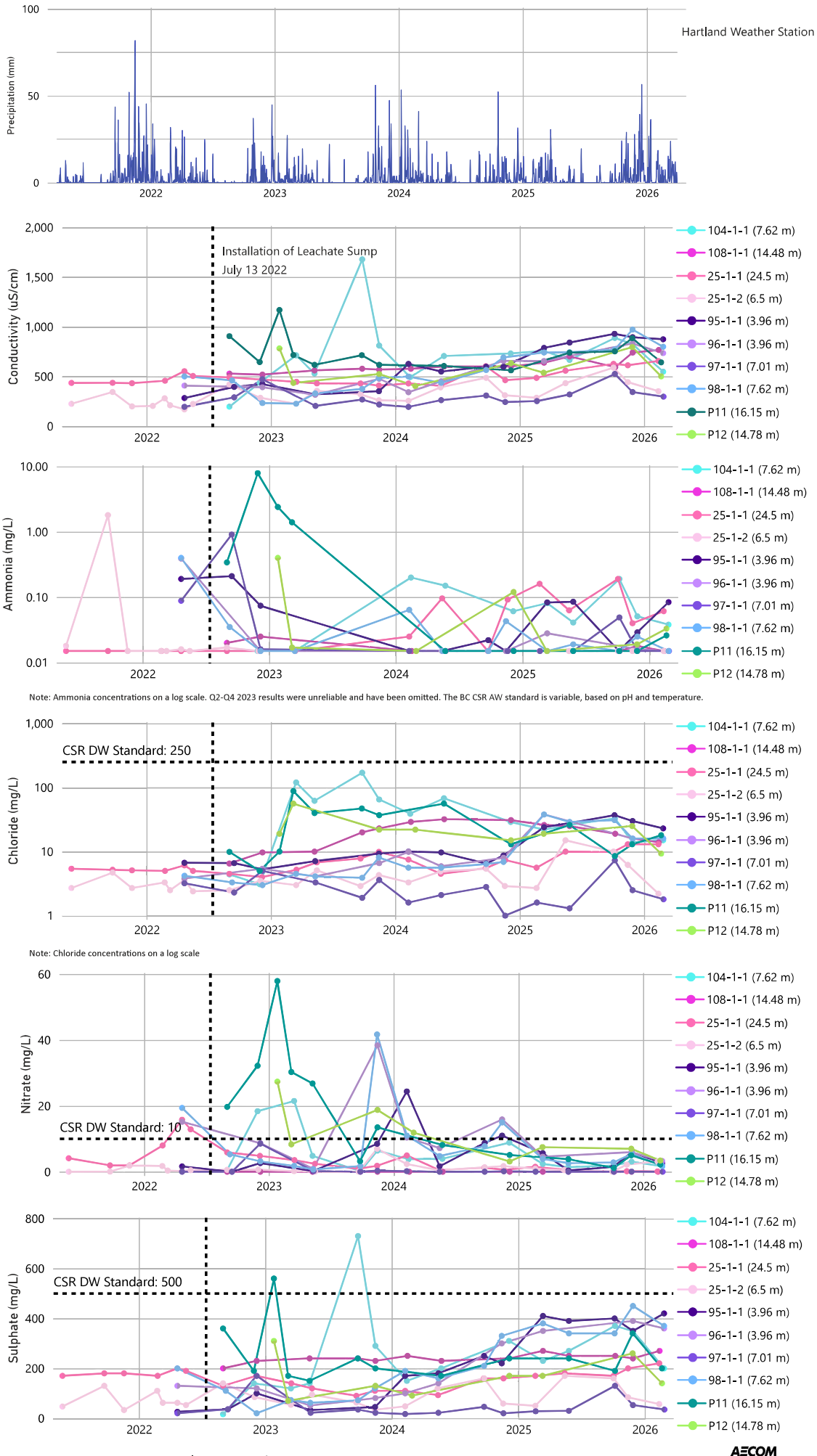


Figure 5-7. Groundwater Quality North of Phase 2 - Aggregate Impacts (2021 to Present)

5.8 Groundwater Quality Northwest of the Landfill

The Hartland North Pad has had a variety of uses including yard waste composting (1994 to 2004) and aggregate stockpiling (2006 to 2018). Currently, it accommodates the north trailer and RTF associated with CRD's McLoughlin Point Wastewater Treatment Plant project (**Appendix B-1**). **Figure 5-8** illustrates long-term groundwater quality trends in the northwest area of the site and offsite in the receiving environment.

5.8.1 Compliance Monitoring Locations

5.8.1.1 Location 41

Monitoring location 41 consists of one monitoring well (GW-41-1-1) screened in shallow bedrock. The well is located in the northwest corner of the site, at the edge of the northern property boundary and north of the RTF. In 2025/26, groundwater quality at monitoring location 41 met all applicable CSR standards. Conductivity, chloride, and ammonia concentrations were low, and nitrate and sulphate concentrations were low to moderate. The highest nitrate concentration was 0.116 mg/L, and sulphate concentrations reached 57.5 mg/L. Mann-Kendall analysis detected a statistically significant decreasing trend in sulphate concentrations. The groundwater quality at this location likely exhibited dilute aggregate runoff impacts, given the concurrently elevated nitrate and sulphate concentrations.

5.8.1.2 Location 56

Monitoring location 56 consists of one well (GW-56-1-1) screened in bedrock. The well is located at the northern property boundary, immediately downgradient of the RTF, about 100 m east of compliance monitoring location 41. In 2025/26, the groundwater quality at monitoring location 56 met all applicable CSR standards, and concentrations of all aggregate and leachate indicator parameters were low. Mann-Kendall analysis detected a statistically significant increasing trend in chloride concentrations and a decreasing trend in sulphate concentrations at this location. Groundwater quality at this location showed no evidence of aggregate runoff or leachate impacts.

5.8.1.3 Location 42

Monitoring location 42 consists of one monitoring well (GW-42-1-1) screened in shallow bedrock. The well is located at the northern property boundary along Willis Point Road, downgradient of the Hartland North pad and northwest of Heal Creek. In 2025/26, the groundwater quality at monitoring location 42 met all applicable CSR standards. Ammonia and nitrate concentrations were present in low to non-detectable concentrations. Conductivity and sulphate concentrations were moderate, averaging 479 µS/cm and 63.4 mg/L, respectively. The average chloride concentration was elevated (33.1 mg/L), and Mann-Kendall analysis determined a statistically significant increasing trend in chloride concentrations. The groundwater quality at this location exhibited impacts from dilute aggregate runoff and road salt application.

5.8.1.4 Location 55

Monitoring location 55 consists of one well (GW-55-1-1) screened in bedrock. The well is located offsite, across Willis Point Road, in the receiving environment (a wetland) downgradient of the RTF and compliance monitoring location 41. In 2025/26, the groundwater quality at monitoring location 55 met all applicable CSR standards, and leachate indicator parameters were present in low concentrations. Nitrate concentrations were elevated (0.302 to 0.372 mg/L), but conductivity and sulphate concentrations were low. The elevated nitrate could reflect aggregate runoff or a natural source in the wetland.

5.8.1.5 Location 57

Monitoring location 57 consists of one well (GW-57-1-1) screened in bedrock. The well is located offsite, across Willis Point Road, in the receiving environment downgradient of the RTF and compliance monitoring locations 56 and 42. GW-57-1-1 situated further into the receiving environment than GW-55-1-1. In 2025/26, the groundwater quality at monitoring location 57 met all applicable CSR standards and did not exhibit any impacts from leachate or aggregate runoff. Mann-Kendall statistical analysis determined that concentrations of all indicator parameters were stable.

5.8.2 Other Monitoring Locations

5.8.2.1 Locations 43, 44, 62, and 91

Monitoring locations 43, 44, 62 and 91 surround the Hartland North Pad, north of the Northwest Stockpile and upgradient of compliance monitoring locations 41, 42, and 56. Monitoring locations 43, 44, and 91 consist of individual wells and location 62 consists of two wells, all of which were completed in bedrock. Monitoring location 62 is upgradient of the other monitoring wells, on the northern boundary of the Northwest Stockpile.

2025/26, groundwater quality at these locations met all applicable CSR standards. Average nitrate and sulphate concentrations at location 62 remained elevated at 3.65 and 203 mg/L, respectively. The average conductivity was moderate

(508 µS/cm) and concentrations of chloride and ammonia were low or non-detectable. Mann-Kendall analysis found increasing trends in conductivity, nitrate, and sulphate concentrations at GW-62-1-1 and an increasing trend in sulphate concentrations at GW-62-2-1.

Downgradient of monitoring location 62, groundwater at locations 43, 44, and 91 generally exhibited low leachate and aggregate runoff indicator concentrations, but sulphate concentrations were elevated at locations 43 and 91, averaging 74.5 and 118 mg/L, respectively. Chloride concentrations were low at locations 44 and 91 (<7 mg/L), while elevated concentrations were observed at GW-43-1-1 and ranged from 16 to 31 mg/L. The Cl/Na molar ratio at GW-43-1-1 was 1.5. Monitoring location 43 is situated on the north side of the Commercial Access Road and immediately downgradient of the North Commercial Scales, where there are higher volumes of commercial vehicle traffic and consequent road salt application in the winter. A 50/50 salt and sand mixture was previously used to de-ice road surfaces at the site, but the sand was recently removed from the mixture, increasing the overall volume of salt applied to roadways. Similar trends in chloride concentrations were observed at downgradient monitoring location GW-42-1-1. Groundwater quality at GW-43-1-1 is likely impacted by runoff from the road and the scales.

Mann-Kendall analysis detected statistically significant increasing trends in sulphate concentrations at all the wells except GW-43-1-1, and an increasing trend in conductivity at GW-44-1-1 and GW-62-1-1. Statistically significant increasing trends in chloride and nitrate concentrations were identified at GW-43-1-1 and GW-62-2-1, respectively. However, statistically significant decreasing trends in chloride and nitrate concentrations were observed at GW-91-1-1.

Overall, groundwater quality beneath the Northwest Stockpile (i.e., GW-62-1-1) exhibited aggregate runoff impacts, but groundwater quality downgradient around the Hartland North Pad was considerably less affected. Runoff from the scales and road surfaces upgradient of GW-43-1-1 appear to be impacting water quality at this location.

5.8.2.2 Locations 77, 92, and 113

Monitoring locations 77, 92, and 113 are located on the North Ridge, south of the groundwater divide running along the Northwest Stockpile (**Figure 4-1**). Groundwater in this area flows into the Phase 2 basin. Two monitoring wells are installed at locations 77 (GW-77-1-1 and GW-77-2-1) and 113 (GW-113-1-1 and GW-113-2-1), and one monitoring well is installed at location 92 (GW-92-1-1).

In 2025/26, groundwater quality at locations 77 and 92 met all applicable CSR standards. Sulphate concentrations (480 to 670 mg/L) exceeded the CSR DW standard on separate sampling events at GW-113-1-1 and GW-113-2-1, and conductivity was elevated. Elevated nitrate concentrations were previously observed at location 113 in 2024/25, but have since decreased to low or non-detectable concentrations. Chloride and ammonia concentrations were similarly low or below detection limits.

At monitoring location 92, concentrations of all aggregate runoff and magnesium lignosulphonate indicator parameters were elevated, with a relative increase of at least 30% in these parameters compared to 2024/25. The CRD reported that the flush mount road box at GW-92-1-1 was completely saturated with magnesium lignosulphonate on September 2, 2025, and concentrations of indicator parameters markedly increased in the sample collected later that month and remained elevated in subsequent samples.

At location 77, conductivity was moderate, ammonia and nitrate concentrations were low to non-detectable, and sulphate concentrations were elevated. Chloride concentrations were low in deep well GW-77-1-1 but were elevated above 50 mg/L in shallow well GW-77-2-1. Immediately north of this location, construction of a new kitchen scraps transfer station commenced in 2022 to replace the south kitchen scraps transfer station and was completed in early 2025. Concentrations of chloride at location 77 were consistently low prior to construction but increased following construction activities and have remained elevated. Impacts could be related to runoff from the kitchen scraps transfer station area, increased de-icing activities, or the use of aggregate for construction. In February 2026, the bins in the kitchen scraps transfer station were sealed to prevent leachate from draining into the surrounding area. An improvement in water quality at GW-77-2-1 is expected to follow.

Mann-Kendall analysis detected statistically significant increasing trends in sulphate concentrations and conductivity at GW-77-1-1 and GW-77-2-1. The analysis also detected statistically significant increasing trends in conductivity, chloride, and sulphate concentrations at GW-92-1-1. Overall, groundwater quality in this area of the landfill was impacted by aggregate runoff, with the most substantive impacts occurring at monitoring location 113, immediately downgradient of the Northwest Stockpile.

5.8.2.3 Locations 87, 88, and 94

Monitoring locations 87 and 88 consist of two sets of wells (GW-87-1-1, GW-87-2-1, GW-88-1-1, and GW-88-2-1) that were completed in bedrock on opposite sides of the Highland Fault, immediately south of the Northwest Stockpile. Monitoring location 94 consists of a single well that was completed in bedrock upgradient of monitoring locations 87 and 88, adjacent to the Northwest Stockpile. Historically, GW-94-1-1 was used to monitoring background groundwater quality, but it has exhibited aggregate runoff impacts since 2021/22 and has not been sampled since 2023. Shallow wells GW-87-2-1 and GW-88-2-1 were both dry in 2025/26 and no samples were collected.

In 2025/26, groundwater quality at GW-87-1-1 and GW-88-1-1 met all applicable CSR standards. Conductivity, chloride, ammonia, and nitrate concentrations were low to non-detectable at GW-87-1-1. Sulphate concentrations have remained moderate to elevated in both wells since the Northwest Stockpile was developed, with the highest concentrations observed on the north side of the Highland Fault at GW-88-1-1. Elevated conductivity and nitrate concentrations were also observed at GW-88-1-1. Mann-Kendall analysis detected a statistically significant increasing trend in sulphate concentrations at both wells and an increasing trend in conductivity at GW-88-1-1. A statistically significant decreasing trend in chloride concentrations was identified at GW-87-1-1. This area of the landfill was impacted by aggregate runoff from the Northwest Stockpile.

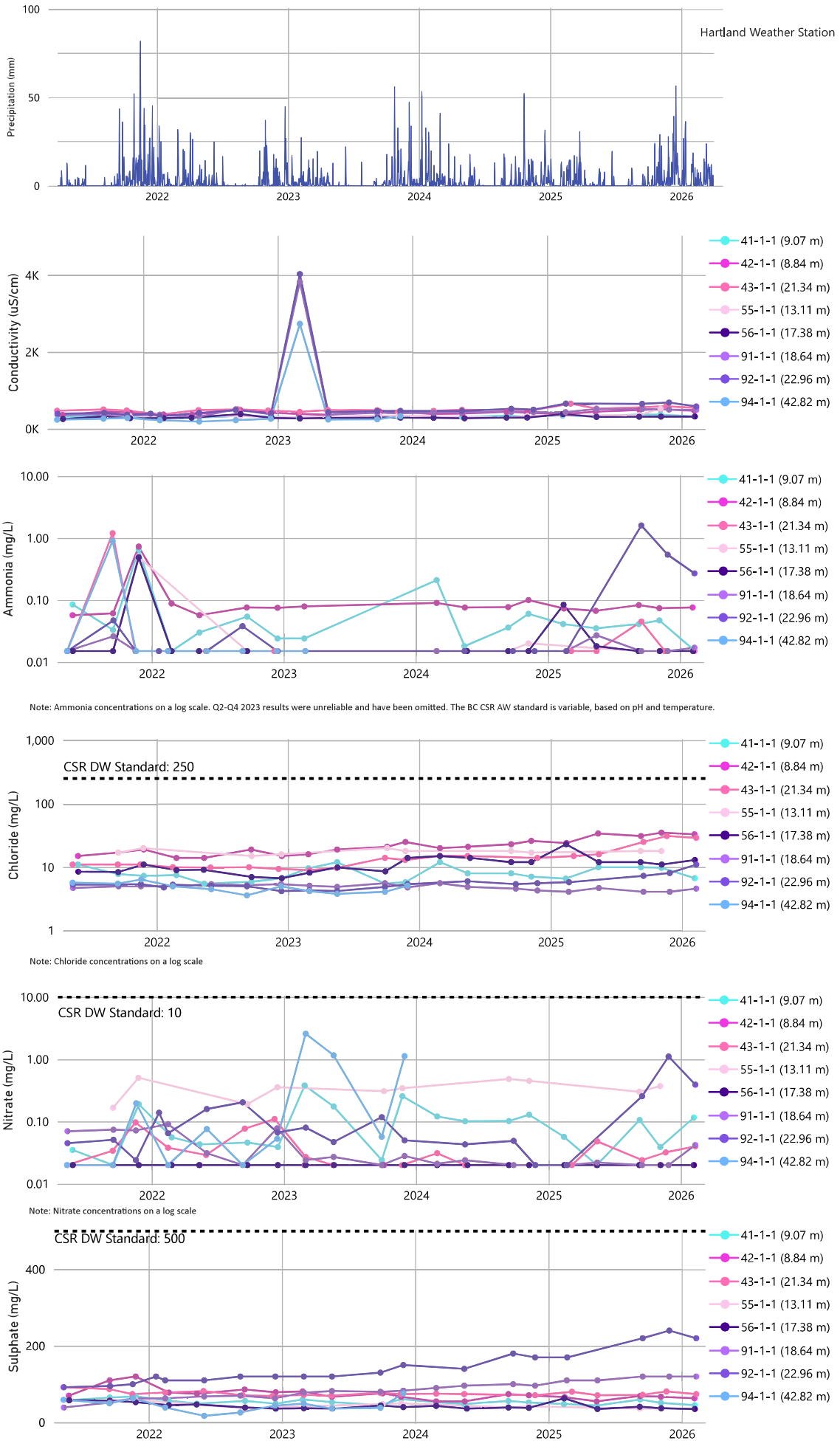


Figure 5-8. Groundwater Quality North of Hartland North Pad

5.9 Groundwater Quality South of the Landfill

Figures 5-9 and 5-10 show long-term groundwater quality trends south and southeast of the landfill. Groundwater quality in these wells is sensitive to the performance of the South Purge Well system. When the system is functioning properly, concentrations of leachate indicator parameters have declined, and seasonal fluctuations have dampened.

5.9.1 Compliance Monitoring Locations

5.9.1.1 Location 72

Monitoring location 72 consists of three groundwater wells (GW-72-1-1, GW-72-2-1, and GW-72-3-1) completed at different depths of the bedrock. GW-72-2-1 has not been sampled since 2016 due to slow recharge rates. The wells are located in the south area of the landfill, upgradient of compliance monitoring point 71.

In 2025/26, groundwater quality at monitoring location 72 met all applicable CSR standards. Ammonia and nitrate concentrations were low or non-detectable, and conductivity and sulphate concentrations were moderate. Chloride concentrations were elevated and averaged 67.7 mg/L at GW-72-1-1 and 40.5 mg/L at GW-72-3-1. The Cl/Na molar ratio at GW-72-3-1 was almost exactly 1.0, indicating potential impacts from road salt application. Mann-Kendall analysis determined that concentrations of all indicator parameters were stable. Overall, groundwater quality in at this location did not exhibit any evidence of leachate or aggregate runoff impacts.

5.9.1.2 Location 71

Monitoring location 71 consists of three groundwater wells (GW-71-1-1, GW-71-2-1, and GW-71-3-1) completed at different depths of the bedrock. The wells are located in the south area of the landfill, downgradient of compliance monitoring point 72, offsite and immediately west of Hartland Avenue.

In 2025/26, groundwater quality at monitoring location 71 met all applicable CSR standards, and all aggregate runoff and leachate indicator concentrations were low in wells GW-71-1-1 and GW-71-2-1. Monitoring well GW-71-3-1 exhibited elevated nitrate concentrations ranging from 0.74 to 1.03 mg/L, and sulphate concentrations and conductivity were moderate, averaging 35.5 mg/L and 333 µS/cm, respectively. Mann-Kendall analysis detected statistically significant increasing trends in sulphate concentrations and conductivity in wells GW-71-2-1 and GW-71-3-1, respectively. Groundwater quality in GW-71-3-1 may have been impacted by aggregate runoff or windblown dust from the aggregate piles, given that there were elevated nitrate concentrations close to the surface and the well is next to a busy road. However, nitrate and sulphate concentrations observed at monitoring location 71 were consistent with historical values.

5.9.1.3 Location 73

Monitoring location 73 consists of three groundwater wells (GW-73-1-1, GW-73-2-1, and GW-73-3-1) completed at different depths in bedrock. The wells are located in the south area of the landfill, downgradient of compliance monitoring points 71 and 72. The dedicated submersible pump installed in GW-73-1-1 failed in early 2025 and has yet to be repaired, so no samples were collected from this well in 2025/26.

Groundwater quality at GW-73-2-1 and GW-73-3-1 met all applicable CSR standards in 2025/26. Ammonia concentrations were consistently below detection limits. Conductivity and sulphate concentrations were moderate, averaging 374 µS/cm and 35.1 mg/L, respectively. Average concentrations of chloride (32.5 mg/L) and nitrate (0.41 mg/L) were elevated. Mann-Kendall analysis identified statistically significant increasing trends in chloride and nitrate concentrations at GW-73-2-1, and increasing trends in conductivity and sulphate were detected at GW-73-3-1. In general, solute concentrations were similar to historical values, and the groundwater quality did not exhibit clear evidence of landfill-related impacts.

5.9.1.4 Location 4

Monitoring location 4 is the southern-most groundwater quality compliance monitoring point and consists of three groundwater wells (GW-04-2-1, GW-04-3-1, and GW-04-4-1) located at the south end of the landfill property. GW-04-2-1 has not been sampled since 2016 due to slow recharge rates.

In 2025/26, groundwater quality at monitoring location 4 met all applicable CSR standards. Conductivity, ammonia, and sulphate concentrations were low to moderate in both wells. Nitrate concentrations were elevated in GW-04-4-1, reaching 1.42 mg/L. Elevated chloride concentrations were observed at GW-04-3-1 (average 30.5 mg/L), and concentrations at GW-04-4-1 reached 110 mg/L. Mann-Kendall analysis detected a statistically significant increasing trend in chloride concentrations in GW-04-3-1. At this monitoring point, the groundwater quality was impacted by aggregate runoff and road salt application.

5.9.2 Other Monitoring Locations

5.9.2.1 Locations 85, 60, and 19

Monitoring locations 85, 60, and 19 are located in the south area of the landfill, along a groundwater flow path originating from Phase 1. Monitoring location 85 consists of a single monitoring well completed in bedrock approximately 100 m upgradient of monitoring location 60. Monitoring location 60 consists of three monitoring wells (GW-60-1-1, GW-60-2-1, and GW-60-3-1) screened at different levels in the bedrock approximately 130 m upgradient of monitoring location 19. Monitoring location 19 consists of four wells (GW-19-1-1, GW-19-2-1, GW-19-1-2, and GW-19-2-2) screened at different elevations in the bedrock.

In 2025/26, monitoring location 19 generally exhibited low aggregate runoff and leachate indicator concentrations, and no CSR AW/DW exceedances were reported. Chloride concentrations were moderate to elevated, ranging from 12 to 21 mg/L. Mann-Kendall analysis identified an increasing trend in chloride concentrations and a decreasing trend in sulphate concentrations at GW-19-2-1 and GW-19-2-2. A statistically significant increasing trend in conductivity was also detected at GW-19-2-1.

Groundwater quality at GW-85-1-1 met all applicable CSR standards. Conductivity, chloride, sulphate, and nitrate concentrations were moderate to elevated. Heavy traffic in this area of the site and a Cl/Na molar ratio near 1.0 indicate the elevated chloride concentrations are likely due to road salt application. The elevated nitrate and sulphate may have been caused by aggregate runoff or windblown dust from the stockpiles. Nitrite was not detected in the groundwater, suggesting a distal nitrogen source.

At monitoring location 60, groundwater quality generally met all applicable CSR standards. However, chloride concentrations exceeded the CSR DW standard at the deepest well (GW-60-1-1) during all four sampling events. Concentrations ranged from 250 to 350 mg/L and were associated with elevated average conductivity (1,203 µS/cm) and a Cl/Na molar ratio of 5.4. Chloride concentrations at this location have increased sharply since May 2024, when concentrations were 120 mg/L. The source of the elevated chloride at deep well GW-60-1-1 is currently unknown but impacts of this magnitude appear to be somewhat isolated, and do not appear to be from deep bypass of the leachate collection system due to low ammonia and trace metal concentrations. It is possible that there is a preferential pathway delivering impacted groundwater to this location from elsewhere on site, potentially from the nearby salt storage area. Chloride concentrations should continue to be monitored at this location.

Chloride concentrations were also elevated at GW-60-2-1 and GW-60-3-1 and averaged 79.5 mg/L. The Cl/Na molar ratio was 1.5 at shallow well GW-60-3-1 and 4.7 at intermediate well GW-60-2-1. Nitrate and ammonia concentrations were low or below detection at location 60 except in GW-60-3-1, where the average nitrate concentration was 2.30 mg/L. Sulphate concentrations were moderate in all three wells. Mann-Kendall analysis detected statistically significant increasing trends in conductivity and chloride concentrations at GW-60-1-1, as well as decreasing trends in sulphate concentration at GW-60-2-1, and a decreasing trend in chloride concentration at GW-60-3-1. Groundwater quality at this location was impacted by aggregate runoff/dust and road salt application. Low ammonia and metal concentrations suggest elevated chloride concentrations were not due to leachate migration.

5.9.2.2 The South Purge Wells (P1, P2, P3, P4 and P10)

The South Purge Wells consist of five leachate recovery wells that were designed to prevent southward migration of leachate from Phase 1 (see **Figures 4-1** and **4-2**). In 2025/26, ammonia concentrations exceeded the CSR AW standard on all sampling events in all wells, and barium concentrations exceeded the CSR DW during two sampling events at P1. Groundwater quality at the South Purge Wells was impacted by leachate, with an average conductivity of 1,739 µS/cm, and average ammonia and chloride concentrations of 70.5 and 136 mg/L, respectively. Nitrate concentrations were typically moderate to elevated, but sulphate concentrations were low to non-detectable. Mann-Kendall analysis detected statistically significant decreasing trends in conductivity and sulphate concentrations at P10. Overall, the highest leachate indicator concentrations occurred at P3 and P4, and all solute concentrations were similar to historical values.

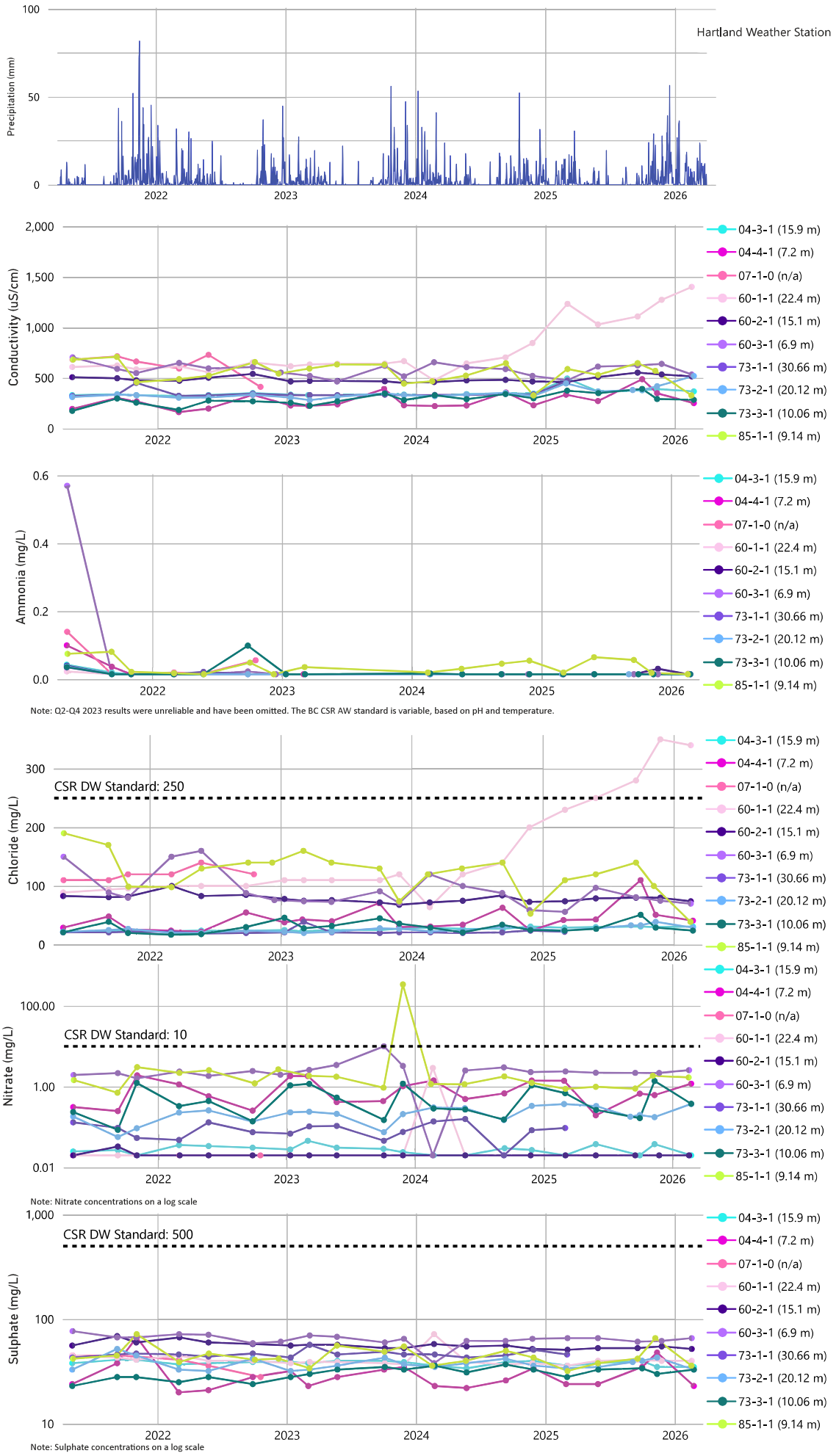


Figure 5-9. Groundwater Quality South of Landfill

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Figure 5-10. Groundwater Quality Southeast of Landfill

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5.10 Groundwater Quality East of the Landfill

Figure 5-11 shows long-term groundwater quality trends east of the landfill. Groundwater monitoring points along the eastern side of Phase 1 are critical for detecting leachate migration offsite to the east.

5.10.1 Compliance Monitoring Locations

5.10.1.1 Location 18

Monitoring location 18 consists of four wells (GW-18-1-1, GW-18-1-2, GW-18-2-1, and GW-18-2-2) completed at different levels in the bedrock immediately east of the peak of Phase 1. The submersible pump installed in GW-18-1-2 was damaged in 2004 and blocked the well, preventing sampling and monitoring activities.

In 2025/26, groundwater quality at monitoring location 18 met all applicable CSR standards. Conductivity, ammonia, and chloride concentrations were low to non-detectable, but nitrate concentrations were elevated above background levels during at least one sampling event at GW-18-2-1 and GW-18-2-2. Sulphate concentrations were moderate in all three wells. Mann-Kendall analysis detected statistically significant increasing trends in chloride concentrations at GW-18-2-1 and GW-18-2-2 and an increasing trend in sulphate concentrations at GW-18-1-1. The groundwater quality at this location may have been impacted by aggregate runoff from the Northeast Stockpile, but there was no evidence of leachate impacts.

5.10.1.2 Location 17

Monitoring location 17 consists of three wells (GW-17-1-1, GW-17-1-2, and GW-17-1-3) screened at different levels in the bedrock immediately east of the northern half of Phase 1. In 2025/26, groundwater quality at monitoring location 17 met all applicable CSR standards. However, nitrate concentrations were elevated in all three wells, with the highest concentrations occurring at GW-17-1-2. Sulphate concentrations were moderate, and conductivity, chloride, and ammonia concentrations were low. Mann-Kendall analysis indicated that water quality at location 17 was stable. The groundwater quality at this location was likely impacted by aggregate runoff, but there was no evidence of leachate impacts.

5.10.1.3 Location 112

Monitoring location 112 consists of two wells (GW-112-1-1 and GW-112-2-1) that were completed within bedrock and across the overburden-bedrock contact immediately east of the Northeast Stockpile. These wells were installed to monitor groundwater quality immediately downgradient of the stockpile.

In 2025/26, antimony concentrations exceeded the CSR DW standard during two sampling events at GW-112-1-1. It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the well was installed and have been steadily decreasing since. Antimony concentrations should continue to be monitored at this location for continued improvement. Nitrate and sulphate concentrations were elevated, averaging 4.43 and 245 mg/L, respectively. Conductivity was moderate to elevated, but chloride and ammonia concentrations were low. Groundwater quality at this location was impacted by aggregate runoff and should continue to be monitored closely.



Figure 5-11. Groundwater Quality East of Landfill

AECOM

5.10.2 Other Monitoring Locations

5.10.2.1 Location 16

Monitoring location 16 consists of four wells (GW-16-1-1, GW-16-1-2, GW-16-2-1, and GW-16-2-2) that were completed at different elevations in the bedrock immediately northeast of Phase 1. This monitoring location is critical for detecting northeastward migration of leachate from Phase 1.

In 2025/26, groundwater quality met all applicable CSR standards, and concentrations of leachate indicator parameters were low to non-detectable. However, nitrate and sulphate were elevated in all four wells. The highest nitrate concentration (5.67 mg/L) was observed at GW-16-2-1, and sulphate concentrations reached 210 mg/L at GW-16-1-1. Mann-Kendall analysis detected statistically significant increasing trends in chloride and sulphate concentrations at GW-16-1-1. Overall, this area of the landfill was impacted by aggregate runoff, but no leachate impacts were detected.

5.11 Summary

Based on our analysis and interpretation of the 2025/26 groundwater quality data:

- Leachate Containment: The groundwater quality data indicated that leachate impacted groundwater was contained within the landfill property boundary. At the north end of the landfill, leachate impacts extended below the Lower Leachate Lagoon but were largely contained by the North Purge Wells. Groundwater quality at compliance monitoring locations 20 and 21 confirm that leachate did not migrate north. At the south end of the landfill, leachate-impacted groundwater was contained by the South Purge Wells, and no leachate impacts were observed downgradient. No leachate impacts were observed in monitoring wells installed along the eastern boundary of Phase 1.
- Aggregate Runoff Impacts: Aggregate runoff impacts (e.g., elevated conductivity, sulphate, and nitrate concentrations) are a pervasive issue at the site, especially north of the landfill. Impacts were most severe at compliance monitoring locations 31, 111, 112, and in many areas of the site immediately downgradient of stockpiles. Elevated nitrate and/or sulphate concentrations were also observed at the south end of the site, at compliance monitoring locations 73 and 71. In the northwest area of the landfill, dilute aggregate runoff impacts were identified, but concentrations were low at the property boundary and low to non-detectable in the receiving environment.
- Magnesium Lignosulphonate Impacts: Magnesium lignosulphonate is used as a dust suppressant at the site, and impacts have been observed at monitoring locations immediately north of the Phase 2 basin (e.g., 37, 104). Impacts continued to be observed in this area in 2025/26 and were also observed to the west at GW-92-1-1.
- Elevated Boron Concentrations at GW-20-1-1: Boron concentrations have exceeded the CSR DW standard seasonally at compliance monitoring location 20 for several years, and historical data shows that boron concentrations have been increasing there since 2016. A previous investigation by AECOM determined that groundwater at monitoring locations 20, 52, and in the North and South Purge Wells exhibits a distinct geochemical signature characterized by highly elevated silicon and boron concentrations, potentially caused by mobilization of boron and silicon from the Lower Lagoon clay berm, or leachate reacting with bedrock below the Phase 1 landfill. In 2025/26, boron concentrations at monitoring location 20 remained elevated but met all applicable CSR standards. Boron concentrations should continue to be monitored at this location.
- Elevated Antimony Concentrations at GW-112-1-1: Antimony concentrations have exceeded the CSR DW standard on three of the four sampling events that have occurred since compliance monitoring well GW-112-1-1 was installed in 2024. It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the well was installed and have been steadily decreasing since. Antimony concentrations should continue to be monitored at this location for continued improvement.
- Elevated Chloride Concentrations: Elevated chloride concentrations were observed in a few areas of the site, particularly in shallow groundwater downgradient of the north and south entrances to the landfill. Cl/Na ratios were generally around 0.5 to 2.0, and ammonia concentrations were generally low to non-detectable, suggesting that the chloride originates from road salt. The highest chloride concentrations were observed at deep well GW-60-1-1 in the south area of the landfill. Chloride concentrations at this location have sharply increased since 2024 and exceeded the CSR DW standard throughout 2025/26. The source is currently unknown but does not appear to be related to deep bypass of the leachate collection system due to low ammonia and metal concentrations. There may be a preferential pathway delivering impacted groundwater to this location from elsewhere on site where road salt is heavily applied or stored. Chloride concentrations should continue to be monitored at this location, and the source should be investigated if concentrations continue to increase.

A summary of groundwater quality exceedances at boundary compliance stations is provided in **Table 5-2.**

Table 5-2. Groundwater Quality Compliance at Boundary Compliance Stations

Station	General Parameters	Nutrients	Metals	Comments
GW-112-1-1	None	None	Antimony (2[b])	• Elevated antimony concentrations have been periodically observed at this location since it was installed in 2024. It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the well was installed and have been steadily decreasing since.

Note:

( )[a] = Number of samples that exceed CSR AW standard for specified parameter

( )[b] = Number of samples that exceed CSR DW standard for specified parameter

6. Groundwater Quality in Domestic Wells

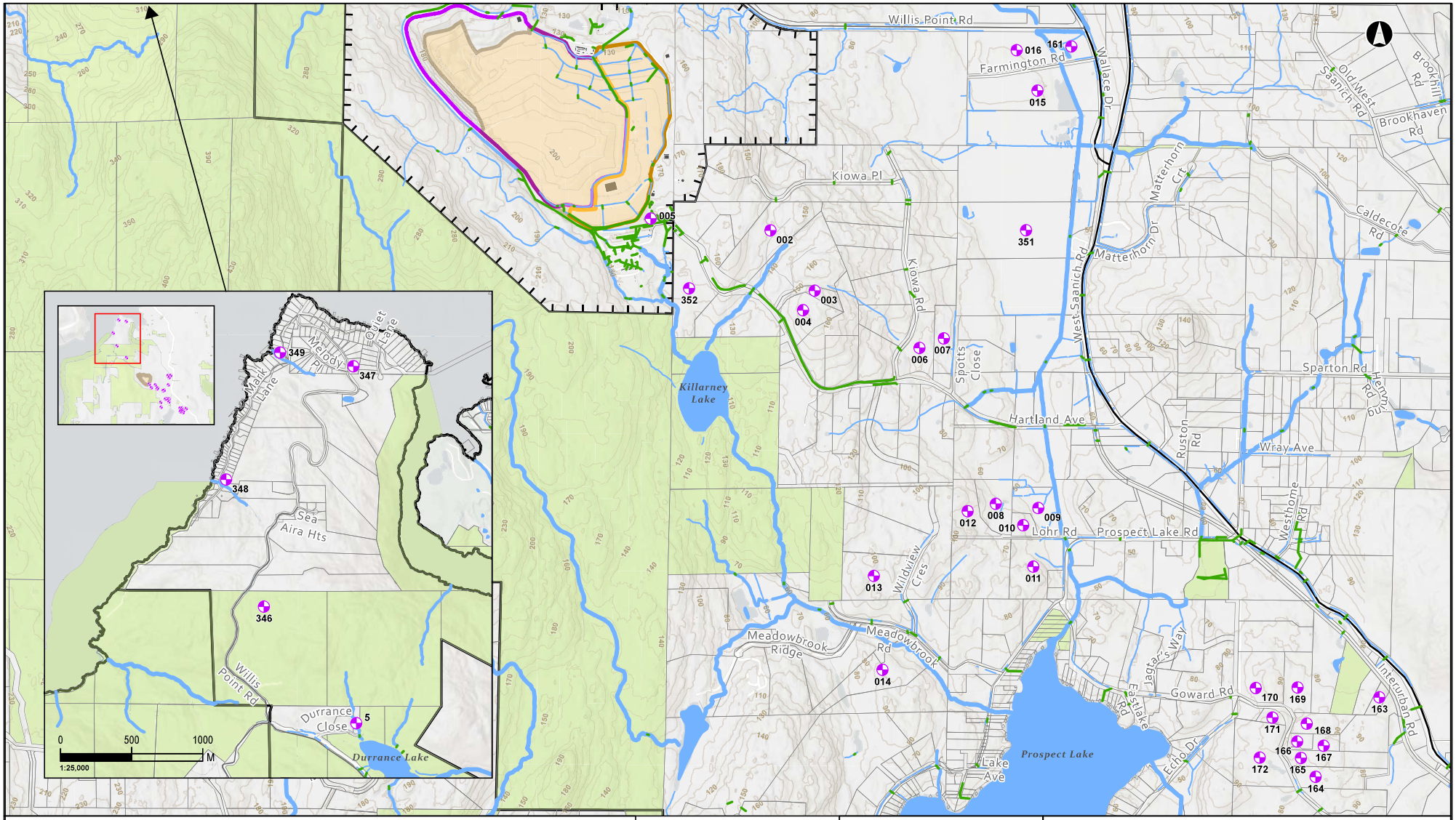
6.1 Monitoring Locations

Since the 1980s, the CRD has performed routine sampling and analysis of domestic wells near the landfill that are used as a primary source of drinking water. This section summarizes our interpretation of water quality data collected from 18 domestic wells located within a 2 km radius of Hartland Landfill. The number of wells included in the program have been reduced gradually as municipal water became available and residents chose to connect to the municipal service. Most of the domestic wells near Hartland Landfill are situated southeast of the landfill, as shown on **Figure 6-1**. The wells are primarily 0.15 m in diameter and penetrate between 30 m and 120 m into the underlying bedrock. Three of the wells are shallow dug wells completed in overburden. Well yields are generally low, and substantial drawdown occurs during pumping, particularly during the dry summer months.

Routine groundwater samples were collected in July 2025 and were analyzed for general water quality parameters, nutrients, and major ions. In 2024, the CRD removed total and dissolved metals from the domestic well analytical suite because metals are not used to identify leachate impacts and there have been few exceedances reported. The analytical results were compared to the *British Columbia Approved Source Drinking Water Quality Guidelines (SDWQGs)* and *Guidelines for Canadian Drinking Water Quality* (GCDWQ), which were last updated in September 2020 and December 2025, respectively.

6.2 Domestic Well Quality

Tabulated analytical results are presented in **Appendix H-2**. The groundwater quality met applicable regulatory criteria at all locations, except temperature exceeded the SDWQGs and GCDWQ aesthetic objectives at three locations, and pH measurements were below the operational guideline set out by the GCDWQ at nine locations. The five domestic wells located northwest of the landfill met CDWQ and SDWQG guidelines for chloride, ammonia, and conductivity, indicating that they were not impacted by leachate. In summary, groundwater quality in the domestic wells was consistent with historical results reported since 2000, and the groundwater quality is considered representative of natural conditions.



LEGEND

- Domestic Water Well
- Lot Lines
- Local Government Boundary
- Site Boundary
- Contour (10m)
- Existing Waste Footprint
- Park
- Phase 1 Closure (1997)
- Phase 2 Base
- Structure
- Primary Stream or Ditch
- Secondary Stream or Ditch
- Tertiary Stream or Ditch
- Gravity Main

Domestic Well Locations	**Hartland Landfill Monitoring Report**	0 125 250 500 750 1000 1250 M
Figure 6-1	1:10,000 NAD83 UTM Zone 10N	**Basemaps provided by:** Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, NASA, NGA, USGS, FEMA, Esri, NASA, NGA, USGS and Capital Regional District
P:60740388	**June 2026**	
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7. Surface Water Quality

7.1 Data

Hartland Landfill is located within the Tod Creek watershed on a drainage divide between the Heal Creek drainage basin to the north and the Killarney Creek basin to the south. Surface water from both the Heal Creek drainage basin and Killarney Creek basin flow into Tod Creek, which discharges to Tod Inlet.

Surface water monitoring locations are shown on **Figure 7-1**. Sampling locations have been established on the landfill property boundary to monitor landfill compliance and identify changes in surface water quality that could be related to landfill operations. Monitoring stations located offsite are used to monitor surface water quality around the landfill and in the receiving environment. Surface water quality monitoring points within the landfill are used to monitor water quality from distinct drainage areas and within the ditch network. Surface water samples are collected quarterly from boundary compliance monitoring points and most routine monitoring points, but samples cannot be collected when watercourses are dry.

In 2025/26, surface water monitoring location SW-S-52 was reactivated. The CRD also collected additional surface water samples from two locations that receive runoff directly from the Northeast Stockpile (SW-N-Agg Drain and SW-E-Agg Pump) in February 2026. Overall, surface water samples were collected from 31 monitoring locations (seven compliance and 24 additional locations), and the analytical results are presented in **Appendix H-3**. Surface water sampling points utilized in the 2025/26 monitoring program include:

North of Phase 1 and Phase 2

- SW-N-05 - compliance
- SW-N-14
- SW-N-15
- SW-N-16 - compliance
- SW-N-17
- SW-N-18
- SW-N-19
- SW-N-45
- SW-N-54
- SW-N-55 - compliance
- SW-N-56 - compliance
- SW-N-57
- SW-N-63
- SW-N-64
- SW-N-65
- SW-N-Agg Drain
- SW-E-Agg Pump

North of the Hartland North Pad

- SW-N-41S1 - compliance
- SW-N-41S3
- SW-N-41S4
- SW-N-42S1 - compliance
- SW-N-CS2

South and West of the Landfill

- SW-S-03
- SW-S-04 - compliance
- SW-S-12
- SW-S-20
- SW-S-21
- SW-S-24
- SW-S-27

Northwest Stockpile Overflow

- SW-N-58
- SW-N-59
- SW-N-60
- SW-N-61

Background

- SW-N-66
- SW-S-52

The surface water monitoring stations within the Northwest Stockpile overflow system are active but can only be sampled during extreme precipitation events when overflows are present. No samples were collected from these stations in 2025/26.

7.2 Compliance Monitoring Locations

Seven surface water compliance monitoring stations surround Hartland Landfill (**Figure 7-1**). These stations are concentrated along the southern and northern property boundaries, downgradient of areas that could potentially be impacted by leachate or runoff from the landfill. The following Boundary Compliance stations are monitored to assess landfill compliance with the Hartland's operating permit:

North of Phases 1 and 2

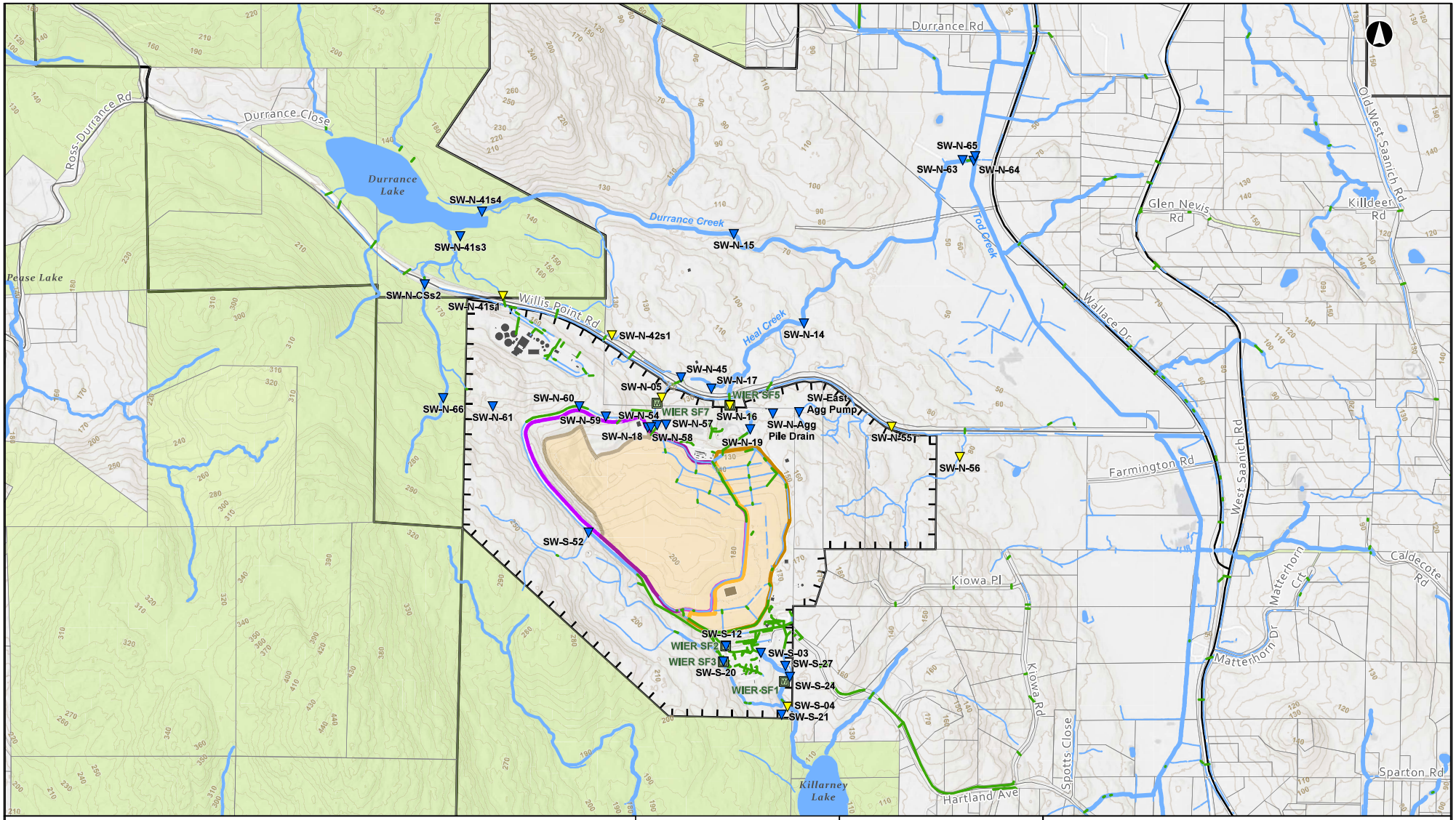
- SW-N-05
- SW-N-16
- SW-N-55
- SW-N-56

North of the Hartland North Pad

- SW-N-41S1
- SW-N-42S1

South of the Landfill

- SW-S-04



LEGEND

Surface Water Monitoring Station
- Compliance
- Non-Compliance
- Weir Location

- Phase 1 Closure (1997)
- Phase 2 Base
- Local Government Boundary
- Existing Waste Footprint
- Park
- Structure

- Primary Stream or Ditch
- Secondary Stream or Ditch
- Tertiary Stream or Ditch
- Gravity Main
- Contour (10m)
- Lot Lines
- Site Boundary

Surface Water Bodies and Sampling Locations

Figure 7-1

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Hartland Landfill Monitoring Report

1:12,500
NAD83 UTM Zone 10N

June 2026

CRD
Making a difference...together

0 125 250 500 750 1000 1250 M

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7.3 Assessment of Surface Water Quality

The primary potential causes of surface water quality degradation at the site include landfill leachate, road salt application, and aggregate runoff. The solutes used to identify impacts associated with these activities include ammonia, chloride, sulphate, nitrate, and electrical conductivity. Professional judgement is used to differentiate between different contaminant sources and to assess the nature and severity of any impacts. Surface water quality may be judged to be impacted relative to background without exceeding regulatory criteria. If surface water quality at compliance monitoring points at the site does not meet the BCWQG criteria for the protection of freshwater aquatic life, standard CSR protocols for notification of affected property owners should be followed.

The 2025/26 surface water quality data were interpreted with consideration for the following:

Background Conditions:

- Background conductivity in surface water is typically below 200 µS/cm but has been observed at higher levels at some locations during periods of low flow, or after periods of prolonged dry weather.
- Background ammonia and nitrate concentrations are typically below 0.01 mg/L but occasionally exceed 0.1 mg/L in wetland areas.
- Background chloride concentrations are typically below 10 mg/L.
- Background sulphate concentrations are typically below 10 mg/L but often increase in the downstream direction as streams receive groundwater discharge.

Impact Criteria:

- Leachate: Surface water is considered impacted by leachate when electrical conductivity exceeds 500 µS/cm, ammonia concentrations exceed 0.5 mg/L and chloride concentrations exceed 20 mg/L. Peak concentrations of these parameters are typically observed during the dry summer and early fall months, when flows are low and there is limited dilution by precipitation.
- Aggregate Runoff: Surface water is considered impacted by aggregate (e.g., production, stockpiling or site construction works) when nitrate concentrations are greater than background levels (~0.1 mg/L) and leachate indicator concentrations are low. In recent years, elevated nitrate concentrations have been observed in the absence of elevated sulphate concentrations. However, elevated sulphate concentrations may occur over a greater period and potentially after nitrate concentrations have subsided. Peak nitrate and sulphate concentrations are typically observed during the first sampling event following the onset of wet weather in the fall months following aggregate stockpiling or blasting activities. Aggregate geochemistry results from 2023 are provided in **Appendix F**.
- Road Salt: Surface water is considered impacted by road salt when chloride concentration is elevated above background levels (i.e., 20 mg/L), and the molar ratio of chloride to sodium is around 1.0 or greater. Cl/Na molar ratios in road salt are generally 1:1, assuming 100% compositional purity. Cl/Na ratios may be greater than 1.0 due to differential ion mobility and inputs from natural or anthropogenic sources. Road salt-impacted sites must also be located downgradient (or downstream) of surfaces where road salt is known to be applied. Conductivity and chloride concentrations typically exhibit peaks following cold weather periods when de-icing salt is often applied to roadways.
- Magnesium Lignosulphonate: Magnesium lignosulphonate has been used as a dust suppressant at the site and likely has an impact on groundwater quality similar to aggregate runoff because it contains nitrogen and sulphur. Additionally, it exhibits elevated iron and manganese concentrations. Laboratory testing indicated that the dust suppressant exhibited elevated conductivity (520 µS/cm), ammonia (51 mg/L), and total sulphur concentrations (83.7 mg/L) in the aqueous phase (**Appendix G**). Between July and September 2025, approximately 7,000 litres of magnesium lignosulphonate was applied at the site.

The CRD determined that ammonia concentration data collected throughout 2023 was invalid because the bottles used to collect the samples were over-preserved. Hence, ammonia concentration data collected in 2023 has been excluded from any interpretation/analysis, and the concentrations are shaded in out in all surface water quality timeseries figures.

7.4 Background Surface Water Quality

The CRD has monitored background surface water quality at numerous locations over the years, forming a robust dataset which was used to establish a background surface water chemistry profile for evaluating surface water quality at the site

(**Section 7.3**). At present, background surface water quality is monitored at locations SW-S-52 and SW-N-66. Historically, background surface water quality was also monitored at location SW-N-CSs2, but dilute aggregate runoff impacts (e.g., elevated nitrate concentrations) have been observed at this location since 2022/23. SW-S-52 is at a relatively high elevation (~205 m asl) and is located west of High Level Road within a creek that drains to the South Diversion Ditch. SW-N-66 is located upstream of the Northwest Stockpile and is at a slightly higher elevation (~225 m asl) than SW-S-52. The CRD began sampling SW-N-66 in 2023/24, although the sampling frequency is typically low as dry or low-flow conditions often persist throughout the year at this location.

In 2025/26, one surface water sample was collected at SW-N-66. Dissolved copper concentration (0.52 µg/L) exceeded the BCWQG LTC guideline, but no other exceedances were reported at this location. Surface water at SW-N-66 exhibited low to non-detectable ammonia (<0.02 mg/L), chloride (3.70 mg/L), and sulphate (5.40 mg/L) concentrations, and conductivity was 87 µS/cm. Nitrate concentration (0.11 mg/L) was marginally elevated above background levels. Mann-Kendall analysis determined that concentrations of all indicator parameters were stable. The surface water exhibited exceptionally low solute concentrations and no evidence of aggregate runoff impacts.

Two surface water samples were collected at SW-S-52 in 2025/26, and water quality met all applicable BCWQG criteria. Average chloride (6.15 mg/L), ammonia (<0.02 mg/L), nitrate (0.02 mg/L), and sulphate (6.65 mg/L) concentrations were low to non-detectable, and average conductivity (114 µS/cm) was also low. Mann-Kendall analysis determined that concentrations of all indicator parameters were stable. Solute concentrations were low overall, and the surface water quality did not exhibit any impacts from aggregate runoff.

Due to the relatively high elevations of SW-S-52 and SW-N-66, the surface water quality at these locations is likely similar to that of local rainwater and may not capture the geochemical signatures of background gas-water-rock interactions. Monitoring location SW-N-41S4 is not a background monitoring point and receives water from multiple sources, but the water quality observed here is a good proxy for a relatively evolved background water quality signature. SW-N-41S4 is at a relatively low elevation (~135 m asl), at the discharge point from Durrance Lake, downstream of the landfill. Compared to SW-S-52 and SW-N-66, SW-N-41S4 receives runoff from a relatively large area and is at the base of several flow paths and streams, so surface water quality at SW-N-41S4 is more evolved geochemically, exhibiting higher solute concentrations and conductivity.

In 2025/26, four surface water samples were collected at SW-N-41S4. Concentrations of leachate and aggregate runoff indicator parameters were low to non-detectable. No BCWQG exceedances were reported at this location. Average conductivity was 190 µS/cm, average chloride concentration was 7.80 mg/L, and average nitrate and sulphate concentrations were 0.03 and 7.33 mg/L, respectively. Mann-Kendall analysis determined that concentrations of all indicator parameters were stable. No aggregate runoff or leachate impacts were observed at this location.

7.5 Overview of Exceedances

Surface water analytical results were compared to the approved and working BCWQG AW criteria in **Appendix H-3**. A summary of surface water exceedances (LTC and STA exceedances) is presented in **Table 7-1**. In 2025/26, surface water quality data met the BCWQG STA for all parameters except for:

- pH (3 samples)
- Nitrate (1 sample)
- Total iron (5 samples)
- Dissolved copper (4 samples)
- Dissolved iron (5 samples)

The trace metal exceedances likely reflect natural mineral dissolution, or low flow and turbulent sampling conditions at the time of sampling. Dissolved copper concentration exceedances are sometimes reported at background monitoring locations (e.g., SW-N-66) and other sampling locations with no evidence of water quality impacts associated with landfill operations. Elevated copper concentrations have been observed at several monitoring locations both onsite and in the downstream receiving environment, with the highest concentrations occurring north of the Phase 1 and 2 landfills. Nutrient exceedances are interpreted to reflect impacts due to runoff from the aggregate stockpiles.

Surface water quality compliance station SW-N-16 exhibited elevated dissolved copper concentration that exceeded the BCWQG STA during one sampling event, and the pH measured at compliance monitoring point SW-N-56 was marginally below the BCWQG STA during one sampling event. Otherwise, surface water quality at compliance monitoring stations met all BCWQG STA criteria in 2025/26.

Table 7-1. Surface Water Quality Exceedances 2025-2026

B.C. Water Quality Guidelines				BC WQG-STA (1)	6.5-9.0	25 (4)	0.06-0.6 (2)	32.8		1000		BC BLM (5)	350	Variable (3)	BC BLM (5)	Variable (6)
				BC WQG-LTC (1)		5 (4)	0.02-0.2 (2)	3	Variable (7)		Variable (3)	BC BLM (5)		Variable (7)	BC BLM (5)	Variable (7)
BC CSR Protocol 11				AW Upper Cap Concentration (8)			2-20	4000								
Station	Sample Type	Compliance Point (Y/N?)	Date Sampled	Parameter	pH	Total Suspended Solids (TSS)	Nitrogen - Nitrite	Nitrogen - Nitrate	Aluminum	Iron	Cobalt	Copper	Iron	Manganese	Nickel	Zinc
				Fraction	---	TOT	DIS	DIS	TOT	TOT	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	pH	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				Method Detection Limit	0.1	1	0.025	0.02	0.5	1	0.005	0.05	1	0.05	0.02	0.1
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	7.07	1.60	< 0.005	0.222	39.6	54.6	0.033	1.53 b	6.65	0.390	0.651	4.08
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	7.32	< 1.50	< 0.005	2.66	76.3	101	0.075	2.26 b	10.5	1.15	0.99	2.57
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	6.71	< 1.00	< 0.005	1.36	50.1	73.6	0.068	1.58 b	5.70	1.31	1.05	2.94
SW-N-14	SS	N	2026-02-02	High flow, clear and colourless	7.37	2.80	< 0.005	2.97	104	214	0.148	2.89 b	26.1	2.49	0.754	1.26
SW-N-15	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.32 & ORP -10.9	7.41	< 1.00	< 0.005	0.136	4.80	5.30	0.012	0.889 b	12.6	1.54	0.161	6.18
SW-N-16	SS	Y	2025-12-02	Moderately high flow, clear and colourless	6.86	< 1.00	0.061	7.21 b	46.7	243	0.480	6.66 b	120	103	2.06	10.7
SW-N-16	SS	Y	2026-02-03	High flow, clear and colourless	7.01	< 1.00	0.018	7.30 b	65.1	182	0.575 b	12.3 a b	121	47.7	2.94	9.04
SW-N-18	SS	N	2025-12-02	Moderate flow, clear and colourless	6.63	1.60	< 0.005	1.95	23.4	52.9	0.550	0.387 b	23.4	81.4	2.94	3.26
SW-N-18	SS	N	2026-02-03	High flow, clear and colourless	6.55	< 1.00	< 0.005	1.08	9.27	53.9	0.528	1.24 a b	38.2	50.2	2.35	3.20
SW-N-19	SS	N	2025-12-02		7.92	< 1.00	0.040	9.59 b	14.1	41.2	0.580	11.8 b	36.7	13.0	3.12	2.67
SW-N-19	SS	N	2026-02-03		7.12	< 1.00	0.032	9.58 b	68.6	96.3	0.591 b	20.8 a b	29.2	3.48	3.70	4.13
SW-N-41S1	SS	Y	2025-05-06	Low flow, clear and colorless	8.11	12.0 b	< 0.005	0.291	188	352	0.042	1.27	19.8	28.2	0.257	1.26
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	7.78	6.60 b	< 0.005	0.616	139	306	0.060	0.214	28.7	58.1	0.103	0.375
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	7.52	8.40 b	< 0.005	0.417	157	237	0.035	0.212	14.6	23.9	0.078	0.410
SW-N-41S3	SS	N	2025-09-23	Low flow, clear and colourless	7.92	5.60 b	< 0.005	0.076	27.9	28.8	0.013	0.490	5.40	1.93	0.120	1.27
SW-N-45	SS	N	2025-12-01	Moderate Flow, clear and colourless	7.21	1.20	< 0.005	2.41	8.30	31.0	0.112	1.18 b	23.0	5.36	0.317	0.820
SW-N-45	SS	N	2026-02-02	High flow, clear and colourless	7.24	2.00	< 0.005	0.962	65.5	96.6	0.089	1.18 b	18.3	4.72	0.515	1.22
SW-N-54	SS	N	2025-12-02	Moderate flow, very slightly yellow	7.28	1.60	0.073	33.0 a b	61.7	117	0.411	20.4 b	72.5	102	2.17	0.630
SW-N-54	SS	N	2026-02-03	High flow, clear and colourless	7.43	15.0 b	0.012	5.37 b	662 b	1230 a	0.229	15.6 b	22.2	28.9	1.53	0.610
SW-N-56	SS	Y	2026-02-03	High flow, clear and colourless	6.29 a	< 1.00	0.007	1.03	46.5	36.6	0.124	0.766 b	23.0	6.70	0.166	13.6
SW-N-57	SS	N	2025-05-05	Moderate flow, clear and colorless	6.24 a	< 1.00	< 0.005	0.718	3.60	10.6	0.125	0.508 b	7.30	31.3	1.01	1.70
SW-N-63	SS	N	2025-05-05	Moderate flow, clear and colorless	7.17	3.60	< 0.005	0.067	47.8	701	0.349	0.763	468 a	89.6	0.773	0.660
SW-N-63	SS	N	2025-12-01	Moderate Flow, clear and colourless	7.48	2.00	< 0.005	0.560	43.0	184	0.142	1.66 b	98.8	18.3	0.670	3.35
SW-N-63	SS	N	2026-02-02	High flow, clear and colourless	6.80	1.20	< 0.005	0.631	171 b	230	0.096	1.65 b	90.6	13.4	0.508	2.74
SW-N-64	SS	N	2025-05-05	Moderate flow, clear and colorless	6.79	2.80	0.005	0.071	65.2	1540 a	1.06 b	3.16 b	1200 a	288 b	1.88	3.18
SW-N-64	SS	N	2026-02-02	High flow, clear and very slightly yellow	6.60	2.80	< 0.005	0.277	334 b	547	0.158	1.90 b	250	15.3	0.829	1.88
SW-N-65	SS	N	2025-05-05	Moderate flow, clear and colorless	6.87	3.20	< 0.005	0.152	53.0	1370 a	0.835 b	1.95 b	978 a	236	1.68	2.39
SW-N-65	SS	N	2026-02-02	High flow, clear and very slightly brown	6.53	4.40	0.005	0.323	323 b	503	0.152	1.82 b	227	15.2	0.795	1.89
SW-N-66	SS	N	2026-02-02	Low flow, clear and colourless	7.22	< 1.00	< 0.005	0.112	17.0	8.00	0.022	0.520 b	3.20	0.121	0.029	0.770
SW-S-03	SS	N	2025-05-06	Moderate flow, clear and colorless	7.25	5.20 b	0.178	2.58	80.5	772	1.75 b	8.73 b	272	779 b	7.88 b	7.50
SW-S-03	SS	N	2025-12-03	Moderately high flow, clear and colourless	7.46	7.20 b	0.038	3.16 b	302 b	546	0.191	6.76 b	31.1	40.4	2.19	7.02
SW-S-03	SS	N	2026-02-04	Moderately high flow, clear and colourless	6.78	< 1.00	0.036	1.93	186 b	596	0.474	6.70 a b	240	173	1.78	10.9
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	6.97	< 1.00	< 0.005	0.365	45.2	58.4	0.055	1.06 b	3.60	1.19	0.248	1.41
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	7.72	< 1.30	< 0.005	1.14	34.5	40.6	0.078	1.80 b	8.25	0.644	0.548	2.57
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	7.31	< 1.20	0.010	0.913	65.0	81.5	0.051	1.88 b	21.1	2.25	0.403	4.04
SW-S-12	SS	N	2025-05-06	Moderate flow, clear and colorless	7.08	13.0 b	0.215 b	2.11	396 b	2600 a	11.2 b	23.4 b	962 a	3180 b	25.5 b	30.9
SW-S-12	SS	N	2025-12-03	Moderate flow, clear and colourless	7.19	8.40 b	0.046	5.53 b	396 b	781	0.488	13.5 b	61.1	148	5.85	9.69
SW-S-12	SS	N	2026-02-04	Moderately high flow, clear and colourless	6.33 a	< 1.00	0.040	2.66	43.8	682	0.786 b	8.75 a b	610 a	296	2.55	7.75
SW-S-21	SS	N	2026-02-04	Moderately high flow, clear and colourless	7.56	< 1.10	< 0.005	0.064	51.2	32.1	0.045	1.05	29.2	0.391	0.185	7.45 b
SW-S-24	SS	N	2025-05-05	Low flow, clear and colorless	7.47	1.20	< 0.005	0.117	22.0	50.6	0.151	1.56 b	12.9	100.0	0.492	2.97
SW-S-24	SS	N	2025-12-03	Moderate flow, clear and colourless	7.35	2.00	0.010	1.08	83.0	137	0.102	3.00 b	18.3	5.69	0.982	16.5
SW-S-24	SS	N	2026-02-04	High flow, clear and colourless	7.20	< 1.00	0.040	1.63	52.8	110	0.113	3.20 b	32.1	22.3	0.846	3.77
SW-S-27	SS	N	2025-05-06	Low flow, clear and colorless	7.94	18.0 b	< 0.005	1.69	633 b	1240 a	0.135	4.35 b	27.3	2.52	1.14	1.74
SW-S-27	SS	N	2025-12-03	Moderate flow, clear and colourless	7.43	4.40	0.034	1.75	187	317	0.128	4.00 b	50.7	7.94	1.20	4.03
SW-S-27	SS	N	2026-02-04	Moderately high flow, clear and colourless	7.30	< 1.00	0.081	2.44	60.7	140	0.200	5.26 b	58.5	62.4	1.37	8.37
SW-N-Agg Pile Drain	SS	N	2025-12-02	Low flow, clear and colourless	7.51	1.20	< 0.005	5.03 b	18.9	22.6	0.109	1.21	11.1	1.69	0.919	1.25
SW-N-Agg Pile Drain	SS	N	2026-02-03	Low flow, clear and colourless	7.14	< 1.00	< 0.005	1.69	24.9	28.2	0.068	1.24 b	3.00	0.879	0.727	0.580
SW-E-Agg Pump	SS	N	2026-02-03	Clear and colourless	7.24	< 1.00	< 0.005	0.804	34.4	38.7	0.053	2.09 b	7.50	0.570	0.440	4.05
SW-FB	FB	N	2025-09-23	Decanted on the tailgate at Hartland North	8.66	< 1.00	< 0.005	< 0.020	< 0.500	< 1.00	0.013	0.400 b	12.3	1.02	0.206	7.34 a b
SW-FB	FB	N	2025-12-03		8.84	< 1.00	< 0.005	0.027	< 3.00	< 5.00	< 0.005	0.072	22.5	0.202	0.023	0.170 b
SW-FB	FB	N	2026-02-04	Clear and colourless	---	< 1.00	< 0.005	< 0.020	< 0.500	< 1.00	< 0.005	< 0.050	< 1.00	< 0.050	< 0.020	0.490 a

Notes:

a — *Above short-term acute (STA) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*

b — *Above long-term chronic (LTC) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*

FB — *Field blank.*

FRM — *Field replicate mean (average of field replicates).*

SS — *Single sample.*

(1) — *British Columbia Approved Water Quality Guidelines (Criteria), Updated February 2026.*

(2) — *Guideline is chloride dependent.*

(3) — *Guideline is hardness dependent.*

(4) — *The TSS guidelines are "change from background" and flow condition dependent. The background TSS in the landfill are derived from station Sw-S-52.*

(5) — *Dissolved copper and nickel guidelines vary with water hardness, temperature and DOC, and calcuated using BLM*

(6) — *Guideline is hardness and DOC dependent.*

(7) — *Guideline is pH, hardness, and DOC dependent.*

(8) — *Upper cap concentrations for water in BC are established under Protocol 11 of the Environmental Management Act's Contaminated Sites Regulation (CSR). These concentrations are defined as maximum levels that, when exceeded, indicate potential high risks to the environment or human health.*

7.6 Surface Water Quality North of Phase 1 and 2

Clean runoff from Phase 1 and the eastern perimeter of the landfill is directed to the NWSP and then into the wetland located north of the Lower Leachate Lagoon. The wetland discharges northward to Heal Creek. Heal Creek also receives drainage from the area north of Phase 2 (e.g., the High Level Road ditch), and from a stream draining a small wetland east of the Hartland North Pad. In June 2018, aggregate and piping were added to sections of the High Level Road ditch to protect the ditch from nearby construction and mitigate ponding, which may contribute to elevated concentrations of sulphate in surface drainage over time. Heal Creek flows northeast and into Durrance Creek, which discharges into Tod Creek. About 3 km north of the site, Tod Creek discharges into Tod Inlet. Heal Creek is a small creek with a watershed area of approximately 128 ha. Heal Creek is mainly steep and rocky, although the creek passes through a few small wetlands. The creek dries up during the summer months except in the lower reaches where groundwater discharge maintains flow year-round.

Figures 7-2 and 7-3 present solute concentration and conductivity trends observed at surface water monitoring stations in the north area of the landfill and beyond the northern property boundary. In **Figure 7-2**, the distance of each station from the landfill boundary is shown in brackets in the legend. Surface water compliance monitoring points in this area of the landfill include SW-N-05, SW-N-16, SW-N-55, and SW-N-56.

7.6.1 Onsite Surface Water Quality

A considerable amount of quarrying and blasting has been performed northwest of Phase 2 to provide airspace for refuse and develop Cells 4 and 5. Quarrying produced large quantities of aggregate that is stored at the Northwest Stockpile and Northeast Stockpile. Runoff from the Northwest Stockpile is captured predominantly by the Phase 2 leachate collection system and a ditch network surrounding Phase 2. However, some aggregate was placed outside of the Phase 2 basin catchment, so some of the runoff flows radially to the northeast. Aggregate runoff impacts (i.e., elevated conductivity, nitrate, and sulphate concentrations) caused by leaching of ANFO residue from the aggregate are prevalent around the Northwest Stockpile and north of Phase 1 and 2.

7.6.1.1 SW-N-18, SW-N-54, and SW-N-57

SW-N-18, SW-N-54, and SW-N-57 are located north of Phase 2. SW-N-54 monitors discharge from the freshwater retention pond at the northern boundary of Phase 2 to Cell 1 and the NWSP. SW-N-18 and SW-N-57 are pipe outlets that discharge into the NWSP and the west end of the Upper Leachate Lagoon, respectively. The outlets are controlled with a valve and receive captured surface runoff from Shane's Pond, the Toutle Valley, and the northern extent of the High Level Road ditch. Runoff from these areas exhibited impacts from the Northeast Stockpile and was previously discharged into the Upper Leachate Lagoon (SW-N-57) to mitigate aggregate runoff impacts in the receiving environment. However, following favourable water quality results, discharge was redirected to the NWSP (SW-N-18) in July 2025. The CRD monitors water quality at this station monthly to confirm ongoing compliance.

In 2025/26, one sample was collected from SW-N-57 in May 2025, and two samples were collected from SW-N-18 in December 2025 and January 2026. Samples were not collected between these dates due to dry conditions. The BCWQG STA criteria for pH and LTC criteria for dissolved copper were exceeded at SW-N-57. Dissolved copper concentrations exceeded BCWQG LTC criteria at SW-N-18 during both sampling events and additionally exceeded STA criteria in January 2026. Average conductivity (640 µS/cm) was elevated, as well as average nitrate (1.25 mg/L) and sulphate (190 mg/L) concentrations. Leachate indicator parameter concentrations were low throughout the monitoring period. Mann-Kendall analysis detected a statistically significant increasing trend in sulphate concentrations at SW-N-18 and a decreasing trend in nitrate concentrations at SW-N-57.

At SW-N-54, BCWQG STA exceedances were reported for nitrate (1) and total iron (1) concentrations, and LTC exceedances were reported for TSS (1), nitrate (2), total aluminium (1), cobalt (2), and dissolved copper concentrations (2). Elevated conductivity, chloride, nitrate, and sulphate concentrations were observed in December 2025 and may be related to nearby grading activities on the Cell 4 Hall Road and Northwest Slope Road, which temporarily caused runoff to be directed into the Phase 2 Cell 1 retention pond that discharges to the NWSP (via SW-N-54). Water quality improved following regrading to direct runoff away from the retention pond and into the leachate collection system, although concentrations of nitrate and sulphate remained elevated. Mann-Kendall analysis detected a statistically significant increasing trend in nitrate concentrations at this location. Overall, water quality in this area reflects aggregate runoff impacts.

7.6.1.2 SW-N-19

SW-N-19 is located within the landfill property below the northeast freshwater retention pond, approximately 80 m east of the Lower Leachate Lagoon and upstream of SW-N-16. This monitoring point receives runoff primarily from the bedrock/refuse interface adjacent to Phase 1. For several years, surface water at SW-N-19 has been impacted by aggregate runoff.

Two surface water samples were collected from SW-N-19 in 2025/26, and surface water quality at this location continued to exhibit elevated aggregate runoff parameters and trace metal concentrations. Dissolved copper concentrations exceeded the BCWQG STA on one sampling event in February 2026, and the LTC guidelines for nitrate and copper were exceeded during both sampling events. One LTC exceedance was also reported for dissolved cobalt. The average nitrate and dissolved copper concentrations were 9.59 mg/L and 16.3 µg/L, respectively. The average conductivity was 337 µS/cm, and the average sulphate concentration was 56 mg/L. Leachate indicator parameter concentrations were low. Mann-Kendall analysis detected statistically significant increasing trends in nitrate and chloride concentrations at this location.

7.6.1.3 SW-N-Agg Drain and SW-E-Agg Pump

The SW-N-Agg Drain and SW-E-Agg Pump sampling points are immediately downgradient of the Northeast Stockpile. These locations monitor the effectiveness of the hydraulic containment system around the stockpile, which aims to mitigate downstream surface water quality impacts related to aggregate storage and crushing. SW-N-Agg Drain is along a drainage channel that collects runoff from a portion of the Northeast Stockpile and conveys it to the Lower Lagoon. Runoff from the adjacent catchment of the Northeast Stockpile drains into a natural pond north of the stockpile and is diverted to the leachate collection system by a pump. The CRD began collecting surface water samples from this location (SW-E-Agg Pump) in January 2026.

In 2025/26, three surface water samples were collected from SW-N-Agg Drain. The sample collected in Q2 2025 exhibited relatively low solute concentrations overall, with all aggregate runoff and leachate indicator parameters below threshold concentrations. No sample was collected in Q3 2025 due to dry conditions. Comparatively, the surface water quality in Q4 2025 and Q1 2026 exhibited elevated average conductivity (624 µS/cm), nitrate (3.36 mg/L), and sulphate (305 mg/L) concentrations. Concentrations of nitrate in December 2025 and dissolved copper in February 2026 (1.24 µg/L) exceeded BCWQG LTC criteria. These surface water samples were directly impacted by aggregate in the Northeast Stockpile.

One surface water sample was collected from SW-E-Agg Pump in January 2026, and concentrations of nitrate (0.80 mg/L), sulphate (160 mg/L), and conductivity (392 µS/cm) were moderate to elevated. Dissolved copper concentration (2.09 µg/L) exceeded the BCWQG LTC criteria. Concentrations of leachate indicator parameters were low. Surface water quality at this location was impacted by aggregate runoff from the Northeast Stockpile.

7.6.2 Compliance Monitoring Points

7.6.2.1 SW-N-05 and SW-N-16

West of the Upper Leachate Lagoon and north of Phase 2, Heal Creek collects runoff from the Phase 2 area, the Northwest Stockpile and North Ridge, and a small wetland just south of Willis Point Road. SW-N-05 is located upstream of the wetland. A culvert beneath the road directs surface water to the north, where it later converges with surface water flowing from the culvert at SW-N-16. In recent years, surface water quality at SW-N-05 has been impacted by aggregate runoff and potentially some landfill leachate, exhibiting elevated conductivity, sulphate, ammonia, nitrite, and nitrate concentrations.

In 2025/26, three surface water samples were collected from SW-N-05. Water quality met BCWQG STA criteria but continued to exhibit aggregate runoff impacts. Dissolved copper concentrations exceeded the BCWQG LTC on all three sampling events, averaging 1.79 µS/cm. Average conductivity (661 µS/cm), nitrate (1.41 mg/L), and sulphate (240 mg/L) concentrations were elevated. Concentrations of leachate indicator parameters were low. Mann-Kendall analysis detected statistically significant decreasing trends in ammonia and nitrate concentrations at this location.

Since 2022/23, nitrate and ammonia concentrations at SW-N-05 have subsided, but sulphate concentrations and conductivity have increased. It is AECOM's interpretation that the bulk of ANFO residue in the Northwest Stockpile has been leached by precipitation, and a sulphate plume is now daylighting at this location. This trend likely reflects the differing reaction rates of ANFO leaching and sulphide oxidation in the stockpile. ANFO leaching occurs rapidly as precipitation contacts the aggregate, whereas sulphide oxidation is a slower process driven by oxygen influx and oxidation of sulphide minerals in the rock. Nitrate concentrations may continue to subside at SW-N-05, and sulphate concentrations and conductivity may continue to increase.

There is a small wetland north of Phase 1 and the Lower Leachate Lagoon where surface water flows north and through a weir (weir SF5) at SW-N-16 before discharging into a culvert beneath Willis Point Road and then to Heal Creek. SW-N-16 is located at the landfill property boundary and is utilized as a compliance monitoring point. In recent years, surface water at SW-N-16

has exhibited high conductivity, nitrate, sulphate, and trace metal concentrations, reflecting aggregate runoff impacts. Aggregate is stored just upgradient of SW-N-16 at the Northeast Stockpile and Triangle Stockpile, where aggregate products are processed and stored for construction purposes.

Two surface water samples were collected from SW-N-16 in 2025/26, and water quality continued to exhibit aggregate runoff impacts. Nitrate and dissolved copper concentrations exceeded the BCWQG LTC during both sampling events, and an additional LTC exceedance was reported for dissolved cobalt. Dissolved copper concentrations also exceeded the BCWQG STA on one sampling event. The average nitrate and sulphate concentrations were 7.26 and 52.5 mg/L, respectively, and the average conductivity was 318 µS/cm. Leachate indicator parameter concentrations were low. Mann-Kendall analysis detected statistically significant increasing trends in chloride and nitrate concentrations at this location.

Since 2022/23, conductivity and nitrate concentrations have increased at SW-N-16, but sulphate concentrations have been relatively stable, exhibiting seasonal fluctuations from moderate to elevated values. It is AECOM's interpretation that elevated nitrate and sulphate concentrations reflect ANFO leaching and sulphide oxidation in the Northeast Stockpile, similar what has been observed downgradient of the Northwest Stockpile at SW-N-05. The difference in surface water quality among these locations likely reflects the timing of aggregate deposition and the volume of material stored in each stockpile.

7.6.2.2 SW-N-55 and SW-N-56

In 2023, the CRD reactivated surface water sampling locations SW-N-55 and SW-N-56. SW-N-55 is located north and immediately downstream of the Northeast Stockpile and predominantly receives runoff from the stockpile. SW-N-56 is located east and downstream of the Northeast Stockpile and receives runoff from the stockpile and a large area east of Phase 1. Surface water in this area flows east toward Tod Creek. Both locations were recognized as compliance monitoring points in 2024/25.

In 2025/26, two surface water samples were collected at SW-N-55, and water quality met all applicable BCWQGs. Average nitrate (1.00 mg/L) and sulphate (156 mg/L) concentrations were elevated. Leachate indicator parameter concentrations were low. Mann-Kendall identified a statistically significant decrease in nitrate concentrations. The surface water at this monitoring location continues to be impacted by aggregate runoff.

Two surface water samples were collected at SW-N-56 in 2025/26. Water quality generally met BCWQGs except in one sample collected in February 2026, which exceeded the LTC guideline for dissolved copper and was marginally below the STA guideline for pH. Average conductivity (326 µS/cm) was moderate, while nitrate and sulphate concentrations were elevated, averaging 0.75 and 139 mg/L, respectively. Leachate indicator parameter concentrations were low to non-detectable. Mann-Kendall statistical analysis detected increasing trends in conductivity and sulphate concentrations. The surface water at this monitoring location was impacted by ANFO leaching and sulphide oxidation.

7.6.3 Surface Water Quality in the Receiving Environment

7.6.3.1 SW-N-45 and SW-N-17

SW-N-45 is located north of Phase 2, outside the landfill property boundary and on the north side of Willis Point Road, downstream of SW-N-05. Historically, SW-N-45 has exhibited aggregate runoff impacts.

In 2025/26, SW-N-45 was sampled twice, and aggregate runoff impacts persisted. No BCWQG STA exceedances were reported, but LTC exceedances were reported for dissolved copper on both sampling events. Nitrate and sulphate concentrations were consistently elevated, with averages of 1.69 and 230 mg/L, respectively. Although concentrations of copper and nitrate are elevated, they appear to be gradually decreasing over time. Average conductivity was elevated at 693 µS/cm. Leachate indicator parameters were present in low concentrations. Mann-Kendall analysis detected a statistically significant increase in conductivity and a decrease in chloride concentrations at this location.

SW-N-17 is located approximately 100 m downstream of SW-N-45, prior to where Heal Creek converges with surface water flowing from compliance monitoring point SW-N-16. Surface water quality at SW-N-17 was similar to SW-N-45, with elevated average conductivity (489 µS/cm), nitrate (0.81 mg/L) and sulphate concentrations (170 mg/L). Elevated chloride concentrations were observed in December 2025, which may represent impacts from winter road salt application. Mann-Kendall analysis identified a statistically significant increasing trend in sulphate concentrations and a decreasing trend in nitrate concentrations at this location.

7.6.3.2 SW-N-14

Surface water monitoring location SW-N-14 is located offsite, north of Willis Point Road and within the Heals Rifle Range, downstream of the confluence of Heal Creek and surface water flowing from SW-N-16. Similar to the upstream sampling

locations (SW-N-05, SW-N-45, SW-N-17, and SW-N-16) surface water at SW-N-14 exhibited aggregate runoff impacts in 2025/26, with elevated average conductivity (331 µS/cm), nitrate (1.61 mg/L), and sulphate concentrations (86.7 mg/L). No BCWQG STA exceedances were reported, but dissolved copper concentrations exceeded LTC criteria on one sampling event. Chloride concentrations were moderate to elevated and ammonia concentrations were below detection limits. Mann-Kendall analysis did not detect any statistically significant solute concentration trends.

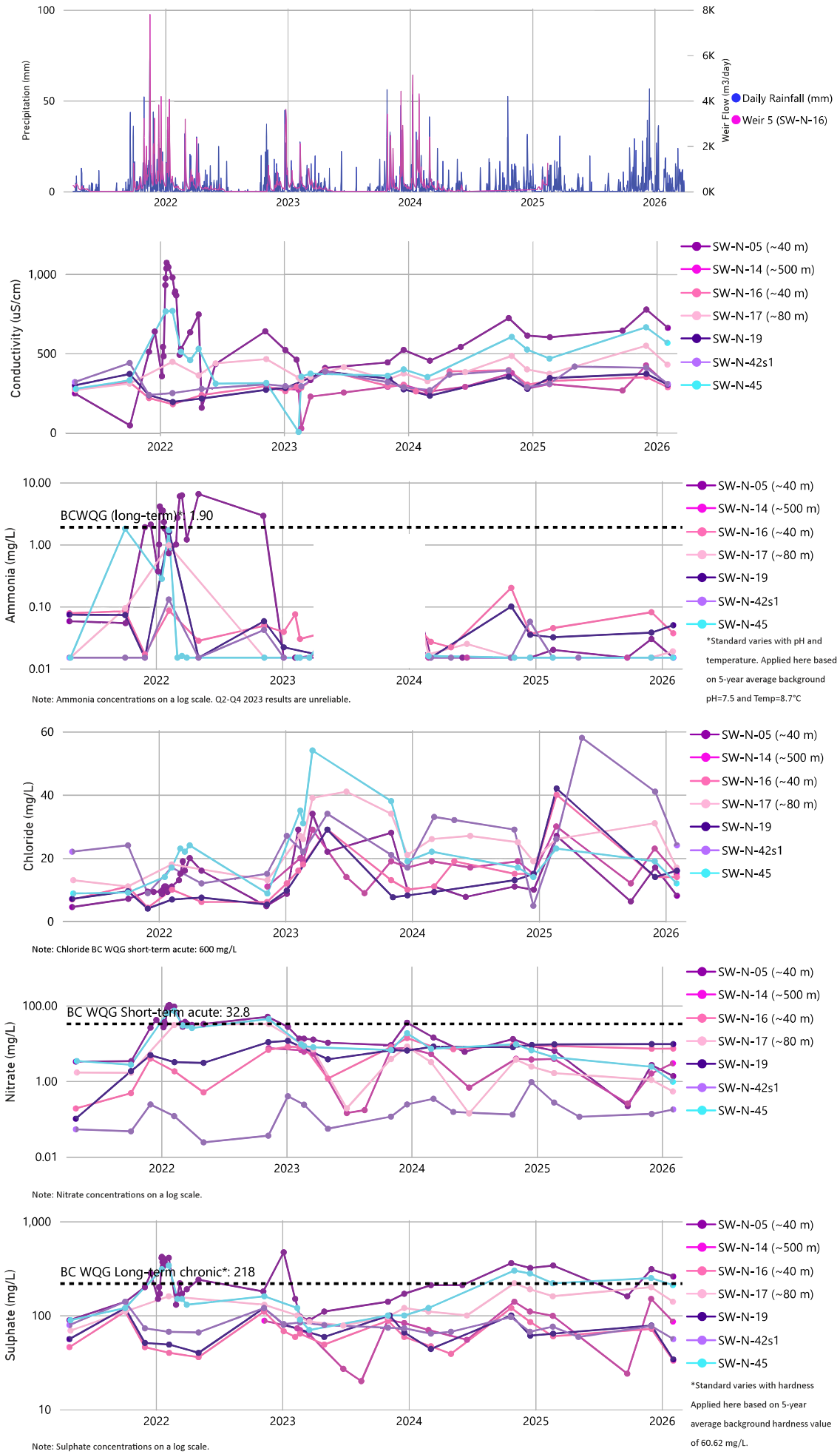


Figure 7-2. Surface Water Quality North of Phase 1

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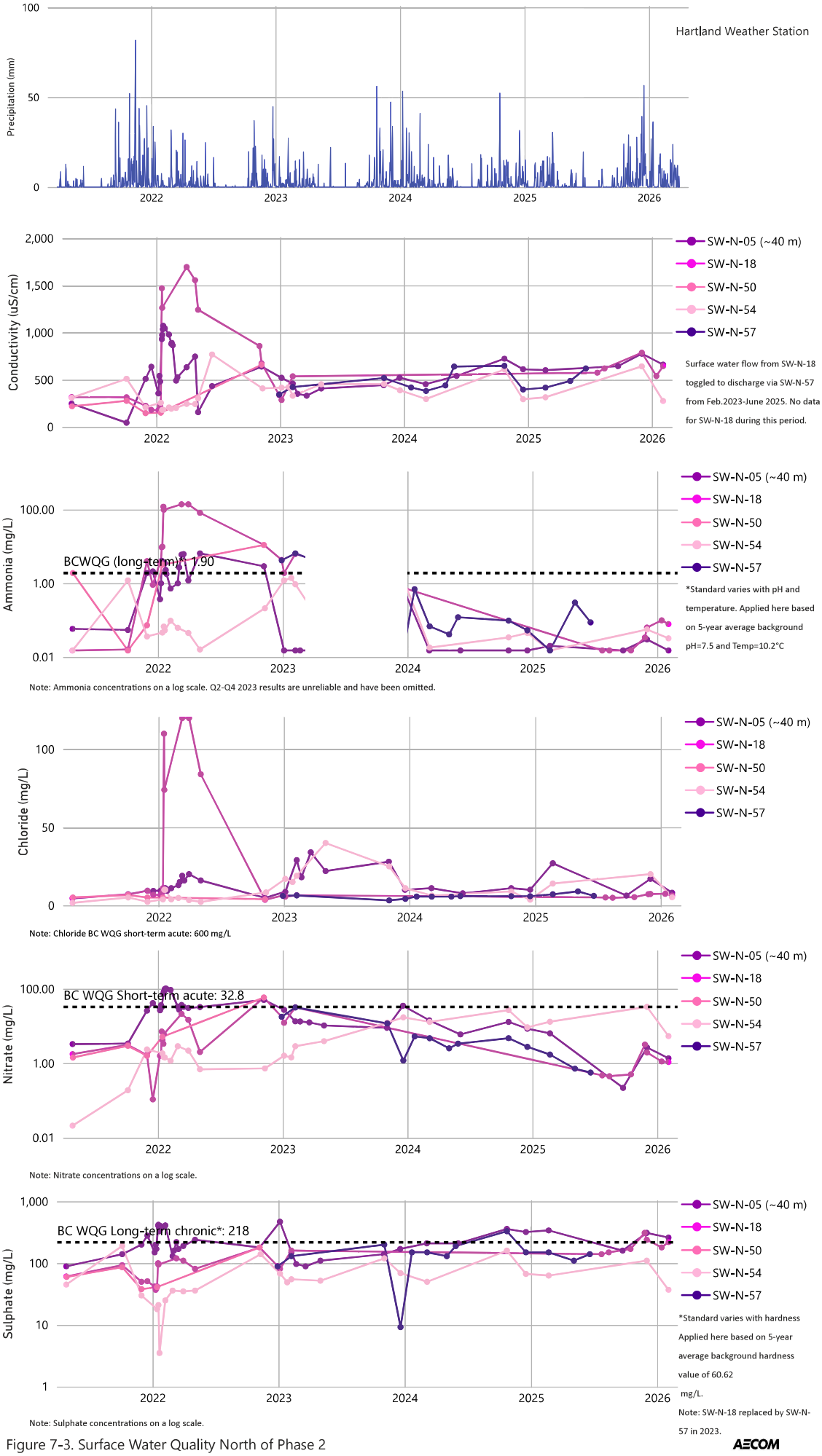


Figure 7-3. Surface Water Quality North of Phase 2

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7.7 Surface Water Quality in the Northwest Area

The Hartland North Pad is in the northwest area of Hartland, as shown on **Figure 7-1**. Recent geologic mapping of the ridge to the south of the North Pad (AECOM 2018) revealed an undulating bedrock surface with extensive deformation, fracturing, and mineralization. The west side of the Hartland North Pad drains northward through an ephemeral channel that originates at the northwest corner of the Hartland North Pad. The water is conveyed through a culvert under Willis Point Road and into a drainage channel that eventually discharges into Durrance Lake approximately 450 m to the north. Flow through the channel only occurs during wet weather periods. During dry periods, several wetlands persist along the drainage course, but they are not connected by surface flows. In the downstream portions of the creek, flows increase due to groundwater discharge to the stream. Further downstream, a second creek of similar size joins the original creek. The "combined" creek has a well-defined channel in the area where it discharges to Durrance Lake. **Figure 7-4** presents leachate and aggregate runoff indicator parameters at sampling locations along the ephemeral channel northwest of the site.

7.7.1 Compliance Monitoring Points

7.7.1.1 SW-N-41s1

SW-N-41s1 is a compliance monitoring point located downstream and northwest of the Hartland North Pad, on the other side of a culvert that spans beneath Willis Point Road. This location receives runoff from the North Pad area and the Northwest Stockpile and exhibits aggregate runoff impacts.

In 2025/26, three samples were collected from SW-N-41s1. No BCWQG STA exceedances were reported, but LTC exceedances were reported for TSS on all three sampling events. Aggregate runoff impacts persisted, with elevated average nitrate (0.44 mg/L) and sulphate (56.5 mg/L) concentrations. Nitrate and sulphate concentrations were highest in December (0.62 and 75.5 mg/L, respectively), and concentrations of leachate indicator parameters were low throughout the monitoring period. Mann-Kendall analysis did not detect any statistically significant trends in indicator parameter concentrations at this location.

7.7.1.2 SW-N-42s1

SW-N-42s1 is a compliance monitoring point located downstream and northeast of the Hartland North Pad, on the other side of a culvert that spans beneath Willis Point Road. This location receives runoff from the North Pad area and potentially the Northwest Stockpile. Historically, aggregate runoff impacts have been observed at SW-N-42s1.

In 2025/26, surface water quality met all applicable BCWQGs in the three samples collected from SW-N-42s1. Aggregate runoff impacts persisted, with slightly elevated average conductivity (378 µS/cm), nitrate (0.13 mg/L), and sulphate (63.8 mg/L) concentrations. Ammonia concentrations were low to non-detectable throughout the monitoring period. Chloride concentrations were elevated, with an average of 40.7 mg/L. Mann-Kendall analysis determined that all indicator parameter concentrations were stable at this location. Based on water quality trends in other areas of the site (e.g., SW-N-05), it is inferred that nitrate concentrations at SW-N-42s1 will subside within the next few years, and sulphate concentrations may begin to increase.

7.7.2 Other Monitoring Locations in the Receiving Environment

7.7.2.1 SW-N-41S3, SW-N-CSs2, and SW-N-41S4

SW-N-CSs2 is located northwest of the Hartland North Pad, downstream of SW-N-66 and the Northwest Stockpile. At this location, surface water flows north toward Durrance Lake, passing through monitoring location SW-N-41S3. Water from Durrance Lake flows east into Durrance Creek, where SW-N-41S4 is located.

In 2025/26, water quality at these locations met BCWQG STA criteria, but LTC exceedances for TSS and nitrate were reported on one sampling event at SW-N-41S3 and SW-N-CSs2, respectively. Moderate nitrate concentrations ranging as high as 0.14 mg/L were observed at SW-N-41S3, but concentrations of all other aggregate runoff and leachate indicator parameters were low. Water quality at SW-N-CSs2 was similar to SW-N-41S3. Mann-Kendall analysis detected a statistically significant increasing trend in sulphate concentrations at SW-N-CSs2, while water quality at SW-N-41S3 was determined to be stable.

As stated in **Section 7.4**, conductivity, and concentrations of aggregate runoff, and leachate indicator parameters were low to non-detectable at SW-N-41S4 throughout the monitoring period.

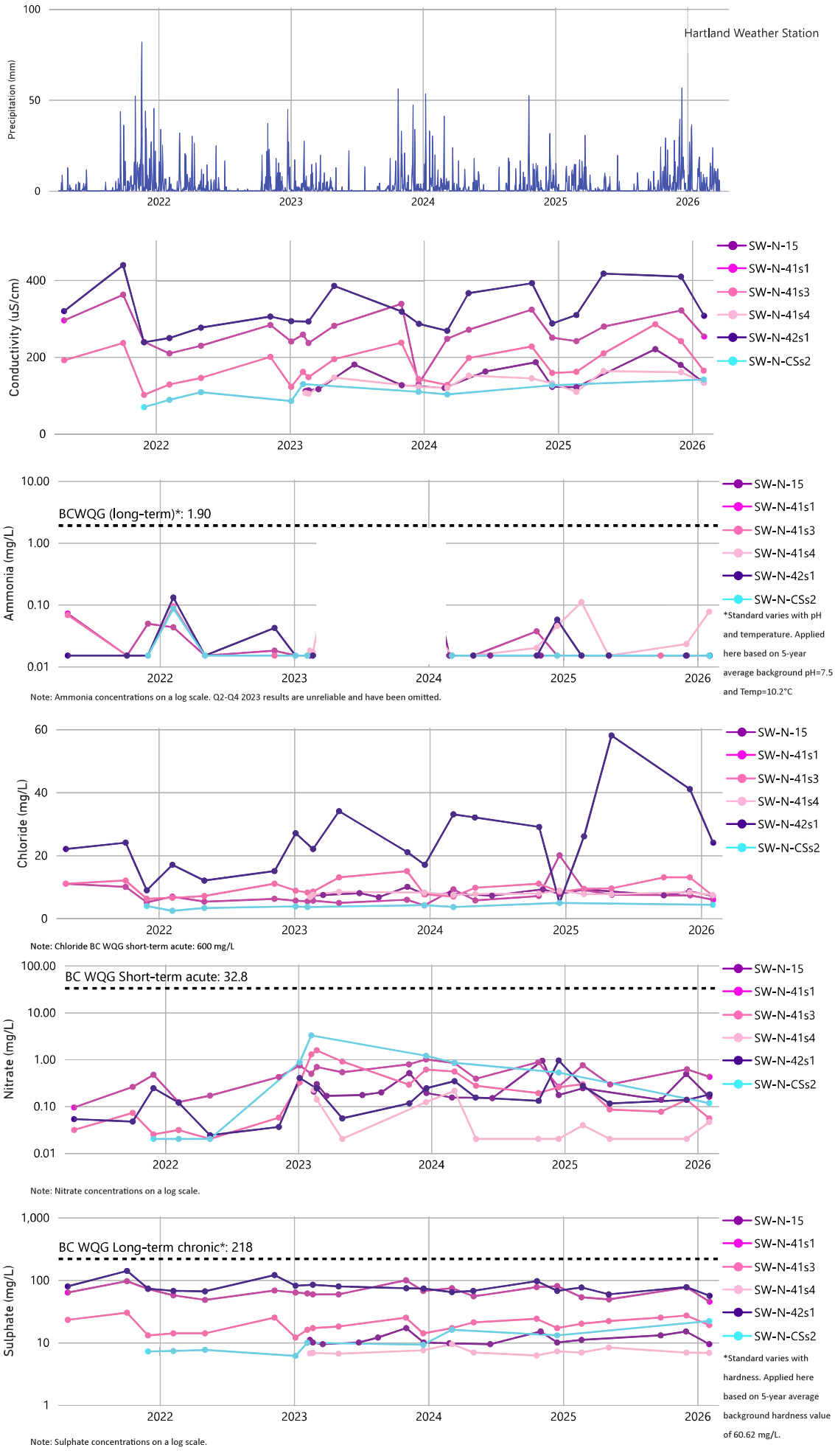


Figure 7-4. Surface Water Quality Downstream of the Hartland North Pad

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7.8 Surface Water Quality in Durrance and Tod Creeks

7.8.1 SW-N-15

SW-N-15 is located in Durrance Creek, downstream of SW-N-41S4. Durrance Creek also receives discharge from a small creek upstream of SW-N-15 that receives runoff from the landfill through SW-N-42S1. Downstream of SW-N-15, Durrance Creek converges with Heal Creek.

In 2025/26, no BCWQG STA exceedances were reported, but dissolved copper concentrations exceeded the LTC guideline in September. No dissolved copper concentration exceedances were reported on the same sampling date at upstream locations (SW-N-42S1 and SW-N-41S4). Concentrations of leachate indicator parameters were low or non-detectable. Nitrate and sulphate concentrations were moderate to slightly elevated, ranging from 0.14 to 0.26 mg/L and 9.40 to 15.0 mg/L, respectively. It is likely that the elevated nitrate and sulphate concentrations reflect dilute aggregate runoff impacts, as elevated concentrations were also observed at upstream location SW-N-42S1. Mann-Kendall analysis indicated that water quality at SW-N-15 remained stable over the past five years.

7.8.2 SW-N-63, SW-N-64, and SW-N-65

Since 2022/23, surface water samples have been collected at three locations (SW-N-63, SW-N-64, and SW-N-65), approximately 900 m northeast of Hartland, near the confluence of Durrance Creek and Tod Creek. SW-N-63 is at the end of Durrance Creek, SW-N-64 is at the confluence of Durrance and Tod creeks, and SW-N-65 is downstream of the confluence of the creeks. Hence, surface water quality at SW-N-65 is intermediate to water quality at SW-N-63 and SW-N-64. In 2025/26, aggregate runoff impacts and trace metal BCWQG exceedances were observed at these locations, but it is unclear if local agriculture has an impact on the water quality.

At SW-N-63, dissolved iron concentrations exceeded BCWQG STA criteria on one sampling event in 2025/26, and LTC exceedances were reported for total aluminium (1) and dissolved copper (2) concentrations. SW-N-64 and SW-N-65 each exceeded STA criteria for total and dissolved iron on one sampling event, and total aluminium (1), dissolved cobalt (1), and dissolved copper concentrations (2) exceeded LTC criteria on concurrent sampling events. Additionally, dissolved manganese concentrations at SW-N-64 exceeded LTC criteria during one sampling event.

Average conductivity was similar at all three locations and ranged from 167 µS/cm at SW-N-64 to 186 µS/cm at SW-N-63. Nitrate concentrations were elevated and fluctuated throughout the monitoring period, ranging from 0.07 mg/L at SW-N-64 to 0.63 mg/L at SW-N-63, and were typically highest in December at all three locations. Sulphate concentrations were low to elevated, ranging from 9.30 mg/L at SW-N-64 to 54.0 mg/L at SW-N-63. Similarly, ammonia concentrations were low to elevated, ranging from <0.02 mg/L to 0.14 mg/L at SW-N-64. Chloride concentrations at all three locations were low, with averages ranging from 9.23 to 13.7 mg/L. Mann-Kendall analysis did not detect any statistically significant trends in indicator parameter concentrations at these locations. Ultimately, aggregate runoff likely had an impact on the water quality at this location, but local agriculture may have also contributed. Lower metal concentrations were observed upstream (e.g., SW-N-14 and SW-N-15), so the elevated metal concentrations observed at this location likely reflect background water-rock interactions and not landfill activities.

7.9 Surface Water Quality South of the Landfill

In the south area of the landfill, an ephemeral stream flows southward into Killarney Lake, which subsequently drains into Prospect Lake. Surface water flow south of the landfill occurs mainly during wet periods, and groundwater seepage has been observed in the Killarney Creek channel during dry periods. Clean surface water runoff from the southern slope of Phase 1 runs westward in a ditch toward a culvert that discharges into a small wetland at SW-S-03 and then into the ephemeral stream that flows into Killarney Lake. The ephemeral stream receives surface water runoff from a drainage ditch running along the southwest perimeter of the site, which receives surface water runoff and likely some groundwater discharge from Mount Work. The confluence of the southwest perimeter ditch and the ephemeral stream is compliance monitoring point SW-S-04.

Figure 7-5 illustrates surface water quality trends at sampling locations south of the landfill. The distance from each station to the landfill boundary is shown in brackets in the legend.

7.9.1 Surface Water Quality Downstream of Phase 1

7.9.1.1 SW-S-12 and SW-S-03

SW-S-12 receives runoff from the ditch network on the southern slope of Phase 1 prior to the culvert that conveys the water to SW-S-03. SW-S-12 has been instrumented with a weir (weir SF2) to gauge surface water flow. SW-S-03 is located in the main channel of Killarney Creek, downstream of SW-S-12, where the culvert discharges into a small wetland area. This area also receives runoff from the MDTS and nearby public bins and recycling areas. Historically, water quality at SW-S-03 has been impacted by contaminated runoff from the south face of the landfill and the former truck wash area, and both locations have exhibited water quality impacts associated with aggregate runoff and potentially industrial activities and traffic passing through the south entrance of the landfill.

In 2025/26, samples were collected at both monitoring locations on three of four sampling events. BCWQG STA exceedances were reported at SW-S-12 for pH (1), total iron (1), dissolved copper (1), and dissolved iron (2) concentrations, and LTC exceedances were reported for TSS (2), nitrite (1), nitrate (1), total aluminium (2), and dissolved cobalt (2), copper (3), manganese (1), and nickel (1) concentrations. At SW-S-03, STA exceedances were reported for dissolved copper (1), concentrations, and LTC exceedances were reported for TSS (2), nitrate (1), total aluminium (2), and dissolved cobalt (1), copper (3), manganese (1), and nickel (1) concentrations. Elevated trace metal concentrations were typically associated with moderate to high flow conditions and elevated TSS concentrations reported in May and December 2025 at both monitoring locations.

At SW-S-12, conductivity was moderate and ranged from 251 to 307 µS/cm. Average nitrate and sulphate concentrations were elevated at 3.43 and 51.3 mg/L, respectively. Concentrations of ammonia were elevated throughout the monitoring period, ranging from 0.55 to 1.80 mg/L. Chloride concentrations were moderate to elevated and reached 33 mg/L. The majority of elevated concentrations and corresponding BCWQG exceedances were reported during the May sampling event, which was preceded by several weeks of unusually dry conditions, and water quality was likely influenced by evaporative concentration. Mann-Kendall analysis determined that water quality at this location remained stable. However, water quality at this station appears to have been partially impacted by the MDTS since it became operational in 2024. The MDTS drains directly to SW-S-12, and increased concentrations of nutrients and trace metals are thought to be related. The CRD has been working to improve drainage and sediment controls in the area, and an improvement in water quality is expected to follow.

At SW-S-03, conductivity was slightly lower than at SW-S-12, ranging from 217 to 319 µS/cm. Nitrate and sulphate concentrations were elevated, peaking at 3.16 and 42 mg/L in December, respectively. Average ammonia (0.63 mg/L) and chloride (31.0 mg/L) concentrations were low to elevated. In December, the Cl/Na ratio was 0.9 and was associated with elevated chloride (22.0 mg/L) and relatively low conductivity and ammonia concentrations, potentially indicating impacts from road salt application in the surrounding area. Mann-Kendall analysis determined that concentrations of indicator parameters at this location were stable or had no trend.

Overall, both SW-S-12 and SW-S-03 exhibited impacts from aggregate runoff, runoff from the MDTS, and potentially dilute leachate throughout the monitoring year. Seasonal fluctuations in indicator parameters have been observed at these locations for several years.

7.9.1.2 SW-S-27 and SW-S-24

SW-S-27 is located at a tributary that discharges into the ephemeral stream running toward SW-S-04. SW-S-24 is at the confluence of the tributary and the ephemeral stream, downstream of SW-S-27. Historically, both locations have exhibited aggregate runoff impacts, and both locations are downstream of a parking lot and high traffic areas, which may contribute road salt to the local environment during snowy periods. In 2025/26, SW-S-24 and SW-S-27 were each sampled three times.

At SW-S-27, the BCWQG STA criteria for total iron was exceeded during one sampling event in 2025/26, and LTC exceedances were reported for TSS (1), total aluminium (1), and dissolved copper concentrations (3). At SW-S-24, no STA exceedances were reported, but the LTC criteria for dissolved copper was exceeded on all three sampling events. Similar to SW-S-12 and SW-S-03, elevated solute concentrations were observed in May 2025 and may be related to low flow conditions and evaporative concentration.

At SW-S-27, average chloride (29.7 mg/L), nitrate (1.96 mg/L), and sulphate (28.0 mg/L) concentrations were elevated. Conductivity and ammonia concentrations were low to elevated, with averages of 267 µS/cm and 0.11 mg/L, respectively. Water quality was similar at SW-S-24, with elevated average chloride (37.0 mg/L), nitrate (0.94 mg/L), and sulphate (31.7 mg/L) concentrations. Conductivity at SW-S-24 was low to moderate and ranged from 225 to 355 µS/cm, and concentrations of ammonia were low, averaging 0.04 mg/L. Aggregate runoff indicator concentrations were typically highest in the winter

months at both locations, and Cl/Na ratios were almost exactly 1.0, reflecting increased precipitation and runoff. Mann-Kendall analysis detected statistically significant increasing trends in conductivity and nitrate at SW-S-27, while water quality at SW-S-24 remained stable. Overall, the water quality at both locations is likely impacted by multiple sources, including road salt application, runoff from the MDTS, and aggregate runoff.

7.9.2 Surface Water Quality in the Southwest Drainage Ditch

7.9.2.1 SW-S-20 and SW-S-21

SW-S-20 is upstream of the Recycling Centre in the southwest drainage ditch and has been instrumented with a weir to gauge surface water flow (weir SF3). SW-S-21 is downstream of SW-S-20 and receives surface water runoff and likely some groundwater discharge from Mount Work.

In 2025/26, two surface water samples were collected at SW-S-20, and water quality met all applicable BCWQG criteria. Average conductivity (88 µS/cm), ammonia (0.05 m/L), chloride (6.25 mg/L), and sulphate (2.30 mg/L) concentrations were low. Nitrate concentrations were slightly elevated in December (0.15 mg/L) but decreased to 0.02 mg/L in February. Only one sample was collected from SW-S-21 in 2025/26 due to dry conditions throughout the majority of the monitoring period. The dissolved zinc concentration exceeded the BCWQG LTC, but otherwise surface water quality was similar to SW-S-20. Conductivity was 77.0 µS/cm, and chloride (4.3 mg/L), ammonia (<0.02 mg/L), nitrate (0.06 mg/L), and sulphate (2.6 mg/L) concentrations were low. Mann-Kendall analysis detected a statistically significant decreasing trend in sulphate concentrations at SW-S-21, and no significant water quality trends were identified at SW-S-20. Overall surface water quality at these locations does not appear to be impacted by aggregate runoff or leachate.

7.9.3 Compliance Monitoring Point SW-S-04

SW-S-04 receives surface water from the southwest drainage ditch and the ephemeral stream at the south end of the site.

In 2025/26, dissolved copper concentrations exceeded BCWQG LTC criteria during all three sampling events. Conductivity was moderate and ranged from 153 to 277 µS/cm. Similar to upstream monitoring locations, average chloride (30.7 mg/L), nitrate (0.80 mg/L), and sulphate (26.3 mg/L) concentrations were elevated. Ammonia concentrations were consistently low or non-detectable. Mann-Kendall analysis determined that indicator parameter concentrations at this location were stable. Similar to upstream locations, water quality at SW-S-04 was indicative of dilute impacts from road salt application, runoff from the MDTS, and aggregate runoff.



Figure 7-5. Surface Water Quality South of Landfill

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7.10 Summary

Based on our analysis and interpretation of the 2025/26 surface water quality data:

- BC Water Quality Guideline Exceedances: Compliance monitoring point SW-N-16 exhibited a dissolved copper concentration that exceeded the BCWQG STA during one sampling event, and the pH measured at compliance monitoring point SW-N-56 was marginally below the BCWQG STA during one sampling event. Otherwise, surface water quality at compliance monitoring stations met all BCWQG STA criteria in 2025/26. Many other monitoring locations exhibited trace metal LTC exceedances. Relatively high trace metal concentrations were often observed downstream of the landfill, suggesting that some occurrences of elevated trace metals are caused by background gas-water-rock interactions.
- Background Surface Water Quality: Surface water quality at background stations SW-S-52 and SW-N-66 exhibited low (i.e., <114 µS/cm) conductivity, and low to non-detectable aggregate runoff and leachate indicator concentrations. Copper concentrations at SW-N-66 (0.52 µg/L) exceeded the BCWQG LTC, and may reflect naturally unfavourable geochemical conditions (e.g., low hardness or DOC concentrations), which are used in the copper BLM model to calculate the copper guidelines.
- Copper Concentration Exceedances: Copper concentration BCWQG LTC exceedances persisted in many areas of the site. However, LTC copper concentration exceedances were reported at a background location and in other locations in the receiving environment, including SW-N-15 and all three surface water monitoring locations at the confluence of Durrance Creek and Tod Creek. This suggests that elevated copper concentrations are typical of the local environment.
- Aggregate Runoff Impacts: Surface water across the landfill, at most compliance monitoring points, and in several areas of the offsite receiving environment continued to exhibit aggregate runoff impacts. Nitrate concentrations decreased in some areas (e.g., downstream of the Northwest Stockpile), but higher nitrate concentrations were observed north of Phase 1 (e.g., location 19, and compliance monitoring location 16). Despite the decrease in nitrate concentrations downstream of the Northwest Stockpile, higher sulphate concentrations and conductivity were observed along the same flow paths, which likely reflect sulphide oxidation in the Northwest Stockpile. The changes in relative concentrations of nitrate and sulphate likely reflect the differing reaction rates of ANFO leaching and sulphide oxidation in the stockpile.

  Elevated concentrations of aggregate runoff indicator parameters were observed north of the site in Durrance Creek, and persisted into Tod Creek. The elevated concentrations in Durrance Creek likely begin where the narrow stream that passes through SW-N-42S1 meets Durrance Creek.
- Elevated Chloride Concentrations: Some monitoring locations south of the landfill were likely impacted by road salt and potentially dilute leachate, as indicated by moderate to elevated chloride and ammonia concentrations.

A summary of surface water quality BCWQG STA exceedances at boundary compliance stations is provided in **Table 7-2.**

Table 7-2. Surface Water Quality Compliance at Property Boundary Stations

Station	General Parameters	Nutrients	Metals	Comments
SW-N-16	None	None	Dissolved Copper (1)	• Trace metal concentration exceedances may be related to flow conditions during sampling, or may reflect naturally unfavourable geochemical conditions (e.g., low hardness or DOC concentrations). It is unlikely that the elevated copper concentrations were influenced by landfill activities. Elevated copper concentrations are typical of background conditions. • pH was marginally below the STA guideline at SW-N-56 and could be due to instrument error as pH is typically circumneutral at this location.
SW-N-56	pH (1)	None	None	

Note:

( ) = Number of samples that exceed the BCWQG STA criteria for specified parameter

8. Leachate

8.1 Data

Leachate samples are collected from the Hartland Valve Chamber on a monthly basis, and are collected quarterly from other locations in the leachate collection and conveyance system. The CRD changed the sampling frequency for the North Purge Wells, Controlled Waste Ditch, South Purge Wells, West Face Drainage, and Cell 3 Pipe Outlet from monthly to quarterly in Q4 2025. Historically, leachate quality at these stations has been consistent, and the combined discharge from each is sampled at the Hartland Valve Chamber compliance point monthly.

Leachate chemistry is analyzed for conventional parameters, organic compounds, and metals. Additionally, Hartland Valve Chamber samples are analyzed quarterly for trace organic compounds, including polycyclic aromatic hydrocarbons (PAHs), BTEX (benzene, toluene, ethylbenzene, xylene), phthalate esters, ketones, aromatics, phenols, ethers, nitrosamines, alkanes, alkenes, and other select organic compounds. Following recommendations in the 2024 Monitoring Network Review (AECOM 2024a), samples from the Hartland Valve Chamber are also analyzed quarterly for emerging contaminants (including PFAS and PFOA).

In 2025/26, CRD staff collected 26 leachate samples from the following locations:

- Hartland Valve Chamber (16 samples)
- Phase 1 North Purge Well system (combined discharge from 52-4-0-P7, 80-1-0-P8 and 81-1-0-P9; two samples)
- Phase 1 South Purge Well system (combined discharge from P1, P2, P3, P4 and P10; two samples)
- Controlled Waste Ditch (two samples)
- West Face Drainage (two samples)
- Cell 3 Pipe Outlet (two samples)

No samples were collected from the North and South Purge Well systems, Controlled Waste Ditch, West Face Drainage, and Cell 3 Pipe Outlet in Q2 2025 due to a scheduling error. Samples that were collected from these locations in Q3 2025 were destroyed in transport, along with one sample from the Hartland Valve Chamber that was to be analyzed for emerging contaminants. Analytical results from the leachate sampling program are provided in **Appendices H-4 to H-12**.

8.2 Leachate Generation and Discharge

Leachate collected from the Phase 1 and Phase 2 landfills is discharged to the unlined Lower Leachate Lagoon. Leachate is pumped into the lined Upper Leachate Lagoon to minimize head build-up in the Lower Lagoon. Leachate from the lagoons is discharged from the site through the CRL which connects to the CRD trunk sewer system that ultimately discharges to the McLoughlin Point Wastewater Treatment Plant. The CRL was activated on December 30, 2020, and the formal switch from the previous leachate discharge line to the CRL occurred in March 2021, with peak instantaneous flow rates ranging between 60 and 80 L/s.

Total monthly leachate flows discharged to sewer are provided in **Appendix I**. Average monthly leachate flow in 2025/26 was 15.2 L/s, which is comparable to historical rates. The highest monthly leachate volume (107,036 m^3) was observed in December 2025, in response to intense winter precipitation events. Changes in leachate discharge rates throughout the year may be related to the increased capacity of the CRL from the RTF, variability in precipitation, or operational improvements aimed at minimizing leachate generation.

8.3 Compliance Monitoring Locations

The compliance monitoring point for leachate at Hartland is the Hartland Valve Chamber (a flow detection chamber), which discharges leachate from the site into a pipeline that conveys the leachate to the McLoughlin Point Wastewater Treatment Plant. Discharge from the leachate pipeline is subject to the CRD RSCP Waste Discharge Authorization SC97.001 (WDA). Leachate compliance data is reported to the CRD RSCP on a quarterly basis.

8.4 Leachate Quality

Sampling and testing of leachate quality have been carried out since the early 1970s. Since 2000, leachate samples have been collected primarily from the Hartland Valve Chamber. Analytical results from the routine monthly leachate sampling program are provided in **Appendix H-4.** Quarterly analytical results for trace organics in the leachate discharge is provided in **Appendix H-5**. The analytical results for quarterly samples collected from the leachate collection and conveyance network are presented in **Appendices H-7, H-8, H-9, H-10,** and **H-11.** Emerging contaminants analytical results from the Hartland Valve Chamber are tabulated in **Appendix H-12.** No sampling was performed at the Phase 2 Cleanout due to ongoing maintenance, so **Appendix H-6** was omitted from this report.

8.4.1 Routine Monthly Leachate Analyses and Sewer Use Bylaw Comparison

Figure 8-1 and **Figure 8-2** present time series plots for selected parameters in leachate at the Hartland Valve Chamber, North Purge Wells, and Phase 2 Cleanout (not sampled since 2021). The Hartland Valve Chamber is the only leachate compliance monitoring point for the site, but comparison of leachate quality at other monitoring points allows for an evaluation of individual leachate contributions to the combined leachate discharge. Concentrations above WDA criteria at locations other than the Hartland Valve Chamber are not considered non-compliant, and the criteria are used for reference purposes only.

At all sampling locations, concentrations of inorganic parameters such as conductivity and chloride show a seasonal dilution effect when greater amounts of precipitation in the fall and winter months result in lower concentrations. Higher concentrations occur during drier periods from May to October. Historically, leachate discharge from the Phase 2 Basin has been significantly more concentrated than leachate generated in Phase 1, which was closed in 1996. Leachate samples have not been collected from the Phase 2 Basin since 2021 due to troubles with the sampling pump. Mixing of leachate from Phases 1 and 2 in the Hartland Valve Chamber results in a leachate that exhibits chemistry that is intermediate of the two sources.

In 2025/26, leachate quality at the Hartland Valve Chamber was consistent with previous years, with an average conductivity of approximately 2,395 µS/cm. The average ammonia and chloride concentrations were approximately 228 and 275 mg/L, respectively. Based on inspection and statistical analysis of the leachate quality data, AECOM noted the following:

- Biochemical oxygen demand (BOD) concentrations were typically below 55 mg/L throughout the monitoring period, but reached 360 mg/L in August.
- Chemical oxygen demand (COD) concentrations exceeded WDA criteria on two sampling events (July and August), and TSS concentrations exceeded the criteria in August. Elevated COD is likely related to ground wood waste placement in Cells 4 and 5a prior to active landfilling.
- Total sulphide, dissolved sulphide, and total PAH concentrations did not exceed the WDA during any sampling event.
- Mann-Kendall analysis indicated that statistically significant decreasing trends in conductivity and chloride concentrations have been observed at the Hartland Valve Chamber over the past five years.

8.4.1.1 Phase 2 Cleanout

Leachate samples have not been collected from Phase 2 Basin since 2021 due to troubles with the sampling pump. The CRD confirmed that the pump is functional but not recovering leachate, and there is an ongoing investigation to determine why leachate samples cannot be recovered.

8.4.1.2 North Purge Wells

In 2025/26, the two leachate samples collected from the North Purge Wells (52-4-0-P7, 80-1-0-P8 and 81-1-0-P9) met all WDA criteria.

8.4.1.3 South Purge Wells

In 2025/26, leachate samples collected from the South Purge Wells (P1, P2, P3, P4 and P10) met all WDA criteria during both sampling events.

8.4.1.4 Controlled Waste Ditch

Leachate collected by the Controlled Waste Ditch is not as concentrated as leachate collected from Phase 2 Cleanout or the West Face Drainage. In 2025/26, all leachate samples collected from the Controlled Waste Drainage leachate met WDA criteria.

8.4.1.5 West Face Drainage

Leachate from the West Face Drainage is strongly reduced with abundant organic content. A weir and flow monitor have been installed at the West Face Drainage to evaluate seasonal trends in flows. Historically, the West Face Drainage has contributed a relatively small volume of leachate and not had a substantive impact on leachate quality at the Hartland Valve Chamber. The CRD reported that leachate flows at the West Face Drainage have increased due to ongoing landfill development and routing of discharge from the Phase 2 Leachate Collector Sump.

Similar to previous years, the West Face Closure Toe Drain exhibited the highest average ammonia, chloride, and COD concentrations in 2025/26. All leachate quality parameters met WDA criteria, except for COD concentrations measured in March 2026.

8.4.1.6 Cell 3 Pipe Outlet

Cell 3 includes new leachate containment and gravity flow conveyance infrastructure (i.e., the Toutle Drain), which receives leachate from Cells 3, 4, and 5 and discharges directly into the Upper Leachate Lagoon. The Cell 3 Pipe Outlet began discharging leachate in 2016, and leachate from this location is considered representative of newly deposited refuse.

In 2025/26, the Cell 3 Pipe Outlet produced the most concentrated leachate at the site. However, all parameters met WDA criteria except for COD concentrations, which exceeded the WDA criteria on both sampling events.

8.4.2 Trace Organics, BTEX, and Emerging Contaminants

Since 1998, analysis of trace volatile and semi-volatile organic compounds have been performed on leachate samples collected quarterly from the Hartland Valve Chamber. Chlorinated phenol compound analytical results for combined leachate in 2025/26 are presented in **Appendix H-5**. BTEX analytical results are provided for each leachate monitoring point in **Appendices H-4, H-7, H-8, H-9, H-10,** and **H-11**, and emerging contaminants analytical results from the Hartland Valve Chamber are tabulated in **Appendix H-12**. All trace organic compounds, BTEX, and emerging contaminants were present in low to non-detectible concentrations, and no exceedances were reported.



Figure 8-1. Hartland Valve Chamber Leachate Chemistry (Conductivity, Ammonia and Chloride)

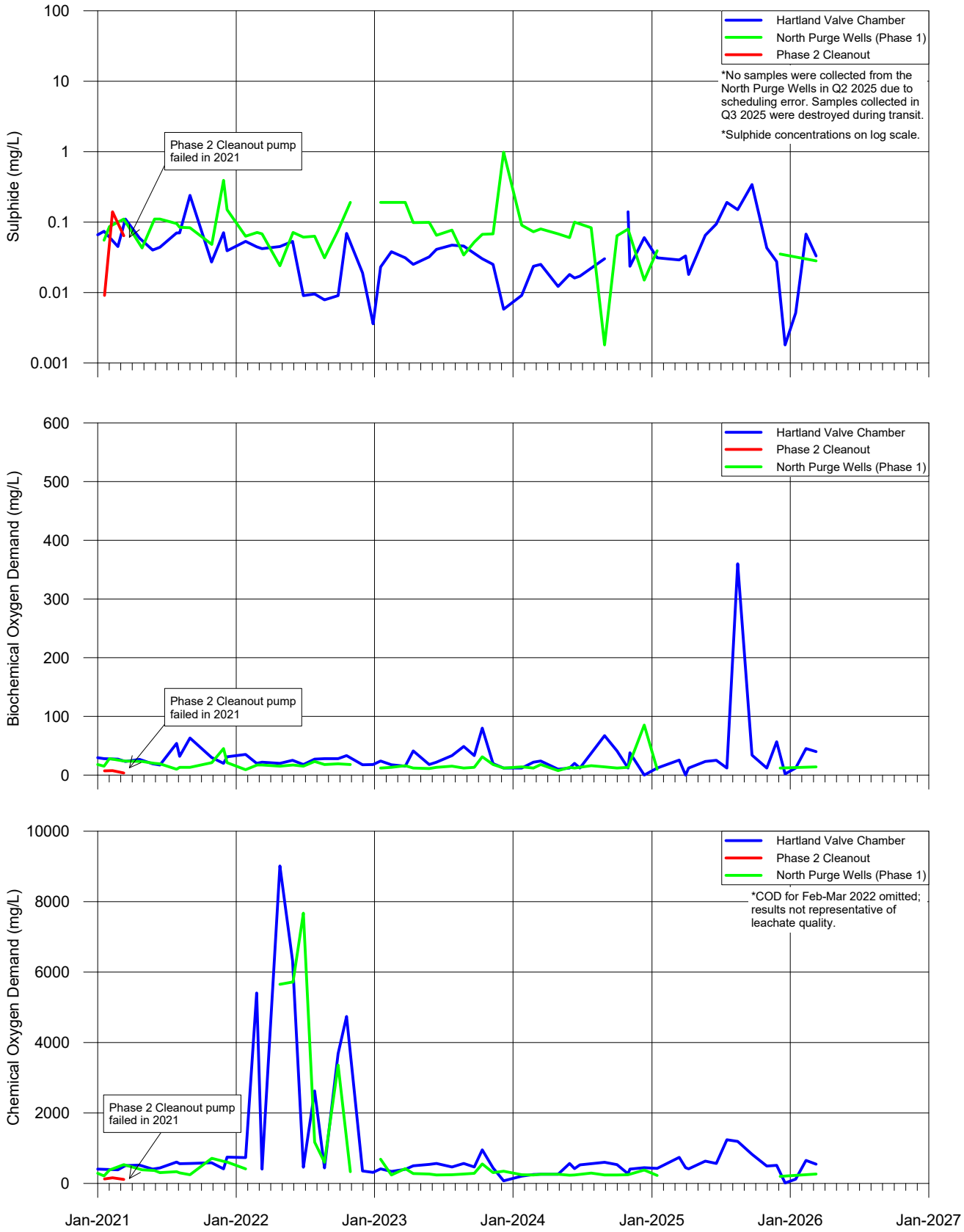


Figure 8-2. Hartland Valve Chamber Leachate Chemistry (Sulphide, BOD and COD)

AECOM

8.5 Summary

The leachate flow and quality data collected in 2025/26 indicated the following:

- Leachate flow and quality were like previous years, with no significant changes in discharge volumes or quality.
- The average monthly leachate flow rate was 15.2 L/s, which is slightly higher than the long-term (1997 to 2025) average of approximately 12.6 L/s. This may be related to the expansion of the leachate containment footprint in the Phase 2 landfill and the Northeast Stockpile.
- The maximum monthly leachate discharge was 107,036 m^3, recorded in December 2025.
- The CRD changed the sampling frequency for the North Purge Wells, Controlled Waste Ditch, South Purge Wells, West Face Drainage, and the Cell 3 Pipe Outlet from monthly to quarterly in Q4 2025. No samples were collected from these stations in Q2 2025 due to a scheduling error. Samples that were collected from these locations in Q3 2025 were destroyed in transport, along with one sample from the Hartland Valve Chamber that was to be analyzed for emerging contaminants.
- COD concentrations exceeded the WDA criteria at the Hartland Valve Chamber (2 samples) and the West Face Drainage (1 sample).
- One leachate sample exhibited non-compliant TSS concentrations at the Hartland Valve Chamber.
- The Cell 3 Pipe Outlet exhibited the most concentrated leachate.

9. Conclusions

9.1 Leachate Flow

In 2025/26, leachate levels and discharge at Hartland were consistent with historical interpretations. The leachate mound in Phase 1 persisted, but leachate levels continued to decrease slowly. The most notable change in leachate discharge patterns occurred at the North Purge Wells, where leachate discharge volumes continued to decrease. Groundwater levels at P52 have been increasing for five years, indicating diminishing performance of the purge wells in that area. The pump at adjacent purge well P7 appears to be able to maintain leachate levels within the purge wells at the target elevation, so the well should be tested to confirm it is performing adequately, effecting a drawdown cone as designed, and rehabilitated as part of ongoing maintenance activities if it is not doing so.

Groundwater quality at wells installed north of the North Purge Wells confirmed that no leachate had migrated north of the landfill. The South Purge Wells performed adequately, and no leachate impacts were observed downgradient of the landfill.

Leachate elevations observed at monitoring stations within Phase 2 were comparable to historical values, indicating that the refuse was largely unsaturated. Groundwater levels at critical monitoring locations north of the Phase 2 Basin were consistently higher than leachate levels in Phase 2, implying that leachate levels were stable and the hydraulic trap was maintained.

9.2 Groundwater Flow

In 2025/26, groundwater flow patterns at Hartland were generally consistent with historical interpretations, with most of the groundwater in the bedrock underlying the landfill captured by the Phase 2 leachate collection system. Groundwater levels along the North Ridge continued to be lower and show greater variability than historical values. We attributed these patterns to quarrying in the Toutle Valley and lowering of the valley floor. No substantive changes to hydraulic gradients have been observed in the Cell 4 area since a liner was installed in early 2025, but hydraulic gradients in this area should continue to be monitored closely in 2026/27 to assess if the liner is impacting the groundwater flow regime. Despite the observed changes to the potentiometric surface in this area, the Phase 2 hydraulic trap was maintained in 2025/26.

9.3 Groundwater Quality

Analysis of the groundwater quality data collected in 2025/26 indicated:

- Leachate Containment: Leachate-impacted groundwater was contained within the landfill property boundary.
- Aggregate Runoff Impacts: Aggregate runoff impacts (e.g., elevated conductivity, sulphate, and nitrate concentrations) are a pervasive issue at the site, especially north of the landfill. Impacts were most apparent at compliance monitoring locations 31, 111, 112, and in many areas of the site immediately downgradient of stockpiles. Elevated nitrate and/or sulphate concentrations were also observed at the south end of the site, at compliance monitoring locations 73 and 71. In the northwest area of the landfill, dilute aggregate runoff impacts were identified, but concentrations were low at the property boundary and low to non-detectable in the receiving environment.
- Magnesium Lignosulphonate Impacts: Magnesium lignosulphonate is used as a dust suppressant at the site, and impacts have been observed at monitoring locations immediately north of the Phase 2 basin (e.g., 37, 104). Impacts continued to be observed in this area in 2025/26 and were also observed to the west at GW-92-1-1.
- Elevated Boron Concentrations: Boron concentrations exceeding the CSR DW standard have been previously observed at monitoring location 20 for several years. A previous investigation by AECOM determined that groundwater at monitoring locations 20, 52, and in the North and South Purge Wells exhibits a distinct geochemical signature characterized by highly elevated silicon and boron concentrations, potentially caused by mobilization of boron and silicon from the Lower Lagoon clay berm, or leachate reacting with bedrock below the Phase 1 landfill. In 2025/26, boron concentrations at monitoring location 20 remained elevated but met all applicable CSR standards. Boron concentrations should continue to be monitored at this location.
- Elevated Antimony Concentrations at GW-112-1-1: Antimony concentrations have exceeded the CSR DW standard on three of the four sampling events that have occurred since compliance monitoring well GW-112-1-1 was installed in 2024. It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the

well was installed and have been steadily decreasing since. Antimony concentrations should continue to be monitored at this location for continued improvement.

- Elevated Chloride Concentrations: Elevated chloride concentrations observed in the area south of the site likely reflect road salt impacts, as indicated by Cl/Na ratios around 0.5 to 2.0, and low to non-detectable ammonia concentrations. The highest chloride concentrations were observed at deep well GW-60-1-1 in the south area of the landfill. Chloride concentrations at this location have sharply increased since 2024 and exceeded the CSR DW standard throughout 2025/26. The source is currently unknown but does not appear to be related to deep bypass of the leachate collection system due to low ammonia and metal concentrations. There may be a preferential pathway delivering impacted groundwater to this location from elsewhere on site where road salt is heavily applied or stored. Chloride concentrations should continue to be monitored at this location, and the source should be investigated if concentrations continue to increase.

9.4 Domestic Well Water Quality

The domestic groundwater quality met applicable regulatory criteria at all locations, except aesthetic objectives for temperature and operational guidelines for pH. The data indicated that the wells were not impacted by leachate, and the water quality was consistent with background conditions as observed since the monitoring program began.

9.5 Surface Water Quality

Surface water quality is generally consistent with natural water quality surrounding the site and indicates the landfill is functioning as intended with a few exceptions as described below. Analysis of the surface water quality data indicated:

- Elevated Trace Metal Concentrations: Several trace metal BCWQG LTC exceedances (e.g., aluminium, iron, dissolved copper) were reported that likely reflect turbid and/or low-flow conditions at the time of sampling. Relatively high trace metal concentrations were often observed downstream of the landfill, suggesting that elevated trace metal concentrations are the result of natural gas-water-rock interactions in contributing catchments.
- Background Surface Water Quality: Surface water quality at background stations SW-S-52 and SW-N-66 exhibited low (i.e., <114 µS/cm) conductivity, and low to non-detectable aggregate runoff and leachate indicator concentrations. Copper concentrations at SW-N-66 (0.52 µg/L) exceeded the BCWQG LTC, and may reflect naturally unfavourable geochemical conditions (e.g., low hardness or DOC concentrations), which are used in the copper BLM model to calculate the copper guidelines.
- Copper Concentration Exceedances: Copper concentration BCWQG LTC exceedances persisted in many areas of the site. However, LTC copper concentration exceedances were reported at a background location and in other locations in the receiving environment, including SW-N-15 and all three surface water monitoring locations at the confluence of Durrance Creek and Tod Creek. This suggests that elevated copper concentrations are typical of the local environment.
- Aggregate Runoff Impacts: Surface water across the landfill, at most compliance monitoring points, and in several areas of the offsite receiving environment continued to exhibit aggregate runoff impacts. Nitrate concentrations decreased in some areas (e.g., downstream of the Northwest Stockpile), but higher nitrate concentrations were observed north of Phase 1 (e.g., location 19, and compliance monitoring location 16). Despite the decrease in nitrate concentrations observed downstream of the Northwest Stockpile, higher sulphate concentrations and conductivity were observed, which likely reflect sulphide mineral oxidation in the stockpile. The temporal patterns observed among nitrate and sulphate concentrations likely reflect differing reaction rates of ANFO leaching and sulphide oxidation in the stockpile.

  Elevated concentrations of aggregate runoff indicator parameters were observed north of the site in Durrance Creek, and persisted into Tod Creek. The elevated concentrations in Durrance Creek likely begin where the narrow stream that passes through SW-N-42S1 meets Durrance Creek.
- Elevated Chloride Concentrations: Some monitoring locations south of the landfill were likely impacted by road salt, as indicated by moderate to elevated chloride concentrations coinciding with Na/Cl molar ratios around 1.0.

9.6 Leachate Quality

The Hartland Valve Chamber is the only leachate quality compliance monitoring point at the site, but there are other leachate quality monitoring points that provide insight into leachate quality in various parts of the landfill. The leachate quality data was screened against WDA criteria. COD concentrations exceeded the sewer use criteria at the West Face Drainage (1 sample) and the Hartland Valve Chamber (2 samples). One leachate sample exhibited non-compliant TSS concentrations at the Hartland Valve Chamber. The Cell 3 Pipe Outlet exhibited the most concentrated leachate.

9.7 Quality Assurance and Quality Control

The quality analysis of the 2025/26 groundwater, surface water, and leachate quality data indicated that replicate samples were collected at a frequency of approximately 13.9% (60/432 samples), exceeding the targeted replicate sampling rate of 10%. It was determined that the sampling field techniques and laboratory analyses produced reliable results, but some replicate samples (e.g., GW-21-1-1 and GW-39-1-1) exhibited a relatively high number of RPD exceedances and should be interpreted with caution.

9.8 Landfill Compliance with the Operating Certificate and Waste Discharge Authorization

The 2025/26 groundwater, surface water, and leachate quality data were used to assess compliance with the Amended Operational Certificate and Waste Discharge Authorization and are discussed individually below. Ultimately, the landfill did not meet all applicable regulatory criteria pertaining to groundwater, surface water, and leachate quality.

9.8.1 Leachate

Leachate quality met WDA criteria on most sampling events, except for two COD exceedances (July and August 2025) and one TSS exceedance (August 2025) that were reported at the Hartland Valve Chamber.

9.8.2 Groundwater

Thirty-eight compliance monitoring wells have been established in 20 locations at Hartland Landfill. Water quality data collected from these wells were compared to the CSR AW and DW quality standards to evaluate landfill compliance with the Operational Certificate. Groundwater quality exceedances were reported at one boundary compliance station summarized in **Table 9-1**.

Table 9-1. Summary of Groundwater Quality Compliance at Boundary Compliance Stations

Station	General Parameters	Nutrients	Metals	Comments
GW-112-1-1	None	None	Antimony (2^b)	• Elevated antimony concentrations have been periodically observed at this location since it was installed in 2024. It is likely that the antimony was introduced during drilling, as concentrations were highest immediately after the well was installed and have been steadily decreasing since.

Note:

( )^a = Number of samples that exceed CSR AW standard for specified parameter

( )^b = Number of samples that exceed CSR DW standard for specified parameter

9.8.3 Surface Water

Seven surface water monitoring locations have been identified as compliance monitoring points surrounding the landfill. These stations are concentrated along the southern and northern property boundaries, downgradient of areas that have the potential to be impacted by leachate or aggregate runoff. The surface water quality data were compared to the BCWQG STA and BCWQG LTC guidelines to assess compliance with the landfill's Operational Certificate. A summary of surface water quality BCWQG STA exceedances at boundary compliance monitoring stations is provided in **Table 9-2**.

Table 9-2. Summary of Surface Water Quality Compliance at Property Boundary Stations

Station	General Parameters	Nutrients	Metals	Comments
SW-N-16	None	None	Dissolved Copper (1)	• Trace metal concentration exceedances may be related to flow conditions during sampling, or may reflect naturally unfavourable geochemical conditions (e.g., low hardness or DOC concentrations). It is unlikely that the elevated copper concentrations were influenced by landfill activities. Elevated copper concentrations are typical of background conditions. • pH was marginally below the STA guideline at SW-N-56 and could be due to instrument error as pH is typically circumneutral at this location.
SW-N-56	pH (1)	None	None	

Note:

( ) = Number of samples that exceed the BCWQG STA criteria for specified parameter

10. Recommendations

Table 10-1 provides a summary of recommendations based on the findings presented in this report.

Table 10-1. Summary of Recommendations

	Leachate Collection System	Status
1	Closely monitor water levels and leachate quality in the North Purge Wells to verify the effectiveness of the leachate collection system. Water levels in well 52-3-0-P52, adjacent to purge well 52-4-0-P7 have slowly increased since 2021/22 and may indicate diminished drawdown and leachate collection in this area. A specific capacity test should be conducted on each North Purge Well to assess well performance. All procedures should follow the Standard Operating Procedure (SOP) – North Purge Well Drawdown Cone Verification (AECOM 2016), with interpretation of results by a qualified professional. The results should be compared to historical assessments to determine the need for well rehabilitation.	Ongoing
2	Closely monitor water levels and leachate quality in the South Purge Wells to verify the effectiveness of the leachate collection system and identify opportunities for improvements. These wells have not been rehabilitated since they were installed in 2001 and have likely accumulated sediment, diminishing their performance and/or requiring excessive maintenance. Pumping elevations in the South Purge Wells should be maintained at elevations below 140 m asl. Pumping elevations in P1 should be maintained near the top of the screened interval around 146 m asl, and about 1.5 m above the pump intake.	Ongoing
3	Groundwater monitoring wells in proximity to the Phase 2 Basin and Northwest Sedimentation Pond should be monitored closely to confirm that the hydraulic trap leachate collection system is effectively containing leachate north of Phase 2. Quarrying in the Toutle Valley resulted in greater connection between the groundwater flow system on the west side of the Highland Fault and the Phase 2 hydraulic trap, resulting in lowering of the surrounding groundwater levels.	Ongoing
4	Groundwater elevations around the Cell 4 liner should continue to be monitored closely in 2026/27 to evaluate whether the liner has an impact on the hydraulic trap, particularly beneath the North Ridge. The volume of groundwater discharge and groundwater quality in the Cell 4 underdrains should continue to be monitored monthly.	New
	Aggregate Runoff Impacts	
5	Minimize the spatial extent and volume of aggregate stockpiles outside of the leachate collection system. Where this is not feasible, stockpiles should be covered with low permeability temporary tarps to minimize sulphate, ammonia, nitrate, and TSS impacts on downgradient groundwater and surface water quality. Direct runoff from aggregate stockpiles away from natural watercourses as it is known to exceed BCWQ guidelines for sulphate and some nitrogenous compounds. This approach proved to be effective for mitigation of historical aggregate runoff impacts at the Hartland North Pad. Aggregate run-off mitigation and control is currently underway by the CRD, and additional measures are being evaluated/planned as part of an overall aggregate management plan.	Ongoing
	Groundwater Monitoring Program	
6	Elevated and non-compliant antimony concentrations were observed at compliance monitoring location GW-112-1-1. Concentrations have gradually decreased since the well was installed in 2024 but should continue to be monitored at this location. The source of the antimony should be determined if concentrations increase.	New
7	Chloride concentrations at deep well GW-60-1-1 have rapidly increased since 2024 and are elevated compared to adjacent monitoring locations, including intermediate and shallow wells GW-60-1-2 and GW-60-1-3. The source is currently unknown but does not appear to be related to deep bypass of the leachate collection system due to low ammonia and metal concentrations. There may be a preferential pathway delivering impacted groundwater to this location from elsewhere on site where road salt is heavily applied or stored. Chloride concentrations should continue to be monitored at this location, and the source should be investigated if concentrations continue to increase.	New
8	Advance a network of boreholes into the bedrock west of Phase 2 to characterize and monitor groundwater levels and quality. This will also allow for establishment of a long-term groundwater monitoring network west and upslope of Phase 2 to support continued evaluations of hydraulic trap performance and monitor groundwater quality. This is required to monitor the lowering of the water table surrounding Phase 2 following completion of the Phase 2 Quarry. Water levels have dropped significantly over the past several years, and monitoring of the hydraulic trap is critical to confirming landfill performance.	Ongoing
9	Elevated boron concentrations continue to be observed at compliance monitoring location GW-20-1-1, though an improvement was noted in 2025/26. Although it is presently thought to originate from the Lower Lagoon clay berm or the bedrock at the north and south end of the Phase 1 landfill, boron concentrations should continue to be monitored at this location. The source of boron should be determined if concentrations increase.	New
10	Resurvey all of the groundwater wells located within the refuse footprint. These wells are known to settle over time and should be periodically surveyed (once every five years) to ensure the resultant groundwater elevations are accurate.	Ongoing
11	Leachate mounding should be investigated in Phase 1 and 2 because it has been over five years since this was assessed. It would be useful to construct a new cross section through the Phase 2 landfill to investigate and monitor this issue over time. If required, subsurface data can be obtained by drilling through the refuse to the base of the landfill and investigating leachate levels in new wells. Wells may need to periodically be replaced because the wells tend to shift and become damaged as the refuse settles over time.	Ongoing

12	As required by the Amended Operational Certificate, the results of the annual monitoring program should continue to be reviewed and interpreted by a Qualified Professional experienced in assessing the impacts of landfill leachate at large municipal landfills similar to Hartland.	Ongoing
	Surface Water Monitoring	
13	Investigate options to identify and establish an additional background surface water quality monitoring station. If a suitable location can be identified, a new background station should be added to supplement the existing background chemistry profile and ensure a sufficient number of representative background surface water quality samples are collected each year. Existing background station SW-S-52 should also be assessed to determine whether it can be relocated further upstream.	New
14	Investigate water quality impacts associated with the application of magnesium lignosulphonate. Understanding the volume of magnesium lignosulphonate used at the site will be important for determining the potential impact on local groundwater quality. Use of the dust suppressant should be limited to unpaved roads within leachate containment.	Ongoing
15	Repair and enhance the site weirs so accurate surface water flow measurements can be collected to inform and constrain the water and leachate balance.	Ongoing
16	Improve surface water management north of the Phase 2 landfill to minimize impacts of aggregate runoff on groundwater and surface water that is not captured by the leachate collection system.	Ongoing
	Leachate Monitoring	
17	Characterize the chemistry of residual wastewater solids and stabilized biosolids (solids and leachate) to allow for establishment of indicator parameter thresholds and future evaluation of any impacts to leachate chemistry. This information may be available from pilot studies or operational monitoring programs.	Ongoing
18	Investigate the source of chloride in the area south of the landfill. Additional waste has been placed on the western and southern portions of Phase 2 over recent years and occasional leachate seeps and runoff from the former truck wash facility, which may carry road salt, have been noted in the past. Changes in activities at the south end of the landfill (including operation of the Materials Diversion Transfer Station) and management of impacted surface runoff may play a role.	Ongoing
19	In addition to the Sewer Use Criteria, leachate quality results for trace organic compounds and emerging contaminants should be compared to CSR standards to identify parameters in leachate that exceed CSR standards and guide any refinements to the monitoring program in future years.	Ongoing
	Construction Management	
20	The placement of aggregate, road salt, dust suppressant, and herbicides should be carefully considered and documented to help understand the causes of potential future concentrations of conductivity, ammonia, chloride, nitrate, sulphate, and select metals at groundwater and surface water monitoring locations.	Ongoing
	Quality Assurance and Quality Control	
21	Quality assurance for laboratory analyses should continue to be evaluated quarterly, and any discrepancies should be resolved with the laboratory and CRD sampling personnel within one month of receiving the laboratory results. The appropriate notation should be added to the data files to explain the reason for the low precision and the steps taken, if any, to improve the sampling or laboratory procedures.	Ongoing

11. Qualifications of the Authors

Denise Pitcairn, B.Sc., G.I.T. is a Hydrogeologist-in-Training with over two years of experience collecting, analyzing, and interpreting hydrogeological data at AECOM in addition to a year of previous experience in mineral exploration. She has authored numerous groundwater monitoring reports at several other municipal landfill sites in British Columbia. Denise performed the data analysis and was the primary author of this report.

Kathy Tixier, M.ASc., P.Eng. is a Senior Hydrogeologist and professional engineer with over 25 years of experience conducting hydrogeological investigations for water resources, waste management, remediation, and construction projects. She has undertaken site investigations at quarries and municipal landfills in British Columbia, which included the development of monitoring programs and assessment of plume migration as part of operations and closure planning. Kathy was the senior reviewer of this report.

Ryan Mills, M.Sc., P.Geo. is a Senior Hydrogeologist with over 24 years of experience interpreting and analyzing hydrogeological and water chemistry data for waste management, water resources, and mining related projects. Ryan has authored several groundwater monitoring reports and conducted numerous site investigations involving drilling and hydrogeologic testing at Hartland since 2004. He has also undertaken site investigations at numerous other municipal, industrial, and small rural landfills throughout British Columbia. Ryan oversaw and reviewed key aspects of this report.

Stephen Dickin, P.Geo. is Senior Hydrogeologist with over 18 years of experience interpreting and analyzing hydrogeological and water chemistry data for waste management and mining related projects. He has conducted hydrogeological assessments at various open and closed municipal, industrial, and rural landfills in British Columbia. Stephen has been involved with the annual groundwater monitoring report for the Hartland Landfill since 2008, and he currently serves as the project manager.

12. References

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Appendix A-1

Daily Rainfall Data – Hartland Landfill Weather Station

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
January	1	5	35	0	22.2	22	0	0	3	2	0	0	0	0	0	0	10.5	2.25	0	0	0	0.25
January	2	0.8	64.4	11.2	0	1.3	0	0.8	0	1.5	0	0	0	0	0	0	40.5	0	0	0	3.3	0
January	3	1.6	7.8	1.6	0.2	0	0	5.5	0	10.5	4.3	0	0	0	17.75	0	7.5	16	0.75	4.25	15.1	2
January	4	1.4	9.6	0.4	20.4	40	4.3	8.3	5.3	0	3.5	0.5	0	0.8	74	0	13.75	5.75	0	0.25	2.5	8.75
January	5	23.8	57.4	11	2.8	5.8	21.8	22.8	1.8	0	31.5	2	0	4	1.5	0	16.5	8.75	0.25	1	1.9	2
January	6	11.4	2.6	0	21	0	23.8	8.5	3.8	0	26	2.5	0	0	0.5	0	0.75	0	0.5	14.75	0	0
January	7	6	55.8	0	28.6	0	11	1	9	0	0	0	0	14	7.5	0	0.25	33.75	0	3	0	26.75
January	8	1.8	4.2	8.2	2.2	15	0	1.8	6	9	0.3	0	0	6.5	0	0	5	0.75	0	0.25	1.8	8.25
January	9	16.4	10.8	0.6	0.2	2	0.3	0.5	6.8	7.5	0.3	0	0.3	1.5	1.5	0	1.5	1.25	0	53.25	0	0
January	10	42.4	12	36.6	17.2	1.5	0	0.3	2.3	5	2.3	0	0	2.5	1.5	23	3.25	0	0	15.25	3.6	0.25
January	11	14.2	0.6	3.4	0.8	27.8	0	0	0	2.5	3	0	0	4	1.5	2	23.5	7	1.5	0.5	0	6.25
January	12	17	0	1.8	0	4	3	0	1	4	1	6	0	5	0	12.5	34	25	17	0	0	34.5
January	13	8.4	0	0	0	2.5	16.3	0	0	2.3	0.3	12.5	0	3.8	0	0	0.75	13.25	3.25	0	0	36.25
January	14	0	0	12	0	22	14	1	0	0	0	2	0	0	0	0	0	2.25	0	0	0	1
January	15	0	0	0	0	21	15	6	1	0	0	0	0	0	0	3.75	0	0.75	5.5	0	0	1.25
January	16	36	5.6	0	0	0	11	0	0	0	3	2	1	0	0	0	0.75	0.25	0	0	0	0.25
January	17	1.4	0	0	0	1.3	0.3	0.5	0	0	0	12	14.5	12.5	0	0	1.5	0	2.25	0	0	0
January	18	0	12.4	0.4	0	2	0	0	0	0	21	6	6	4	7.75	1.75	0.25	6.5	1.5	0.5	0	0
January	19	3.6	5.4	2.8	0	0	0	0	0.3	0.3	37	0.5	2.3	4	5.25	1.5	0	3.75	0	0	0	0
January	20	6	0	0	0	0	8	0	0	0	1	0	0	3	4.5	1.75	0	5	0	32.75	0	0
January	21	2.2	2	0	0	0	8.8	19.5	0	0	0	7.8	0.5	12	0.25	18	0.75	6.5	2.25	0	0	0
January	22	0	18.2	0	0	0	0	5	0	0	1	34	0	12	0	21.25	0	0	0.25	7	0	0
January	23	0.2	8.8	0	0	0	5	4.3	0	0	8.8	2.5	0	23	31.5	19.5	0.75	0	2	7	0	0
January	24	0	0	0	0	4	10	1	4	0	14	0	0	1	3.5	3.25	13.25	0.25	2	3.5	0	0
January	25	0	0.2	0	0	1	0	20	6	0	4	0	0	4	0.25	3.75	3.5	0	0.25	4.5	0	0
January	26	18.6	0	1	0	0	0	21.5	0.3	0	0	0	0	6.5	0	3	0.5	0	1.5	2.25	0	0.25
January	27	3	0	0.2	6	0	0	0	3	0	0	10	0	6	0	12	2	0	0.5	9.25	0	0.25
January	28	11.2	0	0.4	0	0	5	0	0	1.5	0.3	0.5	0	3	0	8.5	3.25	0.75	0	30.25	0	0
January	29	33.2	0	8.2	0	0.5	6	1.5	0	1.3	0	1.3	2	2.8	0	15.25	0	0	0	14.5	0	3.75
January	30	10.8	0	4.2	0	6.5	0	21.8	0.5	21.3	0	8.8	0	13	0	9.5	0	2.25	0	0	3.7	12.25
January	31	1	0	2.8	0	0	0	1	1	2	0	4	0	5	0	6.25	10.25	7.5	4	2	11.9	9.25
Total Monthly Rainfall		**277.4**	**312.8**	**106.8**	**121.6**	**180.5**	**161.75**	**150.75**	**53.75**	**70.25**	**160.75**	**114.5**	**26**	**153.5**	**158.75**	**166.5**	**194.5**	**149.5**	**45.25**	**206**	**43.8**	**153.5**
Maximum Daily Rainfall		**42.4**	**64.4**	**36.6**	**28.6**	**40**	**23.75**	**22.75**	**8.5**	**21.25**	**37**	**34**	**14.5**	**23**	**74**	**23**	**40.5**	**33.75**	**17**	**53.25**	**15.1**	**36.25**

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
February	1	10.2	0	0	1.4	3	0	4.8	0.5	0	1	7.5	0	15	1	24.25	22	0	1.5	0.25	13.5	7.75
February	2	11	0	0.2	4.6	2	0	5	0	0	3	1	0	6	11.3	0.25	7	0	0	0	5	16.75
February	3	5.6	1.6	0	0	1	2	0	0	0	3.5	0.3	0	2	0	0	0	2	4.25	0.25	5.5	18.5
February	4	32.6	6.6	0.2	0	0.5	9.8	0	1.8	0	1	1.8	14.0	1.3	0.3	13	0.75	3.75	2.5	19.75	0	1.5
February	5	0	0	12.8	0	1	0	0	0	0	4	0	3	0	0	18.5	0.25	2.25	2	0	0	0.25
February	6	0	0	14	4.4	0	9	0	10	0	28	0	0	0.8	1.3	17.75	0	0	11.5	0.25	0	0.25
February	7	0.2	4	13	0	2.8	0.3	0	6.8	0	17.3	0	0.3	0.3	0.3	18.25	0	0	27.25	2.5	0.25	0.25
February	8	0.4	1	1.8	0	0.5	0	0	0	0	10.8	0	0	0.3	0	0.25	0	0	0.5	0.25	8	10.25
February	9	0	1.4	3.4	0	0	0	6	0	0	5	0	15	0	0	0	0	1	5.75	3	0.5	0
February	10	0	0.4	5.8	12.2	0	0	15	0	0	11	0	4	0	0	0	0	0.5	1.25	0	0	4.5
February	11	0	1.2	3.4	1.4	3	1	2	0	17	2	4	1	0	0	0	0	0	0	3	0	0.5
February	12	0	0.8	0	0	4	23	1	0	7	0	15	0	0	0	0	0	0	2	11.5	0	0
February	13	5.8	1	0	0	2	1.8	4	1	5.8	5.8	10.5	0	1.3	0	2.5	0	0	8	1	0	0.25
February	14	0	14.6	0	0	4	12	1	0	2	4	12	5	1	0	0.25	1.5	0	0	0.25	0	9
February	15	0	10.8	3.4	0	1	0	0	9	10	0	8	5	1	0	4.5	11.75	0.5	0	0	0	0.75
February	16	0	0.8	0	0	5	7	0	1	18	0	74	0	6	10.5	0	11.25	0	2.25	2	9.75	0
February	17	0	2.8	0	0	0	0	7	0	3	0	0	0	20.8	0.5	0	0	0	1.75	0	11.5	1.25
February	18	0	1.6	0	0	0	0	9	0	13	0	15	0	0.5	0	0	5.25	0	0.5	0	3	7.25
February	19	0	22.2	0	0	0	0	28	6	18	0	6	0	0	0	0	3.25	0	0	0	3.25	1
February	20	0	16	2.2	0	0	0	0	0	11	2	1	0	0	0.8	0	4	0	1.25	7	9	0
February	21	0	1.2	0	0	0	1	3	1	3	0	3	0	0	0.3	0	19.25	0.5	2.25	2.75	0.25	0
February	22	0	0.6	0	2.4	0	0	2	1	0	0	1	0	2.8	0	2.5	1.25	5.25	0	6.25	12.25	4
February	23	1.2	0	0	1.6	2.3	0	0	21.3	4	0	11	0	3.3	4.5	15.25	5	0	0	1.5	14.5	3.25
February	24	0	5.4	0	1.8	10	0	1	0	0	0	0	0	3.5	5.3	0	0	0	0	0	13.75	7.5
February	25	0	0	0	13.4	1	0	28	2	4	0	0	0	5	3.5	0.25	10	1.25	0	0	0.75	0
February	26	12	0	0	0	5	0	6	6	16	1	0	0	0	0	0.25	1	0	9	4.25	14.5	2
February	27	0.2	0	1.2	0	3	2.5	0	1.3	0	15	0.3	0	0.8	0	0	0.75	7.25	1	0	0	0.75
February	28	0	0	0	0.6	0	4	2	0	0	20	1	4	0.3	0	10.25	0.5	31.75	14.5	10.5	0	0.25
February	29	n/a	n/a	1.6	n/a	n/a	n/a	0	n/a	n/a	n/a	3.25	n/a	n/a	n/a	1	n/a	n/a	n/a	41	n/a	n/a
Total Monthly Rainfall		**79.2**	**94**	**63**	**43.8**	**50.25**	**72.5**	**122.5**	**67.3**	**130.0**	**133.0**	**172.8**	**50.0**	**70.0**	**39.3**	**129.0**	**104.8**	**56.0**	**99.0**	**117.3**	**125.3**	**97.8**
Maximum Daily Rainfall		**32.6**	**22.2**	**14**	**13.4**	**9.75**	**22.5**	**27.5**	**21.25**	**18.25**	**27.75**	**74**	**14.75**	**20.75**	**11.25**	**24.25**	**22**	**31.75**	**27.25**	**41**	**14.5**	**18.5**

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AECOM

Date		Daily Rainfall (mm)																				
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
March	1	0	0	2.8	0	0	4.25	5	18	0	0	3	1.75	0.25	0	0.75	0.25	23.25	0.25	0.75	0	0
March	2	0	5.4	1.6	0.2	2	6.5	0	3.3	0	4	22.5	7	14	0	5.75	0	5.75	10	2.75	0	0
March	3	0	2.4	4.6	0	0	1.75	5.75	6.25	13	0.25	6	11.75	0.75	0	0	0	5	3.5	1	0	0
March	4	0	0.2	0.2	0	0	7.25	0	0	4	0	8	0	0	0	0.75	2.5	0	3.5	3	0	1.5
March	5	0	1.2	0	0	0	5.5	4.8	0	14.0	0	0	4	0	0	1.25	0	0	0.25	1	3	15.25
March	6	2.2	0	0	0	0	0.25	12.25	3.75	2.5	0	0	1.75	0	0	0	0.75	0	0.25	6.75	0.25	2.5
March	7	0.4	2.8	2.2	0	1.5	0	0	6.5	14.75	0	7.75	10.25	0	0	0	2.75	0	0	0.5	0	13.5
March	8	15.8	8.8	0	1	0	0	0	1.5	0	0	11.75	7.75	5.25	0.25	0	0	0	0	0.25	0	0.75
March	9	5.4	1.6	4.4	0	0.25	7	0	0	2.5	0	1.75	11.75	0.25	0	0	0	1	0	5	17	0.5
March	10	0.8	12	0	0	2.25	15.75	15.5	0	0	0	6.25	0.25	0	0	0.75	0	0	1.25	0.75	3.75	1.5
March	11	3.8	65.8	0	0	11	2.75	5.5	0.25	2.75	0.25	38.5	7.5	0	0	0	0	1	0.75	1.75	1	4
March	12	0	3.4	0	0	13.25	1	0.75	6.25	0	3	1.5	2.25	0	9.5	0.5	0	1.75	15.25	2	3.75	23.75
March	13	0	1.2	0	0	1	1	7.25	2.5	0	0.75	0.25	9	2	1.25	0.25	0	0.25	3.25	5.5	6.75	9
March	14	0.4	3.2	10	0	5.75	2.75	0.75	13.25	3	1	8.5	11.25	0.25	0	0	0.25	0.25	0.5	0	0.75	1.75
March	15	0	6.4	24	0	2.5	19.25	3.5	9.5	6.25	16	2.5	1.75	0	1	0	0	20.5	0	0	1	0
March	16	1	6	15	0	1.5	8	19	2.5	22.25	36.25	0	2.5	0	0.25	0	0	4.5	0	0	16.25	7.75
March	17	0.8	9.8	3.8	2.2	0.25	4	1.75	0	0.75	0	0	13.75	2.75	0	0	0	0.5	0	0	3	12.25
March	18	0	0	2	0	0	0.25	1.25	0	0	0.75	0	9	0	0	0	0	19.5	0	0	1	9.25
March	19	0	6	4.6	0	0	1.25	0.25	8.5	0.75	0	0	0	0	0	0	1	0.75	0	0	0	7.75
March	20	0	1.4	2.2	0	0	0.5	0	3.25	1.25	17.25	0	0.25	0	0	0	0.5	0.75	4.75	0	1.75	4
March	21	0	0.4	0	0	0.75	0	15	5.75	0	7.25	2.25	2.75	0.5	0	0	8.75	4.75	0.25	0	8.75	10.5
March	22	1.4	4.4	0	0	0	4.75	0.25	0	0	13	1.25	0.75	2.5	0	0	0.75	9	0	0	13	0
March	23	0	9.6	0.8	0	0	0.25	0	0	1	0.5	0	1.5	0	0	0	0	5	0.5	3	0.75	1.25
March	24	2.6	8.4	0	0	0	0	0	0	0	1.5	4.5	2	0.25	0	1.25	8.25	0.25	19.5	23.75	30.5	0
March	25	0	0	0.2	0	5.25	0.5	0	0	0	0.5	1.5	1.25	0	0	0	0.75	0	1.5	0	17	11
March	26	1	0	0	0	0.5	1.5	0	0	8	6.75	0	2	3.25	2	0.75	0	0	0.5	2	0.25	12
March	27	0	0	0.6	0	0	0	1.75	0	2.75	0	3.25	1.75	0.25	0.5	5	0	4.5	0	0	13.25	0
March	28	0.6	0	4.6	0	2.75	0	0	0	0.5	1.25	7	20.75	0	0	9.25	14.75	0.75	0	4.25	3.75	0
March	29	0	0	0	0.2	40	0	2	0	7	0.25	0	11.75	0.75	0	1.25	0	7	0	0	1.75	0
March	30	0.4	0.4	0.6	0	1	2	16.5	0	5	11.75	0	0	0	0	12	0	0	0	0	0.75	6
March	31	0	1.4	15	0	0	10.25	10.75	0	0.5	0.25	0	0	0	0	0.25	0	0.5	4.25	0	0.25	0
Total Monthly Rainfall		**36.6**	**162.2**	**99.2**	**3.6**	**92**	**108**	**130**	**91**	**113**	**123**	**137**	**158**	**33**	**15**	**40**	**41**	**117**	**70**	**64**	**149**	**156**
Maximum Daily Rainfall		**15.8**	**65.8**	**24**	**2.2**	**40**	**19.25**	**19**	**18**	**22.25**	**36.25**	**38.5**	**20.75**	**14**	**9.5**	**12**	**14.75**	**23.25**	**19.5**	**23.75**	**30.5**	**23.75**

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
April	1	13.4	0.4	0	18.6	0	4.25	2.25	0	0	0.25	0	4.5	0	0	4.75	0	0.25	4.25	0	0	
April	2	0	0	0	18.2	16	16	3	0	0	1	0	0	0	0.5	0	0	0	0	0	0	
April	3	5.6	0	0	0	3.5	16.5	0	0	0	1	4.8	0	0	3.5	0.8	0	18.3	4.8	0	0	
April	4	0	0	5	0	0	0.25	1	0	1	0	0.25	4	0	0	0	0	30	10	3.75	0	
April	5	0	0.2	0	0	0	15	0	11	0	0	1	12	18.8	1	0	0	3	3	0	0	
April	6	0	0	0.4	0	0.5	10.75	0.75	2.5	3.5	0	0	3	17.8	2	0	0	0	0.25	0	0	
April	7	0	4.6	4.6	0	8	2.75	6.75	3.75	0	0	0	10.5	1.3	0	0	0	0	1	0	8.75	
April	8	3.6	6	1.4	0	5.75	0	0	12	0	0	0	3	11.8	11.5	0	5	2	1	1	2	
April	9	5.6	2	0	n/a	0.5	0	0	0	12	0	0	0	3	3.5	0	0	2	2	17	4	
April	10	4.2	1.2	0	0	0	0	0	1	0	0	0	1	0	2	0	9	26	5	0	0	
April	11	0	0	0	0	0	4.5	0	14.8	0	4.5	0	0	0.5	8	0	0.5	0.5	0	0	0.3	
April	12	0.2	0	0	17.4	0	0.75	4.5	0.25	0	8.5	4.25	20.5	1	0.25	0	0	2.5	5	1.5	0	
April	13	4.8	1.4	0.2	3.6	0	1.75	2.25	5.5	0	0.25	0	6.25	0.5	6.75	0	0	0.5	0	1.5	0	
April	14	8.6	0.4	10.8	31.4	0	1.25	0	6.5	0	1	2.5	0	24.5	0	0	0	0	1	0	0	
April	15	0.4	0	0	n/a	0.5	7.5	0	1	0	1.5	0	10	3.5	0	0	0	0	0	0	0	
April	16	0	3.4	0	0	0	1.25	0	3	4.25	0	0	0	1.3	0	0	0	0	0.5	0	0	
April	17	2.4	0.8	0	4.4	3.25	0	9	1	7	0	0	1	12.3	0	0	0	0	2	0	0	
April	18	0.2	1	6.6	0	0	0	1	0	11	0	0	1	0.5	11.25	0	0	1	0	0	0	
April	19	0	0	22.6	0	3	0	1	1	0	0	0	0	0	0.75	0	0	1	3	0	0	
April	20	0.4	0	0	0	11.25	1.25	12.25	6.5	2	0	0	0.5	0	0	0	0	1.75	3.25	0	0	
April	21	1.2	0	8	0	0.5	1.5	0.3	0.8	1	0	0	0	3.8	0	0	0	1.3	7.3	0.8	0.5	
April	22	0	0.8	0	1	0	0	0	0	3	0	0	3	1.5	3.25	17	0	3	1	2	1	
April	23	0	0	1.4	0	7.25	0	0	0	2	0	1	1	0	0	0	0	0	6	0	0	
April	24	0	3.8	0	0	3.75	0	0	0	7	2	0	0	0	0	0	0	3	2	0	0	
April	25	0	0.8	0	0	0	2	5	0	11	12	0	0	0	0	3	13	4	1	4	0	
April	26	0	2.6	0	0	0	8.25	3.25	0	0.25	0.75	0	0.25	0	0	4.5	10	1	0	11.75	0	
April	27	0	11.4	3	0	1	0	0	0	1	0	0	5	0	0	1	1	6	2	3	0	
April	28	0	0	6.4	0	2.25	10.75	0	0	2.25	2.25	0	0	0	0	1.25	0	0	0	1.75	0	
April	29	5	0	0	0	0	3.5	0	0.8	0	0.5	0	4.8	6	0	0.8	0	0.8	0	0.8	2	
April	30	0	0	0	0	0.75	0	2	1	0	0	0	0	0.3	0	0	0	12	0	0	0	
Total Monthly Rainfall		**55.6**	**40.8**	**70.4**	**94.6**	**67.75**	**109.75**	**53.5**	**70.5**	**66**	**35**	**14**	**90.75**	**108**	**54.25**	**32.75**	**37.25**	**118**	**64.25**	**43.5**	**18.5**	**0**
Maximum Daily Rainfall		**13.4**	**11.4**	**22.6**	**31.4**	**16**	**16.5**	**12.25**	**14.75**	**11.75**	**11.50**	**4.75**	**20.50**	**24.50**	**11.50**	**16.75**	**12.75**	**30**	**10**	**17**	**9**	**0**

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
May	1	0	0	0	0	0.75	0	4.25	0	0	0	0	2.5	1.5	0	0	3.25	0	0	0.25	0	
May	2	0	2.8	0.4	4	15.75	0	0.75	0	0	0	0	2	0	0	1.75	0	1.5	0	0	0	
May	3	0	2.2	2.8	0	8.25	9.75	0	0	0	0	0.75	2	0	0	2	0	0.25	0	0	1	
May	4	0	0.2	0	3.2	6.75	0	10.75	0	1.75	0	0.25	0	0	0	0	1.5	1	0	0	0	
May	5	0	0.2	0	8.6	0	0	0	0	15	0	0	0	0	0	0	0	9.25	0.25	0.25	0	
May	6	0.8	1	0	11.8	2.75	2	0	0	5	3.5	0	0.25	0	0	0	0	0	12.75	1.75	0	
May	7	3.6	0	0	0	0	4.75	0	0	0	0	0	0	0	0	0	0	0	0	2.25	0	
May	8	0	0	0	0	0	1.5	0	0	0	0	0	0	0	0	0	0.25	1.25	0	0	0.25	
May	9	0	0	0	0	0	0	0	0	9.5	0	0	0	0	0	0	0	0.25	0	0	0	
May	10	0	0	0.2	3.6	2.25	0	0	0	0	0	0	0	0.75	0	0	0.5	0	0	0	0	
May	11	0	0	0.2	2.8	0	0.5	0	0	0	0	0	10.25	8.25	0	1.75	0	0	0	0	0.5	
May	12	0	0	0	0.4	0	5.75	0	2.5	0	0	0	1.25	0	0	7.25	0	3	0	0	0	
May	13	0	0	5.2	10.2	0	0	0	5.5	0	0	0	6.75	0	0	5.75	0	0	0	0	0.5	
May	14	0	0	0.2	9	0	0	0	3.25	0	0	0	0	0	4.75	0	0	2.5	0	0	0	
May	15	0	0	0	0	0	9.75	0	0	0	0.5	0	8.25	0	1.75	0	0	14.25	0	0	0	
May	16	0	0	0	0	0	20.75	0	1.75	0	0	0	2.75	0	0	10	0	1	0	0	6.25	
May	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.75	0	0	0	0	7.5	
May	18	0	0	0	7.8	4.5	0	0	3	0	0	0	0	0	0	0	3.5	5	0	0	9.75	
May	19	0	1.6	1.8	0	1.5	0	0	1	0	0	0	0	0	0	0	0	0	0	4.5	0	
May	20	0	10.4	0.2	0	7.25	0	0	0	0	0	0.75	0	0	9.75	0	0	0	0	0	7.75	
May	21	2.6	0	4.6	n/a	0	0	0.5	4.75	0	0	0	0	0	1.25	8	0	0	0	0	0.25	
May	22	17.4	0	0	0	1	1.5	5.75	6.75	0	0	0	0	0	0	0	0	0	0	17.75	0	
May	23	0	0	0	0	0	0.25	0	8	0	0	0.25	0	0	0	0	0	0	2.25	7.75	0	
May	24	0.2	0	0	0	0	0	0	1.25	3.25	0	0	0	0	0	0	0	0	0	0	0	
May	25	3	0	0	0	1.5	0	1.25	0	0	0	0	0	0	13.5	7.75	4.75	0.5	0	5.75	0	
May	26	6.2	0	0.2	1.2	7	2.25	0	0.25	2	0	0	0	0	0.25	0	4	6.25	0	0	0	
May	27	0.4	0	0	0	0	0	0	3.5	0.75	0	0	0	0	0	0	0	3.5	0	3.25	2	
May	28	0	0	0	n/a	6.25	2.5	0	5.25	3	0	9.75	0	0	0	0	4.25	0.5	0	0	0	
May	29	0	0	0	0	0.75	0.5	0.25	1.5	0	0	0	0	0	0	0	0	0	0	5.75	0	
May	30	0	0	0	0	3.75	0	0	4.25	0	0	0	5	0	0	2.5	0	0.25	0	3.25	3.5	
May	31	0	0	0	0	6.5	0	8.5	1	0	0	0	0.25	0	0	0	0	0	0	0	0	
Total Monthly Rainfall		**34.2**	**18.4**	**15.8**	**62.6**	**76.5**	**61.75**	**32**	**53.5**	**40.25**	**4**	**11.75**	**41.25**	**10.5**	**31.25**	**47.5**	**22**	**50.25**	**15.25**	**52.5**	**39.25**	
Maximum Daily Rainfall		**17.4**	**10.4**	**5.2**	**11.8**	**15.75**	**20.75**	**10.75**	**8**	**15**	**3.5**	**9.75**	**10.25**	**8.25**	**13.5**	**10**	**4.75**	**14.25**	**12.75**	**17.75**	**9.75**	

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
June	1	5.4	0	0	0	0	0	1.75	0.5	0	0	7.5	0	0	0	0	0	0	0	0	7.75	
June	2	0.6	0	0.4	0	0	0	5.25	0.25	0	0.25	0.25	0.75	0.25	0	0.75	0	0	0	2.75	0.25	
June	3	0	1.4	4.4	0	0	1	0	0	0	0.25	0	0	0.25	0	0	0	4.5	0	10.5	0	
June	4	0	1.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0.75	0	6	0	8.75	0	
June	5	0	0.8	2.8	0	0	0	0	0	0	0	0	0	0	0.25	0	1	0.25	0	4.25	0	
June	6	0	0.8	5.8	0	0	0	0	0	0	0	0	0	0	0.25	3.75	1	0	0	0	0	
June	7	6.2	0	0	0	0	0	0	0	0	0	0	0	0	1.75	0.25	0.5	0.25	0	0	0	
June	8	16.8	0	0	0	0	0	15	0.25	0	0	0	11.25	0	0	0	4	0	0	0	0	
June	9	0	9	10.2	0	0	0	0.25	0	0	0	0	0	8	0	22.5	0	24.75	0	0	0	
June	10	0	0	0.2	0	0	0	0	0	0	0	0	5.5	0.5	0	0.75	1	0.25	5.5	0	0	
June	11	0	0	0	0	0	0	0	0	0.25	0	0	0	0	0	0	0	0	22	0	0	
June	12	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	8.75	2.25	1	0	0.5	0	
June	13	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0.25	1.25	0.25	0	0	0	
June	14	0	0	0	0	0	0	0	1.5	1	0	3	0	2	0	0	3.75	0	0	0	0	
June	15	0	2	0	0	0	0	0	0	0	0	4.25	14	0	0	3.75	0	0.5	0	0.25	0	
June	16	0.8	0	0	0	0	1	0	0	0	0	11.75	0	0	0	0.25	11.5	7.25	0	0	0	
June	17	0.6	0	0	1.4	0.35	0	1	0	6.25	0	0	0.25	0	0	0	0	0.25	0	3.5	0	
June	18	0	0	0	0	0	0	0	1	0	0	0.25	2.25	0	0	0	0	1.25	0	0	0	
June	19	0	0	0	0	0	2.25	1.75	0.25	0	2.75	0	0	0	0	0.5	0	0	0.5	0	0	
June	20	0	0	0	0	0	0	0	3.25	0	0.25	0	0	0	0	1	0	0	0	0	0	
June	21	0	5.8	0	1.4	0.35	0	0	2.5	0	0	0	0	0	0	0	0	0	0	0	0.25	
June	22	0	1.4	0	0	0	0	0	0	0	0	8.5	0	0	0	0	0	0	0	0	19.5	
June	23	0	0	0	0	0	0	13	0	0	0	4.75	0	0	0	0	0	0	0	0	0	
June	24	0	3.2	0	2.8	0.7	0	4.25	1.25	0.75	0	1.25	0	0	0	0	0	0	0	0	0.25	
June	25	0	0	0	0.2	0.05	3	0	2	0	0	0	0	7.75	0	0	0	0	0	0	0	
June	26	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
June	27	0	0	0	1.4	0.35	0	0	1.5	0	0	0	0	0	16.75	1.75	0	0	0	0.25	5.25	
June	28	0	4	0	0	0	0.25	0	3	2	0	0	0	0	0	0.25	0	0	0	0.25	0.25	
June	29	0	4.4	0	0	0	0	2.5	0	1.75	0	0	0	0	0	0	0	0	0	0	0	
June	30	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	
Total Monthly Rainfall		**30.4**	**34.4**	**24.2**	**7.2**	**1.8**	**7.5**	**44.75**	**30.25**	**12**	**3.5**	**41.5**	**34**	**19.25**	**19**	**45.25**	**26.25**	**46.5**	**28**	**31**	**33.5**	
Maximum Daily Rainfall		**16.8**	**9**	**10.2**	**2.8**	**0.7**	**3**	**15**	**12**	**6.25**	**2.75**	**11.75**	**14**	**8**	**16.75**	**22.5**	**11.5**	**24.75**	**22**	**10.5**	**19.5**	

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
July	1	0	0	0	0	0	0	3	0	0	0	0.5	0	3	0	0	0	0	0	0	0	
July	2	0	0	0	0	0	0	0	0	0	0	0	0	0	8.25	0	0	0	0	0	0	
July	3	0	0	2.2	0	0	0.25	5.5	0	0	0	0	0	0	0	7	0	16.5	0	0	0	
July	4	0	0	0	0	0	0	4.25	0	0	0	0	0	0	0	0	0	1.75	0	0	0	
July	5	0	0	0.4	0	0	0	0	0	0.25	0	0.25	0	0	0	0	0	0.25	0	0	0	
July	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
July	7	0	0	0	1.6	0.4	0	0	0	1	0	3.5	0	0	1.75	0	0	2.25	0	0	0	
July	8	0	0	0	6	1.5	0	0	0	0	0	0.75	0	0	0	0.25	0	0	0	0	0	
July	9	0	0	0	0	0	0	0	0	0	0	11.5	0	0	4	3	0	0	0	0	0	
July	10	1.8	0	0	0	0	0	0	0	0	0	0	0	0.25	5.25	0	0	0	0	0	0	
July	11	0	0	0	0	0	0	0	0	0	0	0.25	0	0	0.5	0	0	0	0	0	0	
July	12	0	0	0	0	0	0	0	0	0	0.25	0	0	0	0	0	0	0	0	0	0	
July	13	0	0	0	0	0	2.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	14	0	0	0	0	0	0.25	1.25	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	15	0	0	0	0	0	9.75	0	0	0	0	0	0	0	0	0	0	0.25	0	0	0	
July	16	0	0	0	0	0	0.75	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	17	0	5.6	0	0	0	12.75	0	0	0	0	0	0	0	2.5	0	0	0.25	0	0	0	
July	18	0	14.45	0	0	0	0.25	0	0	0	0	0	0	0	0	0	0	0.25	0	0	0	
July	19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	20	0	3.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	21	0	9.2	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	22	0	7.8	0	0	0	0	0	0	0	0	1.5	0	0	0	0	0	0	0	0	0	
July	23	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	24	0	0	0	0	0	0	0	0	1.25	0	0	0	0	0	0	0	0	0	0	0	
July	25	0	0	0	3	0.75	0	0	0	3	7.75	0	0	0	0	0	0	0	13.25	0	0	
July	26	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25	0	0	
July	27	0	0	0	0	0	0	0	0	0	9.5	0	0	0	0	0	0	0	0	0	0	
July	28	0	0	0	0	0	0	0	0	0	0	0.25	0	0	0	0	0	0	0	0	0	
July	29	0	0	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	30	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	
July	31	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.75	0	
Total Monthly Rainfall		**2**	**41.65**	**7**	**10.6**	**2.65**	**26.25**	**21**	**0**	**6.5**	**17.5**	**18.5**	**0**	**3.25**	**22.25**	**10.25**	**0**	**21.5**	**13.5**	**13.75**	**0**	
Maximum Daily Rainfall		**1.8**	**14.45**	**3.8**	**6**	**1.5**	**12.75**	**5.5**	**0**	**3**	**9.5**	**11.5**	**0**	**3**	**8.25**	**7**	**0**	**16.5**	**13.25**	**13**	**0**	

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
August	1	0	0	1.6	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	
August	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4.25	0	0	0	0	0	0	
August	3	0	0	0	0	0	0	0	2.75	0	0	0	0	0	0	1.25	0	0	0	0	0	
August	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
August	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
August	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.5	0	0	0	0	0	
August	7	0	0	0	0	12.25	0	0	0	0	0	0	0	0	0	2.25	1.25	0.31	0	0	3.75	
August	8	0	0	0	0	0.25	0	2	0	0	0	0	0	0	0	0.25	4.75	1.19	0	0	0	
August	9	0	0	4.4	2	1.25	0	0.25	0	0	1	0	0	0	0	0	0	0	0	0	0	
August	10	0.8	0	0	12	0	0	0	0	0	0	0.5	0	0	0.75	0	0	0	0	0	0	
August	11	0.2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
August	12	0	0	0	0	0	0	0	0.25	0	0	0	1.75	0.5	0	0	0	0	0	0	0	
August	13	0	0	0	7.2	0	0	0	0	0	0	0	1.5	0	0	0	0	0	0	0	0	
August	14	0	0	0	0	0	0	0	0	10.75	0	0	0	0	0	0	0	0	0	0	0	
August	15	0	1.4	0	0	0	0	0	0	1.75	0	0	0	0	0	0	0	0	0	0	3.25	
August	16	0	0	0	0	0	0	0	0	0.25	0	0	0	0	0	1	0	0	0	0	10	
August	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.25	
August	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.25	2.25	
August	19	0	12.2	5.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.25	0	
August	20	0	0.8	4.8	0	0	0	0	0	0	0	0	0	0	0	4.75	0	0	0	3.5	0	
August	21	0	7.6	0.4	0	0	0	0	0	0	0	0	0	0	4.75	2.5	0	0	0	0.25	0	
August	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
August	23	0	0	0	0	0	16.5	0	0	0	0	0	0	0	2.25	0	0	0	0	0	0	
August	24	0	0	15	0	0	0	0	0	0	0	0	0	0	0.25	0.25	0	0	0	4.5	0	
August	25	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	
August	26	0	0	4.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
August	27	0	0	5.2	0	0.5	0	0	0	0	0	0	0	0	0	0	1.75	0.44	0	16	0	
August	28	2.4	0	1.2	0	0	0	0	0	0	0.25	0.5	0	0	0	0	0	0	0	0.25	0	
August	29	0	0	0	0	0	0	0	0	0	6.25	0	0	0	0	0	0	0	2.5	0	0.25	
August	30	0	0	0	0	0	0	0	0	0	6.75	0	0	0	0	1	0	0	2.5	0	0	
August	31	0	1.2	0	0	12	0	0	0	0	1.25	1.75	0	0	0	0	0	0	1.25	0	0	
Total Monthly Rainfall		**3.4**	**23.2**	**43.6**	**22.2**	**26.25**	**16.5**	**2.25**	**3**	**12.75**	**15.5**	**2.75**	**3.25**	**0.5**	**12.75**	**18.75**	**7.75**	**1.94**	**6.25**	**51**	**26.75**	
Maximum Daily Rainfall		**2.4**	**12.2**	**15**	**12**	**12.25**	**16.5**	**2**	**2.75**	**10.75**	**6.75**	**1.75**	**1.75**	**0.5**	**4.75**	**5.5**	**4.75**	**1.19**	**2.50**	**18**	**10**	

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
September	1	0	0	0	0	0	0	0	0	0	8.5	3.5	0	0	0	0	0.25	0	2	0	0	
September	2	0	0	0	0	0	0	0	0	0	9	11.25	0	0	0	0	0	0	0	0	0	
September	3	0	5.6	0	1.6	0	0	0	0	19	12.25	0	0	0	0	0	0	0	0	0	0	
September	4	0	0	0	0	0	0	0	0	0	8.5	0	0	0	0	0	0	1	4.25	0	0	
September	5	0	0	0	1.4	0	0	0	0	0	0	2.5	0	0	0	0	5.25	0	0	0.25	0	
September	6	0	0	0	13.8	10.25	0	0	0	0	4.5	2	0	0	0	0	0.25	0	0	0	0	
September	7	0	0	0	5.4	7	0	0	0	0	15.25	2.5	0	0	0	0	0	0	0	0	0	
September	8	0	0	0	0	2.5	0	0	0	0	0	0	0.5	6	0	0	0	0	0	0	0	
September	9	11.6	0	0	12.2	0.25	0	0	0	0	0	0	7.75	1.5	1	0	0.75	0	0	0	0	
September	10	0	0	0	0	0.25	0	0.5	0	1	0	0	0	8	0	0	0	0	0	0	0	
September	11	0	0	0	0	1.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	
September	12	0	0	0	0	14.25	0	0	3.75	0	0	0	0	2.5	2.5	0	6.75	0	0	3	0	
September	13	0.6	0	0	0	8	0	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0.25	0	
September	14	0.6	0	0	0	0.25	0	0	0	0	0	0	0	0	8.25	4.75	0	0	0	12.25	0	
September	15	0.2	0	0	0	1.25	0	0	0	0	3	0	0	0	13.5	2	3.5	0	0	1.75	3	
September	16	0	5.2	0	5.4	2.75	0	0	3	0	0	0	0	4.5	0.75	0.25	0	0	0	0	6.5	
September	17	3.2	0	0	0	13.25	0	0	0	0	1.25	13.25	1	4	20.75	0	0	0	0	0	0	
September	18	4.4	2.4	0	0	18	0.25	0	0	0.25	1.25	0	1.25	0	1.25	0	43.5	0	0	0	0	
September	19	1.2	0	0	6.2	10.75	2.25	0	0	0.75	0.25	5	2.75	0	0.5	0	8.5	0	0	0	0	
September	20	10	1	0.2	0	0.5	0	0	0	0	0.75	0	0.25	0	0	0	5.75	0	0.5	0.25	0	
September	21	0	0.6	0	0	0	0	0	8.75	0	4.5	0	0	5.25	0	2.25	0	0	1	0	5.25	
September	22	0	0.6	0	0	0	1.75	0	0.25	0	0	0	0	6.25	6.25	0	0	0	0	0	3.75	
September	23	0	0	0	0	10.5	11.5	0	12.5	0	0	2	0	2	12.5	27.5	0	0	0	0.25	0	
September	24	0	1	11.6	0	1.5	0	0	3.5	12.5	0	0.5	0	0	0.25	20	0	0	1.25	3.5	0	
September	25	0	0.4	8.4	0	7.75	0	0	9.25	3	4.5	0.25	3.25	0	0	26	0	0	2.25	0	0	
September	26	0	0	1.2	0	17.5	3	0	4.75	1.25	2.75	0	0	0	0.5	11.5	0	0	1.25	16.5	0	
September	27	0	0	0	0	6	24	0	0	12	0.25	0	0	0	12	0	36	0	1.5	8.5	0	
September	28	0	0.6	0	0.8	0	1	0	6.5	0	0	0	0	0	0.25	0	4.25	0.25	3	0.5	0	
September	29	0	1	0	8	0	0	0	4.75	0	0	0	1	0	0	0	3	0	1.25	0	0	
September	30	0	8.8	0	0	0	0	0	3.25	1.5	0	0	1.5	0	0	0	5.5	0	0	0	10.75	
Total Monthly Rainfall		**31.8**	**27.2**	**21.4**	**54.8**	**133.75**	**43.75**	**0.5**	**60.25**	**51.25**	**76.5**	**42.75**	**19.25**	**40.5**	**80.25**	**94.25**	**123.75**	**1.25**	**18.25**	**47.5**	**29.25**	
Maximum Daily Rainfall		**11.6**	**8.8**	**11.6**	**13.8**	**18**	**24**	**0.5**	**12.5**	**19**	**15.25**	**13.25**	**7.75**	**8**	**20.75**	**27.5**	**43.5**	**1**	**4.25**	**16.5**	**10.75**	

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																				
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
October	1	0	0	0	3.4	0	0	0	9.25	0	0	0.5	0	11	0	0	16.25	0	0	0	1.25	
October	2	0	10.2	2	0	0	0	0	7	0	0	0.5	0	3	0.75	0	0	0	0	0.5	1	
October	3	0	1	13.4	0	0	0.5	0	5.75	0	2.25	4.25	0	0.5	0.25	0.25	0	0	17.75	0	2	
October	4	0	1	6.4	0	0	0.25	0	0	0	0	1	0	0	9.25	0.25	0	0	0.25	0	0	
October	5	0	0	1.8	0	0	0	0	0	0	0	0.25	0	0	2.5	0.5	0	0	0	10.25	0	
October	6	1.6	9	1.8	0	0	2	0	0	0	0	8	2	8.75	0	0	1.25	0	0	0	0	
October	7	0	10.4	2.4	0	0	0	0	0	0	0	12.25	0	0	9	0.25	5.5	0	0	0	0	
October	8	5.2	0	0	0	2.75	0.5	0	1.75	0	11.75	5	0	8.5	0.75	0.25	0	0	0	0	0	
October	9	0	0.4	0.6	0	23	0.5	0	0	0	0	0.25	0	5.25	0	16.5	0	0	0	7.5	0	
October	10	0	0	0	0	3.5	0.5	0	0	0	0	0	0	0.25	0	6.5	5.25	0	3	0.75	0	
October	11	0	0	0	0	2.25	8	0.25	0.25	1.25	12.75	0	0.25	0	0	34.25	4.25	0	2.75	0	3.5	
October	12	0	0	0	0	0.5	15.75	0	0	4.25	0	4.5	3.25	0	5	2	0.25	5	2.25	0	2.5	
October	13	0	n/a	8.2	0.8	0	2.5	3.5	4	1	6.75	3.25	1.75	0	0	28.5	2	0	0.25	0	5.75	
October	14	5	0	0	3.2	0	0	17.75	0	7	0	2.5	0	0	0	0	0.75	19.75	1	0	0	
October	15	10	0	7.6	3.2	0	0	3	0	0	0.25	9.25	0	0	3.25	0	2.5	0	1	3.5	0	
October	16	1.6	0.2	7	14.2	0	0	14.25	0	3	0	2.75	0.5	0	10.5	0	7.25	0	4	0.75	0	
October	17	0	1.2	0	48.6	0	0	0	0	0.75	0	2.25	13	0	11.25	0.75	8.25	0	4.5	0.5	0.25	
October	18	11.8	22.6	0	0	0	0	0	0	4.5	0	3.75	5.75	0	11.5	21.75	4.5	0	16.5	0.25	0.25	
October	19	8.2	27.4	0	0	0	0	19.75	0.5	0.25	0	6.5	9.75	0	2.5	0	0.25	0	11.5	19.5	24	
October	20	0	9.8	1.8	0	0	0.25	1	0.5	6.25	0.25	23	2	0	4.5	0	0	0	0.25	52.25	8.5	
October	21	0	1.6	0	4.4	0	0	0.75	0	4.5	0.25	11.5	2.5	0	22.25	0	3	3.5	0	22	0.25	
October	22	0	5.6	0	1.4	0.25	5.25	0	0.25	2	0.25	0.25	5	0	0	0	3.25	0	0	6.75	0.5	
October	23	0	0	0	34.8	2.25	16.25	5.75	0.5	25.75	0.25	1.5	0	0	0	17.5	1.5	2.75	0	0.5	0.5	
October	24	3	0	0	0	17.75	0	3	0	8.75	0	0	0	0.25	0	0	0.25	7.75	0	0.25	0.25	
October	25	0.4	0	0	10	22.75	0	3.75	0	1.5	0.5	0.25	0	1	0.5	0	1.25	5.5	56	0	10.75	
October	26	0.2	0	0	7.6	3.25	0	0	0.25	22.75	14.5	14.25	0	4	0	0.75	15.75	0.75	16	0.25	4.5	
October	27	0	0	0	0	0	1.75	9.75	0	9.75	2.25	4.75	0	6.25	0	0	4.75	21.75	0	3	5.25	
October	28	0	0	0	8.4	2.75	4.25	21.25	0	5.25	0	0.25	0	22.5	0	0.75	3.5	4.25	0	1.25	1.5	
October	29	1	0	0	13.4	0.5	15	1.25	0	14.75	12.5	0.5	0	8.75	0	0	52	0.25	0	0.75	13.25	
October	30	0	0	0.6	14.4	0.5	0	22.5	0	2.75	0.75	6	0	3.5	0	8.25	0	37	0	0.5	3	
October	31	0	0	2.4	3	4.25	7	3.75	0.25	11.25	15.75	6	0	6	0	0	0	3.75	0	0.25	0	
Total Monthly Rainfall		**48**	**100.4**	**56**	**170.8**	**86.25**	**80.25**	**131.25**	**30.25**	**137.25**	**81**	**135**	**45.75**	**89.5**	**93.75**	**139**	**143.5**	**112**	**137**	**131.25**	**88.75**	
Maximum Daily Rainfall		**11.8**	**27.4**	**13.4**	**48.6**	**23**	**16.25**	**22.5**	**9.25**	**25.75**	**15.75**	**23**	**13**	**22.5**	**22.25**	**34.25**	**52**	**21.75**	**56**	**52.25**	**24**	

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
November	1	0	0	0	0	2.75	0	10	1.5	3	48.5	14.5	0	2.25	0	0	0	0.25	0	14.8	20.25	
November	2	16.6	0	1.4	0.8	0.25	0	1.25	4	0	16	14.5	22.25	20	0	0	8.5	13.5	12.75	0.2	29	
November	3	15.6	4	3.4	0	0	7.75	3	3	1.75	0	0.25	3.5	7	0	27.25	14	22.75	32.75	0	1.25	
November	4	21.4	0.2	6.4	0	0	1	5.75	0	21.25	0	2.25	4.75	21.5	0	9.75	15.75	8	7.75	11.8	0.25	
November	5	26.2	0	0	19.4	9	0	11	2.25	5	0.25	19	0.5	9.25	0	5	8.5	0	20	0	0.5	
November	6	88	2.6	66	17	2.75	0	0	5.75	8.25	0.5	0.5	0	0	0	0	1.5	7.75	1.25	0	7.25	
November	7	4.2	2	36.6	18.6	0.25	0	3.75	3.25	10.25	4.25	2.75	0	0	0	0	3.25	4.25	3.25	0	22.5	
November	8	17.6	7.4	2.2	0.8	0	0.75	0.25	11.75	0	15	1.75	3	0	0.75	0	12.75	3.25	0	1.9	0.5	
November	9	1	2	3	6.4	1	2.75	0	0	0	0.5	8.25	1.75	0	3.25	6	0.25	0	0.5	15.1	0	
November	10	18.2	4.2	2.2	8.2	0	0	0	0	3.25	2.5	0	0	4.25	0	0	14.5	0	3	6.4	2.5	
November	11	1.2	1.6	12	0.6	3.25	0	0	0	0	6.25	0	3.25	0.25	0	0	4	0.25	9.75	10	0.75	
November	12	42.2	22.6	22	0	0	9.5	24.5	0	0	0.5	0.75	2.5	0	0	25	17.25	0	20.75	2.2	0	
November	13	18	1.8	0	6.4	6.25	8.25	4	3.75	0	44.5	7	14.5	0	0	13	2.75	0	6.75	14	0.25	
November	14	0.6	2	0.8	0	2.25	0.25	3	0.5	0	23.25	0	20.5	9	0	2.5	34.5	0	0.75	1.8	8.75	
November	15	39.8	14.2	0.2	17	1.5	0	0.25	0	0	13	5.25	10.5	18	0	6.75	71.25	0.25	0.25	0	4	
November	16	0	4.6	0	58.4	0	0	0	3	0	3.75	6.5	2.5	0	0.75	33	81.75	0.5	1	4.9	2.5	
November	17	12.8	5.4	0	15	12.75	11.75	0.5	0	0	7	0	0.25	0.25	0.25	11.75	0	0	0	0.2	1.25	
November	18	6.8	1	0	16.4	2	6.5	4.5	5	0	49	0	0.25	0	9.75	5.5	0	0	0	1.3	0.75	
November	19	7.8	1.6	0	42.2	0.75	0	7	24	0	0	0	18.75	0	0.25	3.5	14.5	0	4.5	0	0.25	
November	20	14.4	0	3.4	7.2	0	0.25	3.75	0	0	0	1.25	7.75	0	0	1.25	0.75	0.75	1	0.9	0	
November	21	35.2	0	7.2	1	0	0	10.75	0	2.25	0	0	2.75	0	0	0.25	0	0	0	0.7	4.5	
November	22	1.8	0	0	17.6	0	5.75	14	0	17.75	0	16	7.75	9	0	2.5	0	17.75	8.5	5.8	1	
November	23	10.2	0	0	10.2	0	58	0.25	0	1.5	0	0.5	8.5	6.5	2.25	6	2	0	0.5	1.2	4.5	
November	24	1.4	0	0	2.6	0	15	10.25	0	18	8	11	2	8.75	0.5	8.5	2.25	0	0	0.6	8	
November	25	14.4	0	0	17.2	4.5	9.75	0.25	0	9.75	0.75	8.25	5.25	0	0	0.25	0	5.75	0	1.7	0	
November	26	32	10.6	0	9.4	14.25	0	0	0	27.75	0	6.5	6.5	3	0	1	43.75	10	0	0	27.75	
November	27	17.8	0	0	0	0.25	1.25	0	0	5.75	0	5.75	0.75	36	0	5	1.25	0	0.5	0.5	4.5	
November	28	0.8	10.4	2.2	8.2	0	24.25	0	0	7.25	0	0	2.25	13.5	0	0	34.25	0	0	0	16	
November	29	17.4	0.2	6	7	8	0	5.5	0	3.25	0	1.5	0.5	2	0	0	9.25	15.25	0	0	0	
November	30	2	0	0.6	1	17.75	7	0.5	7.75	0.25	0.25	0.25	7.5	0.25	0	11.5	1	6.5	0	0	0	
Total Monthly Rainfall		**485.4**	**98.4**	**175.6**	**308.6**	**89.5**	**169.75**	**124**	**75.5**	**146.25**	**243.75**	**134.25**	**160.25**	**170.75**	**17.75**	**185.25**	**399.5**	**116.75**	**135.5**	**96**	**168.75**	
Maximum Daily Rainfall		**88**	**22.6**	**66**	**58.4**	**17.75**	**58**	**24.5**	**24**	**27.75**	**49**	**19**	**22.25**	**36**	**9.75**	**33**	**81.75**	**22.75**	**32.75**	**15.1**	**29**	

Appendix A-1. Daily Rainfall Data: Hartland Landfill Weather Station

AECOM

Date		Daily Rainfall (mm)																			
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
December	1	0	15.2	1.8	0	0.25	0.25	16	6.75	0.25	0.25	1	17.25	2.5	0	0	8.5	0	1.25	0	0	
December	2	0	46.4	0	0	0.25	0	23.25	5.75	0	9.5	0	2.5	1	0	0	0	3.5	8.25	0	4.5	
December	3	0	100.4	0	0	0.25	0	10.25	0	0.25	2.25	4.5	0	0	0	0	0	10	13.75	0	0.5	
December	4	3.6	18	0	0	0	0	13	0	0	7.75	0	0	0	0	0	0	0	9	0	2.5	
December	5	0.4	0.2	0	0	0	0	10.75	0	2	2.25	5	0	0	0	0.75	6.5	0.25	47.25	0	13.25	
December	6	0	0	4.2	0	0	0	8.5	0	1	17.5	0.25	0	0	0.25	0	0.25	5.25	6.75	4.5	7	
December	7	0.2	0	0.4	0	7	0	11	0	5.25	9.75	0	0	0	0.75	10.5	17.75	0.25	0.25	13.4	0.75	
December	8	0.2	0	0	0	4.25	1.75	7	0	0	5.75	0	0	0	0	16	2.75	7.75	4.75	4.4	4.25	
December	9	0.6	3.4	9.6	0	18.25	0	0	0	19.75	43	0	0.25	0	0	0	0.5	2	0	0	29.5	
December	10	1.4	0.2	3.8	0	0	0	9.25	0	13.75	15.25	8.25	0	8	0	0	0.5	3	33.75	0	20	
December	11	19.2	0.4	0	0	3.75	0	0.25	0	38.25	8	1.5	0	4.25	0	0.5	25	0	8	0	39.25	
December	12	17	0	22.2	0	5	0	6	0	6	0	0.25	0	36.75	4.75	0.25	27	0	0.5	0.6	1	
December	13	29.4	2.2	4.2	0	0.5	0	0	2	1.25	19	0	0	22.25	0.5	11.25	12	0	0	4	2.75	
December	14	31.8	9	1.6	10.4	3.25	0	7.75	2	0	10.25	0	0	24	0	2	4.25	0	0	5.8	0.5	
December	15	6.4	16.2	0	25.75	2	2.25	1.5	2.5	0	0	0	3	2.25	0	8.25	0.5	0	2.75	0	10.75	
December	16	0	0	0	14.25	0	1.25	0.75	4.5	0	0.25	0	4.5	0.75	0	8.5	0	0	3.75	14.4	24.75	
December	17	0	1.8	5.8	9.5	0	0.75	24.75	0	0.25	0	0	11	7	0.25	6.5	1	1.75	0.25	31.5	56.5	
December	18	1.8	6.2	3.4	4	0.75	0.75	10.75	0	2	25.75	1	6.5	13.5	0	16.5	9.25	0	0.25	20.6	6.5	
December	19	10	15.2	0	4.75	0.75	0.5	1.75	0	3.25	15.25	4	3	20	0	20.75	45.25	0	3.5	9.8	12.5	
December	20	6.2	0	0	11	1.5	0	22.75	0	3.75	0	1.25	0.75	5.5	0.5	0	0	0.25	3.75	1.4	13.5	
December	21	15.8	0	27.4	4.75	0	0	7.25	10.75	23.5	9	0	2.25	11.25	0.25	35.5	0	0	0.25	1.3	18.5	
December	22	1	19.4	13.2	0	0	0	0	2.5	3	9.25	0.25	0.75	0	0	12.5	5.25	0	1	4.7	7.25	
December	23	17.2	12.6	0.4	0	7	0.25	2.5	7.25	0	2.5	1.5	0	10.75	0	0.25	21.75	8.25	1.25	2.2	11.25	
December	24	23	0.2	21.8	0	5.25	1.25	4.25	6.75	11.75	8.25	0.25	0	12.25	0	0	1.25	44.75	0	0.8	0.75	
December	25	3.4	0	1.8	0	1	5.75	2	0	0.75	0	0	2.75	0	0	7	4.5	9.25	0	4.6	3	
December	26	4.8	0	7.8	0	8	3.5	22.25	0	0	0	0	0	0.5	0	4.75	3.25	26.75	3.75	11.5	4.25	
December	27	0	4.2	5	0	10.75	5.25	10	0	1.5	1	1	0.25	5.5	0	6.5	0	10.5	0.5	1.7	3.75	
December	28	0	7.6	0.6	0.25	0.5	30.75	0.75	2.5	6.25	12.25	0.25	19	1	0	0	0	0.75	0.25	8.5	0	
December	29	0.6	4.2	12.6	0	0	19.75	3	0	0.25	0	2.75	2.75	24.25	0	12.5	0	5	1.25	2.5	0	
December	30	0	1.8	1.6	3.5	0	5.25	3	0	0	0	0	4	19.5	0	29.25	0	13	0.25	2.5	0	
December	31	0	0	3	16.25	0	3.75	0	0.25	0	0	0.25	0	0	0	9.75	0	2.75	0.5	0.3	0	
Total Monthly Rainfall		**194**	**284.8**	**152.2**	**104.4**	**80.25**	**83**	**240.25**	**53.5**	**144**	**234**	**33.25**	**80.5**	**232.75**	**7.25**	**219.75**	**197**	**155**	**156.75**	**151**	**299**	
Maximum Daily Rainfall		**31.8**	**100.4**	**27.4**	**25.75**	**18.25**	**30.75**	**24.75**	**10.75**	**38.25**	**43**	**8.25**	**19**	**36.75**	**4.75**	**35.5**	**45.25**	**44.75**	**47.25**	**31.5**	**56.5**	

Appendix A-2

Monthly Rainfall Data – Hartland Landfill Weather Station

Appendix A-2. Monthly Rainfall Data: Hartland Landfill Weather Station

AECOM

Month	Monthly Rainfall (mm)																					
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Avg
January	277.4	312.4	106.8	121.6	180.5	161.8	150.8	53.8	70.3	160.8	114.5	26	153.5	158.8	166.5	194.5	149.5	45.3	206	42.8	153.5	148.7
February	79.2	94	63	43.8	50.3	72.5	122.5	67.3	130	133	172.8	50	70	39.3	129	104.8	56	99	117.3	125.3	125.3	90.3
March	36.6	162.2	71.4	99.2	92	108	129.5	91	113	123	137	158	132	15	40	41.3	117	70	64	149.3	149.3	97.3
April	55.6	40.8	70.4	94.6	67.8	109.8	53.5	70.5	66	35	14	90.8	108	54.3	32.8	37.3	118	64.3	43.5	18.5		53.5
May	34.2	18.4	15.8	62.6	76.5	61.8	32	53.5	40.3	4	11.8	41.3	10.5	31.3	47.5	22	50.3	15.3	52.3	39.3		35.4
June	30.4	34.4	24.2	7.2	1.8	7.5	44.8	30.3	12	3.5	41.5	34	19.3	19	45.3	26.3	46.5	28	31	31		25.8
July	2	41.7	7	10.6	2.7	26.3	21	0	6.5	17.5	18.5	0	3.3	22.3	10.3	0	21.5	13.5	13.75	0		13.6
August	3.4	23.2	43.6	22.2	26.3	16.5	2.25	3	12.8	15.5	2.8	3.25	0.5	12.8	18.8	7.8	1.9	6.3	51	26.8		18.0
September	31.8	27.2	21.4	54.8	133.8	43.8	0.5	60.3	51.3	76.5	42.8	19.3	40.5	80.3	94.3	123.8	1.3	18.3	48	29.3		44.0
October	48	100.4	56	170.8	86.3	80.3	131.3	30.3	137.3	81	135	45.8	89.5	93.8	139	143.5	112	137	131.3	88.8		109.4
November	485	98.4	175.6	308.6	89.5	169.8	124	75.5	146.3	243.8	134.3	160.3	170.8	17.8	185.3	399.5	116.8	135.5	96	168.8		168.7
December	194	284.8	152.2	104.4	80.3	83	240.3	53.5	144	234	33.3	80.5	232.8	7.3	219.8	197	155	156.8	151	299		156.9
Total Annual Rainfall	**1278**	**1238**	**807**	**1100**	**887**	**941**	**1052**	**589**	**929**	**1127**	**858**	**709**	**1031**	**552**	**1128**	**1298**	**946**	**789**	**1005**	**1019**	**428**	**962**

Notes:
Weather data collected in 2009 is unreliable due to equipment failure

Appendix B-1

Hartland Landfill Site Plan

HARTLAND LANDFILL SITE PLAN



Making a difference...together

0 50 100 200 Metres

Projection: UTM ZONE 10N NAD 83

PS Leachate Pump Station

Hartland Leachate Line

Residual Solids & Centrate Return Line

Cell Phases

Lot Lines

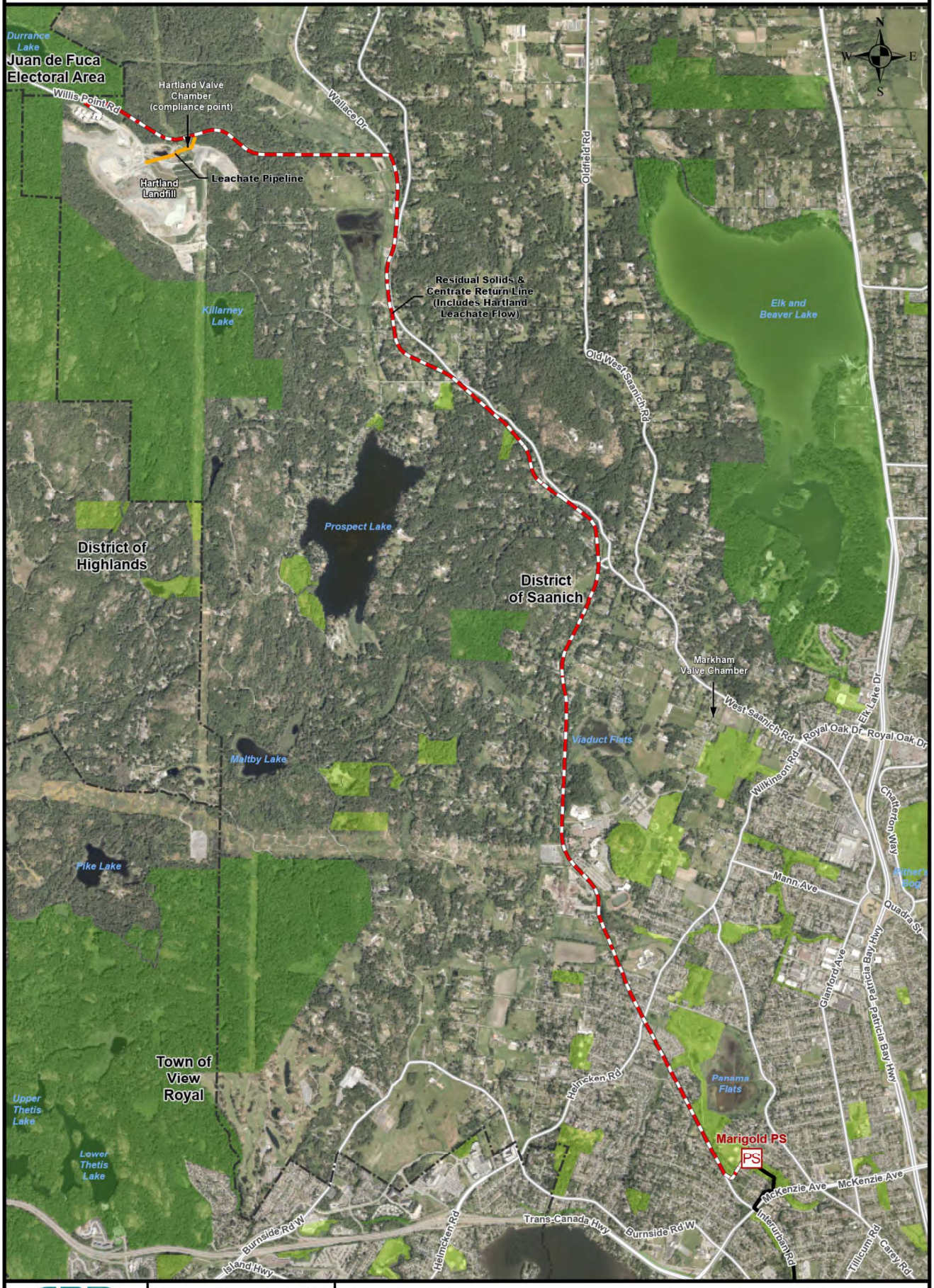
Regional Park

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Appendix B-2

Hartland Landfill Leachate Pipeline Plan

HARTLAND LANDFILL - LEACHATE PIPELINE PLAN



Metres
0 250 500 1,000

Projection: UTM ZONE 10N NAD 83

PS CRD Pump Station
Residual Solids & Centrate Return Line
Hartland Leachate Pipeline
CRD Trunk Main
Municipal Boundaries
Major Roads
Municipal Park
Regional Park

Orthophoto flown in 2025

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Appendix B-3

Groundwater Level Monitoring Locations

HARTLAND LANDFILL
GROUNDWATER LEVEL MONITORING LOCATIONS



CRD
Making a difference...together

Metres
0 25 50 100 150

Projection: UTM ZONE 10N NAD 83

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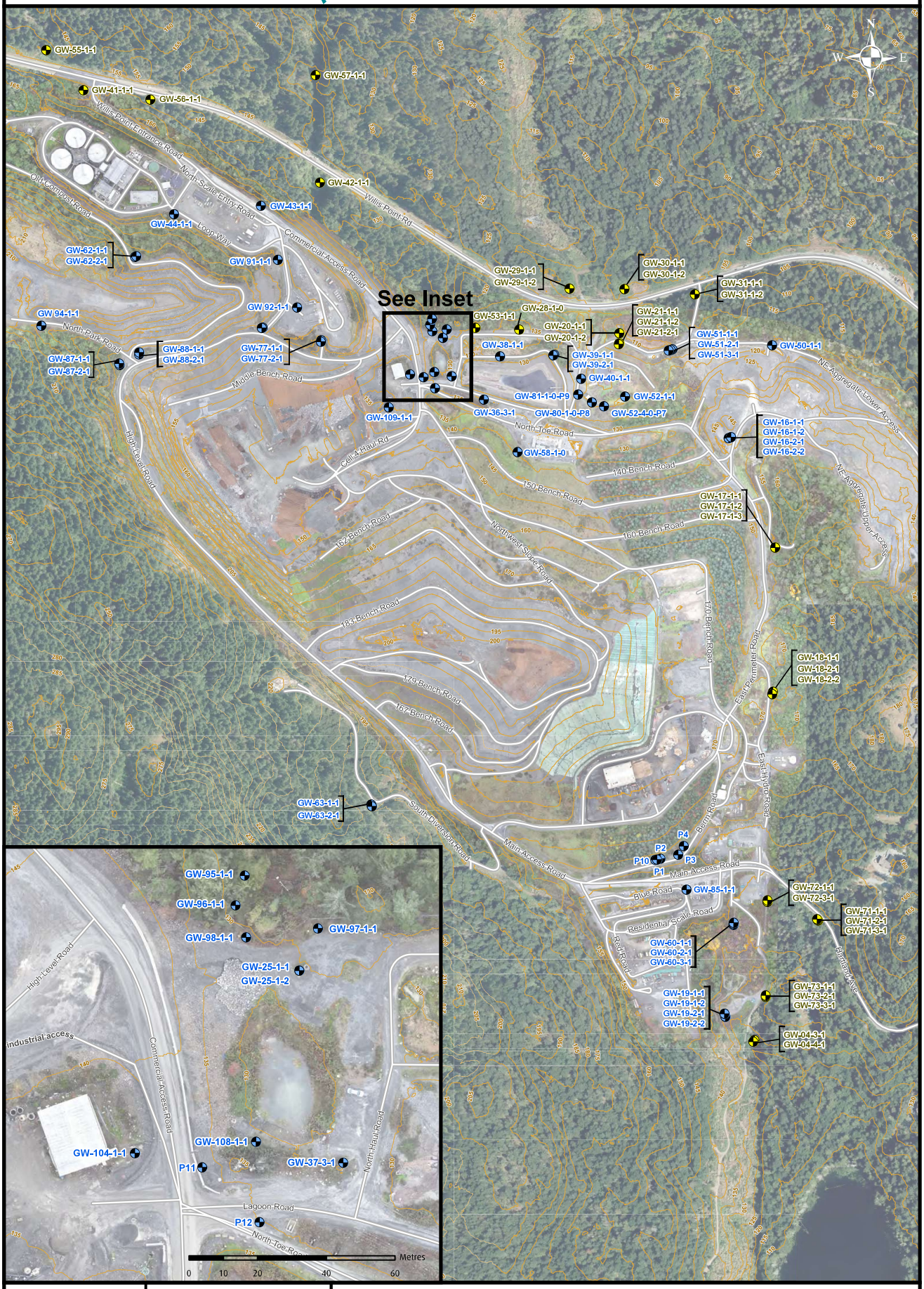
Groundwater Level Monitoring Locations
Monitoring Frequency (# times per year)
- 4
- Continuous
- Variable - Focused Investigation

Roads
Contours (5m interval)

Appendix B-4

Groundwater Quality Monitoring Locations

HARTLAND LANDFILL
GROUNDWATER QUALITY MONITORING LOCATIONS



Metres
0 25 50 100 150

Projection: UTM ZONE 10N NAD 83

Groundwater Monitoring Location – Non-Compliance Well

Groundwater Monitoring Location – Compliance Well

Roads

Contours (5m interval)

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Appendix B-5

Surface Water Quality Monitoring Locations

HARTLAND LANDFILL
SURFACE WATER QUALITY MONITORING LOCATIONS



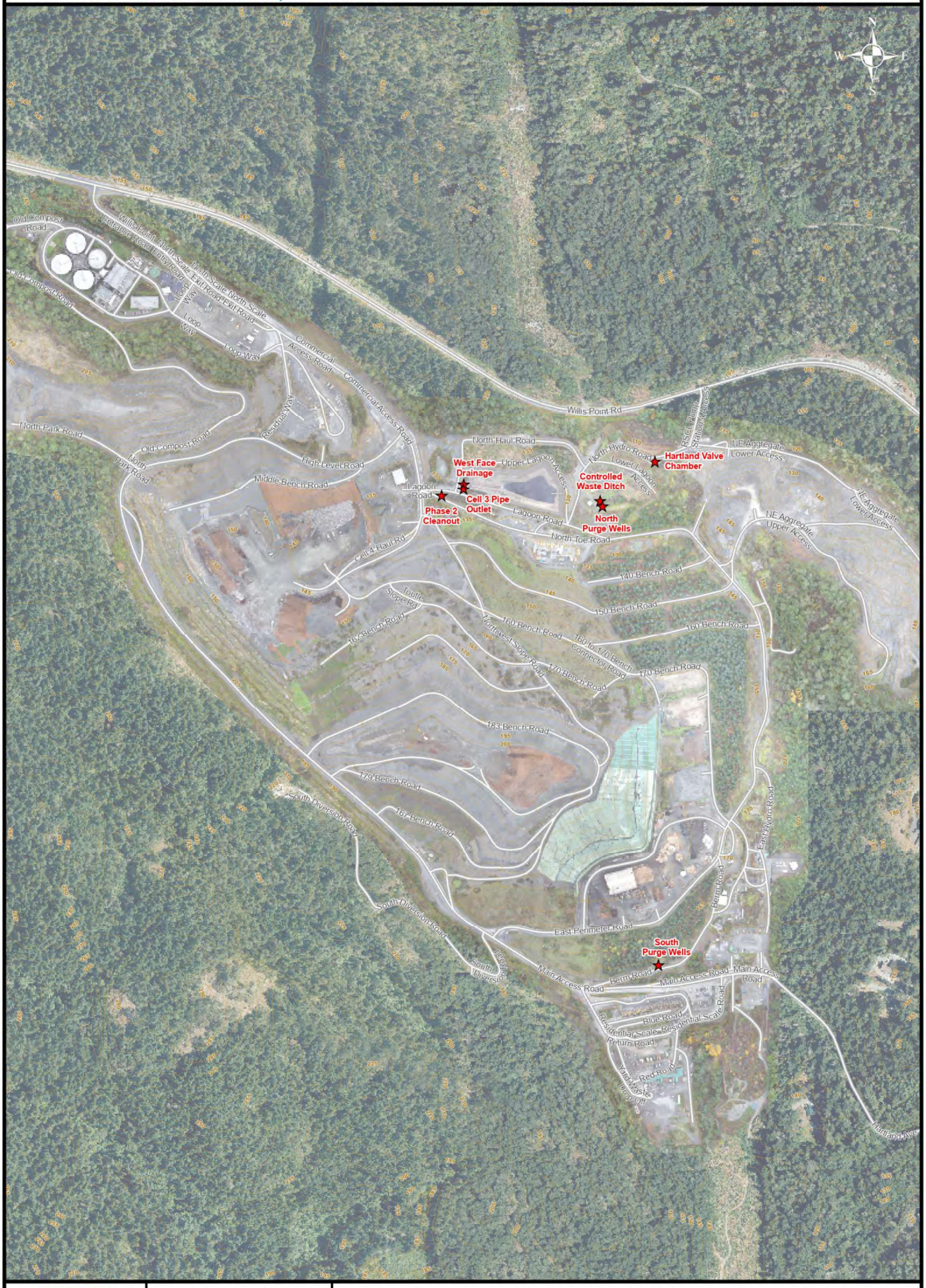
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Appendix B-6

Leachate Quality Monitoring Locations

HARTLAND LANDFILL
LEACHATE QUALITY MONITORING LOCATIONS



Making a difference...together

Metres
0 25 50 100 150

Projection: UTM ZONE 10N NAD 83

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★ Leachate Quality Monitoring Locations

Roads

Contours (5m interval)

Appendix C-1

Monitoring Well Coordinates

Appendix C-1. Monitoring Well Coordinates 2025-2026

AECOM

Station Name	Status	Location		Elevations					Depths				Survey Date	Monitor Class	Area of Landfill	Comments
		Northing (NAD 83)	Easting (NAD 83)	Ground Surface Elevation	Top of Casing Elevation	Top of Piezometer Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Stickup	Borehole Depth Below Ground Surface	Depth to Top of Screen Below Ground Surface	Depth to Bottom of Screen Below Ground Surface		Shallow (S), Intermediate (I), Deep (D)		
		m	m	m asl	m asl	m asl	m asl	m asl	m ags	m bgs	m bgs	m bgs				
GW-04-2-1	Active	5375468.6	466169.2	127.10	127.96	127.85	107.49	104.44	0.75	22.66	19.61	22.66	2020	I	SP1	
GW-04-3-1	Active	5375469.1	466167.7	127.10	128.20	128.09	114.26	111.21	1.05	15.89	12.84	15.89	2020	I	SP1	
GW-04-4-1	Active	5375466.9	466166.0	127.09	128.07	128.01	122.98	119.93	0.88	7.16	4.11	7.16	2020	S	SP1	
GW-07-1-0	Active	5375614.2	466176.7	140.90	142.74	142.69	N/A	N/A	1.69	36.58	N/A	N/A	2020	D	SP1	
GW-09-1-0	Active	5375767.7	466187.1	149.05	150.14	150.14	N/A	N/A	1.18	98.37	N/A	N/A	2020	D	EP1	
GW-16-1-1	Active	5376345.3	466130.1	145.88	146.53	144.05	101.98	100.48	0.58	45.40	43.90	45.40	2020	D	EP1	
GW-16-1-2	Active	5376345.3	466130.2	145.88	146.53	143.98	110.98	109.48	0.52	36.40	34.90	36.40	2020	D	EP1	
GW-16-2-1	Active	5376346.7	466133.6	145.78	146.47	143.66	119.81	118.81	0.36	26.97	25.97	26.97	2020	I	EP1	
GW-16-2-2	Active	5376346.8	466133.7	145.78	146.47	143.71	129.81	126.81	0.41	18.97	15.97	18.97	2020	I	EP1	
GW-17-1-1	Active	5376186.1	466197.9	150.96	151.90	151.81	100.49	98.99	1.09	51.97	50.47	51.97	2020	D	EP1	
GW-17-1-2	Active	5376186.2	466197.9	150.96	151.90	151.84	110.99	109.49	1.12	41.47	39.97	41.47	2020	D	EP1	
GW-17-1-3	Active	5376186.2	466197.8	150.96	151.90	151.76	136.49	133.29	1.05	17.67	14.47	17.67	2020	I	EP1	
GW-18-1-1	Active	5375976.4	466194.7	168.82	169.49	169.37	110.64	109.14	0.19	59.68	58.18	59.68	2020	D	EP1	
GW-18-2-1	Active	5375972.8	466193.7	168.96	169.68	169.16	138.42	136.92	0.24	32.04	30.54	32.04	2020	D	EP1	
GW-18-2-2	Active	5375972.8	466193.7	168.96	169.68	169.12	155.92	152.92	0.20	16.04	13.04	16.04	2020	I	EP1	
GW-19-1-1	Active	5375503.2	466125.4	132.89	133.86	133.54	96.89	95.39	0.96	37.50	36.00	37.50	2020	D	SP1	
GW-19-1-2	Active	5375503.3	466125.5	132.89	133.86	133.66	106.39	104.89	0.98	28.00	26.50	28.00	2020	I	SP1	
GW-19-2-1	Active	5375507.6	466124.1	132.54	133.38	133.19	117.10	115.60	0.66	16.94	15.44	16.94	2020	I	SP1	
GW-19-2-2	Active	5375507.7	466124.2	132.54	133.38	133.28	126.60	123.60	0.72	8.94	5.94	8.94	2020	S	SP1	
GW-20-1-1	Active	5376497.9	465971.1	110.66	111.36	111.23	80.46	77.46	1.20	33.20	30.20	33.20	2020	D	NP1	Deactivated in 2010.
GW-20-1-2	Active	5376498.0	465971.0	110.66	111.36	111.24	92.66	89.66	1.21	21.00	18.00	21.00	2020	I	NP1	
GW-21-1-1	Active	5376483.5	465970.9	110.94	111.83	111.74	98.02	94.92	1.25	16.02	12.92	16.02	2020	I	NP1	
GW-21-1-2	Active	5376483.5	465970.9	110.94	111.83	111.72	105.42	102.32	1.24	8.62	5.52	8.62	2020	S	NP1	
GW-21-2-1	Active	5376481.9	465970.1	111.10	111.89	111.82	No log	No log	0.70	N/A	N/A	N/A	2020	S	NP1	
GW-25-1-1	Active	5376491.3	465714.2	129.98	130.92	130.81	106.91	105.41	0.86	24.57	23.07	24.57	2020	I	NP2	
GW-25-1-2	Active	5376491.3	465714.2	129.98	130.92	130.81	125.61	123.41	0.87	6.57	4.37	6.57	2020	S	NP2	
GW-28-1-0	Active	5376503.3	465825.1	136.31	137.12	136.56	N/A	N/A	0.27	32.80	N/A	N/A	2020	D	NP1	
GW-29-1-1	Active	5376562.9	465898.4	113.45	114.45	114.41	100.28	98.87	0.99	14.58	13.17	14.58	2020	S	NP1	
GW-29-1-2	Active	5376562.9	465898.5	113.45	114.45	114.42	110.39	105.96	1.00	7.49	3.06	7.49	2020	S	NP1	
GW-30-1-1	Active	5376562.2	465978.4	109.84	110.89	110.79	95.51	94.10	0.95	15.74	14.33	15.74	2005	I	NP1	
GW-30-1-2	Active	5376562.3	465978.5	109.84	110.89	110.79	108.56	104.07	0.95	5.77	1.28	5.77	2005	S	NP1	
GW-31-1-1	Active	5376554.7	466080.9	105.35	106.39	106.32	90.92	89.50	0.98	15.85	14.43	15.85	2020	I	NP1	
GW-31-1-2	Active	5376554.6	466080.9	105.35	106.39	106.31	103.84	99.41	0.98	5.94	1.51	5.94	2020	S	NP1	
GW-36-1-1	Active	5376398.6	465778.5	130.57	131.62	131.44	117.87	114.87	1.30	15.70	12.70	15.70	2020	I	NP2	
GW-36-2-1	Active	5376400.3	465776.7	130.26	131.14	131.08	90.68	87.63	1.07	42.63	39.58	42.63	2020	D	NP2	
GW-36-3-1	Active	5376401.4	465773.8	130.16	131.03	130.95	115.01	112.01	0.95	18.15	15.15	18.15	2020	I	NP2	
GW-37-1-1	Active	5376432.3	465725.7	129.84	130.10	129.91	117.35	114.35	0.39	15.49	12.49	15.49	2020	I	NP2	
GW-37-2-1	Active	5376432.3	465727.9	129.94	130.66	130.52	89.47	86.42	0.68	43.52	40.47	43.52	2020	D	NP2	
GW-37-3-1	Active	5376435.3	465727.0	129.89	130.78	130.65	119.72	115.15	0.68	14.74	10.17	14.74	2020	S	NP2	
GW-38-1-1	Active	5376464.3	465797.4	131.86	132.47	132.34	N/A	N/A	0.41	18.29	N/A	N/A	2020	I	NP2	
GW-39-1-1	Active	5376466.8	465876.2	129.60	130.25	130.14	111.10	108.10	0.57	21.50	18.50	21.50	2020	I	NP2	
GW-39-2-1	Active	5376465.9	465874.8	129.75	130.74	130.59	95.56	92.56	0.83	37.19	34.19	37.19	2020	D	NP2	
GW-40-1-1	Active	5376431.8	465915.3	122.04	122.79	122.69	109.76	106.76	0.68	15.28	12.28	15.28	2020	I	NP1	
GW-41-1-1	Active	5376851.6	465190.7	149.34	150.18	150.04	143.41	140.41	0.68	8.93	5.93	8.93	2020	S	HNP	
GW-42-1-1	Active	5376717.3	465535.1	138.69	139.35	139.23	133.02	129.97	0.52	8.72	5.67	8.72	2020	S	HNP	
GW-43-1-1	Active	5376683.5	465449.1	162.66	162.93	163.03	144.31	141.26	0.50	21.40	18.35	21.40	2020	I	HNP	
GW-44-1-1	Active	5376671.2	465322.6	161.00	161.88	161.75	153.84	150.79	0.43	10.21	7.16	10.21	2020	S	HNP	
GW-46-2-1	Active	5376075.6	466029.6	168.94	170.40	170.66	161.69	158.69	1.73	10.25	7.25	10.25	2020	S	P1	
GW-46-3-1	Active	5376078.5	466035.7	169.86	170.87	171.10	137.83	134.78	2.55	35.08	32.03	35.08	2020	D	P1	Installed during 2005

Notes:

Datum Description

m bgs	*metres below ground surface*
m ags	*metres above ground surface*
m asl	*metres above mean sea level*

Monitor Class

S	*Shallow well <15 m deep*
I	*Intermediate well between 15 and 30 m deep*
D	*Deep well >30 m deep*

Area of Landfill

SP1	*South of Phase 1 Landfill*
EP1	*East of Phase 1 Landfill*
NP1	*North of Phase 1 Landfill*
NP2	*North of Phase 2 Landfill*
BKGND - WP2	*Background Water Quality West of Phase 2*
HNP	*Hartland North Pad*
P1	*Phase 1*
P2	*Phase 2*

Appendix C-1. Monitoring Well Coordinates 2025-2026

AECOM

Station Name	Status	Location		Elevations					Depths				Survey Date	Monitor Class	Area of Landfill	Comments
		Northing (NAD 83)	Easting (NAD 83)	Ground Surface Elevation	Top of Casing Elevation	Top of Piezometer Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Stickup	Borehole Depth Below Ground Surface	Depth to Top of Screen Below Ground Surface	Depth to Bottom of Screen Below Ground Surface		Shallow (S), Intermediate (I), Deep (D)		
		m	m	m asl	m asl	m asl	m asl	m asl	m ags	m bgs	m bgs	m bgs				
GW-46-4-1	Active	5376085.7	466035.5	169.87	171.18	171.56	151.12	148.07	2.32	21.80	18.75	21.80	2020	I	P1	Installed during 2005
GW-47-2-1	Active	5375887.8	465994.2	172.67	173.96	174.19	154.78	151.73	2.55	20.94	17.89	20.94	2020	I	P1	Installed during 2005
GW-48-2-1	Active	5375815.0	466030.9	169.70	171.04	171.12	149.97	146.92	2.35	22.78	19.73	22.78	2020	I	P1	Installed during 2005
GW-50-1-1	Active	5376480.5	466193.4	119.39	120.46	120.48	105.47	102.47	1.06	16.92	13.92	16.92	2020	I	EP1	
GW-51-1-1	Active	5376474.6	466048.3	111.02	111.84	111.91	106.13	103.13	0.86	7.89	4.89	7.89	2020	S	NP1	
GW-51-2-1	Active	5376473.7	466045.7	111.04	111.87	111.94	100.49	97.49	0.99	13.55	10.55	13.55	2020	S	NP1	
GW-51-3-1	Active	5376472.8	466042.8	111.00	111.88	111.94	93.85	90.85	0.92	20.15	17.15	20.15	2020	I	NP1	
GW-52-1-1	Active	5376405.9	465979.3	119.96	120.24	120.20	93.19	90.19	0.99	29.77	26.77	29.77	2020	I	NP1	
GW-52-2-0	Active	5376391.0	465959.0	120.17	120.64	120.64	N/A	N/A	0.66	15.57	N/A	N/A	2020	I	NP1	
GW-52-3-0	Active	5376389.9	465948.8	119.94	120.33	120.33	N/A	N/A	0.57	15.53	N/A	N/A	2020	I	NP1	
GW-52-4-0-P7	Active	5376391.6	465948.6	119.80	120.60	120.38	N/A	N/A	0.80	22.25	N/A	N/A	2020	I	NP1	Purge well
GW-53-1-1	Active	5376505.8	465761.5	130.91	131.84	131.90	114.15	110.88	1.08	20.03	16.76	20.03	2020	I	NP2	
GW-54-1-1	Active	5376187.4	466226.7	154.59	155.55	155.62	107.91	104.91	1.02	49.68	46.68	49.68	2020	D	EP1	
GW-54-2-1	Active	5376185.3	466225.3	154.64	155.58	155.64	118.55	115.55	0.97	39.09	36.09	39.09	2020	D	EP1	
GW-54-3-1	Active	5376183.1	466224.5	154.55	155.47	155.51	138.05	135.05	0.87	19.50	16.50	19.50	2020	I	EP1	
GW-55-1-1	Active	5376910.0	465136.5	147.52	148.41	148.34	139.06	134.56	0.85	12.96	8.46	12.96	2020	S	HNP	
GW-56-1-1	Active	5376838.0	465288.2	148.58	149.57	149.49	139.92	131.29	0.94	17.29	8.66	17.29	2020	I	HNP	
GW-57-1-1	Active	5376873.5	465528.8	132.31	132.95	132.87	122.77	118.81	0.53	13.50	9.54	13.50	2020	S	HNP	
GW-58-1-0	Active	5376325.1	465822.9	139.26	138.30	140.21	N/A	N/A	1.06	19.20	N/A	N/A	2020	I	NP2	
GW-60-1-1	Active	5375636.9	466137.2	141.64	142.41	142.33	122.23	119.23	0.69	22.41	19.41	22.41	2020	I	SP1	
GW-60-2-1	Active	5375638.4	466137.4	141.66	142.47	142.41	129.51	126.51	0.79	15.15	12.15	15.15	2020	I	SP1	
GW-60-3-1	Active	5375640.0	466137.5	141.75	142.62	142.51	137.84	134.84	0.75	6.91	3.91	6.91	2020	S	SP1	
GW-61-1-1	Active	5375980.4	465523.4	211.94	212.99	212.87	146.40	143.40	0.95	68.54	65.54	68.54	2020	D	BKGND - WP2	
GW-62-1-1	Active	5376609.0	465265.8	183.47	184.35	184.23	161.32	159.82	N/A	23.65	22.15	23.65	2020	I	HNP	Survey elevations suspect.
GW-62-2-1	Active	5376610.1	465267.7	183.13	184.02	183.91	168.70	165.70	N/A	17.43	14.43	17.43	2020	I	HNP	Survey elevations suspect.
GW-63-1-1	Active	5375812.1	465609.7	197.27	198.18	198.10	168.44	165.44	0.85	31.83	28.83	31.83	2020	I	BKGND - WP2	
GW-63-2-1	Active	5375809.6	465610.7	197.23	198.15	198.05	186.73	183.73	0.82	13.50	10.50	13.50	2005	S	BKGND - WP2	
GW-71-1-1	Active	5375643.3	466260.5	144.00	144.94	144.84	116.61	113.56	0.81	30.44	27.39	30.44	2020	D	SP1	
GW-71-2-1	Active	5375644.1	466259.7	144.03	144.94	144.84	127.04	123.98	0.80	20.05	16.99	20.05	2020	I	SP1	
GW-71-3-1	Active	5375645.3	466258.9	144.04	144.97	144.92	137.04	134.00	0.85	10.04	7.00	10.04	2020	S	SP1	
GW-72-1-1	Active	5375670.6	466186.6	143.31	144.14	144.04	115.86	112.81	0.79	30.50	27.45	30.50	2020	D	SP1	
GW-72-2-1	Active	5375671.7	466186.7	143.32	144.10	144.05	126.56	123.20	0.72	20.12	16.76	20.12	2020	I	SP1	
GW-72-3-1	Active	5375672.7	466186.7	143.35	144.18	144.12	136.06	133.02	0.74	10.33	7.29	10.33	2020	S	SP1	
GW-73-1-1	Active	5375532.1	466184.1	134.31	135.47	135.38	106.91	103.86	0.86	30.45	27.40	30.45	2020	D	SP1	
GW-73-2-1	Active	5375533.1	466184.1	134.40	135.40	135.29	117.40	114.38	0.86	20.02	17.00	20.02	2020	I	SP1	
GW-73-3-1	Active	5375534.3	466184.0	134.42	135.36	135.30	127.46	124.42	0.83	10.00	6.96	10.00	2020	S	SP1	
GW-74-2-1	Active	5376021.8	466032.3	170.82	171.92	171.98	153.19	150.19	2.11	20.63	17.63	20.63	2020	I	P1	Installed during 2005
GW-75-1-1	Active	5376207.3	466035.3	154.62	155.15	155.78	127.72	121.72	1.15	32.90	26.90	32.90	2020	D	P1	
GW-76-1-1	Active	5375965.9	466228.2	171.06	171.78	171.68	123.23	117.13	0.61	53.93	47.83	53.93	2020	D	EP1	
GW-76-2-1	Active	5375967.3	466227.0	170.97	171.76	171.65	133.81	127.72	0.66	43.25	37.16	43.25	2020	D	EP1	
GW-76-3-1	Active	5375968.6	466225.8	170.99	171.74	171.70	145.08	142.03	0.72	28.96	25.91	28.96	2020	I	EP1	
GW-77-1-1	Active	5376487.7	465537.0	155.01	155.69	155.66	120.60	117.55	0.59	37.46	34.41	37.46	2020	D	NP2	Installed in 2006
GW-77-2-1	Active	5376485.6	465536.5	154.83	155.53	155.48	139.16	135.87	0.55	18.95	15.66	18.95	2020	I	NP2	Installed in 2006
GW-80-1-0-P8	Active	5376397.4	465931.0	119.62	N/A	120.38	N/A	N/A	N/A	20.42	N/A	N/A	2020	I	NP1	Purge well
GW-81-1-0-P9	Active	5376408.7	465911.0	122.17	122.87	122.82	N/A	N/A	N/A	26.82	N/A	N/A	2020	I	NP1	Purge well. Installed in 2007
GW-82-1-1	Active	5376257.5	465772.7	154.07	155.89	155.85	135.17	131.50	1.18	22.57	18.90	22.57	2020	I	P2	Installed in 2007
GW-83-1-1	Active	5376353.5	465724.0	141.31	143.00	142.91	124.97	121.92	1.35	19.39	16.35	19.39	2020	I	P2	Installed in 2007
GW-85-1-1	Active	5375688.3	466068.8	149.09	150.10	150.08	142.99	139.95	0.98	9.14	6.10	9.14	2020	S	SP1	Installed in March 2009
GW-87-1-1	Active	5376451.7	465243.4	182.40	183.24	183.19	147.70	144.60	0.84	37.80	34.70	37.80	2020	D	NP2	Installed in 2014

Notes:

Datum Description

m bgs	*metres below ground surface*
m ags	*metres above ground surface*
m asl	*metres above mean sea level*

Monitor Class

S	*Shallow well <15 m deep*
I	*Intermediate well between 15 and 30 m deep*
D	*Deep well >30 m deep*

Area of Landfill

SP1	*South of Phase 1 Landfill*
EP1	*East of Phase 1 Landfill*
NP1	*North of Phase 1 Landfill*
NP2	*North of Phase 2 Landfill*
BKGND - WP2	*Background Water Quality West of Phase 2*
HNP	*Hartland North Pad*
P1	*Phase 1*
P2	*Phase 2*

Appendix C-1. Monitoring Well Coordinates 2025-2026

AECOM

Station Name	Status	Location		Elevations					Depths				Survey Date	Monitor Class	Area of Landfill	Comments
		Northing (NAD 83)	Easting (NAD 83)	Ground Surface Elevation	Top of Casing Elevation	Top of Piezometer Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Stickup	Borehole Depth Below Ground Surface	Depth to Top of Screen Below Ground Surface	Depth to Bottom of Screen Below Ground Surface		Shallow (S), Intermediate (I), Deep (D)		
		m	m	m asl	m asl	m asl	m asl	m asl	m ags	m bgs	m bgs	m bgs				
GW-87-2-1	Active	5376453.8	465242.8	182.37	183.30	183.27	165.57	162.57	0.88	19.80	16.80	19.80	2020	I	NP2	Installed in 2014
GW-88-1-1	Active	5376467.2	465271.7	181.71	182.27	182.24	139.01	136.01	0.69	45.70	42.70	45.70	2020	D	NP2	Installed in 2014
GW-88-2-1	Active	5376470.1	465271.9	181.61	182.19	182.14	168.81	165.81	0.81	15.80	12.80	15.80	2020	I	NP2	Installed in 2014
GW-89-1-1	Active	5376028.6	466043.4	169.19	169.35	170.59	139.77	136.72	0.19	32.48	29.43	32.48	2020	D	P1	Installed in 208
GW-89-2-1	Active	5376026.8	466048.6	169.14	169.32	170.41	150.55	147.35	0.20	21.79	18.59	21.79	2020	I	P1	Installed in 2018
GW-90-1-1	Active	5376286.6	465651.3	151.88	N/A	152.69	118.34	115.30	0.81	36.58	33.54	36.58	2020	D	P2	Leachate mound monitoring well
GW-90-2-1	Active	5376286.9	465652.3	151.90	N/A	152.67	136.77	133.72	0.75	18.18	15.13	18.18	2020	I	P2	Leachate mound monitoring well
GW-91-1-1	Active	5376604.9	465473.7	164.61	N/A	165.33	149.01	145.97	0.72	18.64	15.60	18.64	2020	I	HNP	Installed in 2019
GW-92-1-1	Active	5376535.4	465501.9	167.88	167.86	167.74	147.76	144.72	0.89	23.16	20.12	23.16	2024	I	HNP	Installed in 2019
GW-94-1-1	Active	5376508.8	465129.5	203.65	N/A	204.32	163.87	160.83	0.67	42.82	39.78	42.82	2020	D	HNP	Installed in 2019
GW-95-1-1	Active	5376518.9	465698.3	128.44	129.36	129.36	126.00	124.48	0.92	3.96	2.44	3.96	2022	S	NP2	Installed in April 2022
GW-96-1-1	Active	5376510.3	465695.6	129.49	130.44	130.44	128.00	126.48	0.95	3.01	1.49	3.01	2022	S	NP2	Installed in April 2022
GW-97-1-1	Active	5376503.5	465719.6	129.12	130.00	130.00	126.04	122.99	0.88	6.13	3.08	6.13	2022	S	NP2	Installed in April 2022
GW-98-1-1	Active	5376501.0	465698.7	130.41	131.30	131.30	126.73	123.68	0.89	6.73	3.68	6.73	2022	S	NP2	Installed in April 2022
GW-104-1-1	Active	5376438.0	465686.3	135.52	135.46	135.46	129.36	127.84	0.00	7.68	6.16	7.68	2022	S	NP2	Installed in August 2022
GW-108-1-1	Active	5376441.5	465701.6	129.80	130.69	0.00	118.37	115.32	0.89	14.48	11.43	14.48	2022	D	NP2	Installed in August 2022
GW-109-1-1	Active	5376390.1	465635.3	134.14	134.91	134.91	123.94	122.41	0.77	11.73	10.20	11.73	2022	S	NP2	Installed in August 2022
GW-111-1-1	Active	5376497.8	466422.4	98.55	99.24	99.33	84.05	82.55	0.77	16.00	14.50	16.00	2024	D	NP2	Installed in September 2024
GW-111-2-1	Active	5376499.7	466420.8	98.58	99.32	99.39	94.78	91.78	0.81	6.80	3.80	6.80	2024	S	NP2	Installed in September 2024
GW-112-1-1	Active	5376255.4	466450.9	117.71	118.48	118.54	99.81	98.31	0.83	19.40	17.90	19.40	2024	D	NP1	Installed in September 2024
GW-112-2-1	Active	5376256.4	466449.7	117.74	118.77	118.81	114.24	111.24	1.07	6.50	3.50	6.50	2024	S	NP1	Installed in September 2024
GW-113-1-1	Active	5376506.1	465451.7	165.44	166.24	166.33	128.74	125.74	0.88	39.70	36.70	39.70	2024	D	NP1	Installed in September 2024
GW-113-2-1	Active	5376505.7	465450.4	165.60	166.37	166.49	148.90	145.90	0.89	19.70	16.70	19.70	2024	S	NP1	Installed in September 2024
VLGW-02-D	Active	5375782.8	465984.7	169.04	N/A	170.10	155.58	151.58	0.21	17.46	13.46	17.46	2020	I	P1	Landfill gas well
VLGW-03-D	Active	5375776.6	465933.8	169.84	N/A	170.09	156.29	153.29	0.26	16.55	13.55	16.55	2020	I	P1	Landfill gas well
VLGW-04-D	Active	5375858.2	466056.1	169.07	N/A	169.75	156.24	152.24	0.65	16.83	12.83	16.83	2020	I	P1	Landfill gas well
VLGW-08-D	Active	5376087.8	466113.0	165.42	N/A	165.87	147.41	137.38	0.72	28.04	18.01	28.04	2020	I	P1	Landfill gas well
VLGW-11-S	Active	5375997.2	466122.7	167.32	166.53	167.75	160.42	155.78	0.42	11.54	6.90	11.54	2020	I	P1	Landfill gas well
VLGW-15-D	Active	5375843.1	465996.7	170.30	N/A	170.85	156.41	148.21	0.46	22.09	13.89	22.09	2020	D	P1	Landfill gas well
VLGW-16-D	Active	5375901.0	466010.9	172.39	N/A	172.91	157.02	147.48	0.84	24.91	15.37	24.91	2020	I	P1	Landfill gas well
VLGW-17-D	Active	5375959.4	466025.6	171.12	N/A	171.50	157.20	144.28	0.37	26.84	13.92	26.84	2020	D	P1	Landfill gas well
VLGW-18-D	Active	5376018.0	466039.8	169.76	N/A	170.25	152.94	141.80	0.47	27.96	16.82	27.96	2020	D	P1	Landfill gas well
VLGW-19-D	Active	5376076.3	466053.6	168.19	N/A	168.62	151.60	141.37	0.42	26.83	16.60	26.83	2020	I	P1	Landfill gas well
VLGW-21-D	Active	5376177.2	466081.6	164.55	N/A	165.12	147.63	140.17	0.49	24.38	16.92	24.38	2020	I	P1	Landfill gas well
VLGW-26-D	Active	5376165.3	466022.4	163.47	N/A	164.11	145.50	136.82	0.51	26.66	17.98	26.66	2020	D	P1	Landfill gas well
P1	Active	5375732.1	466026.0	157.29	158.38	158.28	147.05	132.29	0.99	25.00	10.24	25.00	2005	S	P1	Purge well, to replace the old well installed in 2005
P2	Active	5375733.3	466030.9	157.37	158.72	158.62	146.87	132.37	1.25	25.00	10.50	25.00	2005	I	P1	Purge well
P3	Active	5375739.0	466056.7	157.25	158.51	158.41	143.18	132.25	1.16	25.00	14.07	25.00	2005	I	P1	Purge well
P4	Active	5375751.7	466064.7	157.73	158.88	158.78	146.21	132.73	1.05	25.00	11.52	25.00	2005	I	P1	Purge well
P10	Active	5375731.5	466023.5	157.89	N/A	158.01	144.79	129.89	0.12	28.00	13.10	28.00	2010	I	P1	Purge well
P11	Active	5376434.0	465685.9	135.01	135.75	135.69	121.14	118.86	0.00	16.15	13.87	16.15	2022	D	NP2	Purge well. Installed in August 2022
P12	Active	5376418.0	465702.6	135.22	135.89	135.86	121.66	120.44	0.00	14.78	13.56	14.78	2022	D	NP2	Purge well. Installed in August 2022

Notes:

Datum Description

m bgs	*metres below ground surface*
m ags	*metres above ground surface*
m asl	*metres above mean sea level*

Monitor Class

S	*Shallow well <15 m deep*
I	*Intermediate well between 15 and 30 m deep*
D	*Deep well >30 m deep*

Area of Landfill

SP1	*South of Phase 1 Landfill*
EP1	*East of Phase 1 Landfill*
NP1	*North of Phase 1 Landfill*
NP2	*North of Phase 2 Landfill*
BKGND - WP2	*Background Water Quality West of Phase 2*
HNP	*Hartland North Pad*
P1	*Phase 1*
P2	*Phase 2*

Appendix C-1. Monitoring Well Coordinates 2025-2026

AECOM

Station Name	Status	Location		Elevations					Depths				Survey Date	Monitor Class	Area of Landfill	Comments
		Northing (NAD 83)	Easting (NAD 83)	Ground Surface Elevation	Top of Casing Elevation	Top of Piezometer Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Stickup	Borehole Depth Below Ground Surface	Depth to Top of Screen Below Ground Surface	Depth to Bottom of Screen Below Ground Surface		Shallow (S), Intermediate (I), Deep (D)		
		m	m	m asl	m asl	m asl	m asl	m asl	m ags	m bgs	m bgs	m bgs				
GW-01-1-1	Inactive	5375781.9	465852.0	0.00	0.00	168.56	0.00	0.00	0.00	0.00	0.00	0.00				
GW-01-1-2	Inactive	5375781.9	465852.0	0.00	0.00	168.53	0.00	0.00	0.00	0.00	0.00	0.00				
GW-01-1-3	Inactive	5375781.9	465852.0	0.00	0.00	168.53	0.00	0.00	0.00	0.00	0.00	0.00				
GW-01-2-1	Inactive	5375787.9	465859.0	0.00	0.00	168.25	0.00	0.00	0.00	0.00	0.00	0.00				
GW-01-3-1	Inactive	5375791.9	465851.0	0.00	0.00	167.81	0.00	0.00	0.00	0.00	0.00	0.00				
GW-02-1-1	Inactive	5375813.9	465996.0	0.00	0.00	166.90	0.00	0.00	0.00	0.00	0.00	0.00				
GW-02-1-2	Inactive	5375813.9	465996.0	0.00	0.00	166.90	0.00	0.00	0.00	0.00	0.00	0.00				
GW-02-1-3	Inactive	5375813.9	465996.0	0.00	0.00	166.90	0.00	0.00	0.00	0.00	0.00	0.00				
GW-02-2-1	Inactive	5375812.9	465990.0	0.00	0.00	167.14	0.00	0.00	0.00	0.00	0.00	0.00				
GW-03-1-1	Inactive	5375684.9	466042.0	147.41	148.21	148.05	122.91	122.21	0.64	25.20	24.50	25.20				
GW-03-1-2	Inactive	5375684.9	466042.0	147.41	148.21	148.05	134.11	133.61	0.64	13.80	13.30	13.80				
GW-03-1-3	Inactive	5375684.9	466042.0	147.41	148.21	148.05	143.41	141.61	0.64	5.80	4.00	5.80				
GW-03-2-1	Inactive	5375685.5	466037.7	149.20	150.01	149.28	145.15	142.10	0.08	7.10	4.05	7.10	2005	S	SP1	
GW-04-1-1	Inactive	5375464.0	466171.0	126.67	128.12	128.07	96.47	95.77	1.40	30.90	30.20	30.90				
GW-04-1-2	Inactive	5375464.0	466171.0	126.67	128.12	128.07	104.27	103.67	1.40	23.00	22.40	23.00				
GW-04-1-3	Inactive	5375464.0	466171.0	126.67	128.12	128.07	116.67	115.07	1.40	11.60	10.00	11.60				
GW-04-1-4	Inactive	5375464.0	466171.0	126.67	128.12	128.07	122.97	121.27	1.40	5.40	3.70	5.40				
GW-05-1-1	Inactive	5376444.9	465813.9	126.29	127.49	127.49	112.59	110.59	1.20	15.70	13.70	15.70				
GW-05-1-2	Inactive	5376444.9	465813.9	126.29	127.49	127.49	118.69	116.69	1.20	9.60	7.60	9.60				
GW-05-1-3	Inactive	5376444.9	465813.9	126.29	127.49	127.49	122.89	121.89	1.20	4.40	3.40	4.40				
GW-05-2-1	Inactive	5376426.9	465774.9	126.00	126.80	126.80	125.20	124.20	0.80	1.80	0.80	1.80				
GW-06-1-1	Inactive	5376148.9	465661.9	127.70	128.41	128.40	107.00	104.90	0.70	22.80	20.70	22.80				
GW-06-1-2	Inactive	5376148.9	465661.9	127.70	128.41	128.40	115.20	113.20	0.70	14.50	12.50	14.50				
GW-06-1-3	Inactive	5376148.9	465661.9	127.70	128.41	128.40	120.80	118.80	0.70	8.90	6.90	8.90				
GW-06-2-1	Inactive	5376151.9	465669.9	127.46	127.76	127.76	125.86	124.86	0.30	2.60	1.60	2.60				
GW-08-1-1	Inactive	5375867.9	465738.0	159.26	160.28	160.26	145.86	143.76	1.00	15.50	13.40	15.50				
GW-08-1-2	Inactive	5375867.9	465738.0	159.26	160.28	160.26	152.11	150.11	1.00	9.15	7.15	9.15				
GW-08-1-3	Inactive	5375867.9	465738.0	159.26	160.28	160.26	156.76	155.76	1.00	3.50	2.50	3.50				
GW-10-1-1	Inactive	5376108.9	465701.9	135.11	135.41	135.41	133.61	132.61	0.30	2.50	1.50	2.50				
GW-11-1-1	Inactive	5376254.9	465770.9	134.13	135.13	135.13	131.23	130.23	1.00	3.90	2.90	3.90				
GW-12-1-0	Inactive	5375701.0	466189.0	143.02	143.82	143.82	N/A	N/A	0.80	3.40	N/A	N/A	Historic	S	SP1	Dug well, deactivated in 2010
GW-13-1-1	Inactive	5376166.9	466031.9	150.43	152.73	152.73	121.93	118.93	2.30	31.50	28.50	31.50				
GW-13-1-2	Inactive	5376166.9	466031.9	150.43	152.73	152.73	126.83	125.33	2.30	25.10	23.60	25.10				
GW-14-1-1	Inactive	5375968.9	465969.9	158.73	160.22	160.22	138.53	135.53	1.49	23.20	20.20	23.20				
GW-15-1-1	Inactive	5375754.9	466007.0	159.78	160.82	160.82	145.68	143.38	1.04	16.40	14.10	16.40				
GW-18-1-2	Inactive	5375976.4	466194.7	168.82	169.49	169.33	122.61	121.11	0.52	47.71	46.21	47.71	2020	D	EP1	
GW-22-1-1	Inactive	5376290.1	465751.7	138.54	138.81	139.86	111.22	109.69	1.32	28.85	27.32	28.85				
GW-23-1-1	Inactive	5376260.7	465718.7	128.37	129.52	129.50	111.51	110.09	1.13	18.28	16.86	18.28				
GW-23-1-2	Inactive	5376260.7	465718.7	128.37	129.52	129.49	124.67	121.80	1.12	6.57	3.70	6.57				
GW-24-1-1	Inactive	5376421.9	465753.0	127.77	128.88	128.88	109.91	108.51	1.11	19.26	17.86	19.26				
GW-24-1-2	Inactive	5376421.9	465753.0	127.77	128.88	128.87	124.10	121.26	1.10	6.51	3.67	6.51				
GW-26-1-1	Inactive	5376319.8	465596.6	128.22	129.16	129.12	109.79	111.20	0.90	17.02	18.43	17.02				
GW-26-1-2	Inactive	5376319.8	465596.6	128.22	129.16	129.12	124.36	121.52	0.90	6.70	3.86	6.70				
GW-27-1-1	Inactive	5376357.9	465456.0	141.03	141.91	142.04	118.09	116.59	0.48	24.44	22.94	24.44	2020	I	BKGND - WP2	
GW-27-1-2	Inactive	5376357.9	465455.9	141.03	141.91	142.04	140.59	137.59	0.47	3.44	0.44	3.44	2020	S	BKGND - WP2	Destroyed in summer 2022
GW-32-1-1	Inactive	5376129.7	465569.9	165.41	166.44	166.34	123.85	122.44	0.93	42.97	41.56	42.97				
GW-32-1-2	Inactive	5376129.7	465569.9	165.41	166.44	166.37	157.93	152.04	0.96	13.37	7.48	13.37				
GW-33-1-1	Inactive	5376296.5	465627.4	124.55	123.43	124.54	111.11	109.69	-0.01	14.86	13.44	14.86				
GW-33-1-2	Inactive	5376296.5	465627.4	124.55	123.43	124.54	N/A	N/A	0.00	N/A	N/A	N/A				

Notes:

Datum Description

m bgs	*metres below ground surface*
m ags	*metres above ground surface*
m asl	*metres above mean sea level*

Monitor Class

S	*Shallow well <15 m deep*
I	*Intermediate well between 15 and 30 m deep*
D	*Deep well >30 m deep*

Area of Landfill

SP1	*South of Phase 1 Landfill*
EP1	*East of Phase 1 Landfill*
NP1	*North of Phase 1 Landfill*
NP2	*North of Phase 2 Landfill*
BKGND - WP2	*Background Water Quality West of Phase 2*
HNP	*Hartland North Pad*
P1	*Phase 1*
P2	*Phase 2*

Appendix C-1. Monitoring Well Coordinates 2025-2026

AECOM

Station Name	Status	Location		Elevations					Depths				Survey Date	Monitor Class	Area of Landfill	Comments
		Northing (NAD 83)	Easting (NAD 83)	Ground Surface Elevation	Top of Casing Elevation	Top of Piezometer Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Stickup	Borehole Depth Below Ground Surface	Depth to Top of Screen Below Ground Surface	Depth to Bottom of Screen Below Ground Surface		Shallow (S), Intermediate (I), Deep (D)		
		m	m	m asl	m asl	m asl	m asl	m asl	m ags	m bgs	m bgs	m bgs				
GW-34-1-1	Inactive	5376216.8	465668.4	119.47	0.00	0.00	104.64	101.64	0.00	17.83	14.83	17.83				
GW-34-2-1	Inactive	5376214.9	465668.9	119.67	0.00	0.00	115.97	112.97	0.00	6.70	3.70	6.70				
GW-35-1-1	Inactive	5376207.9	465677.3	120.19	0.00	0.00	108.29	105.29	0.00	14.90	11.90	14.90				
GW-35-1-2	Inactive	5376207.0	465675.9	120.33	0.00	0.00	117.13	114.13	0.00	6.20	3.20	6.20				
GW-45-1-1	Inactive	5376163.1	466106.3	162.37	0.00	0.00	143.71	140.71	0.00	21.66	18.66	21.66				
GW-46-1-1	Inactive	5376078.3	466029.2	170.48	171.65	171.96	140.68	134.68	1.48	35.80	29.80	35.80				
GW-47-1-1	Inactive	5375918.3	465992.6	174.85	177.24	177.37	155.09	152.09	2.52	22.76	19.76	22.76	2008	I	P1	
GW-48-1-1	Inactive	5375840.5	466031.3	169.78	171.34	171.63	160.14	157.14	1.85	12.64	9.64	12.64	2006	S	P1	
GW-49-1-0	Inactive	5376759.5	465218.7	160.00	159.81	159.81	N/A	N/A	-0.19	62.20	N/A	N/A				
GW-59-1-1	Inactive	5376254.5	465636.2	125.62	126.40	126.40	113.72	112.22	0.78	13.40	11.90	13.40				
GW-64-1-1	Inactive	5375855.0	465849.0	172.00	0.00	172.78	156.20	154.50	0.78	17.50	15.80	17.50				
GW-65-1-1	Inactive	5375831.0	465820.0	172.09	0.00	172.79	159.79	153.69	0.70	18.40	12.30	18.40				
GW-66-1-1	Inactive	5376088.0	465902.0	164.23	0.00	165.08	157.03	150.93	0.85	13.30	7.20	13.30				
GW-67-1-1	Inactive	5376256.2	465774.0	155.85	N/A	157.55	133.95	127.85	1.70	28.00	21.90	28.00	2005	I	P2	Destroyed. Replaced by GW-82-1-1
GW-67-2-1	Inactive	5376256.2	465774.0	155.85	0.00	157.55	133.95	127.85	1.70	28.00	21.90	28.00	2005	I	P2	
GW-68-1-1	Inactive	5376353.0	465718.0	141.56	0.00	142.74	130.36	124.26	1.18	17.30	11.20	17.30				
GW-68-2-1	Inactive	5376353.0	465718.0	141.56	N/A	142.29	123.76	120.76	0.73	20.80	17.80	20.80	Historic	I	P2	Destroyed. Replaced by GW-83-1-1
GW-69-1-1	Inactive	5376267.6	465685.8	140.64	0.00	142.50	127.64	121.54	1.86	19.10	13.00	19.10	2005	I	P2	
GW-69-2-1	Inactive	5376269.9	465667.0	140.67	0.00	142.11	121.67	115.67	1.44	25.00	19.00	25.00	2005	I	P2	
GW-70-1-1	Inactive	5376019.0	465891.0	167.00	0.00	167.59	149.50	143.40	0.59	23.60	17.50	23.60				
GW-74-1-1	Inactive	5376013.4	466018.4	170.94	171.56	171.80	138.04	132.04	0.86	38.90	32.90	38.90	2007	D	P1	
GW-78-1-1	Inactive	5376498.6	465648.9	142.65	143.49	143.40	113.46	110.18	0.72	32.46	29.18	32.46	2020	D	NP2	Installed in 2006
GW-78-2-1	Inactive	5376500.0	465646.9	142.63	143.44	143.39	132.42	129.14	0.77	13.49	10.21	13.49	2020	S	NP2	Installed in 2006
GW-79-1-1	Inactive	5376522.5	465404.3	182.87	183.63	183.59	147.82	144.77	0.72	38.10	35.05	38.10	2007	D	NP2	Installed during 2007, decommissioned in May 2018
GW-79-2-1	Inactive	5376521.9	465403.1	182.96	183.69	183.59	157.05	154.00	0.64	28.96	25.91	28.96	2007	I	NP2	Installed during 2007, decommissioned in May 2018
GW-84-1-1	Inactive	5376225.9	465646.9	158.20	158.86	158.79	120.63	117.58	0.59	40.62	37.57	40.62		I	P2	Installed during 2007
GW-84-2-1	Inactive	5376224.8	465648.5	158.43	159.06	161.36	133.14	130.09	2.93	28.34	25.29	28.34		S	P2	Installed during 2007
GW-86-1-1	Inactive	5376228.4	465651.4	160.55	N/A	N/A	N/A	N/A	N/A	42.98	N/A	N/A		D	P2	SG piezo - 42.42 m bgs
GW-86-1-2	Inactive	5376228.4	465651.4	160.55	N/A	N/A	N/A	N/A	N/A	42.98	N/A	N/A		I	P2	SG piezo - 20.85 m bgs
GW-86-2-1	Inactive	5376224.8	465651.8	160.55	N/A	N/A	N/A	N/A	N/A	30.78	N/A	N/A		D	P2	SG piezo - 29.69 m bgs
GW-86-2-2	Inactive	5376224.8	465651.8	160.55	N/A	N/A	N/A	N/A	N/A	30.78	N/A	N/A		I	P2	SG piezo - 8.67 m bgs
GW-93-1-1	Inactive	5376556.5	465260.0	183.42	N/A	184.24	159.34	156.29	0.83	27.13	24.08	27.13	2020	D	HNP	Installed in 2019
GW-99-1-1	Inactive	5376427.6	465668.9	135.40	135.30	0.00	132.96	131.44	-0.10	3.96	2.44	3.96	2022	S	NP2	Installed in April 2022
GW-100-1-1	Inactive	5376419.7	465668.6	135.50	135.44	0.00	130.01	128.49	-0.06	7.01	5.49	7.01	2022	S	NP2	Installed in April 2022
GW-101-1-1	Inactive	5376414.0	465669.1	135.46	135.33	0.00	129.97	126.92	-0.13	8.54	5.49	8.54	2022	S	NP2	Installed in April 2022
GW-102-1-1	Inactive	5376399.4	465663.5	134.46	135.01	135.01	129.89	128.36	0.56	6.10	4.57	6.10	2022	S	NP2	Installed in April 2022, decomissioned in Q3 2022
GW-103-1-1	Inactive	5376400.9	465626.0	135.74	136.67	136.67	130.88	129.35	0.92	6.39	4.86	6.39	2022	S	NP2	Installed in April 2022
GW-105-1-1	Inactive	5376432.0	465673.0	135.51	135.42	0.00	126.67	123.62	-0.09	11.89	8.84	11.89	2022	I	NP2	Installed in August 2022
GW-106-1-1	Inactive	5376423.4	465679.7	135.43	135.34	0.00	123.24	121.71	-0.09	13.72	12.19	13.72	2022	I	NP2	Installed in August 2022
GW-107-1-1	Inactive	5376417.3	465684.4	135.54	135.40	135.27	122.02	120.49	-0.14	15.05	13.52	15.05	2022	D	NP2	Installed in August 2022
GW-107-1-2	Inactive	5376417.3	465684.4	135.54	135.43	135.32	129.44	128.38	-0.11	7.16	6.10	7.16	2022	S	NP2	Installed in August 2022
GW-110-1-1	Inactive	5376365.0	465593.6	137.61	138.32	0.00	133.50	131.97	0.71	5.64	4.11	5.64	2022	S	NP2	Installed in August 2022
VLGW-01-D	Inactive	5375802.0	466041.2	169.43	N/A	Ground	163.25	156.25	0.54	13.19	6.19	13.19	2020	I	P1	Landfill gas well
VLGW-20-D	Inactive	5376131.4	466082.5	167.34	N/A	168.15	148.03	140.76	1.05	26.58	19.31	26.58	2020	I	P1	Landfill gas well
P5	Inactive	5375775.2	466079.9	158.35	159.46	159.36	144.43	133.35	1.01	25.00	13.92	25.00		I	P1	Purge well
P6	Inactive	5375803.6	466098.0	159.88	161.65	161.55	147.74	134.88	1.67	25.00	12.14	25.00		I	P1	Purge well

Notes:

Datum Description

m bgs	*metres below ground surface*
m ags	*metres above ground surface*
m asl	*metres above mean sea level*

Monitor Class

S	*Shallow well <15 m deep*
I	*Intermediate well between 15 and 30 m deep*
D	*Deep well >30 m deep*

Area of Landfill

SP1	*South of Phase 1 Landfill*
EP1	*East of Phase 1 Landfill*
NP1	*North of Phase 1 Landfill*
NP2	*North of Phase 2 Landfill*
BKGND - WP2	*Background Water Quality West of Phase 2*
HNP	*Hartland North Pad*
P1	*Phase 1*
P2	*Phase 2*

Appendix C-2

Groundwater Monitoring Plan

Appendix C-2. Groundwater Monitoring Plan 2025-2026

AECOM

Station Name	Status	Pipe Diameter (mm)	Groundwater Quality Samples		Groundwater Level Measurements		Development Method	Sampling Method	Comments
			Quarterly (4/yr)	Bi-annual (2/yr)	Manual Measurement (4/yr)	Pressure Transducer (Continuous)			
GW-04-2-1	Active	50			Y		NA	NA	Dedicated submersible pump installed January 2012. Well recharges very slowly since 2014, so it is no longer sampled.
GW-04-3-1	Active	50	Y		Y		footvalve	footvalve	Submersile pump removed. Sampled using waterra from May 2019 onwards.
GW-04-4-1	Active	50	Y		Y		footvalve	footvalve	
GW-07-1-0	Active	220			Y		well pump	well pump	Several maintenance issues (electrical panel, spigot connection, power) resulted in station not sampled in the last year.
GW-09-1-0	Active	150			Y		NA	NA	Sampling discontinued in 2010. Well scheduled to be decommissioned in 2026.
GW-16-1-1	Active	50		Y	Y		footvalve	footvalve	
GW-16-1-2	Active	50		Y	Y		footvalve	footvalve	
GW-16-2-1	Active	50		Y	Y		footvalve	footvalve	
GW-16-2-2	Active	50		Y	Y		footvalve	footvalve	
GW-17-1-1	Active	50		Y	Y	Y	footvalve	footvalve	Pressure transducer installed in March 2019.
GW-17-1-2	Active	50		Y	Y		footvalve	footvalve	
GW-17-1-3	Active	50		Y	Y		footvalve	footvalve	
GW-18-1-1	Active	50	Y		Y	Y	sample pump	footvalve	Dedicated submersible pump installed May 2009, failed in September and November 2018. Pressure transducer installed in March 2019.
GW-18-2-1	Active	50	Y		Y		footvalve	footvalve	
GW-18-2-2	Active	50	Y		Y		footvalve	footvalve	
GW-19-1-1	Active	50	Y		Y		footvalve	footvalve	19-1-1 sometimes flows artesian.
GW-19-1-2	Active	50	Y		Y		footvalve	footvalve	19-1-2 sometimes flows artesian.
GW-19-2-1	Active	50	Y		Y		footvalve	footvalve	19-2-1 sometimes flows artesian.
GW-19-2-2	Active	50	Y		Y		footvalve	footvalve	
GW-20-1-1	Active	50	Y		Y		footvalve	footvalve	Dedicated submersible pump installed January 2012. Pump ceased functioning in Nov 2019. Recharges in minutes
GW-20-1-2	Active	50	Y		Y		sample pump	sample pump	Dedicated submersible pump installed January 2012. Recharges completely in under 1 hour
GW-21-1-1	Active	50	Y		Y		footvalve	footvalve	Dedicated submersible pump installed January 2012. Pump replaced with Waterra.
GW-21-1-2	Active	50	Y		Y		sample pump	sample pump	Dedicated submersible pump installed January 2012.
GW-21-2-1	Active	50	Y		Y		footvalve	footvalve	
GW-25-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-25-1-2	Active	50	Y		Y		footvalve	footvalve	
GW-28-1-0	Active	150	Y		Y		sample pump	sample pump	Open borehole. Dedicated submersible pump installed January 2011.
GW-29-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-29-1-2	Active	50	Y		Y		footvalve	footvalve	
GW-30-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-30-1-2	Active	50	Y		Y		footvalve	footvalve	
GW-31-1-1	Active	50		Y	Y		footvalve	footvalve	
GW-31-1-2	Active	50		Y	Y		footvalve	footvalve	
GW-36-1-1	Active	50				Y	NA	NA	Pressure transducer installed in June 1997.
GW-36-2-1	Active	50			Y		footvalve	footvalve	
GW-36-3-1	Active	50	Y		Y		footvalve	footvalve	
GW-37-1-1	Active	50				Y	NA	NA	Pressure transducer installed in June 1997.
GW-37-2-1	Active	50			Y		footvalve	footvalve	
GW-37-3-1	Active	50	Y		Y		footvalve	footvalve	
GW-38-1-1	Active	50	Y		Y		footvalve	footvalve	Recharges very slowly, 48 hours required after purging to sample.
GW-39-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-39-2-1	Active	50	Y		Y		sample pump	sample pump	Dedicated submersible pump installed January 2011.
GW-40-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Pressure transducer installed in September 2008.
GW-41-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Pressure transducer installed in May 2018.
GW-42-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-43-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Pressure transducer installed in May 2018.
GW-44-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Pressure transducer installed in May 2018.
GW-46-2-1	Active	50			Y		NA	NA	Phase 1 leachate wells used for water levels only.
GW-46-3-1	Active	50			Y		NA	NA	Phase 1 leachate wells used for water levels only.
GW-46-4-1	Active	50			Y		NA	NA	Phase 1 leachate wells used for water levels only.
GW-47-2-1	Active	50			Y		NA	NA	Phase 1 leachate wells used for water levels only.
GW-48-2-1	Active	50			Y		NA	NA	Phase 1 leachate wells used for water levels only.
GW-50-1-1	Active	50	Y		Y		footvalve	footvalve	Reactivated to sampling plan in Q1 of 2024 due to Nitrate issues stemming from NE Stockpile.
GW-51-1-1	Active	50		Y	Y		footvalve	footvalve	
GW-51-2-1	Active	50		Y	Y		footvalve	footvalve	
GW-51-3-1	Active	50		Y	Y		footvalve	footvalve	
GW-52-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Pressure transducer installed in 2018.
GW-52-2-0	Active	150			Y		NA	NA	
GW-52-3-0 (P52)	Active	150				Y	NA	NA	Pressure transducer records water levels continuously.
GW-52-4-0 (P7)	Active	250	Y			Y	NA	spigot	Pressure transducer installed. Purge well in conjunction with 80-1-0-P8. Sampling spigot installed in 2016.
GW-53-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-54-1-1	Active	50			Y	Y	sample pump	sample pump	Dedicated submersible pump installed January 2012. Sampling discontinued in 2016. Pressure transducer installed in March 2019.
GW-54-2-1	Active	50			Y		footvalve	footvalve	Water levels only.
GW-54-3-1	Active	50			Y		footvalve	footvalve	Water levels only.
GW-55-1-1	Active	50		Y	Y		footvalve	footvalve	
GW-56-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-57-1-1	Active	50		Y	Y		footvalve	footvalve	
GW-58-1-0	Active	150	Y		Y		sample pump	sample pump	Dedicated submersible pump reinstalled after Phase 2 Cell one closure in October 2012. This well is an 8" diameter borehole.
GW-60-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-60-2-1	Active	50	Y		Y		footvalve	footvalve	

Notes:

Footvalves are 16 mm (5/8") unless otherwise noted.

NA - Not Available or Not Applicable.

Appendix C-2. Groundwater Monitoring Plan 2025-2026

AECOM

Station Name	Status	Pipe Diameter (mm)	Groundwater Quality Samples		Groundwater Level Measurements		Development Method	Sampling Method	Comments
			Quarterly (4/yr)	Bi-annual (2/yr)	Manual Measurement (4/yr)	Pressure Transducer (Continuous)			
GW-60-3-1	Active	50	Y		Y		footvalve	footvalve	
GW-61-1-1	Active	150			Y		NA	NA	Borehole well, water levels only.
GW-62-1-1	Active	50		Y	Y	Y	sample pump	sample pump	Portable pressure transducer installed January 2012 (3 hour recording interval). Submersible pump installed January 2012.
GW-62-2-1	Active	50		Y	Y		footvalve	footvalve	
GW-63-1-1	Active	50		Y	Y		sample pump	sample pump	Background station. Dedicated submersible pump installed January 2011.
GW-63-2-1	Active	50		Y	Y		footvalve	footvalve	Background station. Dedicated submersible pump installed January 2011.
GW-71-1-1	Active	50	Y		Y		sample pump	sample pump	Dedicated submersible pump installed January 2012 has malfunctioned.
GW-71-2-1	Active	50	Y		Y		sample pump	footvalve	Dedicated submersible pump installed January 2012.
GW-71-3-1	Active	50	Y		Y		footvalve	footvalve	
GW-72-1-1	Active	50	Y		Y		sample pump	sample pump	Dedicated submersible pump installed January 2012.
GW-72-2-1	Active	50			Y		footvalve	footvalve	Well has been recharging very slowly since 2014, so it is no longer sampled. Water levels only.
GW-72-3-1	Active	50	Y		Y		footvalve	footvalve	
GW-73-1-1	Active	50	Y		Y		sample pump	sample pump	Dedicated submersible pump installed January 2012.
GW-73-2-1	Active	50	Y		Y		sample pump	sample pump	Dedicated submersible pump installed January 2012.
GW-73-3-1	Active	50	Y		Y		footvalve	footvalve	
GW-74-2-1	Active	50			Y		NA	NA	
GW-75-1-1	Active	50			Y		NA	NA	
GW-76-1-1	Active	50			Y	Y	sample pump	sample pump	Dedicated submersible pump installed January 2010. Sampling discontinued in 2016. Pressure transducer installed in March 2019.
GW-76-2-1	Active	50			Y		sample pump	sample pump	Dedicated submersible pump installed January 2012. Sampling discontinued in 2016. Water levels only.
GW-76-3-1	Active	50			Y		footvalve	footvalve	Sampling discontinued in 2016. Water levels only.
GW-77-1-1	Active	50		Y	Y	Y	footvalve	footvalve	Portable pressure transducer installed January 2012 (3 hour recording interval). Dedicated submersible pump installed. Pump failed in 2020.
GW-77-2-1	Active	50		Y	Y		footvalve	footvalve	
GW-80-1-0 (P8)	Active	NA	Y		Y	Y	sample pump	spigot	Pressure transducer installed. Purge well in conjunction with 52-4-0-P7. Sampling spigot installed in 2016.
GW-81-1-0 (P9)	Active	NA	Y		Y	Y	NA	bailer	Borehole. Pressure transducer installed in 2018.
GW-82-1-1	Active	50			Y		NA	NA	
GW-83-1-1	Active	50			Y		NA	NA	
GW-85-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-87-1-1	Active	50		Y	Y	Y	footvalve	sample pump	Well drilled in December 2014. Dedicated submersible pump installed in February 2015. Pressure transducer installed March 2016.
GW-87-2-1	Active	50		Y	Y	Y	footvalve	footvalve	Well drilled in December 2014. Pressure transducer installed in March 2016.
GW-88-1-1	Active	50		Y	Y	Y	footvalve	footvalve	Well drilled in December 2014. Submersible pump installed in February 2015, malfunctioned in 2016. Pressure transducer installed March 2016.
GW-88-2-1	Active	50		Y	Y	Y	footvalve	footvalve	Well drilled in December 2014. Pressure transducer installed in March 2016.
GW-89-1-1	Active	50			Y	Y	NA	NA	Well drilled in Dec 2018. Pressure transducer installed in March 2019 failed in 2023, reinstalled with cable read.
GW-89-2-1	Active	50			Y		NA	NA	Well drilled in Dec 2018. Pressure transducer installed in March 2019 failed in 2023, not reinstalled.
GW-90-1-1	Active	50			Y		NA	NA	Well drilled in Oct 2019. Water levels not taken in well 2019-2024 due to high landfill gas concentrations in area.
GW-90-2-1	Active	50			Y		NA	NA	Well drilled in Dec 2018. No water levels taken in well 2091-2024 due to high landfill gas concentrations in area.
GW-91-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Well drilled in Dec 2019. Pressure transducer installed in March 2020.
GW-92-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Well drilled in Dec 2019. Pressure transducer installed in March 2020.
GW-94-1-1	Active	50			Y	Y	footvalve	footvalve	Well drilled in Dec 2019. Pressure transducer installed in March 2020.
GW-95-1-1	Active	50		Y	Y		footvalve	footvalve	Well drilled April 14 2022.
GW-96-1-1	Active	50		Y	Y		footvalve	footvalve	Well drilled April 14 2022.
GW-97-1-1	Active	50	Y		Y		footvalve	footvalve	
GW-98-1-1	Active	50	Y		Y		footvalve	footvalve	Well drilled April 18 2022.
GW 104-1-1	Active	50	Y		Y		footvalve	footvalve	Well drilled July 11 2022.
GW 108-1-1	Active	50		Y	Y		footvalve	footvalve	Well drilled August 2 2022.
GW 109-1-1	Active	50			Y		footvalve	footvalve	Well drilled August 9 2022. Deep well.
GW 111-1-1	Active	50	Y		Y		footvalve	footvalve	Well drilled September 9 2024
GW 111-2-1	Active	50	Y		Y		footvalve	footvalve	Well drilled September 10 2024.
GW 112-1-1	Active	50	Y		Y		footvalve	footvalve	Well drilled September 11 2024.
GW 112-2-1	Active	50	Y		Y		footvalve	footvalve	Well drilled September 12 2024.
GW 113-1-1	Active	50	Y		Y	Y	footvalve	footvalve	Well drilled September 13 2024.
GW 113-2-1	Active	50	Y		Y		footvalve	footvalve	Well drilled September 16 2024.
P1	Active	NA	Y			Y	NA	spigot	Pressure transducer and QED bladder pumps installed. Electric submersible pump installed May 14 2015.
P2	Active	NA	Y			Y	NA	spigot	Pressure transducer and QED bladder pumps installed.
P3	Active	NA	Y			Y	NA	spigot	Pressure transducer and QED bladder pumps installed.
P4	Active	NA	Y			Y	NA	spigot	Pressure transducer and QED bladder pumps installed.
P10	Active	NA	Y			Y	NA	spigot	Pressure transducer and QED bladder pumps installed.
P11	Active	101.6	Y		Y		footvalve	footvalve	Submersible pump installed and functional in Q2 of 2024.
P12	Active	101.6	Y		Y		footvalve	footvalve	Well drilled August 5 2022. 4" diameter borehole.
VLGW002D	Active	NA			Y		NA	NA	
VLGW003D	Active	NA			Y		NA	NA	
VLGW004D	Active	NA			Y		NA	NA	
VLGW008D	Active	NA			Y		NA	NA	
VLGW011S	Active	NA			Y		NA	NA	
VLGW015D	Active	NA			Y		NA	NA	
VLGW016D	Active	NA			Y		NA	NA	
VLGW017D	Active	NA			Y		NA	NA	
VLGW018D	Active	NA			Y		NA	NA	
VLGW019D	Active	NA			Y		NA	NA	
VLGW021D	Active	NA			Y		NA	NA	
VLGW026D	Active	NA			Y		NA	NA	

Notes:

Footvalves are 16 mm (5/8") unless otherwise noted.

NA - Not Available or Not Applicable.

Station Name	Status	Pipe Diameter (mm)	Groundwater Quality Samples		Groundwater Level Measurements		Development Method	Sampling Method	Comments
			Quarterly (4/yr)	Bi-annual (2/yr)	Manual Measurement (4/yr)	Pressure Transducer (Continuous)			
VLGW020D	Inactive	NA					NA	NA	Became obstructed in 2021.
GW-01-1-1	Inactive	20					NA	NA	Site destroyed.
GW-01-1-2	Inactive	20					NA	NA	
GW-01-1-3	Inactive	20					NA	NA	
GW-01-2-1	Inactive	20					NA	NA	
GW-01-3-1	Inactive	20					NA	NA	
GW-02-1-1	Inactive	20					NA	NA	Site destroyed.
GW-02-1-2	Inactive	20					NA	NA	
GW-02-1-3	Inactive	20					NA	NA	
GW-02-2-1	Inactive	20					NA	NA	
GW-03-1-1	Inactive	20					NA	NA	Deactivated at end of 1998, replaced by well 60-1-1.
GW-03-1-2	Inactive	20					NA	NA	Deactivated at end of 1998, replaced by well 60-2-1.
GW-03-1-3	Inactive	20					NA	NA	Deactivated at end of 1998, replaced by well 60-3-1.
GW-03-2-1	Inactive	50					NA	NA	Destroyed and replaced with 85-1-1 in March 2009.
GW-04-1-1	Inactive	20					NA	NA	Deactivated at end of 1998, replaced by new 04-2-1.
GW-04-1-2	Inactive	20					NA	NA	Deactivated at end of 1998, replaced by well 04-3-1.
GW-04-1-3	Inactive	20					NA	NA	Deactivated at end of 1998, replaced by well 04-4-1.
GW-04-1-4	Inactive	40					NA	NA	Deactivated during 1998, failed to recharge after purging.
GW-05-1-1	Inactive	20					NA	NA	Site destroyed during construction of Phase 2 lagoon.
GW-05-1-2	Inactive	20					NA	NA	
GW-05-1-3	Inactive	20					NA	NA	
GW-05-2-1	Inactive	20					NA	NA	
GW-06-1-1	Inactive	20					NA	NA	Site destroyed during dike contruction in interim filling area.
GW-06-1-2	Inactive	20					NA	NA	
GW-06-1-3	Inactive	20					NA	NA	
GW-06-2-1	Inactive	20					NA	NA	
GW-08-1-1	Inactive	20					NA	NA	Site destroyed.
GW-08-1-2	Inactive	20					NA	NA	
GW-08-1-3	Inactive	20					NA	NA	
GW-10-1-1	Inactive	20					NA	NA	Site destroyed.
GW-11-1-1	Inactive	20					NA	NA	Site destroyed.
GW-12-1-0	Inactive	220					NA	NA	Deactivated in 2010.
GW-13-1-1	Inactive	50					NA	NA	Site destroyed.
GW-13-1-2	Inactive	50					NA	NA	
GW-14-1-1	Inactive	50					NA	NA	Site destroyed.
GW-15-1-1	Inactive	50					NA	NA	Site destroyed.
GW-18-1-2	Inactive	50					NA	NA	Pump damaged and stuck in well since 2004. Not sampled or monitored, well blocked.
GW-22-1-1	Inactive	50					NA	NA	Destroyed during expansion of interim composting area.
GW-23-1-1	Inactive	50					NA	NA	Site destroyed in November 1994.
GW-23-1-2	Inactive	50					NA	NA	
GW-24-1-1	Inactive	50					NA	NA	Site destroyed during construction of Phase 2 lagoon.
GW-24-1-2	Inactive	50					NA	NA	
GW-26-1-1	Inactive	50					NA	NA	Site destroyed in August 1994.
GW-26-1-2	Inactive	50					NA	NA	
GW-27-1-1	Inactive	50					NA	NA	Sampled in Q2, Q3, and Q4 of 2023. Decommissioned in Q1 of 2024 due to construction of cell 4.
GW-27-1-2	Inactive	50					NA	NA	Destroyed in summer 2022. No longer exists.

Notes:
Footvalves are 16 mm (5/8") unless otherwise noted.
NA - Not Available or Not Applicable.

Station Name	Status	Pipe Diameter (mm)	Groundwater Quality Samples		Groundwater Level Measurements		Development Method	Sampling Method	Comments
			Quarterly (4/yr)	Bi-annual (2/yr)	Manual Measurement (4/yr)	Pressure Transducer (Continuous)			
GW-32-1-1	Inactive	50					NA	NA	Site destroyed in October 1997.
GW-32-1-2	Inactive	50					NA	NA	Site destroyed in October 1997.
GW-33-1-1	Inactive	50					NA	NA	Deactivated in August 1992.
GW-33-1-2	Inactive	50					NA	NA	
GW-34-1-1	Inactive	50					NA	NA	Site destroyed in August 1994.
GW-34-2-1	Inactive	50					NA	NA	
GW-35-1-1	Inactive	50					NA	NA	Site destroyed in August 1994.
GW-35-1-2	Inactive	50					NA	NA	
GW-45-1-1	Inactive	50					NA	NA	Site destroyed.
GW-46-1-1	Inactive	50					NA	NA	Deactivated in June 1999.
GW-47-1-1	Inactive	50					NA	NA	Deactivated in December 2012.
GW-48-1-1	Inactive	50					NA	NA	Obstructed. Unable to measure groundwater level.
GW-49-1-0	Inactive	50					NA	NA	Deactived in June 2005.
GW-59-1-1	Inactive	50					NA	NA	Destroyed Feb 2005 by Phase 2 construction.
GW-64-1-1	Inactive	50					NA	NA	Destroyed by interim fill area construction in 2003.
GW-65-1-1	Inactive	50					NA	NA	Destroyed by interim fill area construction in 2003.
GW-66-1-1	Inactive	50					NA	NA	Destroyed by interim fill area construction in 2003.
GW-67-1-1	Inactive	50					NA	NA	Destroyed. Replaced by GW-82-1-1.
GW-67-2-1	Inactive	50					NA	NA	Destroyed. Replaced by GW-82-1-1.
GW-68-1-1	Inactive	50					NA	NA	Destroyed. Replaced by GW-83-1-1.
GW-68-2-1	Inactive	50					NA	NA	Destroyed. Replaced by GW-83-1-1.
GW-69-1-1	Inactive	50					NA	NA	Destroyed July 2006 during construction on active face.
GW-69-2-1	Inactive	50					NA	NA	Destroyed July 2006 during construction on active face.
GW-70-1-1	Inactive	50					NA	NA	Destroyed by interim fill area construction in 2003.
GW-74-1-1	Inactive	50					NA	NA	Decommissioned.
GW-78-1-1	Inactive	50					NA	NA	Sampled in Q2, Q3, and Q4 of 2023. Decommissioned in Q1 of 2024 due to construction of new commercial road.
GW-78-2-1	Inactive	50					NA	NA	Sampled in Q2, Q3, and Q4 of 2023. Decommissioned in Q1 of 2024 due to construction of new commercial road.
GW-79-1-1	Inactive	50					NA	NA	Well decommissioned in May 2018 due to blasting in vicinity.
GW-79-2-1	Inactive	50					NA	NA	Well decommissioned in May 2018 due to blasting in vicinity.
GW-84-1-1	Inactive	50					NA	NA	Destroyed spring 2009. Recorded continuous water levels until April 2012. No longer functioning. Cannot be repaired.
GW-84-2-1	Inactive	50					NA	NA	Destroyed spring 2009. Recorded continuous water levels until April 2012. No longer functioning. Cannot be repaired.
GW-93-1-1	Inactive	50					NA	NA	Destroyed September 2022 due to aggregate stockpiling
GW-99-1-1	Inactive	50					NA	NA	Decommissioned in 2024 Q1.
GW-100-1-1	Inactive	50					NA	NA	Decommissioned in 2024 Q1.
GW 101-1-1	Inactive	50					NA	NA	Decommissioned in 2024 Q1.
GW 103-1-1	Inactive	50					NA	NA	Well drilled April 18 2022. Decommissioned in Summer 2024.
GW 105-1-1	Inactive	50					NA	NA	Decommissioned in 2024 Q1.
GW 106-1-1	Inactive	50					NA	NA	Decommissioned in 2024 Q1.
GW 107-1-1	Inactive	50					NA	NA	Decommissioned in 2024 Q1.
GW 110-1-1	Inactive	50					NA	NA	Decommissioned in 2024 Q1.
T-86-1-1	Inactive	NA					NA	NA	
T-86-1-2	Inactive	NA					NA	NA	Pressure transducer installed October 2010. Well replaces GW-84-1-1 & GW-84-2-1. Pressure transducer no longer functioning.
T-86-2-1	Inactive	NA					NA	NA	Pressure transducer installed October 2010. Well replaces GW-84-1-1 & GW-84-2-1. Pressure transducer no longer functioning.
T-86-2-2	Inactive	NA					NA	NA	Pressure transducer installed October 2010. Well replaces GW-84-1-1 & GW-84-2-1. Pressure transducer no longer functioning.
VLGW001D	Inactive	NA					NA	NA	Well is obstructed. No water level measurements taken since 2018.

Notes:

Footvalves are 16 mm (5/8") unless otherwise noted.

NA - Not Available or Not Applicable.

Appendix C-3

Surface Water Station Details

Appendix C-3. Surface Water Station Details 2025-2026

AECOM

Station Name	Location		Status	Routine		Comments
	Northing	Easting				
	UTM (NAD83)	UTM (NAD83)		(4/yr)	(2/yr)	
SW-N-05	5 376 534.511	465 729.384	Active	Y		Heal Creek, 40m from perimeter fence line.
SW-N-14	5 376 795.252	466 228.944	Active		Y	Heal Creek 2/3 of the way from the Northeast Diversion Ditch to Durrance Creek.
SW-N-15	5 377 109.531	465 982.354	Active	Y		Durrance Creek well above confluence with Heal Creek.
SW-N-16	5 376 506.808	465 968.695	Active	Y		North Wetland at discharge of Weir SF5 into North Wetland Creek, just above confluence with Heal Creek.
SW-N-17	5 376 566.303	465 903.628	Active	Y		Heal Creek below confluence with 42 Creek and above confluence with North Wetland Creek.
SW-N-18	5 376 429.846	465 679.709	Active	Y		Manhole at discharge to Northwest Sedimentation Pond.
SW-N-19	5 376 423.322	466 040.279	Active	Y		Northeast Diversion Ditch below Northeast Sedimentation Pond, just above discharge into North Wetland.
SW-N-41s1	5 376 892.202	465 171.078	Active	Y		41 Creek at north side of Willis Point Road, near source.
SW-N-41s3	5 377 102.438	465 021.226	Active	Y		41 Creek just above discharge to Durrance Lake.
SW-N-41s4	5 377 188.719	465 097.520	Active	Y		Discharge from Durrance Lake.
SW-N-42s1	5 376 753.436	465 553.804	Active	Y		42 Creek at discharge from 42 Wetland below southeast end of Yardwaste Pad. Across Willis Point Road from Well 42.
SW-N-45	5 376 605.647	465 797.403	Active	Y		Heal Creek just above confluence with 42 Creek.
SW-N-54	5 376 438.000	465 713.000	Active	Y		Runoff from northeast face of Phase 2 and Phase 2 Cell 1 closure into Northwest Sedimentation Pond. Replaced SW-N-47.
SW-N-55	5 376 432.480	466 536.890	Active	Y		Stream located on the south side of Willis Point Road, captures surface water run off from the NE aggregate stockpiles area.
SW-N-56	5 376 326.240	466 776.380	Active	Y		Stream located on the NE perimeter of the landfill, north of Kiowa Road. Captures surface water flow from the southern extent of the NE aggregate stockpile area and flows towards Willis Point Road.
SW-N-57	5 376 439.917	465 744.608	Active	Y		Added December 5 2022. Green pipe outlet at West end of upper lagoon. Collects directed surface water runoff from Shane's pond and the Toutle Valley.
SW-N-58	5 376 430.529	465 691.127	Active	Y		Added December 5 2022. Manhole near P11, collecting from black pipe in ditch along High Level Road and groundwater pumped out of P11.
SW-N-59	5 376 468.163	465 532.662	Active	Y		Added December 5 2022. Manhole near GW 77, collecting surface water from the kitchen scraps pad.
SW-N-60	5 376 504.232	465 439.352	Active	Y		Added December 5 2022. Manhole, smaller channel within the manhole collecting directed surface water runoff from Shane's pond.
SW-N-61	5 376 504.346	465 135.424	Active	Y		Added December 5 2022. Manhole on the west side of the road collecting surface water drainage from Shane's pond. It is the beginning of the collection point which reports to SW-N-57.
SW-N-63	5 377 369.181	466 786.923	Active	Y		Added February 8 2023. Sampling point on Durrance Creek after the confluence of Durrance Creek and Heal Creek. Located adjacent to a culvert that runs under the road on private property.
SW-N-64	5 377 367.064	466 825.288	Active	Y		Added February 8 2023. Sampling point on Todd Creek upstream of the Durrance Creek input.
SW-N-65	5 377 383.733	466 830.580	Active	Y		Added February 8 2023. Sampling point on Todd Creek downstream of the Durrance Creek input.
SW-N-66	5 376 533.190	464 961.610	Active	Y		Flows down Mt. Work west of the NW aggregate area, into SW-N-CSs2 and subsequently Durrance Lake. Background station.
SW-N-CSs2	5 376 933.072	464 896.583	Active		Y	Ephemeral stream and culvert on Willis Point Road. Downstream of SW-N-66 and the NW aggregate area. Subsequently flows to Durrance Lake.
SW-N-Agg Pile Drain	5 376 479.100	466 119.880	Active	Y		NE Aggregate pile ditch, sampled from the culvert.
SW-East Agg Pump	5 376 484.100	466 212.180	Active	Y		Added January 2026. Outflow from hose after solar pump at Northeast Stockpile.
SW-S-03	5 375 637.813	466 077.533	Active	Y		Kilarney Creek at culvert discharging from underneath Recycle Road.
SW-S-04	5 375 447.329	466 171.246	Active	Y		Kilarney Creek below confluence with Southwest Diversion Ditch.
SW-S-12	5 375 661.074	465 954.884	Active	Y		At the discharge of Weir SF2, upstream of Killarney Creek.
SW-S-20	5 375 607.030	465 945.921	Active		Y	At the discharge of Weir SF3, in the Southwest Diversion Ditch where it converges with the South High Level Road.
SW-S-21	5 375 419.559	466 150.441	Active	Y		Southwest Diversion Ditch just above confluence with Kilarney Creek.
SW-S-24	5 375 553.049	466 179.487	Active	Y		Kilarney Creek just above confluence with Bike Trail Kiosk Creek and below confluence with Southeast Storm Drain.
SW-S-27	5 375 591.468	466 163.597	Active	Y		Southeast Storm Drain just above confluence with Kilarney Creek.
SW-S-52	5 376 059.905	465 472.066	Active	Y		Creek from Mt. Work before entering culvert draining to South Diversion Ditch. Background station.

Appendix D-1

Statistical Analysis Results – Groundwater

Appendix D-1. Results of Statistical Analysis - Groundwater

AECOM

Station	Time Interval	Parameter				
		Conductivity	Ammonia	Chloride	Sulphate	Nitrate
Compliance Monitoring Wells						
Gw-04-3-1	2022-2026	-	N/A	↑	-	-
Gw-04-4-1	2021-2026	-	N/A	-	-	-
Gw-17-1-1	2021-2025	-	N/A	-	-	-
Gw-17-1-2	2021-2025	-	N/A	-	-	No Trend
Gw-17-1-3	2021-2025	-	N/A	-	-	No Trend
Gw-18-1-1	2021-2026	-	N/A	-	↑	N/A
Gw-18-2-1	2021-2026	-	N/A	↑	-	-
Gw-18-2-2	2021-2026	-	N/A	↑	-	-
Gw-20-1-1	2021-2026	-	N/A	↓	↓	N/A
Gw-20-1-2	2021-2026	-	-	-	-	N/A
Gw-21-1-1	2021-2026	-	-	↓	↓	-
Gw-21-1-2	2021-2026	-	-	-	↑	N/A
Gw-21-2-1	2021-2026	-	-	-	↑	↑
Gw-28-1-0	2021-2026	↑	N/A	↑	-	↑
Gw-29-1-1	2021-2026	-	N/A	-	-	-
Gw-29-1-2	2021-2026	-	N/A	-	↑	↓
Gw-30-1-1	2021-2026	-	-	-	↑	-
Gw-30-1-2	2021-2026	-	-	-	-	No Trend
Gw-31-1-1	2021-2026	-	N/A	-	-	-
Gw-31-1-2	2021-2026	-	N/A	-	-	-
Gw-41-1-1	2021-2026	-	No Trend	-	↓	-
Gw-42-1-1	2021-2026	-	-	↑	↓	N/A
Gw-53-1-1	2021-2026	-	N/A	-	↑	N/A
Gw-55-1-1	2021-2025	-	N/A	-	-	-
Gw-56-1-1	2021-2026	-	N/A	↑	↓	N/A
Gw-57-1-1	2021-2025	-	N/A	-	-	N/A
Gw-71-1-1	2021-2026	-	N/A	-	-	-
Gw-71-2-1	2021-2026	-	N/A	-	↑	N/A
Gw-71-3-1	2021-2026	↑	N/A	-	-	-
Gw-72-1-1	2021-2026	-	-	-	-	N/A
Gw-72-3-1	2021-2026	-	-	-	-	N/A
Gw-73-1-1	2021-2025	-	N/A	-	-	-
Gw-73-2-1	2021-2026	-	N/A	↑	-	↑
Gw-73-3-1	2021-2026	↑	N/A	-	↑	-

Notes:

↓ indicates decreasing trends

↑ indicates increasing trends

- indicates stable trend

If Mann-Kendall analysis returns "no statistical trend", CV is calculated to further evaluate the trend:

When CV>1 or CV=1, No Statistical Trend = No Trend

When CV<1, No Statistical Trend = Stable

N/A indicates analysis is unable to run due to insufficient dataset (<4 detected values and/or <2 years of data) or over 80% of values were under detection limits or all concentrations during all sampling dates were below detection limit (CV cannot be calculated)

CV: Coefficient of Variance

Station	Time Interval	Parameter				
		Conductivity	Ammonia	Chloride	Sulphate	Nitrate
Other Monitoring Wells						
Gw-16-1-1	2021-2025	-	N/A	↑	↑	No Trend
Gw-16-1-2	2021-2025	-	N/A	-	-	No Trend
Gw-16-2-1	2021-2025	-	N/A	-	No Trend	No Trend
Gw-16-2-2	2021-2025	-	N/A	No Trend	-	No Trend
Gw-19-1-1	2021-2026	-	-	-	-	N/A
Gw-19-1-2	2021-2026	-	-	-	-	N/A
Gw-19-2-1	2021-2026	↑	-	↑	↓	N/A
Gw-19-2-2	2021-2026	-	N/A	↑	↓	N/A
Gw-25-1-1	2021-2026	-	↑	↑	-	↓
Gw-25-1-2	2021-2026	↑	N/A	-	-	No Trend
Gw-27-1-1	2021-2023	↑	-	-	↑	N/A
Gw-36-3-1	2021-2026	-	N/A	↑	-	-
Gw-37-3-1	2021-2026	-	-	-	-	-
Gw-38-1-1	2021-2025	-	N/A	↑	-	-
Gw-39-1-1	2021-2026	↑	N/A	↑	↑	-
Gw-39-2-1	2021-2026	↑	N/A	↑	↑	No Trend
Gw-40-1-1	2021-2026	-	↓	↑	↑	-
Gw-43-1-1	2021-2026	-	N/A	↑	-	-
Gw-44-1-1	2021-2026	↑	N/A	-	↑	No Trend
Gw-50-1-1	2024-2026	-	N/A	-	-	↓
Gw-51-1-1	2021-2025	↑	N/A	↑	↑	No Trend
Gw-51-2-1	2021-2025	-	N/A	↑	↓	N/A
Gw-51-3-1	2021-2025	-	N/A	-	-	No Trend
Gw-52-1-1	2021-2026	-	-	↓	No Trend	N/A
Gw-58-1-0	2021-2026	↑	↑	-	-	No Trend
Gw-60-1-1	2021-2026	↑	N/A	↑	-	N/A
Gw-60-2-1	2021-2026	-	N/A	-	↓	N/A
Gw-60-3-1	2021-2026	-	N/A	↓	-	-
Gw-62-1-1	2021-2025	↑	N/A	-	↑	↑
Gw-62-2-1	2021-2025	-	N/A	-	↑	No Trend
Gw-63-1-1	2021-2025	-	N/A	-	-	N/A
Gw-63-2-1	2021-2025	-	N/A	-	-	N/A
Gw-77-1-1	2021-2025	↑	N/A	-	↑	N/A
Gw-77-2-1	2021-2025	↑	N/A	-	↑	N/A
Gw-78-1-1	2021-2023	-	N/A	↓	-	↑
Gw-78-2-1	2021-2023	-	N/A	-	↓	No Trend
Gw-85-1-1	2021-2026	-	-	-	-	No Trend
Gw-87-1-1	2021-2025	-	N/A	↓	↑	No Trend
Gw-87-2-1	2021-2024	-	N/A	-	No Trend	No Trend
Gw-88-1-1	2021-2025	↑	N/A	-	↑	-
Gw-88-2-1	2021-2024	-	N/A	-	-	No Trend
Gw-91-1-1	2021-2026	-	N/A	↓	↑	↓
Gw-92-1-1	2021-2026	↑	No Trend	↑	↑	No Trend
Gw-94-1-1	2021-2023	-	N/A	-	-	No Trend
Gw-95-1-1	2022-2026	↑	-	↑	↑	No Trend
Gw-96-1-1	2022-2026	↑	N/A	↑	↑	No Trend
Gw-97-1-1	2022-2026	-	N/A	-	-	No Trend
Gw-98-1-1	2022-2026	↑	-	↑	↑	No Trend
Gw-103-1-1	2022-2024	-	N/A	-	↑	-
Gw-104-1-1	2022-2026	-	-	-	↑	No Trend
Gw-106-1-1	2022-2024	-	N/A	-	-	-
Gw-108-1-1	2022-2026	↑	N/A	-	↑	N/A
Gw-109-1-1	2022-2026	-	-	↑	-	-
Gw-P1	2021-2026	-	-	-	No Trend	N/A
Gw-P2	2021-2026	-	-	-	No Trend	No Trend
Gw-P3	2021-2026	-	-	-	No Trend	No Trend
Gw-P4	2021-2026	-	-	-	-	No Trend
Gw-52-4-0 (P7)	2021-2026	-	-	↓	-	-
Gw-80-1-0 (P8)	2021-2026	-	-	↓	-	No Trend
Gw-81-1-0 (P9)	2021-2024	N/A	N/A	N/A	N/A	N/A
Gw-P10	2021-2026	↓	-	-	↓	No Trend
Gw-P11	2022-2026	-	↓	-	-	↓
Gw-P12	2023-2026	-	-	-	-	↓

Notes:

↓ indicates decreasing trends

↑ indicates increasing trends

- indicates stable trend

If Mann-Kendall analysis returns "no statistical trend", CV is calculated to further evaluate the trend:

When CV>1 or CV=1, No Statistical Trend = No Trend

When CV<1, No Statistical Trend = Stable

N/A indicates analysis is unable to run due to insufficient dataset (<4 detected values and/or <2 years of data) or over 80% of values were under detection limits or all concentrations during all sampling dates were below detection limit (CV cannot be calculated)

CV: Coefficient of Variance

Appendix D-2

Statistical Analysis Results – Surface Water

Appendix D-2. Results of Statistical Analysis - Surface Water

Station	Time Interval	Parameter				
		Conductivity	Ammonia	Chloride	Sulphate	Nitrate
Boundary Surface Water Quality Location						
SW-N-05	2021-2026	-	↓	-	-	↓
SW-N-16	2021-2026	-	No Trend	↑	-	↑
SW-N-41S1	2021-2026	-	No Trend	-	-	-
SW-N-42S1	2021-2026	-	No Trend	-	-	-
SW-S-04	2021-2026	-	No Trend	-	-	-
SW-N-55	2023-2026	-	N/A	-	-	↓
SW-N-56	2023-2026	↑	N/A	-	↑	-
Routine Surface Water Quality Location						
SW-N-14	2022-2026	-	N/A	-	-	-
SW-N-15	2023-2026	-	N/A	-	-	-
SW-N-17	2021-2026	-	No Trend	-	↑	↓
SW-N-18	2021-2026	-	No Trend	No Trend	↑	No Trend
SW-N-19	2021-2026	-	No Trend	↑	-	↑
SW-N-41S3	2021-2026	-	N/A	-	-	No Trend
SW-N-41S4	2023-2026	-	-	-	-	-
SW-N-45	2021-2026	↑	N/A	-	-	↓
SW-N-50	2021-2021	N/A	N/A	N/A	N/A	N/A
SW-N-53	2021-2023	N/A	N/A	N/A	N/A	N/A
SW-N-54	2021-2026	-	No Trend	-	-	↑
SW-N-57	2023-2025	-	No Trend	-	-	↓
SW-N-58	N/A	N/A	N/A	N/A	N/A	N/A
SW-N-59	N/A	N/A	N/A	N/A	N/A	N/A
SW-N-60	N/A	N/A	N/A	N/A	N/A	N/A
SW-N-61	N/A	N/A	N/A	N/A	N/A	N/A
SW-N-63	2023-2026	-	-	-	-	-
SW-N-64	2023-2026	-	-	-	-	-
SW-N-65	2023-2026	-	-	-	-	-
SW-N-66	2024-2026	N/A	N/A	N/A	N/A	N/A
SW-N-CS2	2021-2026	-	N/A	-	↑	-
SW-N-Agg Pile Drain	2025-2026	N/A	N/A	N/A	N/A	N/A
SW-E.Agg Pump	2026-2026	N/A	N/A	N/A	N/A	N/A
SW-S-03	2021-2026	No Trend	-	No Trend	-	-
SW-S-12	2021-2026	-	-	-	-	-
SW-S-20	2021-2026	-	No Trend	-	-	No Trend
SW-S-21	2021-2026	-	N/A	-	↓	-
SW-S-24	2021-2026	-	-	-	-	-
SW-S-27	2021-2026	↑	-	-	-	↑
SW-S-52	2021-2026	-	N/A	-	-	No Trend

Notes:

↓ indicates decreasing trends

↑ indicates increasing trends

- indicates stable trend

If Mann-Kendall analysis returns "no statistical trend", CV is calculated to further evaluate the trend:

When CV>1 or CV=1, No Statistical Trend = No Trend

When CV<1, No Statistical Trend = Stable

N/A indicates analysis is unable to run due to insufficient dataset (<4 detected values and/or <2 years of data) or over 80% of values were under detection limits or all concentrations during all sampling dates were below detection limit (CV cannot be calculated)

CV: Coefficient of Variance

Appendix D-3

Statistical Analysis Results – Leachate

Appendix D-3. Results of Statistical Analysis - Leachate

Station	Time Interval	Parameter				
		Conductivity	Ammonia	Chloride	Sulphate	Nitrate
Hartland Valve Chamber	2021-2026	↓	-	↓	-	-

Notes:

↓ indicates decreasing trends

↑ indicates increasing trends

- indicates stable trend

If Mann-Kendall analysis returns "no statistical trend", CV is calculated to further evaluate the trend:

When CV>1 or CV=1, No Statistical Trend = No Trend

When CV<1, No Statistical Trend = Stable

N/A indicates analysis is unable to run due to insufficient dataset (<4 detected values and/or <2 years of data) or over 80% of values were under detection limits or all concentrations during all sampling dates were below detection limit (CV cannot be calculated)

CV: Coefficient of Variance

Appendix E

Groundwater Elevations

Appendix E. Groundwater Elevations 2025-2026

AECOM

Station	Q2 07 May 2025 to 08 May 2025	Q3 03 Sep 2025 to 04 Sep 2025	Q4 03 Nov 2025 to 04 Nov 2025	Q1 22 Jan 2026 to 27 Jan 2026
	Groundwater Elevations (m asl)			
04-2-1	126.96	125.64	126.31	127.61
04-3-1	124.20	123.49	124.63	125.65
04-4-1	125.29	124.25	125.25	124.60
07-1-0	141.48	Dry	141.27	141.48
09-1-0	145.69	143.85	146.32	146.58
16-1-1	126.30	123.95	128.90	130.82
16-1-2	127.18	124.22	128.43	131.03
16-2-1	127.55	126.10	128.91	131.78
16-2-2	127.43	126.48	128.82	131.69
17-1-1	144.42	142.66	143.92	146.53
17-1-2	144.43	142.67	143.97	146.59
17-1-3	144.88	143.09	144.33	146.71
18-1-1	150.50	149.17	149.70	152.09
18-2-1	159.86	159.14	162.61	162.98
18-2-2	160.11	159.18	162.54	163.00
19-1-1	133.54	130.96	133.54	133.54
19-1-2	133.66	133.07	133.66	133.66
19-2-1	133.19	132.41	133.19	133.19
19-2-2	130.70	129.71	132.30	133.04
20-1-1	109.56	109.01	109.94	109.84
20-1-2	109.47	108.77	109.80	109.82
21-1-1	109.94	109.42	110.64	110.40
21-1-2	109.63	109.37	109.97	109.97
21-2-1	109.62	109.07	109.97	109.93
25-1-1	125.15	125.05	126.57	126.38
25-1-2	126.19	125.86	126.67	126.65
28-1-0	119.59	119.35	120.58	120.66
29-1-1	112.18	111.94	112.57	112.26
29-1-2	112.34	112.06	112.62	112.35
30-1-1	105.39	104.87	106.61	106.27
30-1-2	105.98	105.89	107.89	107.41
31-1-1	104.34	103.63	104.52	104.84
31-1-2	104.21	103.56	104.62	104.66
36-1-1	121.76	119.64	119.75	123.30
36-2-1	122.77	121.48	123.77	123.79
36-3-1	123.11	121.33	124.63	124.77
37-1-1	123.49	123.49	120.99	127.31
37-2-1	121.90	120.97	124.03	124.08
37-3-1	124.18	123.53	125.95	127.22
38-1-1	119.61	118.76	120.38	121.16
39-1-1	119.71	119.44	120.98	122.03
39-2-1	119.56	119.47	120.57	120.60
40-1-1	117.35	117.56	118.01	118.12
41-1-1	147.26	147.06	147.52	147.52
42-1-1	137.56	137.18	137.77	137.79
43-1-1	157.72	157.29	158.54	158.93
44-1-1	160.09	159.32	159.87	160.48
46-2-1	155.85	156.48	155.87	156.41
46-3-1	155.15	154.20	154.77	153.85
46-4-1	154.21	150.21	154.18	154.11
47-2-1	154.68	153.54	154.74	154.80
48-2-1	150.21	150.22	151.24	150.81
50-1-1	115.57	113.06	114.44	117.92
51-1-1	109.27	108.62	110.12	110.06
51-2-1	109.34	108.67	110.42	110.20
51-3-1	109.34	108.69	110.45	110.51
52-1-1	117.49	115.12	117.24	117.66
52-2-0	118.34	115.52	118.20	118.21
52-3-0 (P52)	117.79	117.23	117.63	117.67
52-4-0 (P7)	113.00	113.00	114.00	112.10
53-1-1	120.45	120.18	121.39	121.67
54-1-1	149.52	147.28	146.98	150.47
54-2-1	149.01	146.90	146.88	150.10
54-3-1	149.07	147.28	147.29	150.08
55-1-1	142.18	140.29	141.50	143.35
56-1-1	143.36	142.27	145.23	145.94
57-1-1	128.83	125.05	129.15	130.05
58-1-0	---	128.16	122.97	128.98
60-1-1	141.52	141.03	141.57	141.73
60-2-1	141.61	140.88	141.57	141.60
60-3-1	141.16	140.90	141.27	141.37

Appendix E. Groundwater Elevations 2025-2026

Station	Q2 07 May 2025 to 08 May 2025	Q3 03 Sep 2025 to 04 Sep 2025	Q4 03 Nov 2025 to 04 Nov 2025	Q1 22 Jan 2026 to 27 Jan 2026
	Groundwater Elevations (m asl)			
61-1-1	183.77	183.04	184.77	185.24
62-1-1	171.83	164.51	165.89	174.72
62-2-1	171.85	166.57	166.21	174.59
63-1-1	190.51	188.69	190.40	192.33
63-2-1	191.46	190.60	193.00	193.81
71-1-1	141.63	140.73	141.61	141.96
71-2-1	141.66	140.88	141.40	142.10
71-3-1	141.68	140.91	141.36	142.13
72-1-1	141.38	140.99	141.14	141.64
72-2-1	141.74	141.17	141.25	141.88
72-3-1	141.61	141.12	142.60	141.90
73-1-1	133.33	131.77	133.51	134.49
73-2-1	133.65	131.79	133.57	134.25
73-3-1	132.45	131.09	132.87	133.09
74-2-1	152.23	155.26	152.67	152.62
75-1-1	129.56	127.97	127.90	127.89
76-1-1	157.34	155.55	155.06	159.33
76-2-1	160.10	158.45	158.22	162.70
76-3-1	162.20	160.62	160.03	165.02
77-1-1	149.24	147.99	152.10	152.44
77-2-1	148.27	146.59	151.03	151.13
80-1-0 (P8)	113.56	113.65	113.35	113.16
81-1-0 (P9)	118.72	118.64	119.24	118.93
82-1-1	Dry	Dry	Dry	133.33
83-1-1	127.66	126.60	128.20	127.35
85-1-1	145.20	145.15	145.63	145.54
87-1-1	170.72	156.12	157.20	181.58
87-2-1	170.89	Dry	Dry	181.93
88-1-1	169.64	162.21	164.51	172.63
88-2-1	169.75	Dry	Dry	173.51
89-1-1	152.74	153.64	152.68	151.70
89-2-1	149.75	149.81	149.80	149.53
90-1-1	120.74	119.51	121.97	129.82
90-2-1	134.65	139.65	138.23	138.11
91-1-1	159.66	158.38	160.51	160.52
92-1-1	160.12	156.99	159.10	162.08
94-1-1	196.49	180.16	160.61	200.91
LG-02-D	149.05	147.75	148.00	147.79
LG-03-D	150.19	150.79	150.76	153.31
LG-04-D	156.88	157.51	156.65	154.42
LG-08-D	146.31	148.62	147.17	153.66
LG-11-S	155.60	155.58	155.51	155.44
LG-15-D	149.74	148.80	150.04	149.42
LG-16-D	151.35	150.73	153.21	149.71
LG-17-D	151.62	154.22	159.17	150.84
LG-18-D	150.69	152.43	152.00	150.09
LG-19-D	149.93	150.35	150.27	151.18
LG-21-D	146.41	146.32	146.60	146.50
LG-26-D	144.75	145.37	145.06	144.80
95-1-1	126.87	126.46	127.36	127.57
96-1-1	127.10	126.45	127.78	127.49
97-1-1	126.35	125.91	127.13	126.89
98-1-1	126.69	126.42	127.44	127.28
104-1-1	130.21	129.80	131.05	132.67
108-1-1	122.68	122.38	125.65	126.51
109-1-1	127.96	127.92	128.94	130.32
P-11	N/A	N/A	N/A	N/A
P-12	121.35	120.84	125.56	126.88
111-1-1	95.45	94.84	95.51	96.13
111-2-1	94.88	94.21	95.27	95.52
112-1-1	---	105.05	114.34	114.96
112-2-1	---	106.87	115.33	114.36
113-1-1	155.92	158.80	155.45	160.17
113-2-1	158.62	158.90	156.64	162.29

Notes:
--- = Not measured
m asl = metres above sea level
N/A = Not Applicable

Appendix F

Aggregate Geochemistry (2023)

Appendix F-1. XRD Results

		Sample ID	WR23-01	WR23-02	WR23-03
		Depth (m BGS)	Surface	Surface	Surface
		Sampling Location	Toutle Valley	Northeast. Stockpile	Northeast. Stockpile
		Lithology	Meta. Mafic Rock	Meta. Mafic Rock	Meta. Mafic Rock
		Age	<1 week	<2 days	<2 days
Minerals	**Mineral Formula**		wt%	wt%	wt%
Actinolite	$Ca_2(Mg,Fe^{2+})_5Si_8O_{22}(OH)_2$		29.54	36.13	61.86
Calcite	$CaCO_3$		2.49	1.17	1.24
Diopside	$CaMgSi_2O_6$		29.07	22.89	9.86
Prehnite	$Ca_2Al_2Si_3O_{10}(OH)_2$		4.49	11.26	2.61
Clinozoisite	$Ca_2Al_3(SiO_4)_3(OH)$		4.54	3.3	-
Albite low	$NaAlSi_3O_8$		2.28	2.72	-
Magnetite	$Fe^{2+}Fe^{3+}{}_2O_4$		2.05	-	3.36
Clinochlore	$(Mg,Al)_6(Si,Al)_4O_{10}(OH)_8$		25.33	20.39	18.09
Quartz low	SiO_2		0.22	0.36	0.28
Lizardite	$Mg_3Si_2O_5(OH)_4$		-	1.78	2.11
Rutile	TiO_2		-	-	0.58
		Total	100	100	100

NOTES

m BGS - meters below ground surface

"-": Minerals not identified by XRD

Appendix F-2. Acid-Base Accounting (ABA) Results

AECOM

Sample ID	Depth (m BGS)	Age	Lithology Description	Sampling Location	Fizz Rating	Paste pH	Total S
					Unit	-	wt%
					Detection Limit	0.2	0.02
WR23-01	Surface	<1 week	Meta. Mafic Rock	Toutle Valley	SLIGHT	8.79	0.09
WR23-02	Surface	<2 days	Meta. Mafic Rock	Northeast. Stockpile	SLIGHT	8.79	0.14
WR23-03	Surface	<2 days	Meta. Mafic Rock	Northeast. Stockpile	SLIGHT	8.96	0.05

Sample ID	HCl Extractable Sulphate Sulphur[e]	Sulphide Sulphur (by difference)[f]	Acid Generation Potential (AP)[b]	Std Sobek Neutralization Potential (NP)	Net Neutralization Potential [d]NNP=NP-AP	Neutralization Potential Ratio NPR = NP/AP	Acid Generation Status[a]
Unit	wt%	wt%	Kg $CaCO_3/T$[c]	Kg $CaCO_3/T$[c]	Kg $CaCO_3/T$[c]		
Detection Limit	0.01	0.02	0.6	N/A	N/A	0.1	N/A
WR23-01	0.5	0.41	0.6	35.2	34.6	59.7	non-PAG
WR23-02	0.79	0.65	1.3	25.3	24	20.5	non-PAG
WR23-03	0.56	0.51	0.3	30.8	30.5	102.7	non-PAG

NOTES

mbgs - meters below ground surface

[a] Std Sobek Neutralization Potential - Field and Laboratory Methods Applicable to Overburdens and Minesoils, (EPA 600 / 2-78-054, March 1978) MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

*[b] AP = HNO_3 Extractable Sulphide Sulphur*31.25*

[c] $CaCO_3$ Equivalency = Total Inorganic Carbon (TIC)(100/12)*10*

[d] NNP = Modified NP-AP

[e] Sulphate Sulphur determined by 25% HCl Leach with S by ICP.

[f] Sulphide Sulphur determined by Sobek 1:7 Nitric Acid Leach with S by ICP Finish.

[g] Mod. ABA Neutralization Potential - MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Insoluble S is acid insoluble S (Total S - (Sulphate S + Sulphide S)).

Appendix F-3. Comparison of Total Recoverable Constituents to Crustal Abundance

Sample ID	Units	Detection Limit	Average Crustal Abudance in Rocks		WR23-01	WR23-02	WR23-03
Depth (m BGS)					Surface	Surface	Surface
Sampling Location					Toutle Valley	Northeast. Stockpile	Northeast. Stockpile
Lithology Description			Price (1997)[a]		Meta. Mafic Rock	Meta. Mafic Rock	Meta. Mafic Rock
Acid Generating Status			Basaltic Rock	Basaltic Rock*10[b]	non-PAG	non-PAG	non-PAG
Age					<1 week	<2 days	<2 days
Parameters							
Aluminum (Al)	%	0.01	7.8	78	3.40	3.51	2.60
Antimony (Sb)	ppm	0.02	0.2	2	<0.02	<0.02	0.03
Arsenic (As)	ppm	0.1	2	20	0.2	0.3	0.5
Barium (Ba)	ppm	0.5	330	3300	5	12	11
Bismuth (Bi)	ppm	0.02	0.007	0.07	<0.02	<0.02	<0.02
Boron (B)	ppm	20	5	50	<20	<20	<20
Cadmium (Cd)	ppm	0.01	0.22	2.2	0.01	0.02	0.02
Calcium (Ca)	%	0.01	7.6	76	2.09	2.32	1.78
Chromium (Cr)	ppm	0.5	22	220	67	108	129
Cobalt (Co)	ppm	0.1	170	1700	50.6	40.5	43.7
Copper (Cu)	ppm	0.01	87	870	31.5	91.7	26.2
Gallium (Ga)	ppm	0.1	17	170	9	5	6
Gold (Au)	ppb	0.2	0.004	0.04	<0.2	<0.2	0.9
Iron (Fe)	%	0.01	8.65	86.5	7.30	3.92	5.18
Lanthanum (La)	ppm	0.5	15	150	<0.5	1	1
Lead (Pb)	ppm	0.01	6	60	0.3	0.3	0.5
Magnesium (Mg)	%	0.01	4.6	46	3.39	3.72	4.07
Manganese (Mn)	ppm	1	1500	15000	657	445	526
Mercury (Hg)	ppm	5	0.09	0.9	<5	<5	<5
Molybdenum (Mo)	ppm	0.01	1.5	15	0.3	0.1	0.8
Nickel (Ni)	ppm	0.1	130	1300	44.1	81.9	70.5
Phosphorus (P)	%	0.001	1100	11000	0.013	0.021	0.018
Potassium (K)	%	0.01	8300	83000	0.01	0.04	0.05
Scandium (Sc)	ppm	0.1	30	300	5.9	9.4	13.1
Selenium (Se)	ppm	0.1	0.05	0.5	0.1	0.2	0.1
Silver (Ag)	ppm	2	0.11	1.1	**10**	**13**	**8**
Sodium (Na)	%	0.001	1.8	18	0.032	0.055	0.125
Strontium (Sr)	ppm	0.5	465	4650	86	45	49
Sulfur (S)	%	0.02	0.03	0.3	0.08	0.12	0.05
Tellurium (Te)	ppm	0.02	-	-	<0.02	<0.02	<0.02
Thallium (Tl)	ppm	0.02	0.21	2.1	<0.02	<0.02	<0.02
Thorium (Th)	ppm	0.1	4	40	<0.1	0.1	0.2
Titanium (Ti)	%	0.001	1.38	13.8	0.204	0.154	0.257
Tungsten (W)	ppm	0.1	0.7	7	<0.1	<0.1	<0.1
Uranium (U)	ppm	0.1	1	10	<0.1	<0.1	<0.1
Vanadium (V)	ppm	1	250	2500	324	107	203
Zinc (Zn)	ppm	0.1	105	1050	63	32	38

NOTES

[a] *From Price (1997), Appendix 3, Distribution of the elements in the Earth's crust.*

[b] *Enrichment criteria based upon crustal abundance data multiplied by a factor of 10.*

[c] *Order of magnitude estimate from Price (1997) - most conservative value used.*

- : Data not available for these elements.

Exceeds Screening Criteria

Appendix F-4. Shake Flask Testing Results

Sample ID	Units	Referenced Guidelines		WR22-01 (Old)	WR22-02 (Fresh)	WR23-01	WR23-02	WR23-03	Averages	Medians
Depth (m BGS)				Surface	Surface	Surface	Surface	Surface		
Sampling Location		BCWQG[a]		Northwest Stockpile	Northwest Stockpile	Toutle Valley	Northeast. Stockpile	Northeast. Stockpile		
Lithology Description				Diorite Gneiss	Diorite Gneiss	Meta. Mafic Rock	Meta. Mafic Rock	Meta. Mafic Rock		
Acid Generating Status		Short-Term Acute	Long-Term Chronic	-	-	non-PAG	non-PAG	non-PAG		
Age				Approx. 1 year	<1 week	<1 week	<2 days	<2 days		
Inorganics										
Hardness (as CaCO3)	mg/L	---	---	24.1	27.7	21.5	33.2	24.6	26.2	24.6
pH (Lab)	---	6.5-9	6.5-9	7.95	8.46	**9.05**	**9.19**	8.99	8.73	8.99
Electrical Conductivity (Lab)	µS/cm	---	---	67.0	74.0	49.0	56.0	84.0	66.0	67.0
Total Alkalinity	mg CaCO3/L	---	---	16.0	16.0	21.0	16.0	18.0	17.4	16.0
Bicarbonate	mg/L	---	---	20.0	19.0	26.0	19.0	22.0	21.2	20.0
Carbonate	mg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hydroxide	mg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfate (SO4)	mg/L	128 - 429[c]	128 - 429[c]	9.20	8.10	1.70	9.80	5.50	6.86	8.10
Ammonia (NH3)	mg/L as N	0.75 - 5.74[c]	0.135 - 1.770[c]	0.061	0.104	0.166	0.768	0.167	0.25	0.17
Nitrite (NO2)	mg/L as N	0.06 - 0.6[f]	0.02 - 0.2[f]	<0.05	<0.05	0.007	0.07	0.023	0.05	0.05
Nitrate (NO3)	mg/L as N	32.8	3.0	<0.20	2.40	0.25	2.52	0.44	1.71	2.40
Total Nitrogen (NH3+NO2+NO3 as N)	mg/L as N	---	---	0.31	2.55	0.42	3.36	0.63	1.46	0.63
Fluoride (F)	mg/L	0.4 - 1.876[d]	---	0.07	0.04	<0.01	<0.01	0.02	0.04	0.04
Chloride (Cl)	mg/L	600	150	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5
Dissolved Metals										
Aluminum (Al)	mg/L	---	---	0.278	0.281	0.238	0.187	0.155	0.23	0.24
Antimony (Sb)	mg/L	---	---	0.000088	0.000040	0.000077	0.000146	0.000098	0.00009	0.00009
Arsenic (As)	mg/L	---	---	0.000257	0.000105	0.000132	0.000088	0.000358	0.00019	0.00013
Barium (Ba)	mg/L	---	---	0.00262	0.00074	0.000546	0.00121	0.000612	0.00115	0.00074
Beryllium (Be)	mg/L	---	---	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)	mg/L	---	---	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)	mg/L	---	---	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium (Cd)	mg/L	0.000038 - 0.0028[d]	0.000018 - 0.0028[d]	0.0000078	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.00001	0.00001
Cesium (Cs)	mg/L	---	---	<0.00005	<0.00005	0.000127	0.000311	0.000153	0.00005	0.00005
Calcium (Ca)	mg/L	---	---	8.660	8.450	6.280	10.800	6.910	8.22	8.45
Chromium (Cr)	mg/L	---	---	0.00027	0.00010	<0.0001	<0.0001	0.00012	0.00014	0.00010
Cobalt (Co)	mg/L	---	---	0.0001780	0.0000688	0.0000351	0.0000179	0.000103	0.00008	0.00007
Copper (Cu)	mg/L	Variable[g]	Variable[g]	**0.002260**	0.000051	0.000242	0.000099	0.000135	0.00056	0.00014
Iron (Fe)	mg/L	0.35	---	0.175	0.031	0.0619	0.0218	0.0884	0.07570	0.06190
Lead (Pb)	mg/L	---	---	0.000215	0.000006	0.0000264	0.0000109	0.0000365	0.00006	0.00003
Lanthanum (La)	mg/L	---	---	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)	mg/L	---	---	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	mg/L	---	---	0.591	1.610	1.410	1.530	1.780	1.38	1.53
Manganese (Mn)	mg/L	---	---	0.0044	0.0014	0.00121	0.000931	0.00161	0.00190	0.00140
Mercury (Hg)	mg/L	---	---	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum (Mo)	mg/L	---	---	0.000476	0.001150	0.001	0.000395	0.00324	0.00125	0.00100
Nickel (Ni)	mg/L	---	---	0.000433	0.000149	0.00008	0.000067	0.000199	0.00019	0.00015
Phosphorus (P)	mg/L	---	---	0.0147	0.0056	0.0163	0.0116	0.0073	0.01	0.01
Potassium (K)	mg/L	---	---	0.41	0.29	0.134	0.204	0.272	0.26	0.27
Rubidium (Rb)	mg/L	---	---	0.00033	0.00088	0.00135	0.00199	0.00304	0.00152	0.00135
Selenium (Se)	mg/L	---	---	0.000243	0.000297	0.000071	0.000137	0.00009	0.00017	0.00014
Silicon (Si)	mg/L	---	---	1.28	1.53	1.54	1.48	1.99	1.56	1.53
Silver (Ag)	mg/L	---	---	0.0000109	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)	mg/L	---	---	0.661	0.961	0.379	0.755	0.42	0.64	0.66
Strontium (Sr)	mg/L	---	---	0.01920	0.02320	0.0283	0.0368	0.0203	0.03	0.02
Sulphur (S)	mg/L	---	---	<10	<10	<10	<10	<10	<10	<10
Thallium (Tl)	mg/L	---	---	<0.0000020	0.0000033	0.0000041	0.0000052	0.0000032	0.0000040	0.0000037
Thorium (Th)	mg/L	---	---	0.000010	0.000007	<0.000050	<0.000050	<0.000050	0.00001	0.00001
Tellurium (Te)	mg/L	---	---	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Tin (Sn)	mg/L	---	---	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium (Ti)	mg/L	---	---	0.00746	0.00161	0.00161	0.00064	0.00314	0.00289	0.00161
Uranium (U)	mg/L	---	---	0.000019	0.000022	0.0000034	0.0000022	0.0000025	0.00001	0.00000
Vanadium (V)	mg/L	---	---	0.00297	0.00330	0.0403	0.0044	0.0113	0.01245	0.00440
Tungsten (W)	mg/L	---	---	0.000036	0.000044	0.000152	0.000035	0.000024	0.00006	0.00004
Zinc (Zn)	mg/L	Variable[e]	Variable[e]	<0.0001	<0.0001	0.0005	0.00013	0.00033	0.00010	0.00010
Zirconium (Zr)	mg/L	---	---	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

NOTES

[a] *Approved BC Water Quality Guidelines for Freshwater Aquatic Life - Long-Term Chronic and Short-Term Acute Solute Concentrations*

[b] *Guideline/standard varies with hardness*

[c] *Guideline/standard varies with pH and temperature. pH and Temperature at receiving water is assumed to be 7.5 and 10°C, respectively.*

[d] *Guideline/standard varies with hardness*

[e] *Guideline/standard varies with hardness, DOC, and pH; DOC of 4.5 mg/L was applied for calculation, derived from the average DOC concentrations measured in surface water during the 2020-2021 monitoring period*

[f] *Applicable guideline varies with chloride. Background chloride concentration of 20 mg/L is applied for criteria calculation*

[g] *Dissolved copper guidelines determined using BLM*

Exceeds BCWQG AW 30-Day Average

Exceeds BCWQG AW MAC

Appendix G

Dust Suppressant Analytical Results

Your Project #: HARTLAND GROUND WATER QUALITY
Your C.O.C. #: 08539314

Attention: Geo Lab Data

CAPITAL REGIONAL DISTRICT
CRD-VIC 625 FISGARD
PO Box 1000
625 Fisgard Street
VICTORIA, BC
Canada V8W 2S6

Report Date: 2024/07/12
Report #: R3526794
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C450249
Received: 2024/07/05, 08:48

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2024/07/11	BBY6SOP-00026	SM 24 2320 B m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2024/07/11	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2024/07/11	BBY6SOP-00026	SM 24 2510 B m
Hardness (calculated as CaCO3)	1	N/A	2024/07/10	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2024/07/10	BBY WI-00033	Auto Calc
Elements by ICPMS Low Level (dissolved) (1)	1	N/A	2024/07/09	BBY7SOP-00002	EPA 6020b R2 m
Ammonia-N (Total)	1	N/A	2024/07/10	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate + Nitrite (N)	1	N/A	2024/07/06	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrite (N) Regular Level Water	1	N/A	2024/07/06	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrogen - Nitrate (as N)	1	N/A	2024/07/06	BBY WI-00033	Auto Calc
pH @25°C (2)	1	N/A	2024/07/11	BBY6SOP-00026	SM 24 4500-H+ B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: HARTLAND GROUND WATER QUALITY
Your C.O.C. #: 08539314

Attention: Geo Lab Data

CAPITAL REGIONAL DISTRICT
CRD-VIC 625 FISGARD
PO Box 1000
625 Fisgard Street
VICTORIA, BC
Canada V8W 2S6

Report Date: 2024/07/12
Report #: R3526794
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C450249
Received: 2024/07/05, 08:48

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Debbie Nordbruget, Key Account Specialist
Email: Debra.NORDBRUGET@bureauveritas.com
Phone# (250)385-6112

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, Senior Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CQQ442		
Sampling Date		2024/07/04 14:50		
COC Number		08539314		
	UNITS	**2024-0038698**	**RDL**	**QC Batch**
ANIONS				
Nitrite (N)	mg/L	<0.050 (1)	0.050	B429086
Calculated Parameters				
Dissolved Hardness (CaCO3)	mg/L	11.0	0.50	B428387
Nitrate (N)	mg/L	<0.20	0.20	B427826
Misc. Inorganics				
Conductivity	uS/cm	520	2.0	B434568
pH	pH	5.37	N/A	B434565
Anions				
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B434533
Alkalinity (Total as CaCO3)	mg/L	40	1.0	B434533
Bicarbonate (HCO3)	mg/L	48	1.0	B434533
Carbonate (CO3)	mg/L	<1.0	1.0	B434533
Hydroxide (OH)	mg/L	<1.0	1.0	B434533
Chloride (Cl)	mg/L	<10 (1)	10	B434602
Sulphate (SO4)	mg/L	<100 (1)	100	B434602
Nutrients				
Total Ammonia (N)	mg/L	51	0.75	B433338
Nitrate plus Nitrite (N)	mg/L	<0.20 (1)	0.20	B429084

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Detection limits raised due to matrix interference.

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CQQ442		
Sampling Date		2024/07/04 14:50		
COC Number		08539314		
	UNITS	2024-0038698	RDL	QC Batch
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	43.6	0.50	B430636
Dissolved Antimony (Sb)	ug/L	0.080	0.020	B430636
Dissolved Arsenic (As)	ug/L	1.14	0.020	B430636
Dissolved Barium (Ba)	ug/L	18.0	0.020	B430636
Dissolved Beryllium (Be)	ug/L	0.012	0.010	B430636
Dissolved Bismuth (Bi)	ug/L	<0.0050	0.0050	B430636
Dissolved Boron (B)	ug/L	17	10	B430636
Dissolved Cadmium (Cd)	ug/L	0.0391	0.0050	B430636
Dissolved Chromium (Cr)	ug/L	2.37	0.10	B430636
Dissolved Cobalt (Co)	ug/L	0.115	0.0050	B430636
Dissolved Copper (Cu)	ug/L	1.66	0.050	B430636
Dissolved Iron (Fe)	ug/L	1750	1.0	B430636
Dissolved Lead (Pb)	ug/L	0.172	0.0050	B430636
Dissolved Lithium (Li)	ug/L	<0.50	0.50	B430636
Dissolved Manganese (Mn)	ug/L	159	0.050	B430636
Dissolved Molybdenum (Mo)	ug/L	0.219	0.050	B430636
Dissolved Nickel (Ni)	ug/L	2.04	0.020	B430636
Dissolved Phosphorus (P)	ug/L	231	2.0	B430636
Dissolved Selenium (Se)	ug/L	0.096	0.040	B430636
Dissolved Silicon (Si)	ug/L	161	50	B430636
Dissolved Silver (Ag)	ug/L	<0.0050	0.0050	B430636
Dissolved Strontium (Sr)	ug/L	19.4	0.050	B430636
Dissolved Thallium (Tl)	ug/L	<0.0020	0.0020	B430636
Dissolved Tin (Sn)	ug/L	<0.20	0.20	B430636
Dissolved Titanium (Ti)	ug/L	<0.50	0.50	B430636
Dissolved Uranium (U)	ug/L	0.0029	0.0020	B430636
Dissolved Vanadium (V)	ug/L	<0.20	0.20	B430636
Dissolved Zinc (Zn)	ug/L	7.17	0.10	B430636
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	B430636
Dissolved Calcium (Ca)	mg/L	1.85	0.050	B428117
Dissolved Magnesium (Mg)	mg/L	1.55	0.050	B428117
Dissolved Potassium (K)	mg/L	3.33	0.050	B428117
Dissolved Sodium (Na)	mg/L	13.9	0.050	B428117
RDL = Reportable Detection Limit				

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CQQ442		
Sampling Date		2024/07/04 14:50		
COC Number		08539314		
	UNITS	**2024-0038698**	**RDL**	**QC Batch**
Dissolved Sulphur (S)	mg/L	83.7	3.0	B428117
RDL = Reportable Detection Limit				

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B429084	Nitrate plus Nitrite (N)	2024/07/06	120	80 - 120	109	80 - 120	<0.020	mg/L	1.7	25
B429086	Nitrite (N)	2024/07/06	113	80 - 120	107	80 - 120	<0.0050	mg/L	NC	20
B430636	Dissolved Aluminum (Al)	2024/07/10	101	80 - 120	99	80 - 120	<0.50	ug/L	5.0	20
B430636	Dissolved Antimony (Sb)	2024/07/10	100	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
B430636	Dissolved Arsenic (As)	2024/07/10	102	80 - 120	100	80 - 120	<0.020	ug/L	NC	20
B430636	Dissolved Barium (Ba)	2024/07/10	101	80 - 120	97	80 - 120	<0.020	ug/L	NC	20
B430636	Dissolved Beryllium (Be)	2024/07/10	98	80 - 120	95	80 - 120	<0.010	ug/L	NC	20
B430636	Dissolved Bismuth (Bi)	2024/07/10	104	80 - 120	102	80 - 120	<0.0050	ug/L	NC	20
B430636	Dissolved Boron (B)	2024/07/10	105	80 - 120	96	80 - 120	<10	ug/L	NC	20
B430636	Dissolved Cadmium (Cd)	2024/07/10	101	80 - 120	97	80 - 120	<0.0050	ug/L	NC	20
B430636	Dissolved Chromium (Cr)	2024/07/10	102	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
B430636	Dissolved Cobalt (Co)	2024/07/10	96	80 - 120	94	80 - 120	<0.0050	ug/L	NC	20
B430636	Dissolved Copper (Cu)	2024/07/10	99	80 - 120	97	80 - 120	<0.050	ug/L	NC	20
B430636	Dissolved Iron (Fe)	2024/07/10	102	80 - 120	100	80 - 120	<1.0	ug/L	0.52	20
B430636	Dissolved Lead (Pb)	2024/07/10	101	80 - 120	100	80 - 120	<0.0050	ug/L	12	20
B430636	Dissolved Lithium (Li)	2024/07/10	99	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
B430636	Dissolved Manganese (Mn)	2024/07/10	101	80 - 120	99	80 - 120	<0.050	ug/L	NC	20
B430636	Dissolved Molybdenum (Mo)	2024/07/10	103	80 - 120	102	80 - 120	<0.050	ug/L	NC	20
B430636	Dissolved Nickel (Ni)	2024/07/10	100	80 - 120	98	80 - 120	<0.020	ug/L	NC	20
B430636	Dissolved Phosphorus (P)	2024/07/10	104	80 - 120	100	80 - 120	<2.0	ug/L	NC	20
B430636	Dissolved Selenium (Se)	2024/07/10	100	80 - 120	96	80 - 120	<0.040	ug/L	NC	20
B430636	Dissolved Silicon (Si)	2024/07/10	103	80 - 120	104	80 - 120	<50	ug/L	NC	20
B430636	Dissolved Silver (Ag)	2024/07/10	100	80 - 120	98	80 - 120	<0.0050	ug/L	NC	20
B430636	Dissolved Strontium (Sr)	2024/07/10	100	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
B430636	Dissolved Thallium (Tl)	2024/07/10	103	80 - 120	101	80 - 120	<0.0020	ug/L	NC	20
B430636	Dissolved Tin (Sn)	2024/07/10	102	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
B430636	Dissolved Titanium (Ti)	2024/07/10	102	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
B430636	Dissolved Uranium (U)	2024/07/10	104	80 - 120	104	80 - 120	<0.0020	ug/L	NC	20
B430636	Dissolved Vanadium (V)	2024/07/10	101	80 - 120	98	80 - 120	<0.20	ug/L	NC	20
B430636	Dissolved Zinc (Zn)	2024/07/10	101	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
B430636	Dissolved Zirconium (Zr)	2024/07/10	101	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
B433338	Total Ammonia (N)	2024/07/10	91	80 - 120	98	80 - 120	<0.015	mg/L	NC	20
B434533	Alkalinity (PP as CaCO3)	2024/07/11					<1.0	mg/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B434533	Alkalinity (Total as CaCO3)	2024/07/11			101	80 - 120	<1.0	mg/L	1.1	20
B434533	Bicarbonate (HCO3)	2024/07/11					<1.0	mg/L	1.1	20
B434533	Carbonate (CO3)	2024/07/11					<1.0	mg/L	NC	20
B434533	Hydroxide (OH)	2024/07/11					<1.0	mg/L	NC	20
B434565	pH	2024/07/11			100	97 - 103				
B434568	Conductivity	2024/07/11			103	90 - 110	<2.0	uS/cm		
B434602	Chloride (Cl)	2024/07/11	99	80 - 120	97	80 - 120	<1.0	mg/L		
B434602	Sulphate (SO4)	2024/07/11	87	80 - 120	98	80 - 120	<1.0	mg/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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BUREAU VERITAS
4606 Canada Way
Burnaby, B.C. V5G 1K5

Central: 250-385-6112
Desk: 604-639-8425
Mobile: 250-661-3420

08539314

COMPANY NAME:	CAPITAL REGIONAL DISTRICT (CRD)
COMPANY ADDRESS:	HARTLAND LANDFILL 280 WILLIS POINT ROAD VICTORIA, B.C. V9E 1K1
SAMPLER NAME:	Shelley Donovan
PH. #:	250-360-347
CELL #:	250-4808711
EMAIL	geolabdata@crd.bc.ca
CLIENT PROJECT ID: (#)	HARTLAND GROUND WATER QUALITY
PROJECT MANAGER:	DEBBIE NORDBRUGET

	CRD ID	Sample Type	PSC LAB # (Lab Use Only)	MATRIX: Ground Water	MATRIX: Surface Water	MATRIX: Soil	MATRIX: Other	SAMPLING: DATE (DD-MMM-YYYY)	SAMPLING: TIME	ANALYSIS REQUESTED: CRD Groundwater Package Routine
1	2024-0038698	SS		X				4-Jul-2024	14:50	X
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

MVAN-2024-07-255

TAT (Turnaround Time)
< 5 DAY TAT ONLY WITH PRIOR APPROVAL

Regular TAT

OTHER (SPECIFY)

IOL SITE LOCATION:

PSC SAP#:

IOL CONTACT:

RELINQUISHED BY SAMPLER: Shelley Donovan — DATE: 4-Jul-2024 — TIME: Shipped 15:30

RELINQUISHED BY: — DATE: — TIME:

RELINQUISHED BY: — DATE — TIME:

SPECIAL INSTRUCTIONS:
Invoice to: geolabinvoices@crd.bc.ca

☐ CCME ☐ CSR
☐ ALBERTA TIER ☐ OTHER

LAB USE ONLY

Sample Arrival Temp °C	DUE DATE	LOG IN CHECK
11/11/11		

RECEIVED BY:

RECEIVED BY:

RECEIVED BY LABORATORY: N Maria Zamora 2024/07/05

NO Seal / ICE Pack frozen. 08:48

Appendix H-1

Groundwater Quality

Appendix H-1. Groundwater Quality Data 2025-2026

BC CSR			AW Maximum (1) DW Maximum (2)						1,500 250		1,31-18,4 (3)		0,2-2 (4) 1		400 10	400 10	1,280-4,290 (5) 500	9500		90 6	50 10	10,000 1,000	2 (8) 8			12,000 5,000	0,5-4 (5) 5			90 (7) 6,000	40 14 (6)
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	pH (Field)	Conductivity (Actual - Field)	Temperature (Field)	Alkalinity	Hardness (As $CaCO_3$)	Chloride		Nitrogen - Ammonia		Nitrogen - Nitrite		Nitrogen - Nitrate	Nitrogen - Nitrate plus Nitrite	Sulphate	Aluminum	Antimony	Arsenic	Barium	Beryllium		Bismuth	Boron	Cadmium	Calcium		Chromium	Cobalt	
				Fraction	—	TOT	TOT	TOT	DIS	DIS		DIS		DIS		DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS		DIS	DIS	DIS	DIS		DIS	DIS	
				Unit	pH	µS/cm	°C	mg/L	mg/L	mg/L		mg/L		mg/L		mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L		µg/L	µg/L	µg/L	mg/L		µg/L	µg/L	
				Method Detection Limit	0.1	1	0.1	1	0.5	1		0.015		0.005		0.02	0.02	1	0.5	0.02	0.02	0.02	0.01		0.005	10	0.005	0.05		0.1	0.005	
Gw-04-3-1	SS	Y	2025-05-29	Clear and colourless	7,76	366	9,90	170	203	30,0	<	0,015	<	0,005		0,038	0,038	38,0	1,89	0,069	0,211	34,7	< 0,010	<	0,005	77,0	0,040	67,5	<	0,100	0,030	
Gw-04-3-1	SS	Y	2025-10-01	Clear and colourless	7,56	377	10,5	170	224	31,0	<	0,015	<	0,005	<	0,020	< 0,020	40,0	6,80	0,073	0,225	38,0	< 0,010	<	0,005	79,0	0,030	74,4	<	0,100	0,044	
Gw-04-3-1	SS	Y	2025-11-12	Clear and colourless	7,31	390	10,1	160	220	30,0	<	0,015	<	0,005		0,038	0,038	35,0	3,36	0,075	0,193	34,8	< 0,010	<	0,005	75,0	0,023	73,2	<	0,100	0,036	
Gw-04-3-1	SS	Y	2026-02-24	Clear and colourless	7,40	366	8,50	160	232	31,0	<	0,015	<	0,005	<	0,020	< 0,020	35,0	1,78	0,079	0,203	39,6	< 0,010	<	0,005	84,0	0,026	77,2	<	0,100	0,029	
Gw-04-4-1	SS	Y	2025-05-29	Clear and colourless	6,81	271	9,80	73,0	104	43,0	<	0,015	<	0,005		0,196	0,196	24,0	6,98	0,052	0,080	8,63	< 0,010	<	0,005	77,0	0,007	32,9	<	0,100	0,056	
Gw-04-4-1	SS	Y	2025-10-01	Clear and colourless	6,64	487	11,0	110	206	110	<	0,015	<	0,005		0,874	0,874	35,0	4,08	0,051	0,077	21,8	< 0,010	<	0,005	96,0	0,028	66,9	<	0,120	0,079	
Gw-04-4-1	SS	Y	2025-11-12	Clear and colourless	6,50	348	10,8	59,0	125	51,0	<	0,015	<	0,005		0,621	0,621	48,0	6,25	0,061	0,088	11,2	< 0,010	<	0,005	87,0	0,012	39,5	<	0,100	0,086	
Gw-04-4-1	SS	Y	2026-02-24	Clear and colourless	6,81	260	8,00	63,0	103	41,0	<	0,015	<	0,005		1,19	1,19	23,0	8,29	0,064	0,073	7,83	< 0,010	<	0,005	69,0	0,010	32,6	<	0,100	0,057	
Gw-16-1-1	SS	N	2025-10-01	Clear and colourless	6,99	353	12,6	160	201	5,90	<	0,015	<	0,005		0,121	0,121	33,0	1,44	0,068	0,104	12,5	< 0,010	<	0,005	25,0	0,098	66,3	<	0,100	0,080	
Gw-16-1-1	SS	N	2025-11-12	Clear and colourless	6,55	548	11,1	150	365	7,50	<	0,015	<	0,022		3,58	3,60	210	1,34	0,044	0,082	9,60	< 0,010	<	0,005	18,0	0,165	117	<	0,100	0,059	
Gw-16-1-2	SS	N	2025-10-01	Clear and colourless	6,88	307	12,3	160	192	5,90	<	0,015	<	0,005		0,253	0,253	35,0	80,4	0,096	0,092	7,85	< 0,010	<	0,005	20,0	0,070	63,4	<	0,100	0,037	
Gw-16-1-2	SS	N	2025-11-12	Clear and colourless	6,50	543	11,4	160	347	7,70	<	0,015		0,018		2,85	2,86	180	2,95	0,051	0,098	16,5	< 0,010	<	0,005	18,0	0,118	113	<	0,100	0,061	
Gw-16-2-1	SS	N	2025-10-01	Clear and colourless	7,21	333	12,3	190	200	3,80	<	0,015	<	0,005		0,382	0,382	20,0	2,71	0,112	0,153	8,50	< 0,011	<	0,005	24,0	0,022	67,7	<	0,100	0,020	
Gw-16-2-1	SS	N	2025-11-12	Clear and colourless	6,16	591	11,3	140	349	7,60	<	0,015		0,145		5,67	5,82	200	6,38	0,052	0,150	16,5	< 0,010	<	0,005	16,0	0,230	114	<	0,100	1,11	
Gw-16-2-2	NS	N	2025-10-01	Dry - no sample	—	—	—	—	—	—		—		—		—	—	—	—	—	—	—	—		—	—	—	—		—	—	
Gw-16-2-2	SS	N	2025-11-12	Clear and colourless	6,64	379	11,2	170	264	5,80	<	0,015		0,046		2,52	2,57	91,0	4,01	0,086	0,170	11,4	< 0,010	<	0,005	20,0	0,097	89,3	<	0,100	0,066	
Gw-17-1-1	SS	Y	2025-10-03	Clear and colourless	7,04	327	11,1	180	164	5,10	<	0,015	<	0,005		0,238	0,238	33,0	1,13	0,507	0,899	24,5	< 0,010	<	0,005	15,0	0,035	48,1	<	0,100	0,202	
Gw-17-1-1	SS	Y	2025-11-14	Clear and colourless	7,06	369	10,3	210	225	4,90	<	0,015	<	0,005		0,096	0,096	33,0	1,58	0,345	0,667	21,1	< 0,010	<	0,005	28,0	0,012	69,2	<	0,100	0,009	
Gw-17-1-2	SS	Y	2025-10-03	Clear and colourless	6,76	308	11,2	160	198	4,70	<	0,015	<	0,005		0,367	0,367	33,0	2,52	0,382	0,695	22,4	< 0,010	<	0,005	15,0	0,031	58,7	<	0,120	0,153	
Gw-17-1-2	SS	Y	2025-11-14	Clear and colourless	6,92	332	11,0	170	177	5,10	<	0,015	<	0,005		0,180	0,180	31,0	1,93	0,244	0,436	18,3	< 0,010	<	0,005	26,0	0,015	53,0	<	0,100	0,013	
Gw-17-1-3	SS	Y	2025-10-03	Clear and colourless	7,23	453	11,1	260	282	5,20	<	0,015	<	0,005		0,056	0,056	37,0	7,51	0,031	0,211	17,7	< 0,010	<	0,005	15,0	0,021	83,3		0,230	0,037	
Gw-17-1-3	SS	Y	2025-11-14	Clear and colourless	7,22	435	10,9	230	234	5,00	<	0,015		0,008		0,414	0,421	36,0	4,27	0,028	0,186	10,9	< 0,010	<	0,005	20,0	0,016	71,5	<	0,100	0,042	
Gw-18-1-1	FRM	Y	2025-05-29	Mean of replicates	7,74	264	10,8	150	153	2,85	<	0,015	<	0,005	<	0,020	< 0,020	26,0	5,78	0,705	2,69	12,6	< 0,010	<	0,005	34,0	0,052	50,1	<	0,100	0,025	
Gw-18-1-1	FRM	Y	2025-10-03	Mean of replicates	7,71	271	11,7	140	157	3,45	<	0,015	<	0,005	<	0,020	< 0,020	27,0	3,78	0,598	3,07	12,1	< 0,010	<	0,005	29,0	0,069	51,3	<	0,100	0,005	
Gw-18-1-1	SS	Y	2025-11-12	Clear and colourless	7,63	276	10,5	150	143	3,20	<	0,015	<	0,005		0,020	0,020	26,0	4,72	0,798	2,58	13,6	< 0,010	<	0,005	31,0	0,090	45,4	<	0,100	0,026	
Gw-18-1-1	SS	Y	2026-02-26	Clear and colourless	7,67	272	10,3	140	164	3,90	<	0,015	<	0,005	<	0,020	< 0,020	27,0	12,7	0,606	2,98	14,5	< 0,010	<	0,005	35,0	0,073	53,8		0,110	0,023	
Gw-18-2-1	SS	Y	2025-05-29	Clear and colourless	7,14	240	10,8	100	143	7,50		0,020	<	0,005		0,106	0,106	20,0	21,5	0,021	0,046	1,48	< 0,010	<	0,005	< 10,00	0,029	49,0	<	0,100	0,031	
Gw-18-2-1	SS	Y	2025-10-03	Clear and colourless	7,67	233	10,7	160	198	6,70	<	0,015	<	0,005	<	0,020	< 0,020	30,0	16,4	0,035	0,089	9,62	< 0,010	<	0,005	< 10,00	0,022	68,8	<	0,100	1,10	
Gw-18-2-1	SS	Y	2025-11-12	Clear and colourless	7,02	301	10,6	140	177	5,50	<	0,015	<	0,005		0,197	0,197	35,0	0,540	0,035	0,078	3,56	< 0,010	<	0,005	< 10,00	0,075	61,2	<	0,100	0,021	
Gw-18-2-1	SS	Y	2026-02-26	Clear and colourless	7,08	266	10,5	130	163	6,80	<	0,015		0,010		0,122	0,132	28,0	2,75	0,026	0,034	1,38	< 0,010	<	0,005	< 10,00	0,024	55,8	<	0,100	0,013	
Gw-18-2-2	SS	Y	2025-05-02	Clear and colourless	7,29	299	10,7	160	191	7,20	<	0,015	<	0,005		0,046	0,046	29,0	12,5	0,032	0,106	5,16	< 0,010	<	0,005	< 10,00	0,006	66,3	<	0,100	0,879	
Gw-18-2-2	SS	Y	2025-10-03	Clear and colourless	7,28	321	10,5	140	171	6,80	<	0,015	<	0,005		0,043	0,043	27,0	10,2	0,025	0,050	1,54	< 0,010	<	0,005	< 10,00	0,029	58,8	<	0,100	0,011	
Gw-18-2-2	SS	Y	2025-11-12	Clear and colourless	7,07	337	11,8	170	204	6,30		0,081	<	0,005		0,078	0,078	32,0	4,47	0,053	0,420	12,8	< 0,010	<	0,005	< 10,00	0,005	71,3	<	0,100	1,32	
Gw-18-2-2	SS	Y	2026-02-26	Clear and colourless	6,60	281	10,3	140	159	7,00	<	0,015	<	0,005		0,197	0,197	36,0	7,87	0,032	0,064	5,76	< 0,010	<	0,005	< 10,00	0,021	55,4	<	0,100	0,664	
Gw-19-1-1	SS	N	2025-05-13	Clear and colourless	7,31	321	10,00	170	194	15,0		0,160	<	0,005	<	0,020	< 0,020	22,0	0,820	0,022	0,487	7,73	< 0,010	<	0,005	28,0	0,005	61,3	<	0,100	0,113	
Gw-19-1-1	SS	N	2025-10-01	Clear and colourless	7,11	343	11,8	170	193	17,0		0,044	<	0,005	<	0,020	< 0,020	23,0	0,960	0,066	0,109	7,78	< 0,010	<	0,005	29,0	0,005	61,8	<	0,100	0,084	
Gw-19-1-1	NS	N	2025-11-17	Tubing jammed inside well	—	—	—	—	—	—		—		—		—	—	—	—	—	—	—	—		—	—	—	—		—	—	
Gw-19-1-1	SS	N	2026-02-23	Clear and colourless	6,94	303	9,50	180	206	18,0		0,110	<	0,005	<	0,020	< 0,020	21,0	0,860	< 0,020	3,12	3,95	< 0,010	<	0,005	32,0	0,005	67,6	<	0,100	0,163	
Gw-19-1-2	SS	N	2025-06-02	Clear and colourless	7,35	329	10,6	170	194	14,0		0,130	<	0,005	<	0,020	< 0,020	21,0	1,19	< 0,020	1,62	4,56	< 0,010	<	0,005	21,0	0,010	62,6	<	0,100	0,116	
Gw-19-1-2	SS	N	2025-10-01	Clear and colourless	7,11	364	11,0	190	211	20,0		0,100	<	0,005	<	0,020	< 0,020	19,0	1,38	< 0,020	2,51	5,68	< 0,010	<	0,005	20,0	0,005	69,6		0,130	0,088	
Gw-19-1-2	SS	N	2025-11-12	Clear and colourless	6,92	373	9,90	190	208	20,0		0,097	<	0,005	<	0,020	< 0,020	15,0	1,11	< 0,020	2,95	3,58	< 0,010	<	0,005	17,0	0,005	68,8		0,130	0,064	
Gw-19-1-2	SS	N	2026-02-23	Clear and colourless	7,26	304	8,90	150	178	12,0		0,061	<	0,005	<	0,020	< 0,020	22,0	0,740	< 0,020	1,74	3,16	< 0,010	<	0,005	32,0	0,005	56,3	<	0,100	0,031	
Gw-19-2-1	SS	N	2025-06-02	Clear and colourless	7,80	328	10,5	150	0,500	18,0		0,085	<	0,005	<	0,020	< 0,020	41,0	2,70	0,021	0,228	39,5	< 0,010	<	0,005	66,0	0,005	59,6	<	0,100	0,087	
Gw-19-2-1	SS	N	2025-10-01	Clear and colourless	7,54	363	12,7	160	211	19,0	<	0,015	<	0,005	<	0,020	< 0,020	36,0	0,750	0,059	0,280	43,6	< 0,010	<	0,005	65,0	0,005	65,1	<	0,100	0,155	
Gw-19-2-1	SS	N	2025-11-12	Clear and colourless	7,45	344	10,2	160	202	18,0	<	0,015	<	0,005	<	0,020	< 0,020	35,0	0,660	< 0,020	0,209	39,3	< 0,010	<	0,005	59,0	0,005	61,6	<	0,100	0,110	
Gw-19-2-1	SS	N	2026-02-23	Clear and colourless	7,48	337	9,80	150	207	20,0	<	0,015	<	0,005	<	0,020	< 0,020	40,0	0,750	< 0,020	0,219	40,7	< 0,010	<	0,005	82,0	0,005	63,7	<	0,100	0,108	
Gw-19-2-2	SS	N	2025-06-02	Clear and colourless	7,22	353	10,00	180	195	20,0		0,075	<	0,005	<	0,020	< 0,020	27,0	2,57	0,024	0,212	39,1	< 0,010	<	0,005	61,0	0,005	59,4	<	0,100	0,075	
Gw-19-2-2	SS	N	2025-10-01	Clear and colourless	7,06	322	11,7	170	211	21,0	<	0,015	<	0,005	<	0,020	< 0,020	29,0	0,500	< 0,020	0,067	9,54	< 0,010	<	0,005	41,0	0,007	67,9	<	0,100	0,020	
Gw-19-2-2	SS	N	2025-11-12	Moderately turbid, slightly orange	7,29	308	10,9	140	177	18,0	<	0,015	<	0,005	<	0,020	< 0,020	31,0	2,29	< 0,020	0,068	9,26	< 0,010	<	0,005	54,0	0,005	55,4	<	0,100	0,022	
Gw-19-2-2	SS	N	2026-02-24	Clear, slightly yellow	7,48	407	9,20	120	173	20,0	<	0,015	<	0,005	<	0,020	< 0,020	37,0	3,90	< 0,020	0,073	8,74	< 0,010	<	0,005	61,0	0,005	52,5	<	0,100	0,010	
Gw-20-1-1	SS	Y	2025-05-22	Clear and colourless	8,47	132	10,7	72,0	65,8	3,20	<	0,015	<	0,005	<	0,020	< 0,020	12,0	3,90	0,100	0,150	2,46	< 0,050	<	0,025	4620	0,025	21,7	<	0,500	0,025	
Gw-20-1-1	SS	Y	2025-09-26	Clear and colourless	8,12	145	11,9	72,0	69,2	3,90	<	0,015	<	0,005	<	0,020	< 0,020	13,0	5,80	0,100	0,100	2,49	< 0,050	<	0,025	4890	0,025	22,3	<	0,500	0,036	
Gw-20-1-1	SS	Y	2026-02-12	Clear and colourless	8,21	132	11,2	64,0	62,7	2,80	<	0,015	<	0,005	<	0,020	< 0,020	11,0	3,40	0,100	0,100	2,15	< 0,050	<	0,025	4390	0,025	20,8	<	0,500	0,025	
Gw-20-1-1	SS	Y	2026-02-13	Clear and colourless	8,26	128	10,1	68,0	57,3	3,20	<	0,015	<	0,005		0,024	0,024	12,0	3,70	0,100	0,100	2,07	< 0,050	<	0,025	4870	0,025	18,8	<	0,500	0,025	
Gw-20-1-2	SS	Y	2025-05-22	Clear and colourless	8,27	190	11,3	96,0	87,4	8,10		0,056	<	0,005	<	0,020	< 0,020	15,0	4,20	0,100	0,100	3,52	< 0,050	<	0,025	4050	0,025	27,7	<	0,500	0,025	
Gw-20-1-2	SS	Y	2025-09-26	Clear and colourless	8,09	186	12,3	86,0	85,1	7,90		0,025	<	0,005	<	0,020	< 0,020	14,0	2,60	0,100	0,140	3,20	< 0,050	<	0,025	4410	0,025	26,8	<	0,500	0,030	
Gw-20-1-2	SS	Y	2025-11-12	Clear and colourless	8,10	147	11,4	69,0	65,7	3,00		0,062	<	0,005	<	0,020	< 0,020	11,0	2,80	0,100	0,100	2,37	< 0,050	<	0,025	4400	0,025	21,0	<	0,500	0,030	
Gw-20-1-2	SS	Y	2026-02-23	Clear and colourless	8,21	147	11,2	68,0	62,6	2,90	<	0,015	<	0,005	<	0,020	< 0,020	12,0	2,90	0,100	0,100	2,06	< 0,050	<	0,025	4660	0,025	20,1	<	0,500	0,025	
Gw-21-1-1	FRM	Y	2025-05-22	Mean of replicates	8,48	138	11,3	72,0	66,4	2,95	<	0,015	<	0,005	<	0,020	< 0,020	11,0	3,60	0,100	1,76	1,74	< 0,050	<	0,025	4125	0,025	20,8	<	0,500	0,025	
Gw-21-1-1	FRM	Y	2025-09-26	Mean of replicates	8,29	149	12,8	67,5	65,7	3,30		0,019	<	0,005		0,036	0,036	10,5	9,55	0,100	0,495	1,89	< 0,050	<	0,025	4300	0,025	20,4	<	0,500	0,025	
Gw-21-1-1	FRM	Y	2025-11-14	Mean of replicates	8,15	154	11,6	71,5	70,3	3,15	<	0,015	<	0,005	<	0,020	< 0,020	10,00	1,70	0,040	2,26	1,36	< 0,020	<	0,010	4030	0,010	21,9	<	0,200	0,010	
Gw-21-1-1	FRM	Y	2026-02-24	Mean of replicates	8,24	147	10,7	72,5	69,8	3,30	<	0,015	<	0,005	<	0,020	< 0,020	10,00	10,4	0,070	1,77	1,58	< 0,035	<	0,018	4130	0,018	21,7	<	0,350	0,018	
Gw-21-1-2	FRM	Y	2025-05-22	Mean of replicates	6,97	449	12,2	160	182	41,0		5,20	<	0,005	<	0,020	< 0,020	52,0	1,33	< 0,020	1,20	17,3	< 0,010	<	0,005	736	0,006	54,7		0,295	1,04	
Gw-21-1-2	SS	Y	2025-09-26	Clear and colourless	6,87	524	12,9	180	226	59,0		5,50	<	0,005	<	0,020	< 0,020	45,0	0,500	< 0,020	1,35	21,6	< 0,010	<	0,005	798	0,006	67,4		0,190	1,21	
Gw-21-1-2	FRM	Y	2025-11-14	Mean of replicates	6,66	555	11,3	190	239	61,0		5,05	<	0,005	<	0,020	< 0,020	41,0	0,700	< 0,020	1,31	22,2	< 0,010	<	0,005	659	0,006	71,4		0,175	1,24	
Gw-21-1-2	FRM	Y	2026-02-23	Mean of replicates	6,84	528	11,5	160	183	32,0		4,75	<	0,005	<	0,020	< 0,020	55,5	0,655	< 0,020	1,18	17,6	< 0,010	<	0,005	845	0,005	55,0		0,155	0,966	
Gw-21-2-1	FRM	Y	2025-05-22	Mean of replicates	6,94	459	11,4	150	192	43,5		4,80	<	0,011		0,511	0,522	52,0	2,14	< 0,020	1,40	15,5	< 0,010	<	0,005	647	0,014	57,8		0,180	1,07	
Gw-21-2-1	FRM	Y	2025-09-26	Mean of replicates	6,74	547	12,2	190	243	67,0		4,90	<	0,005		0,084	0,084	42,5	1,13	< 0,020	1,82	19,5	< 0,010	<	0,005	811	0,006	72,6		0,185	1,50	
Gw-21-2-1	SS	Y	2025-11-14	Clear and colourless	6,65	539	11,2	190	223	59,0		5,10	<	0,005		0,153	0,153	45,0	0,910	< 0,020	1,54	19,3	< 0,010	<	0,005	850	0,012	67,0		0,170	1,42	
Gw-21-2-1	SS	N	2026-02-13	Moderately turbid, moderately orange	6,68	480	10,8	160	183	35,0		4,80	<	0,005		0,417	0,417	59,0	1,90	0,021	0,666	15,9	< 0,010	<	0,005	711	0,015	54,5		0,150	1,05	
Gw-25-1-1	SS	N	2025-05-15	Clear and colourless	7,38	556	11,0	180	337	10,00		0,063	<	0,005		0,627	0,627	180	2,51	0,055	0,175	21,4	< 0,010	<	0,005	207	0,007	119	<	0,100	0,184	
Gw-25-1-1	SS	N	2025-10-03	Clear and colourless	7,21	627	13,3	210	333	9,90		0,190	<	0,005		0,068	0,068	170	860	0,036	0,201	57,1		0,031		0,016	109	0,005	118	<	0,100	0,184	
Gw-25-1-1	SS	N	2025-11-14	Very slightly turbid, colourless	7,03	613	10,00	180	425	13,0		0,040	<	0,005		0,185	0,185	200	29,3	0,035	0,164	21,3	< 0,010	<	0,005	223	0,005	152	<	0,100	0,182	
Gw-25-1-2	FRM	N	2026-02-12	Mean of replicates	7,03	656	10,7	190	388	13,0		0,061	<	0,005		0,129	0,129	220	5,66	0,039	0,191	21,5	< 0,010	<	0,005	214	0,007	137	<	0,100	0,183	
Gw-25-1-2	SS	N	2025-05-15	Clear and colourless	6,56	433	10,8	110	299	15,0	<	0,015	<	0,005		0,517	0,517	170	5,46	0,108	0,088	10,9	< 0,010	<	0,005	83,0	0,017	104	<	0,100	0,129	
Gw-25-1-2	SS	N	2025-10-03	Clear and colourless	6,83	589	14,9	170	322	10,00	<	0,015	<	0,005		0,057	0,057	160	44,9	0,136	0,126	14,7	< 0,010	<	0,005	88,0	0,021	112	<	0,100	0,200	
Gw-25-1-2	SS	N	2025-11-14	Clear and colourless	6,52	443	13,8	160	234	6,20	<	0,015		0,010		2,18	2,19	84,0	1,83	0,142	0,106	9,13	< 0,010	<	0,005	86,0	0,017	81,8	<	0,100	0,028	
Gw-25-1-2	SS	N	2026-02-12	Clear and colourless	6,38	352	10,8	140	188	2,20	<	0,015	<	0,005		3,15	3,15	57,0	10,7	0,113	0,123	8,02	< 0,010	<	0,005	51,0	0,026	64,6		0,120	0,047	
Gw-28-1-0	SS	Y	2025-05-16	Clear and colourless	7,11	346	12,3	170	201	6,30	<	0,015	<	0,005		0,331	0,331	33,0	0,670	0,032	0,100	1,24		0,013	<	0,005	1230	0,005	68,0		0,300	0,046	
Gw-28-1-0	SS	Y	2025-10-06	Clear and colourless	7,10	387	12,6	170	218	7,50	<	0,015	<	0,005		0,524	0,524	62,0	0,500	0,032	0,107	1,20	< 0,010	<	0,005	882	0,005	73,3		0,200	0,042	
Gw-28-1-0	SS	Y	2025-11-14	Clear and colourless	6,98	403	10,8	170	260	8,10	<	0,015	<	0,005		0,480	0,480	64,0	0,510	0,037	0,102	1,27	< 0,010	<	0,005	1010	0,005	88,0	<	0,100	0,034	
Gw-28-1-0	FRM	Y	2026-02-12	Mean of replicates	6,88	351	11,4	180	201	7,25	<	0,015	<	0,005		0,285	0,285	29,5	0,570	0,034	0,106	1,10	< 0,010	<	0,005	1345	0,005	66,8		0,300	0,041	
Gw-29-1-1	SS	Y	2025-05-14	Clear and colourless	6,89	340	10,4	110	149	34,0	<	0,015	<	0,005		0,286	0,286	49,0	1,76	0,028	0,244	0,957	< 0,010	<	0,005	357	0,034	49,6		0,210	0,017	
Gw-29-1-1	SS	Y	2025-09-11	Clear and colourless	6,75	417	12,0	110	199	30,0	<	0,015	<	0,005		0,244	0,244	86,0	0,930	0,022	0,243	1,13	< 0,010	<	0,005	366	0,021	67,0		0,150	0,021	
Gw-29-1-1	SS	Y	2025-11-05	Clear and colourless	6,68	417	11,4	120	169	33,0	<	0,015	<	0,005		0,234	0,234	78,0	6,34	0,042	0,271	2,42	< 0,010	<	0,005	362	0,128	56,1		0,130	0,015	
Gw-29-1-1	SS	Y	2026-02-05	Clear and colourless	6,73	320	10,3	120	147	27,0	<	0,015	<	0,005		0,196	0,196	43,0	0,950	0,029	0,289	0,654	< 0,010	<	0,005	503	0,007	49,2		0,200	0,013	

Notes:

a *Above CSR Schedule 3.2 AW Standard,*

b *Above CSR Schedule 3.2 DW Standard.*

BC CSR *CSR-Sch3.2: BC Contaminated Site Regulation - Schedule 3.2 - Generic Numerical Water Standards, last amended October 27, 2025.*

FB *Field blank,*

FRM *Field replicate mean (average of field replicates).*

NS *Not sampled.*

SS *Single sample.*

TB *Travel blank,*

(1) *Aquatic Life (AW) Freshwater Standard, Column 3 in CSR-Sch3.2*

(2) *Drinking Water (DW) Standard, Column 6 in CSR-Sch3.2*

(3) *Standard varies with pH.*

(4) *Standard varies with chloride,*

(5) *Standard varies with hardness.*

(6) *BC CSR Schedule 3.2 criterion for iron and manganese were not applied as directed by the Stage 8 CSR Amendments.*

(7) *Stand

Appendix H-1. Groundwater Quality Data 2025-2026

BC CSR			AW Maximum (1)	20-90 (5)		40-160 (5)					10,000	250-1,500 (5)				20		0.5-15 (5)				3		1,000		85		75-2,400 (5)	
			DW Maximum (2)	1,500	(6)	10		33 (6)		(6)	250	80				10		20	1,700 (8)	2,500			2500			20	20	3,000	
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	Copper		Iron		Lead		Lithium	Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Selenium		Silicon	Silver		Sodium	Strontium	Sulphur	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Zirconium
				Fraction	DIS		DIS		DIS		DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS		DIS	DIS		DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L		µg/L		µg/L		µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L		µg/L	µg/L		mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				Method Detection Limit	0.05		1		0.005		0.5	0.05	0.05	0.05	0.02	2	0.05	0.04		50	0.005		0.05	0.05	3	0.002	0.2	0.5	0.002	0.2	0.1	0.1
Gw-04-3-1	SS	Y	2025-05-29	Clear and colourless	0.353		2.00		0.033		0.630	8.46	0.157	2.86	0.339	12.1	0.562	0.289		8280	< 0.005		12.1	183	11.3	< 0.002	< 0.200	< 0.500	0.699	< 0.200	0.920	< 0.100
Gw-04-3-1	SS	Y	2025-10-01	Clear and colourless	0.403		19.2		0.084		0.650	9.25	1.76	3.05	0.373	10.9	0.591	0.321		9050	< 0.005		12.1	195	12.8	0.003	< 0.200	< 0.500	0.578	< 0.200	0.770	< 0.100
Gw-04-3-1	SS	Y	2025-11-12	Clear and colourless	0.244		2.80		0.023		0.700	9.06	0.132	2.41	0.319	9.70	0.597	0.248		8590	< 0.005		13.2	185	12.2	0.002	< 0.200	< 0.500	0.577	< 0.200	0.790	< 0.100
Gw-04-3-1	SS	Y	2026-02-24	Clear and colourless	0.277		1.00		0.024		0.650	9.55	0.106	3.03	0.342	10.00	0.638	0.356		8960	< 0.005		12.6	193	12.6	< 0.002	< 0.200	< 0.500	0.615	< 0.200	0.900	< 0.100
Gw-04-4-1	SS	Y	2025-05-29	Clear and colourless	1.25		3.50	< 0.005	< 0.500		5.34	0.321	0.099	0.329	2.70	1.34	< 0.040	5720	< 0.005		18.7	110	8.00	< 0.002	< 0.200	< 0.500	0.009	0.430	0.320	< 0.100
Gw-04-4-1	SS	Y	2025-10-01	Clear and colourless	1.83		12.6	0.152	< 0.500		5.99	4.87	0.172	0.691	2.50	2.01	0.054	6180	< 0.005		33.5	210	11.3	0.003	< 0.200	< 0.500	0.037	0.520	7.29	< 0.100
Gw-04-4-1	SS	Y	2025-11-12	Clear and colourless	1.86		2.10	0.014	< 0.500		6.48	0.251	0.130	0.418	< 2.00	1.63	0.043	5310	< 0.005		22.7	130	16.6	< 0.002	< 0.200	< 0.500	0.010	0.440	0.290	< 0.100
Gw-04-4-1	SS	Y	2026-02-24	Clear and colourless	1.50		1.90	0.005	< 0.500		5.36	0.415	0.115	0.276	3.90	1.38	< 0.040	5410	< 0.005		17.9	97.3	7.60	0.002	< 0.200	< 0.500	0.008	0.410	0.210	< 0.100
Gw-16-1-1	SS	N	2025-05-29	Clear and colourless	0.552		1.00	0.006	< 0.500		8.68	32.0	0.804	0.604	3.20	0.221	0.041	6560	< 0.005		4.36	216	11.8	0.003	< 0.200	< 0.500	0.330	0.540	1.92	< 0.100
Gw-16-1-1	SS	N	2025-11-12	Clear and colourless	1.25		1.80	0.008	< 0.500		17.5	19.6	0.219	0.584	< 2.00	0.260	0.098	6210	< 0.005		5.75	384	70.9	0.003	< 0.200	< 0.500	0.277	0.540	1.88	< 0.100
Gw-16-1-2	SS	N	2025-10-01	Clear and colourless	0.837		32.0	0.067	< 0.500		8.28	25.8	0.584	0.568	4.60	0.215	0.049	6400	< 0.005		4.35	205	11.9	0.004	< 0.200	1.07	0.186	0.620	1.64	0.130
Gw-16-1-2	SS	N	2025-11-12	Clear and colourless	0.926		4.60	0.015	< 0.500		15.5	44.4	0.262	0.716	3.30	0.272	0.079	6340	< 0.005		5.66	359	61.7	0.004	< 0.200	< 0.500	0.347	0.480	2.49	< 0.100
Gw-16-2-1	SS	N	2025-10-01	Clear and colourless	0.640		2.90	0.026	0.740		7.48	3.78	0.851	0.548	4.40	0.331	0.052	6770	< 0.005		5.09	292	6.40	0.003	< 0.200	< 0.500	0.169	1.03	1.07	< 0.100
Gw-16-2-1	SS	N	2025-11-12	Clear and colourless	3.73		1.80	0.011	< 0.500		15.9	413	0.193	2.41	< 2.00	0.278	0.114	6040	< 0.005		6.51	335	65.4	0.004	< 0.200	< 0.500	0.181	0.310	2.24	< 0.100
Gw-16-2-2	NS	N	2025-10-01	Dry - no sample	—		—	—	—		—	—	—	—	—	—	—	—		—	—		—	—	—	—	—	—	—	—	—
Gw-16-2-2	SS	N	2025-11-12	Clear and colourless	1.10		5.30	0.012	0.650		10.00	29.0	0.426	0.707	< 2.00	0.357	0.123	6520	< 0.005		5.89	333	29.9	0.003	< 0.200	< 0.500	0.162	0.690	1.76	< 0.100
Gw-17-1-1	SS	Y	2025-10-03	Clear and colourless	1.12		1.40	0.022	2.74		10.6	108	0.906	1.07	5.30	0.671	0.078	13500	< 0.005		16.8	438	9.10	0.005	< 0.200	< 0.500	0.723	1.21	4.10	< 0.100
Gw-17-1-1	SS	Y	2025-11-14	Clear and colourless	0.909		1.00	0.027	1.77		12.7	0.738	0.656	0.577	4.40	0.623	0.049	13100	< 0.005		12.7	462	10.7	< 0.002	< 0.200	< 0.500	0.479	1.48	1.95	< 0.100
Gw-17-1-2	SS	Y	2025-10-03	Clear and colourless	0.984		5.60	0.027	2.05		12.5	74.8	0.714	1.87	5.60	0.609	0.077	12200	< 0.005		13.1	476	9.80	0.003	< 0.200	< 0.500	0.562	1.66	3.99	< 0.100
Gw-17-1-2	SS	Y	2025-11-14	Clear and colourless	1.12		3.10	0.009	1.92		10.9	0.645	0.958	0.265	4.20	0.769	0.057	14500	< 0.005		13.0	436	9.90	0.003	< 0.200	< 0.500	0.556	0.680	6.02	< 0.100
Gw-17-1-3	SS	Y	2025-10-03	Clear and colourless	0.529		4.50	0.018	< 0.500		17.9	0.497	0.222	3.01	< 2.00	0.451	0.081	9120	< 0.005		4.49	595	11.7	< 0.002	< 0.200	< 0.500	0.189	2.81	0.700	< 0.100
Gw-17-1-3	SS	Y	2025-11-14	Clear and colourless	0.951		2.00	0.019	< 0.500		13.4	0.567	0.190	1.56	2.90	0.430	0.082	8380	< 0.005		4.31	330	11.1	0.002	< 0.200	< 0.500	0.079	1.83	1.34	< 0.100
Gw-18-1-1	FRM	Y	2025-05-29	Mean of replicates	0.139		6.00	0.009	1.48		6.77	9.83	0.690	0.173	4.55	0.278	< 0.040	8220	< 0.005		5.36	89.9	8.00	< 0.002	< 0.200	< 0.500	0.137	0.860	0.975	< 0.100
Gw-18-1-1	FRM	Y	2025-10-03	Mean of replicates	0.263		2.55	0.020	1.85		6.98	0.576	0.797	0.089	4.80	0.329	< 0.040	8645	< 0.005		5.79	94.0	7.85	0.003	< 0.200	< 0.500	0.120	0.770	1.52	< 0.100
Gw-18-1-1	SS	Y	2025-11-12	Clear and colourless	0.063		5.90	0.009	1.18		7.26	20.3	0.650	0.216	5.00	0.255	< 0.040	7470	< 0.005		5.64	96.9	8.00	< 0.002	< 0.200	< 0.500	0.145	0.870	1.27	< 0.100
Gw-18-1-1	SS	Y	2026-02-26	Clear and colourless	0.387		16.7	0.036	1.60		7.32	3.19	0.820	0.124	8.40	0.321	< 0.040	8970	< 0.005		5.93	92.3	8.80	< 0.002	< 0.200	1.65	0.138	0.890	1.99	< 0.100
Gw-18-2-1	SS	Y	2025-05-29	Clear and colourless	1.36		11.6	0.106	< 0.500		4.88	0.502	< 0.050	0.128	2.00	0.096	0.346	6910	< 0.005		3.51	55.0	6.80	< 0.002	< 0.200	< 0.500	0.045	0.750	0.790	< 0.100
Gw-18-2-1	SS	Y	2025-10-03	Clear and colourless	1.22		90.5	0.078	< 0.500		6.28	49.1	0.103	0.236	2.20	0.202	0.217	8580	< 0.005		3.61	83.5	8.80	< 0.002	< 0.200	< 0.500	0.107	0.99	0.680	< 0.100
Gw-18-2-1	SS	Y	2025-11-12	Clear and colourless	1.46		1.60	0.022	< 0.500		5.93	3.05	0.070	0.297	< 2.00	0.106	0.708	6400	< 0.005		4.39	67.1	11.8	< 0.002	< 0.200	< 0.500	0.102	0.570	1.18	< 0.100
Gw-18-2-1	SS	Y	2026-02-26	Clear and colourless	1.30		1.20	0.031	< 0.500		5.67	0.149	0.057	0.104	3.00	0.096	0.688	6720	< 0.005		3.59	59.8	9.10	< 0.002	< 0.200	< 0.500	0.033	0.870	0.490	< 0.100
Gw-18-2-2	SS	Y	2025-05-02	Clear and colourless	0.464		92.5	0.037	< 0.500		6.05	46.2	0.074	0.273	< 2.00	0.196	0.222	8530	< 0.005		3.52	78.1	8.80	< 0.002	< 0.200	< 0.500	0.113	0.740	0.640	< 0.100
Gw-18-2-2	SS	Y	2025-10-03	Clear and colourless	1.32		5.70	0.035	< 0.500		5.94	0.305	0.057	0.143	< 2.00	0.106	0.456	6450	< 0.005		3.80	66.1	7.60	< 0.002	< 0.200	< 0.500	0.046	0.540	0.630	< 0.100
Gw-18-2-2	SS	Y	2025-11-12	Clear and colourless	0.156		1590	0.011	< 0.500		6.25	86.6	0.119	0.311	< 2.00	0.199	0.412	6340	< 0.005		3.48	80.3	10.4	< 0.002	< 0.200	< 0.500	0.144	0.850	0.420	< 0.100
Gw-18-2-2	SS	Y	2026-02-26	Clear and colourless	0.772		14.2	0.022	< 0.500		5.14	2.45	< 0.050	0.147	3.40	0.148	0.513	7030	< 0.005		3.69	59.0	9.10	< 0.002	< 0.200	< 0.500	0.035	0.810	0.690	< 0.100
Gw-19-1-1	SS	N	2025-05-13	Clear and colourless	0.050		847	0.011	< 0.500		9.87	1570	0.766	0.216	< 2.00	0.174	< 0.040	12100	< 0.005		6.22	156	7.80	< 0.002	< 0.200	< 0.500	0.056	< 0.200	0.180	< 0.100
Gw-19-1-1	SS	N	2025-10-01	Clear and colourless	0.050		1940	< 0.005	< 0.500		9.27	1530	0.900	0.227	3.90	0.197	< 0.040	12700	< 0.005		6.61	160	7.70	< 0.002	< 0.200	< 0.500	0.047	< 0.200	0.330	< 0.100
Gw-19-1-1	NS	N	2025-11-17	Tube crushed immed inside well	—		—	—	—		—	—	—	—	—	—	—	—		—	—		—	—	—	—	—	—	—	—	—
Gw-19-1-1	SS	N	2026-02-23	Clear and colourless	0.050		6120	0.009	< 0.500		9.10	2440	0.558	0.173	6.80	0.235	< 0.040	12200	< 0.005		6.49	178	6.90	< 0.002	< 0.200	< 0.500	0.007	0.440	0.230	< 0.100
Gw-19-1-2	SS	N	2025-06-02	Clear and colourless	0.050		4380	0.010	< 0.500		9.07	2010	0.429	0.230	4.20	0.184	< 0.040	11900	< 0.005		5.78	154	6.90	< 0.002	< 0.200	< 0.500	0.006	0.350	0.380	< 0.100
Gw-19-1-2	SS	N	2025-10-01	Clear and colourless	0.278		6750	0.111	< 0.500		8.95	2590	0.838	0.317	6.20	0.214	< 0.040	12700	< 0.005		6.60	177	5.60	< 0.002	< 0.200	< 0.500	0.930	0.004	0.490	4.61	< 0.100
Gw-19-1-2	SS	N	2025-11-12	Clear and colourless	0.052		6330	0.012	< 0.500		8.70	2370	0.572	0.203	6.60	0.225	< 0.040	12100	< 0.005		7.07	162	4.90	< 0.002	< 0.200	< 0.500	0.031	0.430	0.130	< 0.100
Gw-19-1-2	SS	N	2026-02-23	Clear and colourless	0.050		2950	0.006	< 0.500		9.03	1180	0.440	0.085	5.90	0.168	< 0.040	11400	< 0.005		5.34	148	7.20	< 0.002	< 0.200	< 0.500	0.016	< 0.200	< 0.100	< 0.100
Gw-19-2-1	SS	N	2025-06-02	Clear and colourless	0.161		134	0.008	< 0.500		10.7	98.6	0.539	0.246	2.20	0.135	< 0.040	12000	< 0.005		4.73	159	12.1	< 0.002	< 0.200	< 0.500	0.077	< 0.200	0.510	< 0.100
Gw-19-2-1	SS	N	2025-10-01	Clear and colourless	0.083		29.8	0.027	< 0.500		11.9	108	0.615	0.301	3.20	0.149	< 0.040	13100	< 0.005		5.12	181	11.9	< 0.002	< 0.200	< 0.500	0.080	< 0.200	1.13	< 0.100
Gw-19-2-1	SS	N	2025-11-12	Clear and colourless	0.050		97.5	0.005	< 0.500		11.6	109	0.504	0.198	3.00	0.139	< 0.040	12600	< 0.005		4.97	165	11.1	< 0.002	< 0.200	< 0.500	0.089	< 0.200	0.220	< 0.100
Gw-19-2-1	SS	N	2026-02-23	Clear and colourless	0.050		110	0.006	< 0.500		11.6	119	0.565	0.178	2.50	0.154	< 0.040	13200	< 0.005		5.00	172	13.5	< 0.002	< 0.200	< 0.500	0.076	< 0.200	0.270	< 0.100
Gw-19-2-2	SS	N	2025-06-02	Clear and colourless	0.123		121	0.017	< 0.500		11.4	98.9	0.547	0.194	3.60	0.145	< 0.040	12100	< 0.005		5.03	160	13.0	< 0.002	< 0.200	< 0.500	0.071	< 0.200	0.430	< 0.100
Gw-19-2-2	SS	N	2025-10-01	Clear and colourless	0.287		9.40	0.010	< 0.500		10.2	31.7	0.299	0.280	2.60	0.219	< 0.040	11400	< 0.005		6.07	174	9.40	< 0.002	< 0.200	< 0.500	0.060	< 0.200	0.340	< 0.100
Gw-19-2-2	SS	N	2025-11-12	Moderately turbid, slightly orange	0.137		22.8	0.021	< 0.500		9.38	17.5	0.496	0.228	2.10	0.188	< 0.040	10300	< 0.005		5.35	142	10.00	< 0.002	< 0.200	< 0.500	0.089	< 0.200	0.900	< 0.100
Gw-19-2-2	SS	N	2026-02-24	Clear, slightly yellow	0.135		4.60	0.008	< 0.500		10.1	1.74	0.296	0.149	3.40	0.208	< 0.040	10100	< 0.005		5.57	144	12.6	< 0.002	< 0.200	< 0.500	0.078	< 0.200	0.440	< 0.100
Gw-20-1-1	SS	Y	2025-05-22	Clear and colourless	0.250		5.00	< 0.025	< 2.50		2.83	4.63	0.420	0.160	25.0	< 0.250	< 0.200	18200	< 0.025		9.79	390	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	< 0.500	< 0.500
Gw-20-1-1	SS	Y	2025-09-26	Clear and colourless	0.250		8.90	0.050	< 2.50		3.27	15.3	0.550	0.620	< 10.00	< 0.250	< 0.200	20700	< 0.025		9.69	390	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	10.5	< 0.500
Gw-20-1-1	SS	Y	2025-11-12	Clear and colourless	0.250		5.00	< 0.025	< 2.50		2.60	8.64	0.270	0.450	< 10.00	< 0.250	< 0.200	19600	< 0.025		9.06	374	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	3.30	< 0.500
Gw-20-1-1	SS	Y	2026-02-13	Clear and colourless	0.250		6.90	0.027	< 2.50		2.51	13.2	0.350	0.440	< 10.00	< 0.250	< 0.200	19300	< 0.025		8.76	338	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	0.610	< 0.500
Gw-20-1-2	SS	Y	2025-05-22	Clear and colourless	0.250		5.00	< 0.025	< 2.50		4.44	14.7	0.490	< 0.100	22.0	0.290	< 0.200	18300	< 0.025		12.0	522	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	< 0.500	< 0.500
Gw-20-1-2	SS	Y	2025-09-26	Clear and colourless	0.250		10.1	0.041	< 2.50		4.41	15.5	0.520	0.260	< 10.00	0.310	< 0.200	20900	< 0.025		11.1	498	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	5.21	< 0.500
Gw-20-1-2	SS	Y	2025-11-12	Clear and colourless	0.250		8.10	< 0.025	< 2.50		3.21	8.54	0.370	0.300	< 10.00	< 0.250	< 0.200	19300	< 0.025		9.11	389	< 15.0	< 0.010	< 1.00	< 2.50	< 0.012	< 1.00	10.5	0.500
Gw-20-1-2	SS	Y	2026-02-23	Clear and colourless	0.250		5.30	< 0.025	< 2.50		2.99	9.51	0.340	0.230	< 10.00	< 0.250	< 0.200	18400	< 0.025		8.80	337	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	0.610	< 0.500
Gw-21-1-1	FRM	Y	2025-05-22	Mean of replicates	0.250		5.00	< 0.025	< 2.50		3.54	2.86	0.640	< 0.100	< 27.0	< 0.250	< 0.200	17900	< 0.025		8.67	448	< 15.0	< 0.010	< 1.00	< 2.50	0.014	< 1.00	< 0.500	< 0.500
Gw-21-1-1	FRM	Y	2025-09-26	Mean of replicates	0.255		15.1	0.054	< 2.50		3.61	2.50	0.455	0.190	12.5	0.315	< 0.200	18900	< 0.025		8.94	422	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	< 1.00	5.72	< 0.500
Gw-21-1-1	FRM	Y	2025-11-14	Mean of replicates	0.100		2.05	< 0.010	1.00		3.80	3.25	0.455	0.046	< 4.00	0.200	< 0.080	19400	< 0.010		8.88	460	< 6.00	< 0.004	< 0.400	< 1.00	0.015	< 0.400	0.665	< 0.200
Gw-21-1-1	FRM	Y	2026-02-24	Mean of replicates	0.175		8.55	0.019	1.80		3.77	11.4	0.470	0.195	8.45	0.235	< 0.140	19300	< 0.018		8.99	431	< 10.5	< 0.007	< 0.700	< 1.75	0.026	< 0.700	0.820	0.350
Gw-21-1-2	FRM	Y	2025-05-22	Mean of replicates	0.302		1145	0.005	< 0.500		11.0	2125	0.663	1.30	5.20	5.81	< 0.040	12600	< 0.005		23.5	516	17.4	0.003	< 0.200	< 0.500	0.062	0.305	0.610	< 0.100
Gw-21-1-2	SS	Y	2025-09-26	Clear and colourless	0.267		1450	< 0.005	< 0.500		14.0	2600	0.656	1.89	7.00	6.40	< 0.040	14300	< 0.005		26.1	606	14.9	0.002	< 0.200	< 0.500	0.077	0.370	0.490	< 0.100
Gw-21-1-2	FRM	Y	2025-11-14	Mean of replicates	0.219		1505	0.007	< 0.500		14.8	2620	0.592	2.17	7.55	6.19	< 0.040	13200	< 0.005		26.0	649	14.8	0.003	< 0.200	< 0.500	0.097	0.220	0.255	< 0.100
Gw-21-1-2	FRM	Y	2026-02-23	Mean of replicates	0.263		1085	< 0.005	< 0.500		11.1	2025	0.686	1.14	6.00	5.49	< 0.040	13250	< 0.005		22.7	498	19.7	0.003	< 0.200	< 0.500	0.050	0.205	0.400	< 0.100
Gw-21-2-1	FRM	Y	2025-05-22	Mean of replicates	0.400		1045	< 0.005	< 0.500		11.6	2235	0.828	1.39	4.10	6.02	< 0.040	12350	< 0.005		23.4	523	17.7	0.003	< 0.200	< 0.500	0.075	0.220	0.490	< 0.100
Gw-21-2-1	FRM	Y	2025-09-26	Mean of replicates	0.432		1085	0.012	< 0.500		15.0	2940	0.819	2.56	6.45	6.64	< 0.040	13950	< 0.005		29.5	618	15.6	0.011	< 0.200	< 0.500	0.147	0.395	1.61	< 0.100
Gw-21-2-1	SS	Y	2025-11-14	Clear and colourless	0.234		1360	0.015	< 0.500		13.5	2570	0.587	2.30	7.00	6.20	< 0.040	12700	< 0.005		32.7	579	15.2	0.004	< 0.200	< 0.500	0.107	0.240	0.350	< 0.100
Gw-21-2-1	SS	Y	2026-02-13	Moderately turbid, moderately orange	0.421		313	0.018	< 0.500		11.4	2330	0.865	1.38	3.40	5.95	< 0.040	13000	< 0.005		24.8	496	21.0	0.003	< 0.200	< 0.500	0.060	< 0.200	1.69	< 0.100
Gw-25-1-1	SS	N	2025-05-15	Clear and colourless	0.169		131	0.032	< 0.500		9.76	347	0.828	0.178	5.60	0.388	0.175	10200	< 0.005		8.60	374	58.0	< 0.002	< 0.200	< 0.500	0.167	0.220	1.35	< 0.100
Gw-25-1-1	SS	N	2025-10-03	Clear and colourless	0.577		566	0.522			9.950	9.67	365	0.880	0.219	20.1	0.732	< 0.040	12200	< 0.005		26.6	567	54.7	< 0.002	< 0.200	8.58	0.336	0.810	0.870	0.840
Gw-25-1-1	SS	N	2025-11-14	Very slightly turbid, colourless	0.156		383	0.044	< 0.500		11.2	430	1.01	0.144	6.20	0.407	0.046	10600	< 0.005		7.80	495	69.4	< 0.002	< 0.200	< 0.500	0.183	< 0.200	0.620	< 0.100
Gw-25-1-1	FRM	N	2026-02-12	Mean of replicates	0.102		335	0.019	< 0.500		11.6	443	1.07	0.183	6.75	0.455	0.081	10250	< 0.005		8.38	458	76.4	< 0.002	< 0.200	< 0.500	0.148	< 0.200	0.685	< 0.100
Gw-25-1-2	SS	N	2025-05-15	Clear and colourless	0.808		7.60	0.016	< 0.500		9.59	26.3	0.241	1.20	4.40	0.310	0.211	7450	< 0.005		4.19	233	59.7	< 0.002	< 0.200	< 0.500	0.133	0.260	1.21	< 0.100
Gw-25-1-2	SS	N	2025-10-03	Clear and colourless	0.455		45.6	0.082	< 0.500		10.2	90.4	0.652	1.17	6.60	0.397	0.163	7780	< 0.005		5.57	264	51.4	0.002	< 0.200	0.99	0.550	0.440	0.780	< 0.100
Gw-25-1-2	SS	N	2025-11-14	Clear and colourless	0.651		1.70	0.006	< 0.500		7.13	3.86	0.377	0.749	4.30	0.334	0.299	8550	< 0.005		5.30	169	14.7	< 0.002	< 0.200	< 0.500	0.418	0.410	0.660	< 0.100
Gw-25-1-2	SS	N	2026-02-12	Clear and colourless	0.795		12.5	0.049	< 0.500		6.42	3.03	0.179	0.747	6.60	0.308	0.202	8340	< 0.005		4.08	152	18.1	0.003	< 0.200	< 0.500	0.141	0.430	1.76	< 0.100
Gw-28-1-0	SS	Y	2025-05-16	Clear and colourless	0.181		154	0.009	< 0.500		7.60	11.1	1.08	0.483	5.00	0.204	0.135	10000	< 0.005		3.92	366	11.2	< 0.002	< 0.200	< 0.500	0.193	0.840	0.450	< 0.100
Gw-28-1-0	SS	Y	2025-10-06	Clear and colourless	0.142		41.0	< 0.005	< 0.500		8.41	6.51	1.23	0.347	4.50	0.217	0.187	8870	< 0.005		4.23	424	19.3	< 0.002	< 0.200	< 0.500	0.254	0.790	< 0.100	< 0.100
Gw-28-1-0	SS	Y	2025-11-14	Clear and colourless	0.168		14.4	0.008	< 0.500		9.67	5.68	1.17	0.280	2.40	0.223	0.153	9730	< 0.005		4.42	444	23.6	< 0.002	< 0.200	< 0.500	0.336	0.720	0.320	< 0.100
Gw-28-1-0	FRM	Y	2026-02-12	Mean of replicates	0.209		10.9	0.005	< 0.500		8.18	4.90	1.05	0.477	2.25	0.214	0.133	10250	< 0.005		4.02	382	9.50	< 0.002	< 0.200	< 0.500	0.203	0.770	0.180	< 0.100
Gw-29-1-1	SS	Y	2025-05-14	Clear and colourless	0.332		5.90	0.006	< 0.500		6.11	0.309	0.381	0.691	5.60	0.303	0.147	5930	< 0.005		23.1	221	18.3	< 0.002	< 0.200	< 0.500	0.088	0.430	0.720	< 0.100
Gw-29-1-1	SS	Y	2025-09-11	Clear and colourless	0.309		22.7	0.009	< 0.500		7.67	0.423	0.366	0.695	3.50	0.315	0.109	6340	< 0.005		25.3	278	35.0	< 0.002	< 0.200	< 0.500	0.106	0.430	0.690	< 0.100
Gw-29-1-1	SS	Y	2025-11-05	Clear and colourless	0.390		2.70	0.009	< 0.500		7.01	0.193	0.361	1.04	16.9	0.345	0.096	5980	< 0.005		25.3	251	25.5	< 0.002	<

Appendix H-1. Groundwater Quality Data 2025-2026

BC CSR			AW Maximum (1) DW Maximum (2)					1,500 250	1,31-18,4 (3)	0,2-2 (4) 1	400 10	400 10	1,280-4,290 (5) 500	9500	90 6	50 10	10,000 1,000	2 (8) 8		12,000 5,000	0,5-4 (5) 5		90 (7) 6,000	40 14 (6)
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	pH (Field)	Conductivity (Actual - Field)	Temperature (Field)	Alkalinity	Hardness (As $CaCO_3$)	Chloride	Nitrogen - Ammonia	Nitrogen - Nitrite	Nitrogen - Nitrate	Nitrogen - Nitrate plus Nitrite	Sulphate	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt
				Fraction	—	TOT	TOT	TOT	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	pH	µS/cm	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
				Method Detection Limit	0.1	1	0.1	1	0.5	1	0.015	0.005	0.02	0.02	1	0.5	0.02	0.02	0.02	0.01	0.005	10	0.005	0.05	1	0.005
Gw-29-1-2	SS	Y	2025-05-14	Clear and colourless	6.72	361	10.00	83.0	153	33.0	0.019	< 0.005	0.235	0.235	83.0	2.26	0.065	0.062	3.28	< 0.010	< 0.005	189	0.013	53.8	< 0.100	0.039
Gw-29-1-2	SS	Y	2025-09-11	Clear and colourless	6.56	452	13.0	100.0	190	26.0	< 0.015	< 0.005	0.100	0.100	110	1.44	0.074	0.052	3.91	< 0.010	< 0.005	277	0.015	63.5	< 0.100	0.233
Gw-29-1-2	SS	Y	2025-11-05	Clear and colourless	6.51	436	11.8	100.0	180	28.0	< 0.015	< 0.005	0.285	0.285	100.0	1.54	0.084	0.041	3.97	< 0.010	< 0.005	281	0.015	59.6	< 0.100	0.119
Gw-29-1-2	SS	Y	2026-02-05	Clear and colourless	6.61	300	10.5	97.0	113	22.0	< 0.015	< 0.005	0.188	0.188	49.0	0.910	0.083	0.051	2.40	< 0.010	< 0.005	286	0.005	37.3	< 0.140	0.027
Gw-30-1-1	FRM	Y	2025-05-14	Clear and colourless	7.68	436	10.5	170	217	49.0	0.043	< 0.005	< 0.020	< 0.020	33.0	1.31	0.029	0.362	48.2	< 0.010	< 0.005	387	0.013	74.0	< 0.100	0.038
Gw-30-1-1	SS	Y	2025-09-11	Clear and colourless	7.55	471	13.7	170	237	52.0	< 0.015	< 0.005	0.036	0.036	35.0	109	0.033	0.367	46.7	0.012	0.006	434	0.007	81.3	< 0.100	0.032
Gw-30-1-1	FRM	Y	2025-11-06	Mean of replicates	7.49	458	11.1	170	220	63.5	< 0.015	< 0.005	0.028	0.028	50.0	2.41	0.091	0.348	8.36	< 0.010	< 0.005	316	0.061	75.7	< 0.100	0.076
Gw-30-1-1	SS	Y	2026-02-06	Clear and colourless	7.66	451	10.3	180	233	49.0	0.029	< 0.005	< 0.020	< 0.020	36.0	0.560	0.022	0.407	47.9	< 0.010	< 0.005	403	0.013	79.9	< 0.100	0.039
Gw-30-1-2	SS	Y	2025-05-14	Clear and colourless	7.17	451	10.00	140	193	61.0	< 0.015	< 0.005	0.096	0.096	46.0	8.08	0.093	0.245	8.29	< 0.010	< 0.005	259	0.104	66.2	< 0.110	0.041
Gw-30-1-2	FRM	Y	2025-09-11	Mean of replicates	7.14	508	12.2	170	220	63.5	< 0.015	< 0.005	0.028	0.028	50.0	2.41	0.091	0.348	8.36	< 0.010	< 0.005	316	0.061	75.7	< 0.100	0.076
Gw-30-1-2	SS	Y	2025-11-06	Clear and colourless	7.00	496	11.7	160	216	64.0	< 0.015	< 0.005	0.207	0.207	53.0	3.60	0.056	0.297	9.57	< 0.010	< 0.005	311	0.090	73.4	< 0.100	0.049
Gw-30-1-2	SS	Y	2026-02-06	Clear and colourless	6.93	167	9.80	55.0	47.2	13.0	< 0.015	< 0.005	0.885	0.885	18.0	6.09	0.031	0.154	3.39	< 0.010	< 0.005	43.0	0.106	15.6	< 0.100	0.038
Gw-31-1-1	SS	Y	2025-05-13	Clear and colourless	7.07	609	11.1	150	355	9.20	< 0.015	< 0.005	4.32	4.32	210	1.56	0.080	0.168	4.68	< 0.010	< 0.005	51.0	0.037	125	< 0.100	0.135
Gw-31-1-1	FRM	Y	2025-09-05	Mean of replicates	7.06	630	11.9	160	407	9.00	< 0.015	0.006	3.72	3.72	210	1.40	0.106	0.199	5.15	< 0.010	< 0.005	59.0	0.042	143	< 0.100	0.151
Gw-31-1-1	SS	Y	2025-11-06	Clear and colourless	6.98	555	11.0	160	378	9.00	< 0.015	0.006	3.19	3.19	200	27.0	0.101	0.209	5.12	< 0.010	< 0.005	67.0	0.048	132	< 0.100	0.219
Gw-31-1-1	SS	Y	2026-02-05	Clear and colourless	6.84	636	10.3	150	389	6.80	< 0.015	< 0.005	3.06	3.06	260	0.850	0.080	0.166	4.92	< 0.010	< 0.005	56.0	0.040	137	< 0.100	0.192
Gw-31-1-2	SS	Y	2025-05-13	Clear and colourless	6.90	520	10.5	140	299	9.10	< 0.015	< 0.005	4.21	4.21	180	4.38	0.043	0.108	3.16	< 0.010	< 0.005	50.0	0.020	104	< 0.100	0.044
Gw-31-1-2	SS	Y	2025-09-05	Clear and colourless	6.80	516	12.1	130	333	9.20	< 0.015	< 0.005	4.09	4.09	170	0.782	0.033	0.102	3.37	< 0.010	< 0.005	59.0	0.026	116	< 0.100	0.033
Gw-31-1-2	SS	Y	2025-11-06	Clear and colourless	6.77	606	11.8	120	358	6.80	< 0.015	< 0.005	2.31	2.31	240	4.46	0.052	0.149	5.13	< 0.010	< 0.005	57.0	0.022	123	< 0.100	0.061
Gw-31-1-2	SS	Y	2026-02-05	Clear and colourless	6.77	534	10.1	120	323	7.50	< 0.015	< 0.005	2.48	2.48	210	2.11	0.043	0.121	3.37	< 0.010	< 0.005	47.0	0.022	113	< 0.100	0.068
Gw-36-3-1	SS	N	2025-05-16	Clear and colourless	7.13	828	12.5	290	509	24.0	< 0.015	< 0.005	0.375	0.375	200	1.09	0.074	0.232	53.4	< 0.010	< 0.005	103	0.005	153	< 0.100	0.094
Gw-36-3-1	SS	N	2025-10-03	Clear and colourless	6.99	873	13.4	300	544	25.0	0.075	< 0.005	0.418	0.418	210	1.53	0.066	0.257	36.0	< 0.010	< 0.005	64.0	0.007	164	< 0.100	0.084
Gw-36-3-1	SS	N	2025-11-02	Clear and colourless	6.88	919	13.2	330	589	23.0	< 0.015	0.010	0.591	0.601	240	1.21	0.067	0.250	36.5	< 0.010	< 0.005	66.0	0.006	178	< 0.100	0.102
Gw-36-3-1	SS	N	2026-02-10	Clear and colourless	7.00	845	9.80	330	593	24.0	< 0.015	< 0.005	1.26	1.26	220	8.71	0.081	0.269	48.4	< 0.010	< 0.005	70.0	0.013	177	< 0.100	0.093
Gw-37-3-1	SS	N	2025-05-15	Clear and colourless	7.03	588	11.5	190	344	27.0	0.590	< 0.005	< 0.020	< 0.020	150	2.73	0.022	0.190	23.1	< 0.010	< 0.005	358	0.015	116	< 0.140	0.506
Gw-37-3-1	SS	N	2025-10-03	Clear and colourless	6.92	642	12.1	230	381	19.0	0.500	< 0.005	< 0.020	< 0.020	160	0.880	0.029	0.192	24.8	< 0.010	< 0.005	278	0.021	127	< 0.100	0.558
Gw-37-3-1	SS	N	2025-11-07	Clear and colourless	6.78	886	11.5	220	491	18.0	0.560	< 0.005	< 0.020	< 0.020	170	0.99	0.027	0.198	24.9	< 0.010	< 0.005	376	0.021	134	< 0.100	0.535
Gw-37-3-1	SS	N	2026-02-10	Clear and colourless	6.79	695	11.2	200	426	14.0	0.240	< 0.005	< 0.020	< 0.020	220	1.35	0.028	0.220	24.2	< 0.010	< 0.005	294	0.017	141	< 0.100	0.847
Gw-38-1-1	SS	N	2025-05-28	Clear and colourless	7.49	577	12.4	300	329	16.0	< 0.015	< 0.005	0.234	0.234	47.0	1.01	0.282	0.457	8.78	< 0.010	< 0.005	158	0.026	100.0	< 0.100	0.033
Gw-38-1-1	SS	N	2025-10-03	Clear and colourless	7.23	619	14.2	290	348	18.0	< 0.015	< 0.005	0.178	0.178	50.0	1.82	0.262	0.365	8.14	< 0.010	< 0.005	175	0.029	106	< 0.100	0.145
Gw-38-1-1	SS	N	2025-11-05	Clear and colourless	7.15	605	11.9	310	347	18.0	< 0.015	< 0.005	0.170	0.170	45.0	1.10	0.220	0.475	7.72	< 0.010	< 0.005	183	0.028	105	< 0.100	0.073
Gw-38-1-1	NS	N	2026-02-26	Tubing jammed - no sample	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-39-1-1	FRM	N	2025-05-27	Mean of replicates	7.92	386	12.3	95.5	190	12.5	< 0.015	0.019	5.78	5.80	75.5	3.81	0.668	0.323	9.01	< 0.010	< 0.005	20.0	0.019	67.2	< 0.100	0.031
Gw-39-1-1	FRM	N	2025-10-03	Mean of replicates	7.71	359	11.8	94.0	199	13.5	< 0.015	< 0.005	3.16	3.16	81.5	4.11	0.678	0.339	9.10	< 0.010	< 0.005	19.5	0.016	70.1	< 0.100	0.033
Gw-39-1-1	FRM	N	2025-11-20	Mean of replicates	7.59	347	11.3	97.0	198	13.0	< 0.015	< 0.005	1.64	1.64	84.5	1.68	0.339	0.379	6.16	< 0.010	< 0.005	44.5	0.015	68.8	< 0.100	0.037
Gw-39-1-1	SS	N	2026-02-10	Clear and colourless	7.65	357	11.1	97.0	203	13.0	< 0.015	0.009	2.85	2.85	87.0	6.58	0.708	0.332	8.69	< 0.010	< 0.005	18.0	0.016	71.5	< 0.100	0.056
Gw-39-2-1	SS	N	2025-05-27	Clear and colourless	7.53	381	12.2	170	219	19.0	< 0.015	< 0.005	0.439	0.439	48.0	2.51	0.617	0.429	3.27	< 0.010	< 0.005	925	0.012	76.5	< 0.100	0.027
Gw-39-2-1	SS	N	2025-10-03	Clear and colourless	7.53	332	11.5	160	200	12.0	< 0.015	< 0.005	0.179	0.179	40.0	0.600	0.610	0.482	1.87	< 0.010	< 0.005	1080	0.005	69.1	< 0.100	0.020
Gw-39-2-1	SS	N	2025-11-19	Clear and colourless	7.33	355	11.2	160	301	12.0	< 0.015	< 0.005	0.157	0.157	44.0	0.550	0.020	0.134	23.3	< 0.010	< 0.005	438	0.021	106	< 0.100	0.487
Gw-39-2-1	SS	N	2026-02-10	Clear and colourless	7.51	433	11.7	160	264	21.0	< 0.015	< 0.005	0.477	0.477	75.0	0.620	0.641	0.433	2.39	< 0.010	< 0.005	686	0.005	87.3	< 0.100	0.033
Gw-40-1-1	SS	N	2025-05-27	Clear and colourless	7.20	476	12.9	210	249	16.0	0.370	0.011	2.26	2.27	54.0	5.79	0.200	0.083	7.33	< 0.010	< 0.005	124	0.043	86.1	0.120	0.316
Gw-40-1-1	SS	N	2025-10-07	Clear and colourless	7.12	672	17.3	210	250	16.0	0.067	< 0.005	2.49	2.49	60.0	2.36	0.243	0.113	7.66	< 0.010	< 0.005	136	0.005	84.9	0.120	0.268
Gw-40-1-1	SS	N	2025-11-20	Clear and colourless	6.89	587	11.5	240	348	21.0	0.420	0.025	1.47	1.50	69.0	0.500	0.168	0.105	10.5	< 0.010	< 0.005	193	0.009	119	< 0.150	0.551
Gw-40-1-1	SS	N	2026-02-24	Clear and colourless	6.98	520	11.7	210	285	23.0	0.430	0.010	2.18	2.19	62.0	1.54	0.220	0.110	8.78	< 0.010	< 0.005	162	0.005	97.8	0.140	0.494
Gw-41-1-1	FRM	Y	2025-05-14	Mean of replicates	7.33	328	10.9	150	186	10.00	0.033	< 0.005	< 0.020	< 0.020	43.5	1.13	0.046	2.67	1.41	< 0.010	< 0.005	36.0	0.006	63.5	< 0.100	0.038
Gw-41-1-1	FRM	Y	2025-09-09	Mean of replicates	7.02	376	12.4	150	197	10.00	0.040	< 0.005	0.103	0.103	57.5	0.555	0.057	1.89	1.93	< 0.010	< 0.005	28.5	0.009	67.0	< 0.100	0.072
Gw-41-1-1	SS	Y	2025-11-05	Clear and colourless	7.13	375	11.7	160	203	9.80	0.047	< 0.005	0.039	0.039	51.0	0.540	0.044	3.89	1.83	< 0.010	< 0.005	28.0	0.009	68.8	< 0.100	0.114
Gw-41-1-1	SS	Y	2026-02-06	Clear and colourless	7.28	324	9.80	150	194	6.70	0.016	< 0.005	0.116	0.116	45.0	0.870	0.080	4.08	5.64	< 0.010	< 0.005	30.0	0.005	66.7	< 0.100	0.092
Gw-42-1-1	FRM	Y	2025-05-13	Mean of replicates	7.00	446	10.3	180	246	33.5	0.067	< 0.005	< 0.020	< 0.020	58.0	23.8	< 0.020	0.142	14.2	0.015	< 0.005	67.0	0.005	89.3	0.180	0.087
Gw-42-1-1	FRM	Y	2025-09-09	Mean of replicates	7.04	491	11.1	200	292	31.0	0.080	< 0.005	< 0.020	< 0.020	68.5	2.66	< 0.020	0.171	16.1	0.013	< 0.005	67.0	0.005	106	0.135	0.037
Gw-42-1-1	SS	Y	2025-11-05	Clear and colourless	6.85	513	10.8	200	301	35.0	0.074	< 0.005	< 0.020	< 0.020	67.0	3.85	< 0.020	0.186	16.4	0.015	< 0.005	77.0	0.005	109	0.160	0.060
Gw-42-1-1	SS	Y	2026-02-05	Clear and colourless	6.77	466	9.70	200	272	33.0	0.076	< 0.005	< 0.020	< 0.020	63.0	4.51	< 0.020	0.175	14.5	< 0.010	< 0.005	74.0	0.005	98.8	0.200	0.058
Gw-43-1-1	SS	N	2025-05-15	Clear and colourless	7.56	528	11.2	260	307	16.0	0.048	< 0.005	0.048	0.048	71.0	15.0	0.782	0.218	8.66	< 0.010	< 0.005	620	0.024	107	< 0.100	0.091
Gw-43-1-1	SS	N	2025-09-16	Clear and colourless	7.35	562	11.3	250	326	25.0	0.045	< 0.005	0.024	0.024	72.0	30.3	0.512	0.159	10.1	< 0.010	< 0.005	752	0.041	113	< 0.100	0.059
Gw-43-1-1	SS	N	2025-11-20	Clear and colourless	7.21	588	12.0	240	350	31.0	< 0.015	0.006	0.032	0.039	81.0	2.30	0.478	0.219	7.72	< 0.010	< 0.005	665	0.013	122	< 0.100	0.038
Gw-43-1-1	SS	N	2026-02-10	Clear and colourless	7.20	545	10.00	250	345	29.0	< 0.015	< 0.005	0.040	0.040	74.0	4.29	0.784	0.239	8.65	< 0.010	< 0.005	638	0.016	121	< 0.100	0.055
Gw-44-1-1	SS	N	2025-05-15	Clear and colourless	7.54	380	10.5	190	220	6.80	< 0.015	< 0.005	< 0.020	< 0.020	56.0	3.59	0.367	0.080	10.3	< 0.010	< 0.005	108	0.019	79.8	< 0.100	0.016
Gw-44-1-1	SS	N	2025-09-12	Clear and colourless	7.46	400	13.5	190	247	6.80	< 0.015	< 0.005	0.033	0.033	62.0	2.14	0.397	0.025	10.9	< 0.010	< 0.005	91.0	0.020	90.1	< 0.100	0.038
Gw-44-1-1	SS	N	2025-11-20	Clear and colourless	7.37	403	11.2	190	240	6.40	0.024	< 0.005	0.022	0.022	59.0	0.550	0.232	0.056	9.77	< 0.010	< 0.005	88.0	0.018	86.6	< 0.100	0.017
Gw-44-1-1	SS	N	2026-02-10	Clear and colourless	7.27	402	9.60	190	251	6.30	0.023	< 0.005	0.044	0.044	67.0	2.23	0.410	0.052	11.3	< 0.010	< 0.005	103	0.080	91.2	0.170	0.047
Gw-50-1-1	SS	N	2025-05-23	Clear and colourless	7.76	321	10.6	180	183	5.80	0.034	< 0.005	0.031	0.031	27.0	2.77	0.248	0.416	46.1	< 0.010	< 0.005	57.0	0.011	63.2	< 0.100	< 0.005
Gw-50-1-1	SS	N	2025-10-01	Clear and colourless	7.69	352	13.3	180	184	6.10	< 0.015	< 0.005	< 0.020	< 0.020	30.0	2.87	0.295	0.472	40.7	< 0.010	< 0.005	38.0	0.017	63.5	< 0.100	0.005
Gw-50-1-1	SS	N	2025-11-20	Clear and colourless	7.55	344	11.2	180	180	6.30	< 0.015	< 0.005	0.024	0.024	29.0	36.3	0.334	0.552	38.2	< 0.010	< 0.005	37.0	0.028	62.1	< 0.100	0.056
Gw-50-1-1	SS	N	2026-02-10	Clear and colourless	7.65	338	10.6	180	184	7.10	< 0.015	< 0.005	0.041	0.041	31.0	8.23	0.289	0.234	50.8	< 0.010	< 0.005	41.0	0.009	63.6	< 0.100	0.008
Gw-51-1-1	SS	N	2025-05-26	Clear and colourless	6.70	384	14.8	110	224	12.0	< 0.015	< 0.005	1.51	1.51	88.0	15.9	0.040	0.430	5.58	< 0.010	< 0.005	85.0	0.017	76.8	< 0.100	0.096
Gw-51-1-1	SS	N	2025-11-19	Clear and colourless	6.74	370	11.8	94.0	191	14.0	< 0.015	< 0.005	1.08	1.08	92.0	1.98	0.651	0.380	8.96	< 0.010	< 0.005	15.0	0.019	67.4	< 0.100	0.032
Gw-51-2-1	SS	N	2025-05-26	Clear and colourless	7.85	379	12.6	140	200	34.0	< 0.015	< 0.005	< 0.020	< 0.020	35.0	9.81	0.164	0.843	31.7	< 0.010	< 0.005	199	0.009	54.9	< 0.100	0.072
Gw-51-2-1	SS	N	2025-11-20	Clear and colourless	7.62	360	10.8	140	191	33.0	< 0.015	< 0.005	< 0.020	< 0.020	37.0	3.19	0.210	0.806	30.2	< 0.010	< 0.005	176	0.011	53.3	< 0.100	0.084
Gw-51-3-1	SS	N	2025-05-26	Clear and colourless	7.75	323	14.2	120	214	70.0	0.018	< 0.005	0.028	0.028	13.0	5.14	0.121	0.489	39.9	< 0.010	< 0.005	306	0.006	59.1	< 0.100	0.030
Gw-51-3-1	SS	N	2025-11-20	Clear and colourless	7.55	373	10.4	120	199	57.0	< 0.015	0.017	0.340	< 0.020	19.0	2.37	0.129	0.447	30.6	< 0.010	< 0.005	245	0.020	55.3	< 0.100	0.034
Gw-52-1-1	SS	N	2025-05-22	Clear and colourless	7.13	2100	13.7	850	483	170	28.0 a	< 0.005	< 0.020	< 0.020	1.00	2.90	0.063	0.263	104	< 0.020	< 0.010	3400	0.010	128	1.09	2.21
Gw-52-1-1	SS	N	2025-10-01	Clear and colourless	6.95	1819	14.2	910	528	170	28.0 a	< 0.005	< 0.020	< 0.020	1.00	2.50	0.100	0.230	116	< 0.050	< 0.025	3530	0.025	137	1.08	2.20
Gw-52-1-1	SS	N	2025-11-07	Clear and colourless	6.92	1885	13.5	880	497	170	27.0 a	< 0.005	< 0.020	< 0.020	1.00	2.50	0.100	0.140	109	< 0.050	< 0.025	3300	0.025	128	0.920	2.16
Gw-52-1-1	SS	N	2026-02-13	Clear and colourless	6.95	1771	13.2	830	456	170	27.0 a	< 0.005	0.041	0.041	1.00	3.10	0.090	0.192	101	< 0.020	< 0.010	3600	0.010	118	0.980	2.12
Gw-52-4-0 (P7)	SS	N	2025-05-22	Clear and colourless	—	—	—	1600	527	270 b	190 a	< 0.005	0.022	< 0.022	1.00	32.1	0.564	9.69	174	< 0.010	< 0.005	3120	0.005	122	10.3	10.1
Gw-52-4-0 (P7)	SS	N	2025-10-07	Clear and colourless	7.86	3678	18.2	1500	559	320 b	160 a	< 0.005	0.023	0.023	1.00	14.3	0.115	4.85	460	< 0.020	< 0.010	2900	0.010	120	3.26	5.67
Gw-52-4-0 (P7)	SS	N	2025-11-07	Clear, very slightly yellow	6.66	3800	17.4	1500	513	310 b	130 a	0.009	< 0.020	< 0.020	7.00	22.0	0.305	6.19	415	< 0.020	< 0.010	2730	0.010	108	5.36	5.72
Gw-52-4-0 (P7)	SS	N	2026-02-13	Clear, very slightly yellow	7.39	3400	15.4	1400	512	270 b	120 a	< 0.005	0.038	0.038	7.30	19.8	0.249	3.87	403	< 0.020	< 0.010	2940	0.010	115	2.12	4.62
Gw-53-1-1	SS	Y	2025-05-27	Clear and colourless	7.46	432	11.4	190	265	8.30	< 0.015	< 0.005	< 0.020	< 0.020	75.0	5.46	< 0.020	0.099	17.4	< 0.010	< 0.005	460	0.016	93.3	< 0.100	0.352
Gw-53-1-1	SS	Y	2025-10-06	Clear and colourless	7.29	454	11.9	190	278	7.90	< 0.015	< 0.005	< 0.020	< 0.020	96.0	0.570	< 0.020	0.123	22.7	< 0.010	< 0.005	471	0.014	97.8	< 0.100	0.440
Gw-53-1-1	SS	Y	2025-11-19	Clear and colourless	7.19	457	10.3	190	215	9.50	< 0.015	< 0.005	< 0.020	< 0.020	97.0	0.500	0.577	0.524	2.18	< 0.010	< 0.005	1000	0.008	73.8	< 0.100	0.021
Gw-53-1-1	SS	Y	2026-02-12	Clear and colourless	7.22	467	10.2	190	278	9.60	< 0.015	< 0.005	< 0.020	< 0.020	100.0	1.24	< 0.020	0.123	20.1	< 0.010	< 0.005	456	0.014	96.8	< 0.100	0.387
Gw-55-1-1	SS	Y	2025-09-08	Clear and colourless	7.23	358	10.9	170	188	18.0	< 0.015	< 0.005	0.302	0.302	36.0	0.500	0.124	0.183	4.59	< 0.010	< 0.005	18.0	0.007	65.8	< 0.100	0.015
Gw-55-1-1	SS	Y	2025-11-05	Light turbid, light pink	6.98	524	11.8	180	202	18.0	< 0.015	< 0.005	0.372	0.372	38.0	0.850	0.118	0.156	4.65	< 0.010	< 0.005	18.0	0.005	70.3	< 0.100	0.011
Gw-56-1-1	SS	Y	2025-05-15	Clear and colourless	7.78	310	10.4	150	185	12.0	0.018	< 0.005	< 0.020	< 0.020	35.0	3.61	0.050	0.181	34.2	< 0.010	< 0.005	34.0	0.020	64.7	0.140	0.009
Gw-56-1-1	SS	Y	2025-09-08	Clear and colourless	7.69	316	10.7	150	193	12.0	< 0.015	< 0.005	< 0.020	< 0.020	41.0	2.16	0.048	0.169	39.7	< 0.010	< 0.005	19.0	0.013	67.0	< 0.100	0.005
Gw-56-1-1	SS	Y	2025-11-06	Clear and colourless	7.55	319	10.5	140	179	11.0	< 0.015	< 0.005	< 0.020	< 0.020	37.0	1.53	0.046	0.177	28.0	< 0.010	< 0.005	18.0	0.009	63.0	< 0.100	0.005
Gw-56-1-1	SS	Y	2026-02-06	Clear and colourless	7.51	321	10.2	150	183	13.0	< 0.015	< 0.005	< 0.020	< 0.020	35.0	1.31	0.041	0.172	29.6	< 0.010	< 0.005	17.0	0.006	64.6	< 0.100	0.005
Gw-57-1-1	SS	Y	2025-09-11	Clear and colourless	7.55	364	10.4	170	215	13.0	< 0.015	< 0.005	< 0.020	< 0.020	47.0	0.910	0.030	0.100	17.1	< 0.010	< 0.005	47.0	0.006	77.0	< 0.100	0.013
Gw-57-1-1	SS	Y	2025-11-06	Clear and colourless	7.37	379	10.00	180	210	14.0	< 0.015	< 0.005	< 0.020	< 0.020	49.0	0.690	0.198	0.115	9.30	< 0.010	< 0.005	36.0	0.007	75.4	< 0.100	0.032

Notes:

a Above CSR Schedule 3.2 AW Standard.
b Above CSR Schedule 3.2 DW Standard.
BC CSR CSR-Sch3.2: BC Contaminated Site Regulation - Schedule 3.2 - Generic Numerical Water Standards, last amended October 27, 2025.
FB Field blank.
FRM Field replicate mean (average of field replicates).
NS Not sampled.
SS Single sample.
TB Travel blank.
(1) Aquatic Life (AW) Freshwater Standard, Column 3 in CSR-Sch3.2
(2) Drinking Water (DW) Standard, Column 6 in CSR-Sch3.2
(3) Standard varies with pH.
(4) Standard varies with chloride.
(5) Standard varies with hardness.
(6) BC CSR Schedule 3.2 criterion for iron and manganese were not applied as directed by the Stage 8 CSR Amendments.
(7) Standard is based on the trivalent (Cr(III)) species. Cr(III) is

Appendix H-1. Groundwater Quality Data 2025-2026

BC CSR			AW Maximum (1) DW Maximum (2)	20-90 (5) 1,500		40-160 (5) 10		33 (6)			(6)	10,000 250	250-1,500 (5) 80				20 10		0.5-15 (5) 20	1,700 (8)	2,500		3		2500		1,000	85 20	20	75-2,400 (5) 3,000		
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter Fraction Unit Method Detection Limit	Copper DIS µg/L 0.05		Iron DIS µg/L 1		Lead DIS µg/L 0.005		Lithium DIS µg/L 0.5	Magnesium DIS mg/L 0.05	Manganese DIS µg/L 0.05	Molybdenum DIS µg/L 0.05	Nickel DIS µg/L 0.02	Phosphorus DIS µg/L 2	Potassium DIS mg/L 0.05	Selenium DIS µg/L 0.04		Silicon DIS µg/L 50	Silver DIS µg/L 0.005	Sodium DIS mg/L 0.05	Strontium DIS µg/L 0.05	Sulphur DIS mg/L 3	Thallium DIS µg/L 0.002		Tin DIS µg/L 0.2		Titanium DIS µg/L 0.5	Uranium DIS µg/L 0.002	Vanadium DIS µg/L 0.2	Zinc DIS µg/L 0.1		Zirconium DIS µg/L 0.1
Gw-29-1-2	SS	Y	2025-05-14	Clear and colourless	1.59		9.80		0.008	<	0.500	7.02	1.33	0.278	0.599	3.10	0.386	0.089	<	5400	<	0.005	23.6	223	34.2	0.003	<	0.200	<	0.500	0.053	<	0.200	0.500	<	0.100
Gw-29-1-2	SS	Y	2025-09-11	Clear and colourless	1.46		51.7		0.006	<	0.500	7.71	45.3	0.527	0.792	3.40	0.428	0.040	<	6460	<	0.005	30.5	273	41.9	0.003	<	0.200	<	0.500	0.086	<	0.200	0.300	<	0.100
Gw-29-1-2	SS	Y	2025-11-05	Clear and colourless	1.31		59.2	<	0.005	<	0.500	7.50	37.7	0.582	0.686	4.00	0.431	0.088	<	6450	<	0.005	31.6	273	36.4	0.004	<	0.200	<	0.500	0.072	<	0.200	0.240	<	0.100
Gw-29-1-2	SS	Y	2026-02-05	Clear and colourless	1.21		51.7		0.006	<	0.500	4.67	2.92	0.544	0.308	2.70	0.365	0.237	<	6020	<	0.005	26.0	167	16.2	0.003	<	0.200	<	0.500	0.055	<	0.200	0.260	<	0.100
Gw-30-1-1	FRM	Y	2025-05-14	Clear and colourless	0.093		1.60		0.014		1.79	7.81	20.0	0.753	0.257	8.00	0.565	0.040	<	7690	<	0.005	19.8	535	11.7	0.006	<	0.200	<	0.500	0.291	<	0.200	0.530	<	0.100
Gw-30-1-1	SS	Y	2025-09-11	Clear and colourless	0.180		76.6		0.188		1.94	8.30	3.10	0.850	0.152	13.8	0.581	0.040	<	8450	<	0.005	20.4	516	10.7	0.004	<	0.200		1.54	0.337	<	0.200	0.340	<	0.100
Gw-30-1-1	FRM	Y	2025-11-06	Mean of replicates	0.442		2.35		0.009	<	0.500	7.49	2.25	4.34	0.723	14.0	2.12	0.101	<	5415	<	0.005	35.9	315	18.1	0.002	<	0.200	<	0.500	0.261	0.310		7.49	<	0.100
Gw-30-1-1	SS	Y	2026-02-06	Clear and colourless	0.050		1.40		0.018		1.73	8.15	46.5	0.712	0.289	5.30	0.553	0.040	<	8340	<	0.005	19.8	520	12.3	0.005	<	0.200	<	0.500	0.276	<	0.200	0.560	<	0.100
Gw-30-1-2	SS	Y	2025-05-14	Clear and colourless	0.488		4.80		0.027	<	0.500	6.82	1.14	1.65	0.928	14.5	1.75	0.067	<	5990	<	0.005	28.0	287	14.8	0.002	<	0.200	<	0.500	0.117	<	0.200	0.260		20.2	<	0.100
Gw-30-1-2	FRM	Y	2025-09-11	Mean of replicates	0.442		2.35		0.009	<	0.500	7.49	2.25	4.34	0.723	14.0	2.12	0.101	<	5415	<	0.005	35.9	315	18.1	0.002	<	0.200	<	0.500	0.261	0.310		7.49	<	0.100
Gw-30-1-2	SS	Y	2025-11-06	Clear and colourless	0.489		6.80		0.010	<	0.500	8.04	1.11	3.72	0.712	13.0	2.24	0.080	<	5190	<	0.005	34.7	334	17.3	0.002	<	0.200	<	0.500	0.314	0.340		16.0	<	0.100
Gw-30-1-2	SS	Y	2026-02-06	Clear and colourless	0.743		5.80		0.026	<	0.500	2.01	0.181	0.363	0.622	7.20	1.12	0.069	<	0.00	<	0.005	18.6	56.6	6.20	<	0.002	<	0.002	0.500	0.006	<	0.200	43.7	<	0.100
Gw-31-1-1	SS	Y	2025-05-13	Clear and colourless	0.394		3.10		0.011	<	0.500	10.5	25.5	0.867	0.214	3.30	0.647	0.188	<	4910	<	0.005	6.42	431	72.4	0.002	<	0.200	<	0.500	0.385	0.320		0.800	<	0.100
Gw-31-1-1	FRM	Y	2025-09-05	Mean of replicates	0.535		1.85		0.008	<	0.500	12.5	28.3	0.987	0.275	5.85	0.750	0.100	<	5720	<	0.005	8.05	434	76.2	0.002	<	0.200	<	0.500	0.509	0.340		0.385	<	0.100
Gw-31-1-1	SS	Y	2025-11-06	Clear and colourless	0.386		44.7		0.062	<	0.500	11.5	42.5	1.03	0.302	7.00	0.693	0.139	<	5310	<	0.005	7.71	423	71.6	0.002	<	0.200	<	0.500	0.481	0.380		0.420	<	0.100
Gw-31-1-1	SS	Y	2026-02-05	Clear and colourless	1.62		1.50		0.008	<	0.500	11.4	24.5	0.909	0.317	4.30	0.700	0.226	<	5520	<	0.005	6.97	433	83.6	<	0.002	<	0.200	<	0.500	0.418	0.250		0.660	<	0.100
Gw-31-1-2	SS	Y	2025-05-13	Clear and colourless	0.853		5.80		0.014	<	0.500	9.59	0.916	0.506	0.531	< 2.00	0.615	0.147	<	4690	<	0.005	6.01	305	61.1	<	0.002	<	0.200	<	0.500	0.449	0.470		2.69	<	0.100
Gw-31-1-2	SS	Y	2025-09-05	Clear and colourless	0.683		5.70		0.009	<	0.500	10.5	4.87	0.515	0.156	3.00	0.652	0.105	<	5750	<	0.005	7.57	326	56.4	0.002	<	0.200	<	0.500	0.451	0.520		1.64	<	0.100
Gw-31-1-2	SS	Y	2025-11-06	Clear and colourless	1.59		18.4		0.027	<	0.500	12.5	2.25	0.649	0.199	2.40	0.881	0.351	<	4870	<	0.005	7.65	355	79.5	0.003	<	0.200	<	0.500	0.372	0.570		1.68	<	0.100
Gw-31-1-2	SS	Y	2026-02-05	Clear and colourless	1.06		4.50		0.012	<	0.500	10.3	2.84	0.616	0.318	2.30	0.642	0.148	<	5050	<	0.005	6.47	331	69.1	<	0.002	<	0.200	<	0.500	0.440	0.420		1.78	<	0.100
Gw-36-1-1	SS	N	2025-05-16	Clear and colourless	0.860		1.60	<	0.005	<	0.500	31.1	0.129	0.371	0.303	8.70	0.724	0.097	<	11200	<	0.005	9.37	416	66.1	<	0.005	<	0.200	<	0.500	0.262	0.260		0.490	<	0.100
Gw-36-3-1	SS	N	2025-10-03	Clear and colourless	0.828		2.40		0.007	<	0.500	32.7	0.250	0.283	0.199	9.20	0.664	0.119	<	10800	<	0.005	9.22	405	72.4	0.004	<	0.200	<	0.500	0.312	0.270		0.470	<	0.100
Gw-36-3-1	SS	N	2025-11-02	Clear and colourless	0.954		6.20		0.015	<	0.500	35.0	0.109	0.236	0.200	7.70	0.688	0.113	<	12400	<	0.005	9.67	420	77.8	0.003	<	0.200	<	0.500	0.335	0.310		0.670	<	0.100
Gw-36-3-1	SS	N	2026-02-10	Clear and colourless	0.953		1.40		0.007		0.540	36.7	3.11	0.489	0.408	8.50	0.811	0.099	<	12300	<	0.005	9.88	432	80.5	0.007	<	0.200	<	0.500	0.338	<	0.200	0.790	<	0.100
Gw-37-3-1	SS	N	2025-05-15	Clear and colourless	0.137		949		0.012	<	0.500	12.8	459	0.366	1.22	6.20	0.551	0.040	<	10900	<	0.005	9.07	276	52.7	0.014	<	0.200	<	0.500	0.152	0.400		0.720	<	0.100
Gw-37-3-1	SS	N	2025-10-03	Clear and colourless	0.353		1100		0.006	<	0.500	15.4	502	0.506	1.40	5.90	0.576	0.040	<	10200	<	0.005	9.20	307	50.2	0.012	<	0.200	<	0.500	0.228	0.450		0.490	<	0.100
Gw-37-3-1	SS	N	2025-11-07	Clear and colourless	0.233		1360		0.010	<	0.500	16.4	547	0.548	1.29	6.60	0.624	0.040	<	11100	<	0.005	9.32	332	56.7	0.013	<	0.200	<	0.500	0.241	0.330		0.780	<	0.100
Gw-37-3-1	SS	N	2026-02-10	Clear and colourless	0.617		1120		0.016	<	0.500	17.9	457	0.570	3.89	6.50	0.666	0.046	<	9120	<	0.005	9.52	337	81.2	0.007	<	0.200	<	0.500	0.244	0.280		0.910	<	0.100
Gw-38-1-1	SS	N	2025-05-28	Clear and colourless	0.708		2.80		0.047		0.740	19.0	0.184	2.48	3.98	5.50	0.377	0.274	<	14200	<	0.005	12.0	599	14.3	0.003	<	0.200	<	0.500	0.705	1.98		1.56	<	0.100
Gw-38-1-1	SS	N	2025-10-03	Clear and colourless	0.616		3.80		0.051		0.720	20.2	1.22	2.75	4.64	< 2.00	0.395	0.409	<	14900	<	0.005	14.5	673	16.3	0.002	<	0.200	<	0.500	0.500	1.95		2.99	<	0.100
Gw-38-1-1	SS	N	2025-11-05	Clear and colourless	0.731		1.80		0.072	<	0.660	20.8	0.264	1.83	3.75	4.00	0.362	0.224	<	14700	<	0.005	10.1	612	14.2	<	0.002	<	0.200	<	0.500	0.377	1.83		2.13	<	0.100
Gw-38-1-1	NS	N	2026-02-26	Tubing jammed - no sample	—		—		—		—	—	—	—	—	—	—	—		—		—	—	—	—		—		—	—	—		—		—
Gw-39-1-1	FRM	N	2025-05-27	Mean of replicates	0.217		2.05		0.015		0.535	5.24	0.080	2.65	0.200	2.50	0.333	0.526	<	4980	<	0.005	5.82	406	24.7	0.002	<	0.200	<	0.500	0.275	1.52		0.970	<	0.100
Gw-39-1-1	FRM	N	2025-10-03	Mean of replicates	0.243		10.00		0.010	<	0.500	5.72	0.127	3.01	0.203	2.20	0.341	0.589	<	5095	<	0.005	5.78	406	28.8	<	0.002	<	0.200	<	0.500	0.296	1.55		0.725	<	0.100
Gw-39-1-1	FRM	N	2025-11-20	Mean of replicates	0.865		1.00		0.005	<	0.500	6.48	0.880	1.43	0.341	2.90	0.369	0.322	<	5525	<	0.005	5.80	318	27.9	0.003	<	0.200	<	0.500	0.205	0.99		0.665	<	0.100
Gw-39-1-1	SS	N	2026-02-10	Clear and colourless	0.498		13.1		0.104	<	0.500	5.88	0.846	2.42	0.373	3.10	0.348	0.495	<	5210	<	0.005	5.83	406	32.2	<	0.002	<	0.200	<	0.500	0.358	1.60		5.15	<	0.100
Gw-39-2-1	SS	N	2025-05-27	Clear and colourless	0.329		2.10		0.021	<	0.500	7.38	11.6	1.64	0.245	3.30	0.253	1.35		7690	<	0.005	4.07	408	15.8	<	0.002	<	0.200	<	0.500	0.262	1.24		1.11	<	0.100
Gw-39-2-1	SS	N	2025-10-03	Clear and colourless	0.279		1.00	<	0.005	<	0.500	6.57	7.85	1.90	0.169	2.40	0.208	1.36		8280	<	0.005	4.16	341	12.3	<	0.002	<	0.200	<	0.500	0.236	1.21	<	0.100	<	0.100
Gw-39-2-1	SS	N	2025-11-19	Clear and colourless	0.050		320		0.006	<	0.500	9.01	217	0.660	0.600	2.60	0.283	< 0.040		12200	<	0.005	4.13	394	38.6	0.013	<	0.200	<	0.500	0.094	<	0.200	0.370	<	0.100
Gw-39-2-1	SS	N	2026-02-10	Clear and colourless	0.397		1.20	<	0.005	<	0.500	8.64	6.11	1.52	0.363	< 2.00	0.243	0.894		8250	<	0.005	4.37	428	26.0	<	0.002	<	0.200	<	0.500	0.380	0.860	<	0.100	<	0.100
Gw-40-1-1	SS	N	2025-05-27	Clear and colourless	2.07		6.30		0.088		0.880	8.17	5.12	0.714	0.974	4.50	3.21	0.063		7210	<	0.005	10.2	469	16.7	0.003	<	0.200	<	0.500	0.570	0.310		5.63	<	0.100
Gw-40-1-1	SS	N	2025-10-07	Clear and colourless	1.63		1.90		0.016		0.740	9.11	8.42	0.636	0.966	7.00	3.12	0.080		7390	<	0.005	11.1	502	18.3	0.002	<	0.200	<	0.500	0.747	0.290		2.86	<	0.100
Gw-40-1-1	SS	N	2025-11-20	Clear and colourless	3.57		3.10		0.054	<	0.500	12.6	26.8	0.878	1.81	3.10	3.78	0.071		8350	<	0.005	14.5	591	22.0	0.003	<	0.200	<	0.500	1.08	0.380		4.60	<	0.100
Gw-40-1-1	SS	N	2026-02-24	Clear and colourless	2.99		3.30		0.033		0.820	9.97	2.25	0.701	1.57	3.10	3.54	0.055		7940	<	0.005	13.1	473	22.2	<	0.002	<	0.200	<	0.500	0.725	0.280		3.29	<	0.100
Gw-41-1-1	FRM	Y	2025-05-14	Mean of replicates	0.212		3.45		0.005	<	0.500	6.60	107	1.69	0.107	2.65	0.874	0.045		7285	<	0.005	6.14	189	16.2	<	0.002	<	0.200	<	0.500	0.163	<	0.200	0.235	<	0.100
Gw-41-1-1	FRM	Y	2025-09-09	Mean of replicates	0.271		3.30		0.007	<	0.500	7.23	364	2.10	0.140	< 2.00	1.23	0.080		7220	<	0.005	7.15	199	19.2	0.003	<	0.200	<	0.500	0.253	<	0.200	0.110	<	0.100
Gw-41-1-1	SS	Y	2025-11-05	Clear and colourless	0.249		4.20	<	0.005	<	0.500	7.51	579	2.51	0.190	2.30	0.908	< 0.040		7790	<	0.005	6.36	215	17.2	0.003	<	0.200	<	0.500	0.242	<	0.200	<	0.100	<	0.100
Gw-41-1-1	SS	Y	2026-02-06	Clear and colourless	0.155		59.2		0.007	<	0.500	6.74	336	2.06	0.075	1.70	0.842	0.052		7840	<	0.005	5.74	196	14.6	<	0.002	<	0.200	<	0.500	0.202	<	0.200	0.100	<	0.100
Gw-42-1-1	FRM	Y	2025-05-13	Mean of replicates	0.146		714		0.068	<	0.500	5.61	154	0.247	0.175	5.60	1.04	0.059		5570	<	0.005	8.68	358	19.4	<	0.002	<	0.200	<	0.500	0.066	0.750		0.315	<	0.100
Gw-42-1-1	FRM	Y	2025-09-09	Mean of replicates	0.050		674		0.008	<	0.500	6.68	158	0.408	0.123	6.30	1.06	< 0.040		6745	<	0.005	10.1	448	27.0	<	0.002	<	0.200	<	0.500	0.109	0.615	<	0.100	<	0.100
Gw-42-1-1	SS	Y	2025-11-05	Clear and colourless	0.050		664		0.012	<	0.500	6.95	170	0.334	0.144	7.00	1.04	< 0.040		7080	<	0.005	10.8	423	25.4	<	0.002	<	0.200	<	0.500	0.075	0.690		0.160	<	0.100
Gw-42-1-1	SS	Y	2026-02-05	Clear and colourless	0.050		731		0.009	<	0.500	6.11	162	0.283	0.120	6.90	1.01	< 0.040		6830	<	0.005	9.46	389	20.6	<	0.002	<	0.200	<	0.500	0.051	0.850	<	0.100	<	0.100
Gw-43-1-1	SS	N	2025-05-15	Clear and colourless	1.47		25.4		0.027		0.890	9.91	5.84	0.890	0.672	13.1	0.483	0.051		11000	<	0.005	9.95	307	27.1	0.003	<	0.200	<	0.500	0.183	1.57		1.12	<	0.100
Gw-43-1-1	SS	N	2025-09-16	Clear and colourless	3.24		28.2		0.072		0.940	10.4	1.73	0.910	0.553	5.60	0.496	0.053		11800	<	0.005	11.2	543	28.6	<	0.002	<	0.200	<	0.500	0.162	1.37		3.55	<	0.100
Gw-43-1-1	SS	N	2025-11-20	Clear and colourless	2.76		2.40		0.020		0.780	11.3	0.200	0.881	0.538	2.10	0.517	0.057		12100	<	0.005	11.8	488	30.2	<	0.002	<	0.200	<	0.500	0.166	1.28		1.16	<	0.100
Gw-43-1-1	SS	N	2026-02-10	Clear and colourless	2.12		4.50		0.010		0.700	10.6	1.37	0.861	0.556	2.20	0.507	0.059		11600	<	0.005	10.4	489	27.2	<	0.002	<	0.200	<	0.500	0.173	1.20		0.890	<	0.100
Gw-44-1-1	SS	N	2025-05-15	Clear and colourless	0.397		7.60		0.021		0.580	5.12	0.565	1.06	0.516	11.7	0.385	< 0.040		7100	<	0.005	6.83	199	18.9	<	0.002	<	0.200	<	0.500	0.176	0.340		2.27	<	0.100
Gw-44-1-1	SS	N	2025-09-12	Clear and colourless	0.458		4.10		0.010		0.660	5.30	6.29	1.14	0.554	6.00	0.417	< 0.040		7450	<	0.005	6.76	215	21.9	0.002	<	0.200	<	0.500	0.183	0.320		3.31	<	0.100
Gw-44-1-1	SS	N	2025-11-20	Clear and colourless	0.458		3.90		0.021	<	0.500	5.81	1.65	0.899	0.432	10.2	0.389	< 0.040		7800	<	0.005	7.06	202	20.8	<	0.002	<	0.200	<	0.500	0.170	0.320		2.69	<	0.100
Gw-44-1-1	SS	N	2026-02-10	Clear and colourless	0.309		18.8		0.013		0.500	5.58	3.61	1.17	1.00	18.7	0.446	< 0.040		7830	<	0.005	7.62	218	23.2	<	0.002	<	0.200	<	0.500	0.203	0.280		4.64	<	0.100
Gw-50-1-1	SS	N	2025-05-23	Clear and colourless	0.249		2.20	<	0.005		0.850	6.17	< 0.050	4.59	0.087	5.40	0.723	0.357		6700	<	0.005	16.4	158	8.60	0.002	<	0.200	<	0.500	0.427	0.250		0.800	<	0.100
Gw-50-1-1	SS	N	2025-10-01	Clear and colourless	0.333		4.70		0.104		0.800	6.11	0.362	4.51	0.194	5.80	0.653	0.349		7110	<	0.005	16.8	161	9.00	0.002	<	0.200	<	0.500	0.332	0.340		4.71	<	0.100
Gw-50-1-1	SS	N	2025-11-20	Clear and colourless	0.179		12.7		0.018		0.710	6.18	4.44	3.92	0.253	6.90	0.641	0.291		6940	<	0.005	16.2	155	7.70	0.002	<	0.200	<	0.500	0.363	0.320		1.19	<	0.100
Gw-50-1-1	SS	N	2026-02-10	Clear and colourless	0.147		6.90		0.022		0.600	6.08	0.201	4.72	0.153	7.20	0.751	0.318		6880	<	0.005	16.0	159	10.5	0.003	<	0.200	<	0.520	0.382	<	0.200	1.17	<	0.100
Gw-51-1-1	SS	N	2025-05-26	Clear and colourless	1.80		27.5		0.072	<	0.500	7.78	20.2	0.172	0.665	2.50	0.483	0.044		6200	<	0.005	5.94	274	35.7	0.004	<	0.200	<	0.500	0.044	0.300		2.70	<	0.100
Gw-51-1-1	SS	N	2025-11-19	Clear and colourless	0.173		1.00		0.007	<	0.500	5.56	< 0.050	2.68	0.178	2.00	0.317	0.578		5000	<	0.005	5.50	389	30.4	<	0.002	<	0.200	<	0.500	0.361	1.63		0.730	<	0.100
Gw-51-2-1	SS	N	2025-09-26	Clear and colourless	0.405		14.8		0.032		1.52	15.3	13.1	1.17	1.07	7.80	0.434	0.224		13900	<	0.005	10.8	658	12.1	0.007	<	0.200	<	0.580	0.483	0.570		0.600	<	0.100
Gw-51-2-1	SS	N	2025-11-20	Clear and colourless	0.400		2.50		0.026		1.29	14.0	18.5	1.28	0.971	7.00	0.422	0.169		13200	<	0.005	12.0	616	13.8	0.004	<	0.200	<	0.500	0.495	0.560		0.720	<	0.100
Gw-51-3-1	SS	N	2025-09-26	Clear and colourless	0.726		10.2		0.103		1.62	16.1	0.609	0.448	1.45	7.30	0.404	< 0.040		17300	<	0.005	8.53	786	4.20	0.002	<	0.200	<	0.500	0.071	0.270		3.80	<	0.100
Gw-51-3-1	SS	N	2025-11-20	Clear and colourless	0.652		5.90		0.042		1.38	14.9	0.379	0.504	1.03	4.80	0.362	0.055		15800	<	0.005	8.06	753	7.80	0.003	<	0.200	<	0.500	0.070	0.270		0.490	<	0.100
Gw-52-1-1	SS	N	2025-05-22	Clear and colourless	0.100		551	<	0.010		5.30	39.9	354	0.480	10.9	33.0	14.7	< 0.080		34900	<	0.010	211	3020	b	<	6.00	<	0.004	<	1.00	<	0.004	0.880	<	0.200	<	0.200
Gw-52-1-1	SS	N	2025-10-01	Clear and colourless	0.250		599	<	0.025		5.30	45.2	402	0.600	12.0	18.0	15.4	< 0.200		37100	<	0.025	233	3490	b	<	15.0	<	0.010	<	1.00	<	1.00	1.66	<	0.500
Gw-52-1-1	SS	N	2025-11-07	Clear and colourless	0.250		564		1.29		5.50	42.9	373	0.390	11.4	< 10.00	14.9	< 0.200		35200	<	0.025	241	2990	b	<	15.0	<	0.010	<	1.00	<	2.50	<	0.010	<	1.00	1.70	<	0.500
Gw-52-1-3	SS	N	2026-02-13	Clear and colourless	0.170		559		0.022		5.10	39.0	357	0.470	10.7	18.9	14.4	< 0.080		36400	<	0.010	218	2890	b	<	6.00	<	0.004	<	0.400	<	1.00	0.013	<	0.720	<	0.550	<	0.200
Gw-52-4-0 (P7)	SS	N	2025-05-22	Clear and colourless	1.03		17800		0.037		1.68	53.8	1880	0.693	16.8	1040	105	0.202		18200	<	0.005	295	1090			7.40	<	0.002		1.55	14.6		0.161	15.5		6.43		3.34
Gw-52-4-0 (P7)	SS	N	2025-10-07	Clear and colourless	0.510		17500		0.119		1.90	62.8	1150	0.690	16.4	322	109	0.127		18200	<	0.010	327	1470	<		6.00	<	0.004		0.550	1.70		0.018	2.49		6.75		0.640
Gw-52-4-0 (P7)	SS	N	2025-11-07	Clear, very slightly yellow	1.92		14700		0.130		2.10	59.3	1070	0.970	20.4	467	103	0.172		16800	<	0.010	331	1260	<		6.00	<	0.004		0.950	6.00		0.041	4.07		23.8		1.21
Gw-52-4-0 (P7)	SS	N	2026-02-13	Clear, very slightly yellow	0.370		15400		0.288		2.00	54.3	987	0.750	13.9	223	104	0.115		19100	<	0.010	296	1200	<		6.00	<	0.004		0.757	2.00		0.014	2.50		4.68		0.580
Gw-53-1-1	SS	Y	2025-05-27	Clear and colourless	0.062		359		0.018	<	0.500	7.72	171	0.722	0.444	3.30	0.248	< 0.040		10900	<	0.005	3.78	376	26.3	0.014	<	0.200	<	0.500	0.075	<	0.200	0.530	<	0.100
Gw-53-1-1	SS	Y	2025-10-06	Clear and colourless	0.054		361		0.019	<	0.500	8.26	203	0.663	0.526	3.90	0.257	< 0.040		10900	<	0.005	3.89	377	30.7	0.014	<	0.200	<	0.500	0.071	<	0.200	0.450	<	0.100
Gw-53-1-1	SS	Y	2025-11-19	Clear and colourless	0.317		1.00		0.007	<	0.500	7.46	7.99	1.74	0.210	< 2.00	0.230	1.03		8720	<	0.005	4.34	361	16.5	<	0.002	<	0.200	<	0.500	0.304	1.28		0.160	<	0.100
Gw-53-1-1	SS	Y	2026-02-12	Clear and colourless	0.050		359		0.006	<	0.500	8.82	190	0.753	0.514	4.30	0.270	< 0.040		11200	<	0.005	4.13	387	35.0	0.012	<	0.200

BC CSR			AW Maximum (1) DW Maximum (2)						1,500 250		1,31-18,4 (3)		0,2-2 (4) 1		400 10	400 10		1,280-4,290 (5) 500	9500		90 6		50 10	10,000 1,000		2 (8) 8			12,000 5,000		0,5-4 (5) 5			90 (7) 6,000	40 14 (6)
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	pH (Field)	Conductivity (Actual - Field)	Temperature (Field)	Alkalinity	Hardness (As $CaCO_3$)	Chloride		Nitrogen - Ammonia		Nitrogen - Nitrite		Nitrogen - Nitrate	Nitrogen - Nitrate plus Nitrite		Sulphate	Aluminum		Antimony		Arsenic	Barium		Beryllium		Bismuth	Boron		Cadmium	Calcium		Chromium	Cobalt
				Fraction	—	TOT	TOT	TOT	DIS	DIS		DIS		DIS		DIS	DIS		DIS	DIS		DIS		DIS	DIS		DIS		DIS	DIS		DIS	DIS		DIS	DIS
				Unit	pH	µS/cm	°C	mg/L	mg/L	mg/L		mg/L		mg/L		mg/L	mg/L		mg/L	µg/L		µg/L		µg/L	µg/L		µg/L		µg/L	µg/L		µg/L	mg/L		µg/L	µg/L
				Method Detection Limit	0.1	1	0.1	0.5	1	1		0.015		0.005		0.02	0.02		1	0.5		0.02		0.02	0.02		0.01		0.005	10		0.005	0.05		0.1	0.005
Gw-58-1-0	NS	N		No access in Q2	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-58-1-0	SS	N	2025-10-07	Clear, moderately yellow	6,82	6680	19,2	2300	1640	1100	b	140	a	< 0,500		3,60	3,60		130	17,2		0,681		1,89	45,6		< 0,020		< 0,010	4750		0,107	383		14,7	57,4	b
Gw-58-1-0	SS	N	2025-11-28	Clear, moderately yellow	6,79	6558	18,7	2200	1750	1100	b	190	a	< 0,050		< 0,200	< 0,200		97,0	24,8	b	0,650		2,53	56,7		< 0,050		< 0,025	5080	b	0,055	421		20,5	61,1	b
Gw-58-1-0	SS	N	2026-02-23	Purged dry Feb.12, sampling delayed	6,69	6273	17,4	2100	1450	960	b	140	a	< 0,005		< 0,020	< 0,020		120	22,5		0,570		1,53	37,5		< 0,050		< 0,025	4230		0,046	366		11,9	53,7	b
Gw-60-1-1	SS	N	2025-05-29	Clear and colourless	7,39	1029	10,5	220	606	250	b	< 0,015		< 0,005		< 0,020	< 0,020		40,0	1,06		0,029		0,144	41,1		< 0,010		< 0,005	166		0,007	198		< 0,100	0,068	
Gw-60-1-1	SS	N	2025-09-18	Clear and colourless	7,29	1108	11,0	210	655	280	b	< 0,015		< 0,005		< 0,020	< 0,020		41,0	1,85		0,033		0,141	53,8		< 0,010		< 0,005	204		0,022	210		< 0,100	0,028	
Gw-60-1-1	SS	N	2025-11-25	Clear and colourless	7,72	1273	10,00	220	687	350	b	0,018		< 0,005		< 0,020	< 0,020		40,0	0,640	<	0,020		0,183	46,4		< 0,010		< 0,005	169		0,026	225		< 0,100	0,076	
Gw-60-1-1	SS	N	2026-02-18	Clear and colourless	6,92	1401	9,90	220	687	340	b	< 0,015		< 0,005		< 0,020	< 0,020		40,0	0,500	<	0,020		0,232	43,4		< 0,010		< 0,005	175		0,038	226		< 0,100	0,112	
Gw-60-2-1	SS	N	2025-05-29	Clear and colourless	7,63	508	10,7	150	279	79,0		< 0,015		< 0,005		< 0,020	< 0,020		53,0	1,49		0,050		0,292	34,7		< 0,010		< 0,005	345		0,014	87,8		< 0,100	0,178	
Gw-60-2-1	SS	N	2025-09-18	Clear and colourless	7,59	552	12,5	150	310	80,0		< 0,015		< 0,005		< 0,020	< 0,020		53,0	0,790		0,062		0,303	37,8		< 0,010		< 0,005	379		0,019	97,8		< 0,100	0,162	
Gw-60-2-1	SS	N	2025-11-25	Clear and colourless	7,34	534	10,4	150	285	80,0		0,031		< 0,005		< 0,020	< 0,020		55,0	0,830		0,046		0,292	35,2		< 0,010		< 0,005	332		0,015	89,9		< 0,100	0,186	
Gw-60-2-1	SS	N	2026-02-18	Clear and colourless	7,55	515	9,90	150	289	74,0		< 0,015		0,007		< 0,020	< 0,020		52,0	6,70		0,046		0,321	36,2		< 0,010		< 0,005	353		0,020	91,8		< 0,100	0,200	
Gw-60-3-1	SS	N	2025-05-29	Clear and colourless	7,22	612	10,8	160	283	97,0		< 0,015		< 0,005		2,22	2,22		66,0	0,770		0,068		0,116	16,2		< 0,010		< 0,005	188		0,031	97,0		< 0,100	0,071	
Gw-60-3-1	SS	N	2025-09-18	Clear and colourless	7,15	623	12,1	190	317	81,0		< 0,015		< 0,005		2,20	2,20		61,0	8,59		0,069		0,155	17,3		< 0,010		< 0,005	375		0,092	109		< 0,100	0,142	
Gw-60-3-1	SS	N	2025-11-25	Clear and colourless	7,00	639	10,6	200	284	75,0		< 0,015		< 0,005		2,19	2,19		62,0	0,500		0,062		0,156	15,4		< 0,010		< 0,005	366		0,039	101		< 0,100	0,085	
Gw-60-3-1	SS	N	2026-02-18	Clear and colourless	7,09	534	9,70	150	250	70,0		< 0,015		0,006		2,57	2,58		66,0	11,1		0,064		0,147	13,8		< 0,010		< 0,005	189		0,086	85,2		< 0,100	0,101	
Gw-62-1-1	SS	N	2025-09-16	Clear and colourless	7,00	523	10,5	94,0	327	3,20		< 0,015		< 0,005		3,81	3,81		220	0,500		0,035		0,068	2,19		0,011		< 0,005	42,0		0,006	115		0,120	0,053	
Gw-62-1-1	SS	N	2025-11-17	Clear and colourless	6,81	494	9,60	99,0	302	3,50		< 0,015		< 0,005		3,10	3,10		200	0,500		0,038		0,127	2,04		< 0,010		< 0,005	29,0		0,006	104		0,440	0,059	
Gw-62-2-1	NS	N	2025-09-16	Dry	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-62-2-1	SS	N	2025-11-17	Moderately turbid, colourless	6,65	507	9,60	110	310	4,10		< 0,015		< 0,005		4,05	4,05		190	1,55		0,063		0,127	12,9		< 0,010		< 0,005	415		0,025	107		< 0,100	0,104	
Gw-63-1-1	SS	N	2025-09-18	Clear and colourless	7,77	256	10,5	150	174	4,50		< 0,015		< 0,005		< 0,020	< 0,020		9,70	0,99		0,020		0,059	15,5		< 0,010		< 0,005	18,0		0,005	55,2		< 0,100	0,111	
Gw-63-1-1	SS	N	2025-11-17	Clear and colourless	7,85	256	10,2	140	149	4,90		< 0,015		< 0,005		< 0,020	< 0,020		8,50	3,34		< 0,020		0,046	7,22		< 0,010		< 0,005	< 10,00		0,012	46,2		< 0,100	0,053	
Gw-63-2-1	SS	N	2025-09-18	Clear and colourless	7,65	404	11,8	150	177	5,20		< 0,015		< 0,005		0,028	0,028		11,0	2,61		0,030		0,156	17,9		< 0,010		< 0,005	13,0		0,014	61,0		< 0,100	0,011	
Gw-63-2-1	SS	N	2025-11-17	Clear and colourless	7,22	241	11,0	150	160	5,80		< 0,015		< 0,005		< 0,020	< 0,020		12,0	1,46		0,032		0,154	17,3		< 0,010		< 0,005	< 10,00		0,009	54,7		< 0,100	0,009	
Gw-71-1-1	FRM	Y	2025-05-29	Mean of replicates	7,76	267	11,1	140	150	6,85		< 0,015		< 0,005		< 0,020	< 0,020		24,0	2,11		0,048		0,399	6,00		< 0,010		< 0,005	543		0,005	49,1		< 0,100	0,092	
Gw-71-1-1	FRM	Y	2025-09-18	Mean of replicates	7,68	267	10,4	160	200	8,05		< 0,015		0,006		0,023	0,026		24,5	2,02		0,061		0,329	6,85		< 0,010		< 0,005	521		0,005	66,1		< 0,100	0,094	
Gw-71-1-1	FRM	Y	2025-11-25	Mean of replicates	7,56	308	9,60	170	187	7,95		0,018		< 0,005		< 0,020	< 0,020		27,0	1,42		0,076		0,493	9,16		< 0,010		< 0,005	456		0,005	61,0		< 0,100	0,131	
Gw-71-1-1	FRM	Y	2026-02-23	Mean of replicates	7,52	274	10,4	150	154	7,20		< 0,015		< 0,005		0,021	0,021		23,0	1,04		0,047		0,411	6,65		< 0,010		< 0,005	521		0,029	50,0		< 0,100	0,058	
Gw-71-2-1	SS	Y	2025-05-29	Clear and colourless	7,60	373	10,3	210	238	7,80		< 0,015		< 0,005		< 0,020	< 0,020		38,0	1,36		0,029		0,200	26,2		< 0,010		< 0,005	307		0,020	82,1		< 0,100	0,091	
Gw-71-2-1	SS	Y	2025-09-18	Clear and colourless	7,41	384	10,7	210	270	8,30		< 0,015		< 0,005		< 0,020	< 0,020		38,0	1,29		0,047		0,248	28,6		< 0,010		< 0,005	360		0,030	93,6		< 0,100	0,168	
Gw-71-2-1	SS	Y	2025-11-25	Clear and colourless	7,30	386	10,2	220	246	8,60		< 0,015		< 0,005		< 0,020	< 0,020		37,0	1,38		0,033		0,190	25,1		< 0,010		< 0,005	315		0,027	86,0		< 0,100	0,076	
Gw-71-2-1	SS	Y	2026-02-18	Clear and colourless	7,30	397	9,80	220	259	8,50		< 0,015		< 0,005		< 0,020	< 0,020		37,0	5,85		0,042		0,208	22,1		< 0,010		< 0,005	314		0,023	90,2		< 0,100	0,140	
Gw-71-3-1	SS	Y	2025-05-29	Clear and colourless	7,07	309	10,7	150	179	8,00		< 0,015		< 0,005		0,932	0,932		33,0	8,83		0,032		0,104	6,86		< 0,010		< 0,005	300		0,023	63,8		< 0,100	0,055	
Gw-71-3-1	SS	Y	2025-09-18	Clear and colourless	6,85	354	11,2	180	234	9,30		< 0,015		< 0,005		0,99	0,99		39,0	204		0,046		0,185	16,4		0,021		< 0,005	453		0,039	83,5		0,200	0,784	
Gw-71-3-1	SS	Y	2025-11-25	Clear and colourless	6,56	365	10,6	180	208	9,00		< 0,015		< 0,005		1,03	1,03		40,0	0,760		0,021		0,067	8,16		< 0,010		< 0,005	524		0,026	74,0		< 0,100	0,037	
Gw-71-3-1	SS	Y	2026-02-17	Clear and colourless	6,87	302	9,50	150	186	9,60		< 0,015		< 0,005		0,738	0,738		30,0	2,95		0,025		0,059	8,94		< 0,010		< 0,005	324		0,020	66,6		< 0,100	0,057	
Gw-72-1-1	FRM	Y	2025-05-29	Mean of replicates	7,88	481	11,6	150	264	67,0		0,017		< 0,005		< 0,020	< 0,020		46,0	1,28		0,021		0,136	12,5		< 0,010		< 0,005	1770		0,005	84,0		0,105	0,037	
Gw-72-1-1	FRM	Y	2025-09-18	Mean of replicates	7,81	478	11,1	150	269	68,5		< 0,015		< 0,005		< 0,020	< 0,020		46,0	1,25		0,040		0,107	12,2		< 0,020		< 0,010	1785		0,010	85,5		< 0,200	0,031	
Gw-72-1-1	FRM	Y	2025-11-25	Mean of replicates	7,57	490	10,4	150	264	68,0		0,017		< 0,005		< 0,020	< 0,020		46,5	0,725	<	0,020		0,116	12,2		< 0,010		< 0,005	1680		0,005	83,3		< 0,100	0,028	
Gw-72-1-1	FRM	Y	2026-02-18	Mean of replicates	7,62	498	9,90	150	272	67,0		0,015		< 0,005		< 0,020	< 0,020		46,0	8,03		0,023		0,131	12,2		< 0,010		< 0,005	1600		0,010	86,8		< 0,100	0,032	
Gw-72-3-1	SS	Y	2025-05-29	Clear and colourless	7,56	472	11,5	190	241	39,0		< 0,015		0,003		0,021	0,021		63,0	26,2		0,036		0,285	22,5		< 0,010		< 0,005	458		0,015	84,5		< 0,100	0,197	
Gw-72-3-1	SS	Y	2025-09-18	Clear and colourless	7,08	516	12,1	190	279	41,0		0,030		0,003		< 0,020	< 0,020		64,0	1,70		0,038		0,284	19,6		< 0,010		< 0,005	559		0,015	98,6		< 0,100	0,066	
Gw-72-3-1	SS	Y	2025-11-25	Clear and colourless	7,21	526	10,8	190	263	41,0		0,019		0,003		< 0,020	< 0,020		73,0	1,52		0,047		0,231	20,0		< 0,010		< 0,005	547		0,015	92,6		< 0,100	0,062	
Gw-72-3-1	SS	Y	2026-02-18	Clear and colourless	7,36	475	8,60	200	243	41,0		< 0,015		0,003		< 0,020	< 0,020		60,0	0,890		0,039		0,246	14,4		< 0,010		< 0,005	530		0,019	85,9		< 0,100	0,065	
Gw-73-1-1	NS	Y	2025-05-29	Controller failed	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-73-1-1	NS	Y	2025-09-04	Controller burnt	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-73-1-1	NS	Y	2025-11-12	Electrical controller is fried	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-73-1-1	NS	Y	2026-02-24	Submersible pump malfuction	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-73-2-1	SS	Y	2025-05-30	Clear and colourless	7,21	365	11,3	160	187	28,0		< 0,015		< 0,005		0,333	0,333		35,0	56,4		0,046		0,175	23,6		0,010		< 0,005	64,0		0,040	58,8		< 0,100	0,074	
Gw-73-2-1	SS	Y	2025-10-01	Clear and colourless	7,17	380	10,8	160	228	33,0		< 0,015		< 0,005		0,199	0,199		40,0	0,700	<	0,020		0,085	11,5		< 0,010		< 0,005	92,0		0,006	71,9		< 0,100	0,110	
Gw-73-2-1	SS	Y	2025-11-12	Clear and colourless	6,94	417	10,6	160	239	39,0		< 0,015		< 0,005		0,177	0,177		43,0	0,630	<	0,020		0,079	10,7		< 0,010		< 0,005	86,0		0,009	75,4		< 0,100	0,116	
Gw-73-2-1	FRM	Y	2026-02-24	Mean of replicates	7,01	519	10,3	160	222	29,0		< 0,015		0,004		0,360	0,360		33,0	1,45		< 0,020		0,068	9,46		< 0,010		< 0,005	85,5		0,009	69,9		< 0,100	0,086	
Gw-73-3-1	SS	Y	2025-05-30	Clear and colourless	7,35	349	12,3	140	216	27,0		< 0,015		< 0,005		0,266	0,266		33,0	1,15		< 0,020		0,096	11,0		< 0,010		< 0,005	74,0		0,011	67,8		< 0,100	0,095	
Gw-73-3-1	SS	Y	2025-10-01	Clear and colourless	7,08	391	12,4	130	195	51,0		< 0,015		< 0,005		0,167	0,167		34,0	2,87		0,034		0,152	22,0		< 0,010		< 0,005	97,0		0,026	61,3		< 0,100	0,031	
Gw-73-3-1	SS	Y	2025-11-12	Clear and colourless	6,49	291	11,0	89,0	124	29,0		< 0,015		< 0,005		1,39	1,39		30,0	23,4		0,040		0,132	16,6		< 0,010		< 0,005	60,0		0,027	38,4		< 0,100	0,040	
Gw-73-3-1	SS	Y	2025-12-24	Clear and colourless	6,83	283	10,1	100,0	124	24,0		< 0,015		0,007		0,379	0,388		33,0	69,5		0,057		0,149	16,1		< 0,010		< 0,005	59,0		0,023	39,1		< 0,100	0,026	
Gw-77-1-1	SS	N	2025-09-16	Clear and colourless	7,74	404	14,9	140	225	10,00		0,053		< 0,005		< 0,020	< 0,020		72,0	2,67		0,055		0,163	24,2		< 0,010		< 0,005	269		0,019	69,1		< 0,100	0,252	
Gw-77-1-1	SS	N	2025-11-25	Clear and colourless	7,53	410	10,9	150	245	9,30		< 0,015		< 0,005		< 0,020	< 0,020		94,0	7,71		0,031		0,144	21,2		< 0,010		< 0,005	277		0,022	74,5		< 0,100	0,225	
Gw-77-2-1	SS	N	2025-09-16	Clear and colourless	7,71	531	12,0	110	316	56,0		0,022		< 0,005		< 0,020	< 0,020		160	0,980	<	0,020		0,753	30,3		< 0,010		< 0,005	176		0,015	87,2		< 0,100	0,091	
Gw-77-2-1	SS	N	2025-11-25	Clear and colourless	7,50	580	11,1	110	333	57,0		< 0,015		< 0,005		< 0,020	< 0,020		160	1,67		0,022		0,730	28,3		< 0,010		< 0,005	151		0,010	92,1		< 0,100	0,053	
Gw-80-1-0 (P8)	SS	N	2025-05-22	Clear and colourless	—	—	—	1600	518	280	b	200	a	< 0,005		< 0,020	< 0,020		< 1,00	37,6		0,537		9,22	182		< 0,020		< 0,010	3080		0,010	118		10,4	9,88	
Gw-80-1-0 (P8)	SS	N	2025-10-07	Clear and colourless	7,24	3827	20,4	1600	1524	270	b	210	a	< 0,500		< 2,00	< 2,00		91,0	32,7		0,813		10,3	b 123		< 0,020		< 0,010	2860		0,011	127		12,8	9,98	
Gw-80-1-0 (P8)	SS	N	2025-11-07	Moderately turbid, moderately orange	7,38	3101	10,9	1500	495	250	b	170	a	0,013		< 0,020	0,024		110	31,3		0,512		8,25	78,1		< 0,020		< 0,010	2840		0,017	110		13,0	9,47	
Gw-80-1-0 (P8)	SS	N	2026-02-20	Clear, very brown	7,21	3397	12,8	1900	566	310	b	290	a	0,142		< 0,200	< 0,200		100,0	272		2,11		13,8	b 108		< 0,020		< 0,010	5540	b	0,049	144		66,5	15,2	
Gw-81-1-0 (P9)	NS	N	2025-05-22	Not functioning	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-81-1-0 (P9)	NS	N	2025-10-07	Not functioning	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-81-1-0 (P9)	NS	N	2025-11-07	Not functioning	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-81-1-0 (P9)	NS	N	2026-02-20	Not functioning	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-85-1-1	SS	N	2025-05-29	Clear and colourless	7,12	530	13,8	72,0	140	120		0,065		< 0,005		1,00	1,00		38,0	0,920		0,082		0,163	3,37		< 0,010		< 0,005	142		0,007	41,8		< 0,100	0,105	
Gw-85-1-1	SS	N	2025-09-18	Clear and colourless	6,95	646	15,1	84,0	182	140		0,057		< 0,005		0,900	0,900		42,0	36,2		0,071		0,211	5,07		< 0,010		< 0,005	164		0,028	54,2		< 0,100	0,346	
Gw-85-1-1	SS	N	2025-11-07	Clear and colourless	6,97	570	14,9	66,0	153	100,0		0,019		< 0,005		1,87	1,87		66,0	1,47		0,083		0,174	4,42		< 0,010		< 0,005	136		0,021	46,8		< 0,100	0,169	
Gw-85-1-1	SS	N	2026-02-17	Clear and colourless	7,26	327	11,8	66,0	90,9	39,0		< 0,015		< 0,005		1,70	1,70		36,0	10,1		0,102		0,163	2,04		< 0,010		< 0,005	132		0,025	27,2		< 0,100	0,195	
Gw-87-1-1	SS	N	2025-09-16	Clear and colourless	7,60	319	10,1	140	200	3,80		0,020		< 0,005		< 0,020	< 0,020		66,0	1,96		0,124		0,324	13,9		< 0,010		< 0,005	19,0		0,007	63,1		< 0,100	0,082	
Gw-87-1-1	SS	N	2025-11-25	Clear and colourless	7,52	382	9,20	130	268	3,80		< 0,015		0,014		0,037	0,050		140	1,86		0,564		0,351	14,9		< 0,010		< 0,005	20,0		0,008	86,8		< 0,100	0,049	
Gw-87-2-1	NS	N	2025-09-04	Dry	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-87-2-1	NS	N	2025-11-24	Dry	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-89-1-1	SS	N	2025-09-16	Clear and colourless	7,22	610	11,4	110	395	3,20		< 0,015		< 0,005		2,87	2,87		270	1,74		0,044		0,075	3,15		< 0,010		< 0,005	18,0		0,009	135		0,150	0,080	
Gw-89-1-1	SS	N	2025-11-25	Clear and colourless	7,15	573	9,50	120	383	3,00		< 0,015		< 0,005		2,55	2,55		250	1,04		0,035		0,138	2,87		< 0,010		< 0,005	16,0		0,005	131		0,110	0,076	
Gw-89-2-1	NS	N	2025-09-04	Dry	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-89-2-1	NS	N	2025-11-25	Dry - not enough water to sample.	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-91-1-1	SS	N	2025-05-15	Clear and colourless	7,52	515	12,0	190	298	4,70		0,027		< 0,005		0,022	0,022		110	13,7		0,177		0,280	39,1		< 0,010		< 0,005	68,0		0,010	98,9		0,120	0,045	
Gw-91-1-1	SS	N	2025-09-16	Clear and colourless	7,40	518	12,3	200	306	4,10		< 0,015		< 0,005		< 0,020	< 0,020		120	2,10		0,136		0,308	43,7		< 0,010		< 0,005	76,0		0,007	101		< 0,100	0,018	
Gw-91-1-1	SS	N	2025-11-28	Clear and colourless	7,28	502	10,8	210	303	4,10		< 0,015		< 0,005		< 0,020	< 0,020		120	2,53		0,134		0,305	39,3		< 0,010		< 0,005	69,0		0,026	100,0		< 0,100	0,015	
Gw-91-1-1	SS	N	2026-02-10	Clear and colourless	7,29	490	8,80	210	323	4,60		0,017		< 0,005		0,042	0,042		120	1,38		0,140		0,320	41,8		< 0,010		< 0,005	74,0		0,009	107		< 0,100	0,010	
Gw-92-1-1	NS	N	2025-05-15	Dry	—	—	—	—	—	—		—		—		—	—		—	—		—		—	—		—		—	—		—	—		—	—
Gw-92-1-1	SS	N	2025-09-16	Clear and colourless	7,56	652	13,5	180	352	7,30		1,60		0,021		0,256	0,277		220	23,3		0,215		1,11	67,5		< 0,010		< 0,005	437		0,051	111		0,370	2,88	
Gw-92-1-1	SS	N	2025-11-28	Very slightly turbid, very slightly brown	7,31	685	10,1	160	387	8,10		0,540		0,067		1,11	1,16		240	30,0		0,093		0,776	50,9		< 0,010		< 0,005	410		0,031	124		0,110	0,885	
Gw-92-1-1	SS	N	2026-02-10	Moderately turbid, moderately grey yellow	7,33	584	10,5	160	357	11,0		0,270		0,021		0,391	0,412		220	7,89		0,126		0,443	44,8		< 0,010		< 0,005	373		0,040	116		0,130	0,570	

Notes:

a — *Above CSR Schedule 3.2 AW Standard.*

b — *Above CSR Schedule 3.2 DW Standard.*

BC CSR — *CSR–Sch3.2: BC Contaminated Site Regulation - Schedule 3.2 - Generic Numerical Water Standards, last amended October 27, 2025.*

FB — *Field blank.*

FRM — *Field replicate mean (average of field replicates).*

NS — *Not sampled.*

SS — *Single sample.*

TB — *Travel blank.*

(1) — *Aquatic Life (AW) Freshwater Standard, Column 3 in CSR-Sch3.2*

(2) — *Drinking Water (DW) Standard, Column 6 in CSR-Sch3.2*

(3) — *Standard varies with pH.*

(4) — *Standard varies with chloride.*

(5) — *Standard varies with hardness.*

(6) — *BC CSR Schedule 3.2 criterion for iron and manganese were not applied as directed by the Stage 8 CSR Amendments.*

(7) — *Standard is based on the trivalent (Cr(III)) species. Cr(III) is the most common form of chromium.*

(8) — *CSR Stage 13 amendments, Protocol 9, background concentration is higher than the applicable CSR DW and/or most stringent CSR s standard, A concentration above the CSR DW or most stringent CSR AW standard but below the regional background concentration (South Vancouver Island Region) is not considered contaminated and is not highlighted as a CSR DW or AW exceedance.*

BC CSR	AW Maximum (1)	20-90 (5)		40-160 (5)				(6)	10,000	250-1,500 (5)				20		0.5-15 (5)				3		1,000	85		75-2,400 (5)	
	DW Maximum (2)	1,500	(6)	10	33 (6)				250	80				10		20	1,700 (8)	2,500			2500		20	20	3,000	
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silicon	Silver	Sodium	Strontium	Sulphur	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Zirconium
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				Method Detection Limit	0.05	1	0.005	0.5	0.05	0.05	0.05	0.02	2	0.05	0.04	50	0.005	0.05	0.05	0.05	3	0.002	0.2	0.5	0.002	0.2	0.1	0.1
Gw-58-1-0	NS	N		No access in Q2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-58-1-0	SS	N	2025-10-07	Clear, moderately yellow	13.8	921	0.283	< 1.00	166	5620	7.41	100.0 b	81.6	76.3	0.457	19100	< 0.010	699	5360 b	47.3	0.010	1.24	9.30	0.445	42.2 b	3.47	4.15
Gw-58-1-0	SS	N	2025-11-28	Clear, moderately yellow	9.44	7550	0.760	< 2.50	171	5480	7.92	114 b	130	99.4	0.560	19100	< 0.025	817	5150 b	41.0	< 0.010	2.20	13.3	0.395	62.7 b	5.35	5.14
Gw-58-1-0	SS	N	2026-02-23	Purged dry Feb.12, sampling delayed	14.3	779	0.100	< 2.50	130	4940	7.05	102 b	65.0	75.3	0.370	20300	< 0.025	620	4110 b	41.0	< 0.010	1.20	4.80	0.324	27.3 b	5.74	3.12
Gw-60-1-1	SS	N	2025-05-29	Clear and colourless	0.158	32.0	0.009	0.920	26.9	66.8	0.286	0.824	< 2.00	0.470	< 0.040	11300	< 0.005	28.9	789	11.8	0.006	< 0.200	< 0.500	0.192	< 0.200	0.450	< 0.100
Gw-60-1-1	SS	N	2025-09-18	Clear and colourless	0.241	5.80	0.015	1.13	31.4	0.885	0.299	0.335	4.00	0.565	0.053	14000	< 0.005	33.1	834	14.8	0.007	< 0.200	< 0.500	0.329	< 0.200	1.39	< 0.100
Gw-60-1-1	SS	N	2025-11-25	Clear and colourless	0.213	72.3	0.014	0.900	30.4	241	0.300	2.03	3.00	0.633	< 0.040	12200	< 0.005	40.7	820	12.8	0.014	< 0.200	< 0.500	0.109	< 0.200	0.640	< 0.100
Gw-60-1-1	SS	N	2026-02-18	Clear and colourless	0.228	227	0.009	0.930	29.8	510	0.402	2.72	3.70	0.604	0.047	12000	< 0.005	44.9	784	12.7	0.015	< 0.200	< 0.500	0.116	< 0.200	0.650	< 0.100
Gw-60-2-1	SS	N	2025-05-29	Clear and colourless	0.184	14.9	0.010	0.730	14.5	76.9	1.71	2.22	6.90	0.368	0.073	11800	< 0.005	10.00	264	17.8	0.010	< 0.200	< 0.500	0.190	< 0.200	0.440	< 0.100
Gw-60-2-1	SS	N	2025-09-18	Clear and colourless	0.288	20.6	0.030	0.770	16.0	80.8	1.86	2.48	8.80	0.396	0.086	13800	< 0.005	11.7	294	19.4	0.009	< 0.200	< 0.500	0.223	< 0.200	1.18	< 0.100
Gw-60-2-1	SS	N	2025-11-25	Clear and colourless	0.204	27.3	0.022	0.630	14.5	93.8	1.50	2.11	7.60	0.396	0.064	12500	< 0.005	11.0	274	17.6	0.008	< 0.200	< 0.500	0.138	< 0.200	0.520	< 0.100
Gw-60-2-1	SS	N	2026-02-18	Clear and colourless	0.243	47.3	0.033	0.620	14.5	94.6	1.59	2.10	6.60	0.383	0.081	12400	< 0.005	10.2	272	17.0	0.011	< 0.200	< 0.500	0.156	< 0.200	0.790	< 0.100
Gw-60-3-1	SS	N	2025-05-29	Clear and colourless	0.973	1.00 <	0.005 <	0.500	9.99	1.98	0.305	0.333 <	2.00	2.21	0.198	6430	< 0.005	35.3	240	21.2 <	0.002	< 0.200	< 0.500	0.048	0.230	1.07	< 0.100
Gw-60-3-1	SS	N	2025-09-18	Clear and colourless	1.36	13.3	0.024 <	0.500	10.8	69.3	0.480	0.633	3.30	2.68	0.138	8210	< 0.005	38.4	284	21.6 <	0.002	< 0.200	< 0.500	0.087	0.350	0.530	< 0.100
Gw-60-3-1	SS	N	2025-11-25	Clear and colourless	1.24	1.00 <	0.005 <	0.500	10.2	3.07	0.429	0.464	3.20	2.61	0.146	7910	< 0.005	33.7	239	20.5 <	0.002	< 0.200	< 0.500	0.060	0.330	0.400	< 0.100
Gw-60-3-1	SS	N	2026-02-18	Clear and colourless	1.56	5.80	0.019 <	0.500	9.08	35.6	0.369	0.488	2.80	2.14	0.261	6130	< 0.005	29.8	213	21.8 <	0.002	< 0.200	0.99	0.037	0.240	0.750	< 0.100
Gw-62-1-1	SS	N	2025-09-16	Clear and colourless	0.107	1.00 <	0.005 <	0.500	10.00	< 0.050	0.180	0.183 <	2.00	0.219	1.12	6450	< 0.005	4.06	301	76.3 <	0.002	< 0.200	< 0.500	0.120	0.450	0.440	< 0.100
Gw-62-1-1	SS	N	2025-11-17	Clear and colourless	0.106	3.60	0.006 <	0.500	9.98	0.167	0.306	0.330 <	2.00	0.219	0.923	6190	< 0.005	4.19	254	69.2 <	0.002	< 0.200	< 0.500	0.133	0.490	0.480 <	0.100
Gw-62-2-1	NS	N	2025-09-16	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-62-2-1	SS	N	2025-11-17	Moderately turbid, colourless	0.191	5.10	0.041	0.650	10.5	6.71	0.166	0.423	3.70	0.361	0.969	7690	< 0.005	4.33	251	67.6	0.006	< 0.200	< 0.500	0.382	0.360	2.21	< 0.100
Gw-63-1-1	SS	N	2025-09-18	Clear and colourless	0.050	35.9 <	0.005 <	0.500	8.84	57.7	0.228	0.194	4.10 <	0.050	< 0.040	9700	< 0.005	4.47	99.6	3.10	0.007	< 0.200	< 0.500	0.026 <	0.200	0.180 <	0.100
Gw-63-1-1	SS	N	2025-11-17	Clear and colourless	0.056	31.5	0.012 <	0.500	8.17	29.0	0.124	0.114	3.50 <	0.050	< 0.040	8190	< 0.005	3.58	87.8 <	3.00	0.004	< 0.200	< 0.500	0.009 <	0.200	6.07	< 0.100
Gw-63-2-1	SS	N	2025-09-18	Clear and colourless	0.230	11.8	0.015 <	0.500	5.87	0.903	0.241	0.107	7.40	0.103	0.092	6920	< 0.005	3.74	67.4	3.50	0.003	< 0.200	< 0.500	0.043	0.400	1.02	< 0.100
Gw-63-2-1	SS	N	2025-11-17	Clear and colourless	0.198	1.00	0.007 <	0.500	5.64	0.804	0.279	0.080	6.60	0.102	0.077	6220	< 0.005	3.36	66.5	3.90 <	0.002	< 0.200	< 0.500	0.034	0.470	0.470 <	0.100
Gw-71-1-1	FRM	Y	2025-05-29	Mean of replicates	0.080	42.4	0.008	0.590	6.68	83.1	0.472	0.313	13.8	0.264	< 0.040	11850	< 0.005	7.86	132	7.35	0.004	< 0.200	< 0.500	0.050	0.255	0.325	1.10	< 0.100
Gw-71-1-1	FRM	Y	2025-09-18	Mean of replicates	0.092	44.2	0.011	0.525	8.53	97.5	0.384	0.328	16.3	0.273	< 0.040	13700	< 0.005	7.83	173	8.25	0.004	< 0.200	< 0.500	0.261	0.295	0.320	< 0.100
Gw-71-1-1	FRM	Y	2025-11-25	Mean of replicates	0.063	45.3	0.008	0.580	8.24	149	0.686	0.920	17.9	0.292	< 0.040	12200	< 0.005	8.01	167	8.25	0.005	< 0.200	< 0.500	0.254	0.405	0.425	< 0.100
Gw-71-1-1	FRM	Y	2026-02-23	Mean of replicates	0.059	7.85	0.005 <	0.500	7.15	80.1	0.603	0.592	11.4	0.263	< 0.040	12300	< 0.005	7.13	126	7.45	0.005	< 0.200	< 0.500	0.199	0.276	2.51	< 0.100
Gw-71-2-1	SS	Y	2025-05-29	Clear and colourless	0.136	2.50	0.060	0.520	8.02	40.0	0.233	0.368	11.4	0.417	0.045	8610	< 0.005	7.53	203	11.5	0.012	< 0.200	< 0.500	0.161	0.240	0.260	< 0.100
Gw-71-2-1	SS	Y	2025-09-18	Clear and colourless	0.209	2.00	0.068	0.550	8.82	39.9	0.234	0.425	14.3	0.464	0.059	10000	< 0.005	8.38	229	12.5	0.018	< 0.200	< 0.500	0.227	0.290	0.420	< 0.100
Gw-71-2-1	SS	Y	2025-11-25	Clear and colourless	0.185	1.20	0.062 <	0.500	8.16	27.5	0.205	0.309	12.0	0.409	0.040	9100	< 0.005	7.59	213	12.1	0.015	< 0.200	< 0.500	0.123	0.240	0.360	< 0.100
Gw-71-2-1	SS	Y	2026-02-18	Clear and colourless	0.180	12.5	0.051	0.510	8.18	33.0	0.234	0.335	10.4	0.414	0.063	9150	< 0.005	7.29	212	11.9	0.014	< 0.200	< 0.500	0.166 <	0.200	0.260 <	0.100
Gw-71-3-1	SS	Y	2025-05-29	Clear and colourless	0.796	20.6	0.025 <	0.500	4.86	1.25	0.108	0.337	4.50	0.240	0.127	7600	< 0.005	7.12	87.6	10.5	0.003	< 0.200	< 0.500	0.156	0.560	2.07	< 0.100
Gw-71-3-1	SS	Y	2025-09-18	Clear and colourless	2.17	533	0.316 <	0.500	6.25	21.0	0.122	1.08	25.2	0.343	0.157	9750	< 0.005	8.39	115	12.9	0.011	< 0.200	< 0.500	0.301	1.07	1.77	< 0.100
Gw-71-3-1	SS	Y	2025-11-25	Clear and colourless	0.709	2.90	0.011 <	0.500	5.73	0.575	0.121	0.333	6.60	0.258	0.107	8610	< 0.005	8.38	99.5	12.5	0.006	< 0.200	< 0.500	0.184	0.580	0.810 <	0.100
Gw-71-3-1	SS	Y	2026-02-17	Clear and colourless	0.737	11.7	0.013 <	0.500	4.88	8.74	0.152	0.420	10.00	0.294	0.101	8010	< 0.005	7.37	91.4	9.90	0.004	< 0.200	< 0.500	0.138	0.460	0.550 <	0.100
Gw-72-1-1	FRM	Y	2025-05-29	Mean of replicates	0.050	372	0.006	0.565	13.1	115	0.734	1.85	6.45	0.233	< 0.040	18900	< 0.005	8.67	277	14.8 <	0.002	< 0.200	< 0.500	0.016 <	0.200	0.475 <	0.100
Gw-72-1-1	FRM	Y	2025-09-18	Mean of replicates	0.100	366 <	0.010 <	1.00	13.6	112	0.695	1.40	9.20	0.225	< 0.080	20800	< 0.010	9.58	284	14.6 <	0.004	< 0.400 <	1.00	0.018 <	0.400	0.245 <	0.200
Gw-72-1-1	FRM	Y	2025-11-25	Mean of replicates	0.050	352 <	0.005	0.545	13.4	110	0.706	1.35	5.80	0.239	< 0.040	19700	< 0.005	9.34	289	15.4 <	0.002	< 0.200	< 0.500	0.011 <	0.200 <	0.100 <	0.100
Gw-72-1-1	FRM	Y	2026-02-18	Mean of replicates	0.072	376	0.014	0.550	13.4	109	0.766	1.50	6.40	0.244	< 0.040	18700	< 0.005	8.97	282	14.8 <	0.002	< 0.200	< 0.500	0.013 <	0.200	1.73 <	0.100
Gw-72-3-1	SS	Y	2025-05-29	Clear and colourless	0.426	49.5	0.035	0.580	7.26	10.2	0.621	0.794	17.0	0.838	0.054	7760	< 0.005	25.1	167	20.5	0.008	< 0.200	< 0.500	0.237	0.330	0.480 <	0.100
Gw-72-3-1	SS	Y	2025-09-18	Clear and colourless	0.289	3.40	0.012	0.760	7.97	13.6	0.766	0.696	16.9	0.898	0.051	9550	< 0.005	30.0	196	23.9	0.008	< 0.200	< 0.500	0.258	0.250	0.350 <	0.100
Gw-72-3-1	SS	Y	2025-11-25	Clear and colourless	0.510	4.50	0.019	0.580	7.76	3.87	0.645	0.738	17.0	0.915	0.061	8190	< 0.005	29.6	181	24.4	0.005	< 0.200	< 0.500	0.207	0.240	0.670 <	0.100
Gw-72-3-1	SS	Y	2026-02-18	Clear and colourless	0.406	3.60	0.008	0.800	6.97	21.5	0.742	0.640	14.4	0.930	0.046	7690	< 0.005	25.3	178	20.2	0.003	< 0.200	< 0.500	0.229 <	0.200	0.810 <	0.100
Gw-73-1-1	NS	Y	2025-05-29	Controller failed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-73-1-1	NS	Y	2025-09-04	Controller burnt	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-73-1-1	NS	Y	2025-11-12	Electrical controller is fried	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-73-1-1	NS	Y	2026-02-24	Submersible pump malfuction	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-73-2-1	SS	Y	2025-05-30	Clear and colourless	0.425	70.8	0.141 <	0.500	9.84	3.13	0.847	0.822	17.5	0.570	< 0.133	7510	< 0.005	8.28	138	10.6	0.007	< 0.200	2.59	0.407	0.510	0.920	0.240
Gw-73-2-1	SS	Y	2025-10-01	Clear and colourless	0.424	9.70	0.008 <	0.500	11.8	55.2	1.20	0.356	4.70	0.376	< 0.040	9410	< 0.005	7.09	185	12.9	0.003	< 0.200	< 0.500	0.224	0.720	0.300 <	0.100
Gw-73-2-1	SS	Y	2025-11-12	Clear and colourless	0.316	6.10 <	0.005 <	0.500	12.4	50.8	1.04	0.327	3.40	0.405	< 0.040	8900	< 0.005	7.40	189	14.1	0.002	< 0.200	< 0.500	0.291	0.520	0.110 <	0.100
Gw-73-2-1	FRM	Y	2026-02-24	Mean of replicates	0.270	5.55	0.007 <	0.500	11.6	46.8	0.958	0.311	3.70	0.361	< 0.040	8845	< 0.005	6.90	174	11.5 <	0.002	< 0.200	< 0.500	0.252	0.605	0.490 <	0.100
Gw-73-3-1	SS	Y	2025-05-30	Clear and colourless	0.332	5.90	0.006 <	0.500	11.4	49.4	0.99	0.337	3.90	0.353	< 0.040	9010	< 0.005	6.55	167	11.5	0.002	< 0.200	< 0.500	0.244	0.650	2.22 <	0.100
Gw-73-3-1	SS	Y	2025-10-01	Clear and colourless	0.404	2.40	0.016 <	0.710	10.1	0.635	1.43	0.469	15.9	0.636	0.082	7930	< 0.005	15.4	153	10.1	0.006	< 0.200	< 0.500	0.225	0.480	0.820 <	0.100
Gw-73-3-1	SS	Y	2025-11-12	Clear and colourless	0.263	10.4	0.034	0.960	6.73	0.870	0.444	0.442	14.5	0.654	0.055	7080	< 0.005	16.8	96.0	9.20	0.007	< 0.200	< 0.500	0.095	0.300	1.02 <	0.100
Gw-73-3-1	SS	Y	2026-02-24	Clear and colourless	0.379	21.6	0.039	0.950	6.48	0.498	0.632	0.428	8.90	0.580	0.089	7980	< 0.005	14.4	87.9	10.1	0.007	< 0.200	< 0.500	0.143	0.400	1.15 <	0.100
Gw-77-1-1	SS	N	2025-09-16	Clear and colourless	0.108	2.00	0.013	0.630	12.8	145	0.551	0.476	17.4	0.595	< 0.040	10500	< 0.005	5.30	282	27.1	0.010	< 0.200	< 0.500	0.235	0.520	0.150 <	0.100
Gw-77-1-1	SS	N	2025-11-25	Clear and colourless	0.131	5.30	0.012 <	0.500	14.2	58.2	0.476	0.358	9.90	0.410	< 0.040	11100	< 0.005	4.99	270	32.8	0.007	< 0.200	< 0.500	0.072	0.360	0.470 <	0.100
Gw-77-2-1	SS	N	2025-09-16	Clear and colourless	0.086	8.80	0.010	1.02	23.8	112	0.586	1.03	40.1	0.409	0.040	14700	< 0.005	7.17	1020	50.6	0.011	< 0.200	< 0.500	0.058	0.240	0.280 <	0.100
Gw-77-2-1	SS	N	2025-11-25	Clear and colourless	0.142	16.0	0.017	0.800	25.0	44.9	0.544	0.543	34.6	0.441	0.062	14500	< 0.005	7.71	960	54.0	0.008	< 0.200	< 0.500	0.066	0.250	0.390 <	0.100
Gw-80-1-0 (P8)	SS	N	2025-05-22	Clear and colourless	1.31	18700	0.130	1.60	54.4	1890	0.690	16.9	1310	102	0.186	17800	< 0.010	299	1050	6.10 <	0.004	1.52	13.9	0.162	15.3	12.0	2.88
Gw-80-1-0 (P8)	SS	N	2025-10-07	Clear and colourless	1.33	2510	0.139	1.30	57.4	1990	1.21	22.2	188	101	0.271	20800	< 0.010	285	1270	32.1	0.007	1.68	12.7	0.239	13.5	7.24	3.70
Gw-80-1-0 (P8)	SS	N	2025-11-07	Moderately turbid, moderately orange	3.60	1560	0.128	1.00	53.3	1790	1.00	21.6	164	95.1	0.232	17800	< 0.010	287	1110	30.8 <	0.004	1.61	13.7	0.197	15.7	12.1	5.06
Gw-80-1-0 (P8)	SS	N	2026-02-20	Clear, very brown	13.6	5820	0.625	5.30	50.2	1950	2.19	34.9	3070	117	0.504	16900	0.017	355	858	43.8 <	0.004	8.22	87.3	0.472	46.4 b	23.0	16.8
Gw-81-1-0 (P9)	NS	N	2025-05-22	Not functioning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-81-1-0 (P9)	NS	N	2025-10-07	Not functioning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-81-1-0 (P9)	NS	N	2025-11-07	Not functioning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-81-1-0 (P9)	NS	N	2026-02-20	Not functioning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-85-1-1	SS	N	2025-05-29	Clear and colourless	3.20	1.30 <	0.005 <	0.500	8.61	19.2	0.649	0.435	4.30	4.96	0.095	5150	< 0.005	54.7	210	12.0	0.004	< 0.200	< 0.500	0.028	0.99	0.130 <	0.100
Gw-85-1-1	SS	N	2025-09-18	Clear and colourless	3.71	34.5	0.046 <	0.500	11.4	149	1.04	0.99	12.6	5.41	0.096	6460	< 0.005	69.5	273	13.7	0.007	< 0.200	0.760	0.054	1.25	0.300 <	0.100
Gw-85-1-1	SS	N	2025-11-07	Clear and colourless	3.07	1.10 <	0.005 <	0.500	8.65	101	0.855	0.841	10.3	4.85	0.470	6070	< 0.005	58.7	227	18.1	0.008	< 0.200	< 0.500	0.046	0.930	0.180 <	0.100
Gw-85-1-1	SS	N	2026-02-17	Clear and colourless	2.82	8.90	0.022 <	0.500	5.57	159	1.17	0.583	10.4	3.50	0.220	6090	< 0.005	37.5	127	12.5	0.004	< 0.200	< 0.500	0.037	1.06	0.330 <	0.100
Gw-87-1-1	SS	N	2025-09-16	Clear and colourless	0.071	1.00	0.010 <	0.500	10.3	5.07	0.569	0.524	11.9	0.358	0.046	7650	< 0.005	4.84	187	23.6	0.007	< 0.200	< 0.500	0.157 <	0.200	0.250 <	0.100
Gw-87-1-1	SS	N	2025-11-25	Clear and colourless	0.058	1.00	0.009 <	0.500	12.7	3.04	0.478	0.355	9.40	0.288	0.194	6830	< 0.005	4.93	249	48.1	0.006	< 0.200	< 0.500	0.250 <	0.200	0.390 <	0.100
Gw-87-2-1	NS	N	2025-09-04	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-87-2-1	NS	N	2025-11-24	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-88-1-1	SS	N	2025-09-16	Clear and colourless	0.223	3.50 <	0.005 <	0.500	14.2	0.701	0.305	0.198 <	2.00	0.210	1.26	5780	< 0.005	4.79	291	97.6 <	0.002	< 0.200	< 0.500	0.110	0.520	0.320 <	0.100
Gw-88-1-1	SS	N	2025-11-25	Clear and colourless	0.263	1.40 <	0.005 <	0.500	13.3	0.741	0.318	0.172	3.70	0.205	1.17	5860	< 0.005	4.70	249	86.1 <	0.002	< 0.200	< 0.500	0.115	0.590	0.180 <	0.100
Gw-88-2-1	NS	N	2025-09-04	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-88-2-1	NS	N	2025-11-25	Dry - not enough water to sample.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-91-1-1	SS	N	2025-05-15	Clear and colourless	7.55	32.4	0.392	2.37	12.5	2.09	0.801	0.602	15.1	1.37	0.155	7750	< 0.005	7.01	506	39.6	0.015	< 0.200	< 0.500	1.21	< 0.200	5.85 <	0.100
Gw-91-1-1	SS	N	2025-09-16	Clear and colourless	0.188	2.20	0.012	2.45	12.9	4.09	0.868	0.397	16.2	1.39	0.121	8390	< 0.005	6.06	557	41.3	0.015	< 0.200	< 0.500	0.985 <	0.200	0.370 <	0.100
Gw-91-1-1	SS	N	2025-11-28	Clear and colourless	0.266	3.70	0.022	2.00	12.9	2.37	0.775	0.373	14.4	1.26	0.115	8030	< 0.005	5.70	493	38.6	0.013	< 0.200	< 0.500	0.887 <	0.200	0.720 <	0.100
Gw-91-1-1	SS	N	2026-02-10	Clear and colourless	0.158	4.50 <	0.005 <	2.10	13.4	3.34	0.898	0.514	14.0	1.39	0.162	8480	< 0.005	6.43	511	42.3	0.018	< 0.200	< 0.500	1.14 <	0.200	0.260 <	0.100
Gw-92-1-1	NS	N	2025-05-15	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-92-1-1	SS	N	2025-09-16	Clear and colourless	2.10	452	0.296	9.93	18.0	978	9.83	8.56	15.7	2.87	0.287	9480	< 0.005	15.9	404	80.8	0.098	0.630	1.92	1.56	0.620	4.74	0.400
Gw-92-1-1	SS	N	2025-11-28	Very slightly turbid, very slightly brown	0.853	467	0.226	4.20	18.7	466	6.34	1.98	17.5	1.58	0.066	9420	< 0.005	8.08	390	83.6	0.034	0.290	2.00	0.947	0.240	1.95 <	0.100
Gw-92-1-1	SS	N	2026-02-10	Moderately turbid, moderately grey yellow	0.752	548	0.345	3.37	16.2	268	6.34	1.84	11.0	1.57	0.132	8990	< 0.005	10.3	342	73.4	0.052	0.330	< 0.500	1.09 <	0.200	1.29 <	0.100

Notes:

a Above CSR Schedule 3.2 AW Standard.
b Above CSR Schedule 3.2 DW Standard.
BC CSR CSR–Sch3.2: BC Contaminated Site Regulation - Schedule 3.2 - Generic Numerical Water Standards, last amended October 27, 2025.
FB Field blank.
FRM Field replicate mean (average of field replicates).
NS Not sampled.
SS Single sample.
TB Travel blank.
(1) Aquatic Life (AW) Freshwater Standard, Column 3 in CSR-Sch3.2
(2) Drinking Water (DW) Standard, Column 6 in CSR-Sch3.2
(3) Standard varies with pH.
(4) Standard varies with chloride.
(5) Standard varies with hardness.
(6) BC CSR Schedule 3.2 criterion for iron and manganese were not applied as directed by the Stage 8 CSR Amendments.
(7) Standard is based on the trivalent (Cr(III)) species. Cr(III) is the most common form of chromium.
(8) CSR Stage 13 amendments, Protocol 9, background concentration is higher than the applicable CSR DW and/or most stringent CSR a standard, A concentration above the CSR DW or most stringent CSR AW standard but below the regional background concentration (South Vancouver Island Region) is not considered contaminated and is not highlighted as a CSR DW or AW exceedance.

BC CSR			AW Maximum (1) DW Maximum (2)						1,500 250		1,31-18,4 (3)		0,2-2 (4) 1		400 10	400 10		1,280-4,290 (5) 500		9500		90 6		50 10	10,000 1,000		2 (8) 8				12,000 5,000	0,5-4 (5) 5			90 (7) 6,000	40 14 (6)
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	pH (Field)	Conductivity (Actual - Field)	Temperature (Field)	Alkalinity	Hardness (As $CaCO_3$)	Chloride		Nitrogen - Ammonia		Nitrogen - Nitrite		Nitrogen - Nitrate	Nitrogen - Nitrate plus Nitrite		Sulphate		Aluminum		Antimony		Arsenic	Barium		Beryllium		Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt
				Fraction	—	TOT	TOT	TOT	DIS	DIS		DIS		DIS		DIS	DIS		DIS		DIS		DIS		DIS	DIS		DIS		DIS	DIS	DIS	DIS	DIS	DIS
				Unit	pH	µS/cm	°C	mg/L	mg/L	mg/L		mg/L		mg/L		mg/L	mg/L		mg/L		µg/L		µg/L		µg/L	µg/L		µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				Method Detection Limit	0.1	1	0.1	1	0.5	1		0.015		0.005		0.02	0.02		1		0.5		0.02		0.02	0.02		0.01		0.005	10	0.005	0.05	0.1	0.005
Gw-95-1-I	FRM	N	2025-05-27	Mean of replicates	6.76	841	10.3	155	555	28.0		0.080	<	0.005		0.403	0.403		385		5.00		0.250		0.175	12.6	<	0.010	<	0.005	285	0.148	197	< 0.125	1.02
Gw-95-1-I	FRM	N	2025-10-06	Mean of replicates	6.72	929	13.1	160	569	37.0	<	0.015	<	0.005		1.47	1.47		400		4.54		0.175		0.128	11.5	<	0.010	<	0.005	327	0.030	199	< 0.100	0.558
Gw-95-1-I	FRM	N	2025-11-28	Mean of replicates	6.49	895	11.4	120	550	29.5		0.027	<	0.005		5.92	5.92		345		3.28		0.094		0.073	6.95	<	0.010	<	0.005	238	0.026	189	< 0.100	0.181
Gw-95-1-I	FRM	N	2026-02-26	Mean of replicates	6.62	874	9.60	140	617	23.0		0.063	<	0.005		2.65	2.65		415		1.79		0.143		0.116	10.5	<	0.010	<	0.005	278	0.046	213	< 0.100	0.655
Gw-96-1-I	NS	N	2025-05-27	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-96-1-I	NS	N	2025-09-04	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-96-1-I	SS	N	2025-11-28	Very slightly turbid, very slightly grey	6.35	832	11.8	41.0	519	16.0		0.016	<	0.005		5.96	5.96		390		9.01		0.027		0.061	4.62		0.011	<	0.005	83.0	0.047	163	0.230	0.402
Gw-96-1-I	SS	N	2026-02-26	Slightly turbid, slightly yellow	6.42	735	10.1	52.0	452	16.0	<	0.015	<	0.005		3.27	3.27		360		7.58		0.030		0.049	2.85	<	0.013	<	0.005	99.0	0.063	140	0.180	0.158
Gw-97-1-I	SS	N	2025-05-27	Clear and colourless	7.75	319	11.7	170	188	1.30	<	0.015	<	0.005	<	0.020	< 0.020	<	30.0		1.15		0.372		0.109	18.1	<	0.010	<	0.005	55.0	0.008	69.8	0.290	0.309
Gw-97-1-I	SS	N	2025-10-07	Clear and colourless	7.37	526	14.0	180	294	7.30		0.049	<	0.005		0.021	0.021		130		1.61		0.396		0.149	37.8	<	0.010	<	0.005	73.0	0.011	108	< 0.100	0.019
Gw-97-1-I	SS	N	2025-11-28	Clear and colourless	7.37	343	12.7	140	203	2.50	<	0.015	<	0.005		0.072	0.072		53.0		4.26		0.352		0.110	16.2	<	0.010	<	0.005	46.0	0.013	75.4	< 0.100	0.084
Gw-97-1-I	SS	N	2026-02-27	Clear and colourless	7.36	297	10.6	150	178	1.80	<	0.015	<	0.005	<	0.020	< 0.020	<	35.0		2.84		0.236		0.098	13.4	<	0.010	<	0.005	36.0	0.005	66.0	< 0.100	0.037
Gw-98-1-I	SS	N	2025-05-27	Clear and colourless	6.87	744	10.9	100.0	452	29.0		0.019	<	0.005		2.64	2.64		340		1.73		0.184		0.048	3.77	<	0.010	<	0.005	146	0.013	150	< 0.100	0.038
Gw-98-1-I	SS	N	2025-10-06	Clear and colourless	6.82	771	14.2	83.0	431	31.0	<	0.015	<	0.005		2.83	2.83		340		9.61		0.122		0.075	5.93	<	0.010	<	0.005	145	0.028	138	< 0.100	0.069
Gw-98-1-I	SS	N	2025-11-28	Moderately turbid, very slightly grey	6.59	972	11.9	62.0	563	16.0		0.025	<	0.005		5.44	5.44		450		5.39		0.086		0.061	3.48		0.016	<	0.005	106	0.036	177	< 0.170	0.089
Gw-98-1-I	SS	N	2026-02-26	Moderately turbid, moderately grey	6.63	799	10.8	79.0	515	16.0	<	0.015		0.016		1.78	1.79		370		1.52		0.128		0.060	3.12	<	0.010	<	0.005	122	0.031	165	< 0.100	0.050
Gw-104-1-I	SS	N	2025-05-27	Clear and colourless	7.29	666	11.3	150	395	26.0		0.041		0.038		1.40	1.44		270		4.21		0.155		0.105	6.14	<	0.010	<	0.005	96.0	0.107	132	0.110	30.3	b
Gw-104-1-I	SS	N	2025-10-07	Clear and colourless	7.42	886	13.4	170	486	33.0		0.190		0.027		1.93	1.96		370		7.24		0.206		0.131	19.1	<	0.010	<	0.005	133	0.104	159	0.140	49.9	a
Gw-104-1-I	SS	N	2025-11-28	Clear and colourless	7.20	825	12.5	120	447	14.0		0.051		0.013		3.09	3.10		350		2.80		0.129		0.111	3.95	<	0.010	<	0.005	119	0.138	146	< 0.100	13.6
Gw-104-1-I	SS	N	2026-02-26	Clear, very slightly yellow	7.14	546	10.9	120	309	15.0		0.038		0.015		1.68	1.69		200		2.00		0.161		0.091	4.99	<	0.010	<	0.005	87.0	0.061	102	< 0.100	15.7	b
Gw-108-1-I	SS	N	2025-05-27	Clear and colourless	7.77	702	11.5	150	403	25.0	<	0.015	<	0.005	<	0.020	< 0.020	<	250		2.68		0.049		0.316	58.4	<	0.010	<	0.005	121	0.009	109	< 0.100	0.053
Gw-108-1-I	SS	N	2025-10-08	Clear and colourless	7.68	594	13.0	190	434	19.0	<	0.015	<	0.005	<	0.020	< 0.020	<	250		5.18		0.031		0.298	48.2	<	0.010	<	0.005	142	0.012	115	< 0.100	0.044
Gw-108-1-I	FRM	N	2025-11-28	Mean of replicates	7.42	740	12.5	200	456	16.0		0.017	<	0.005	<	0.020	< 0.020	<	235		3.88		0.030		0.268	48.6	<	0.010	<	0.005	145	0.009	121	< 0.100	0.043
Gw-108-1-I	SS	N	2026-02-13	Clear and colourless	7.38	767	11.4	230	536	14.0	<	0.015	<	0.005		0.026	0.026		270		16.3		0.037		0.267	59.3	<	0.010	<	0.005	171	0.009	147	< 0.100	0.067
Gw-109-1-I	NS	N	2025-05-27	Inaccessible	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-109-1-I	FRM	N	2025-10-08	Mean of replicates	8.93	584	15.7	165	6.10	18.5		0.265	<	0.005		0.039	0.039		115		6.36		0.235		7.76	1.14	<	0.010	<	0.005	211	0.005	1.41	< 0.100	0.025
Gw-109-1-I	SS	N	2025-11-28	Very high turbidity, very grey	9.01	565	15.5	170	2.86	16.0		0.340	<	0.005		0.048	0.048		120		5.71		0.293		8.46	0.665	<	0.010	<	0.005	196	0.005	0.661	< 0.100	0.026
Gw-109-1-I	SS	N	2026-02-13	Very turbid,very grey	8.03	767	11.4	230	536	14.0	<	0.015	<	0.005		0.026	0.026		270		16.3		0.037		0.267	59.3	<	0.010	<	0.005	171	0.009	147	< 0.100	0.067
Gw-111-1-I	FRM	Y	2025-05-21	Mean of replicates	7.74	401	10.1	160	235	7.15	<	0.015		0.021		8.73	8.75		47.5		3.56		0.180		0.256	25.9	<	0.010	<	0.005	40.5	0.007	83.6	< 0.100	0.066
Gw-111-1-I	FRM	Y	2025-09-08	Mean of replicates	7.55	409	10.6	150	243	7.20		0.018		0.128		7.87	8.03		65.5		1.51		0.220		0.256	26.4	<	0.010	<	0.005	15.0	0.005	85.3	< 0.100	0.059
Gw-111-1-I	SS	Y	2025-11-28	Clear and colourless	7.56	345	10.4	150	286	7.30	<	0.015		0.025		7.98	8.01		97.0		2.21		0.180		0.206	17.0	<	0.010	<	0.005	15.0	0.010	103	< 0.100	0.047
Gw-111-1-I	FRM	Y	2026-02-06	Mean of replicates	7.38	460	10.00	150	256	8.00	<	0.015		0.016		6.94	6.95		81.5		2.42		0.173		0.232	16.4	<	0.010	<	0.005	12.0	0.007	91.6	< 0.100	0.037
Gw-111-2-I	SS	Y	2025-05-21	Clear and colourless	7.28	399	10.4	150	246	6.10	<	0.015	<	0.005		6.40	6.40		75.0		4.40		0.047		0.206	6.75	<	0.010	<	0.005	37.0	0.012	86.2	< 0.100	0.057
Gw-111-2-I	SS	Y	2025-09-08	Clear and colourless	7.26	484	13.4	150	262	7.00	<	0.015		0.023		5.99	6.01		89.0		1.63		0.054		0.194	12.5	<	0.010	<	0.005	15.0	0.011	92.0	< 0.100	0.058
Gw-111-2-I	SS	Y	2025-11-28	Clear and colourless	7.31	420	9.60	150	251	7.70	<	0.015		0.009		4.22	4.23		95.0		176		0.046		0.222	6.18	<	0.010	<	0.005	18.0	0.016	88.0	0.310	0.296
Gw-111-2-I	SS	Y	2026-02-06	Very slightly turbid, very slightly grey	7.19	355	8.90	150	221	6.80	<	0.015	<	0.005		3.81	3.81		60.0		7.96		0.042		0.186	5.27	<	0.010	<	0.005	14.0	0.010	78.2	< 0.100	0.032
Gw-112-1-I	NS	Y	2025-05-20	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-112-1-I	SS	Y	2025-09-26	Clear, colourless	7.42	787	11.7	210	372	10.00		0.028		0.026		5.43	5.46		250		30.6		19.0	b	1.17	55.8	<	0.010	<	0.005	56.0	0.033	129	0.220	0.098
Gw-112-1-I	NS	Y	2025-12-19	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-112-1-I	SS	Y	2026-02-25	Clear, colourless	7.35	745	9.80	200	451	10.00	<	0.015		0.007		3.64	3.64		270		2.96		16.9	b	0.728	54.6	<	0.010	<	0.005	59.0	0.007	158	< 0.100	0.019
Gw-112-2-I	NS	Y	2025-05-20	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-112-2-I	NS	Y	2025-09-26	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-112-2-I	SS	Y	2025-12-19	Clear and colourless	6.69	783	10.3	220	465	4.10	<	0.015		0.007		5.17	5.17		220		2.11		0.107		0.139	26.4	<	0.010	<	0.005	37.0	0.075	166	< 0.100	1.03
Gw-112-2-I	SS	Y	2026-02-25	Clear and colourless	6.82	707	9.90	210	458	4.30	<	0.015	<	0.005		3.48	3.48		240		2.94		0.122		0.104	25.9	<	0.010	<	0.005	39.0	0.026	162	< 0.100	0.129
Gw-113-1-I	SS	N	2025-05-21	Clear and colourless	7.75	1239	11.0	130	711	7.40		0.020		0.010		0.048	0.058		670	b	309		2.16		1.18	36.3		0.017		0.005	172	0.032	238	0.830	1.28
Gw-113-1-I	SS	N	2025-09-18	Clear and colourless	7.60	1139	11.8	130	736	6.30	<	0.015		0.007		0.025	0.032		630	b	8.91		1.61		0.890	37.9	<	0.010	<	0.005	190	0.007	245	< 0.100	0.868
Gw-113-1-I	SS	N	2025-11-28	Clear and colourless	7.40	1031	10.8	130	659	4.00	<	0.015	<	0.005	<	0.020	< 0.020	<	540	b	4.72		0.658		1.16	22.4	<	0.010	<	0.005	180	0.005	220	< 0.100	0.520
Gw-113-1-I	FRM	N	2026-02-10	Mean of replicates	7.45	1034	10.5	120	684	4.10	<	0.015		0.006		0.020	0.022		553	b	8.21		1.53		0.727	31.0	<	0.010	<	0.005	189	0.012	225	< 0.100	0.565
Gw-113-2-I	SS	N	2025-05-22	Clear and colourless	7.64	985	11.8	140	649	3.70		0.020	<	0.005	<	0.020	< 0.020	<	480		3.87		0.225		0.441	45.9	<	0.010	<	0.005	186	0.016	207	< 0.100	0.291
Gw-113-2-I	NS	N	2025-09-18	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-113-2-I	SS	N	2025-11-28	Clear and colourless	7.33	1129	11.6	140	707	4.10	<	0.015	<	0.005	<	0.020	< 0.020	<	570	b	3.98		0.161		0.509	49.6	<	0.010	<	0.005	194	0.025	224	< 0.100	0.128
Gw-113-2-I	SS	N	2026-02-10	Clear and colourless	7.47	1117	10.7	130	725	4.00	<	0.015	<	0.005	<	0.020	< 0.020	<	620	b	5.85		0.132		0.504	43.9	<	0.010	<	0.005	176	0.020	236	< 0.100	0.181
Gw-P1	SS	N	2025-05-22	Clear, very slightly orange	—	—	—	730	245	130		81.0	a	0.011		0.121	0.132	<	1.00		6.40		0.064		1.08	565	<	0.020	<	0.010	2670	0.010	66.2	0.890	3.29
Gw-P1	NS	N	2025-09-04	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-P1	SS	N	2025-11-27	Clear and colourless	7.22	1875	16.2	610	260	92.0		47.0	a	0.005	<	0.020	< 0.020	<	1.00		4.90		0.067		8.85	1500	b	< 0.020	<	0.010	1890	0.010	71.3	0.790	1.86
Gw-P1	SS	N	2026-02-20	Clear, very slightly orange	6.95	1001	14.2	460	284	50.0		28.0	a	0.005	<	0.020	< 0.020	<	1.00		5.90		0.040		5.52	1510	b	< 0.020	<	0.010	1270	0.010	79.9	0.530	1.05
Gw-P2	SS	N	2025-05-22	Clear, very slightly yellow	—	—	—	870	232	160		81.0	a	0.017		0.081	0.098	<	1.00		5.70		0.061		2.05	645	<	0.020	<	0.010	3710	0.010	53.9	1.35	4.90
Gw-P2	SS	N	2025-10-08	Clear, very slightly yellow	7.25	1913	15.5	860	252	160		69.0	a	0.013		0.052	0.065	<	1.00		4.80		0.053		0.715	462	<	0.020	<	0.010	3050	0.010	61.5	1.02	3.93
Gw-P2	SS	N	2025-11-27	Clear, very slightly yellow	7.28	1925	15.6	910	253	160		80.0	a	0.011		0.030	0.041	<	1.00		8.90		0.043		2.33	661	<	0.020	<	0.010	2910	0.010	58.6	1.00	3.73
Gw-P2	SS	N	2026-02-20	Clear, very slightly orange	7.15	2023	14.9	910	244	160		84.0	a	0.007	<	0.020	< 0.020	<	1.00		18.7		0.040		0.858	496	<	0.020	<	0.010	3570	0.010	60.7	1.15	4.09
Gw-P3	SS	N	2025-05-22	Clear, slightly yellow	—	—	—	1000	239	200		110	a	0.011		0.400	0.411	<	1.00		9.70		0.064		2.90	759	<	0.020	<	0.010	4040	0.010	53.4	1.41	5.09
Gw-P3	SS	N	2025-10-08	Clear, slightly yellow	7.21	2305	14.9	1000	248	200		89.0	a	0.025		0.058	0.083	<	1.00		6.70		0.053		1.72	654	<	0.020	<	0.010	3840	0.010	53.8	1.15	4.32
Gw-P3	SS	N	2025-11-27	Clear, slightly yellow	7.15	2210	14.8	930	256	160		87.0	a	0.024	<	0.020	0.031		12.0		5.00		0.041		2.23	692	<	0.020	<	0.010	3040	0.010	58.7	1.04	3.73
Gw-P3	SS	N	2026-02-20	Clear, slightly yellow	7.15	2256	13.8	1000	259	180		110	a	0.023	<	0.020	0.040	<	1.00		7.10		0.049		2.12	788	<	0.020	<	0.010	4350	0.010	55.5	1.13	4.31
Gw-P4	SS	N	2025-05-22	Clear, slightly yellow	—	—	—	960	227	190		110	a	0.026		3.83	3.85	<	1.00		6.90		0.100		2.56	733	<	0.020	<	0.050	3920	0.025	50.0	1.34	4.51
Gw-P4	SS	N	2025-10-08	Clear, slightly yellow	6.90	1900	14.4	850	338	170		66.0	a	0.160		0.199	0.359	<	1.00		7.80		0.051		0.626	141	<	0.020	<	0.010	2130	0.016	85.0	0.750	2.51
Gw-P4	SS	N	2025-11-27	Clear, slightly yellow	7.11	1875	16.1	850	377	140		72.0	a	0.071		0.122	0.193		9.40		11.3		0.075		1.06	150	<	0.020	<	0.010	1990	0.072	98.5	0.890	2.92
Gw-P4	SS	N	2026-02-20	Clear, very slightly orange	6.81	1936	13.3	910	378	140		83.0	a	0.008	<	0.020	< 0.020	<	5.40		4.50		0.040		0.653	128	<	0.020	<	0.010	2340	0.010	92.8	0.710	2.82
Gw-P10	SS	N	2025-05-27	Clear, very slightly yellow	—	—	—	480	275	58.0		32.0	a	0.005		0.145	0.145	<	1.00		5.93		0.042		0.884	701	<	0.010	<	0.005	1300	0.014	82.3	0.500	1.30
Gw-P10	SS	N	2025-10-08	Clear, very slightly yellow	7.06	1108	14.4	540	262	92.0		37.0	a	0.007		0.722	0.729	<	1.00		2.80		0.040		1.07	801	<	0.020	<	0.010	1330	0.010	74.1	0.500	1.19
Gw-P10	SS	N	2025-11-27	Clear, very slightly yellow	7.10	1095	13.1	600	277	100.0		42.0	a	0.005		0.025	0.025	<	1.00		2.19		0.173		0.218	717.0	<	0.010	<	0.005	12.0	0.008	99.1	< 0.100	0.048
Gw-P10	SS	N	2026-02-20	Clear, very slightly yellow	7.06	929	11.3	500	248	48.0		32.0	a	0.005	<	0.020	< 0.020	<	1.00		2.27		0.023		0.641	639	<	0.010	<	0.005	1160	0.005	74.6	0.400	1.18
Gw-P11	SS	N	2025-05-27	Clear, very slightly orange	—	739	—	150	427	26.0	<	0.015	<	0.005		3.86	3.86		240		2.90		0.367		0.139	3.70	<	0.010	<	0.005	92.0	0.034	139	0.160	0.208
Gw-P11	SS	N	2025-10-07	Clear, very slightly orange	6.53	753	15.0	270	423	8.50	<	0.015	<	0.005		1.16	1.16		190		3.12		0.268		0.074	3.48	<	0.010	<	0.005	61.0	0.031	135	0.170	0.087
Gw-P11	SS	N	2025-11-27	Clear and colourless	6.60	885	15.1	130	536	13.0	<	0.015	<	0.005		5.01	5.01		340		10.7		0.237		0.091	4.17	<	0.010	<	0.005	89.0	0.028	175	0.200	0.141
Gw-P11	SS	N	2026-02-20	Clear, very slightly yellow	6.65	642	11.6	140	361	18.0		0.026	<	0.005		2.21	2.21		200		34.5		0.177		0.078	2.92	<	0.010	<	0.005	112	0.019	117	0.190	0.451
Gw-P12	NS	N	2025-05-13	Dry - no water for 48 hours	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-P12	NS	N	2025-09-04	Dry	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
Gw-P12	SS	N	2025-11-27	Clear and colourless	6.87	796	13.1	160	482	25.0		0.019	<	0.005		7.00	7.00		260		6.73		0.142		0.149	15.3	<	0.010	<	0.005	80.0	0.016	158	0.140	0.211
Gw-P12	SS	N	2026-02-20	Clear, very slightly orange	6.96	501	9.80	150	313	9.30		0.033	<	0.005		3.42	3.42		140		5.57		0.152		0.110	6.15	<	0.010	<	0.005	67.0	0.005	104	0.130	0.152
FB	FB	N	2025-05-07	Not sampled	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
FB	FB	N	2025-10-07	Clear and colourless	9.27	3.70	2.40	1.00	< 0.500	< 1.00	<	0.015	<	0.005	<	0.020	< 0.020	<	1.00	<	4.63	<	0.020	<	0.020	0.434	<	0.010	<	0.005	< 10.00	< 0.005	< 0.050	< 0.100	0.006
FB	FB	N	2025-11-14	Clear and colourless	8.60	17.7	2.70	1.00	< 0.500	< 1.00	<	0.015	<	0.005	<	0.020	< 0.020	<	1.00		6.92	<	0.020	<	0.020	0.023	<	0.010	<	0.005	< 10.00	< 0.005	< 0.050	< 0.100	< 0.005
FB	FB	N	2026-02-10	Clear and colourless	8.45	11.9	3.30	1.50	< 0.500	< 1.00	<	0.015	<	0.005	<	0.020	< 0.020	<	1.00	<	0.500	<	0.020	<	0.020	0.026	<	0.010	<	0.005	< 10.00	< 0.005	< 0.050	< 0.100	< 0.005
TB	TB	N	2025-05-07	Not sampled	—	—	—	—	—	—		—		—		—	—		—		—		—		—	—		—		—	—	—	—	—	—
TB	TB	N	2025-10-07	Clear and colourless	—	—	—	1.00	< 0.500	< 1.00	<	0.015	<	0.005	<	0.020	< 0.020	<	1.00	<	0.500	<	0.020	<	0.020	< 0.020	<	0.010	<	0.005	< 10.00	< 0.005	< 0.050	< 0.100	< 0.005
TB	TB	N	2025-11-14	Clear and colourless	—	—	—	1.00	< 0.500	< 1.00	<	0.015	<	0.005	<	0.020	< 0.020	<	1.00	<	0.500	<	0.020	<	0.020	< 0.020	<	0.010	<	0.005	< 10.00	< 0.005	< 0.050	< 0.100	< 0.005
TB	TB	N	2026-02-10	Clear and colourless	—	—	—	1.00	< 0.500	< 1.00	<	0.015	<	0.005	<	0.020	< 0.020	<	1.00	<	0.500	<	0.020	<	0.020	< 0.020	<	0.010	<	0.005	< 10.00	< 0.005	< 0.050	< 0.100	< 0.005

Notes:

a Above CSR Schedule 3.2 AW Standard.
b Above CSR Schedule 3.2 DW Standard.
BC CSR CSR–Sch3.2: BC Contaminated Site Regulation – Schedule 3.2 – Generic Numerical Water Standards, last amended October 27, 2025.
FB Field blank.
FRM Field replicate mean (average of field replicates).
NS Not sampled.
SS Single sample.
TB Travel blank.
(1) Aquatic Life (AW) Freshwater Standard, Column 3 in CSR-Sch3.2
(2) Drinking Water (DW) Standard, Column 6 in CSR-Sch3.2
(3) Standard varies with pH.
(4) Standard varies with chloride.
(5) Standard varies with hardness.
(6) BC CSR Schedule 3.2 criterion for iron and manganese were not applied as directed by the Stage 8 CSR Amendments.
(7) Standard is based on the trivalent (Cr(III)) species. Cr(III) is the most common form of chromium.
(8) CSR Stage 13 amendments, Protocol 9, background concentration is higher than the applicable CSR DW and/or most stringent CSR AW standard. A concentration above the CSR DW or most stringent CSR AW standard but below the regional background concentration (South Vancouver Island Region) is not considered contaminated and is not highlighted as a CSR DW or AW exceedance.

BC CSR			AW Maximum (1)		20-90 (5)		40-160 (5)					10,000	250-1,500 (5)			20		0.5-15 (5)				3		1,000	85		75-2,400 (5)	
			DW Maximum (2)		1,500	(6)	10	33 (6)			(6)	250	80			10		20	1,700 (8)	2,500			2500		20	20	3,000	
Station	Sample Type	Compliance Well (Y/N?)	Date Sampled	Parameter	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silicon	Silver	Sodium	Strontium	Sulphur	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Zirconium
				Fraction	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS	DIS
				Unit	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				Method Detection Limit	0.05	1	0.005	0.5	0.05	0.05	0.05	0.02	2	0.05	0.04	50	0.005	0.05	0.05	0.05	0.05	3	0.002	0.2	0.5	0.002	0.2	0.1	0.1
Gw-95-1-1	FRM	N	2025-05-27	Mean of replicates	1.12	81.0	0.013	0.510	15.6	46.8	2.89	4.26	3.80	0.357	0.096	6740	< 0.005	7.54	498	134	0.008	< 0.200	< 0.500	1.11	0.425	1.23	< 0.100
Gw-95-1-1	FRM	N	2025-10-06	Mean of replicates	0.769	6.45	0.007	< 0.500	17.8	47.1	0.960	2.14	4.70	0.406	0.105	7250	< 0.005	7.97	509	135	0.008	< 0.200	< 0.500	0.622	0.425	0.890	< 0.100
Gw-95-1-1	FRM	N	2025-11-28	Mean of replicates	0.958	4.20	0.007	< 0.500	19.2	2.18	0.282	1.25	3.10	0.321	0.371	8350	< 0.005	8.26	433	125	0.006	< 0.200	< 0.500	0.317	0.435	0.890	< 0.100
Gw-95-1-1	FRM	N	2026-02-26	Mean of replicates	0.919	15.8	0.009	< 0.500	20.8	26.0	0.564	2.79	3.25	0.334	0.254	7870	< 0.005	8.56	509	154	0.006	< 0.200	< 0.500	0.492	0.355	1.70	< 0.100
Gw-96-1-1	NS	N	2025-05-27	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-96-1-1	NS	N	2025-09-04	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-96-1-1	SS	N	2025-11-28	Very slightly turbid, very slightly grey	1.19	4.70	0.018	< 0.500	27.4	4.96	0.267	0.833	4.90	0.221	0.392	9540	< 0.005	9.10	272	148	0.003	< 0.200	< 0.500	0.019	0.580	1.01	< 0.100
Gw-96-1-1	SS	N	2026-02-26	Slightly turbid, slightly yellow	0.928	6.10	0.009	< 0.500	24.6	3.02	0.249	0.700	3.80	0.188	0.446	8000	< 0.005	8.08	251	132	0.002	< 0.200	< 0.500	0.025	0.550	1.50	< 0.100
Gw-97-1-1	SS	N	2025-05-27	Clear and colourless	0.278	222	0.038	0.700	3.29	135	0.350	0.950	9.60	0.427	0.050	6820	< 0.005	2.60	119	5.90	0.006	< 0.200	6.93	0.523	0.830	1.10	< 0.100
Gw-97-1-1	SS	N	2025-10-07	Clear and colourless	0.295	3.50	0.014	0.960	5.77	9.79	0.646	2.52	5.70	0.775	0.061	8110	< 0.005	4.47	200	41.5	0.015	< 0.200	< 0.500	0.345	0.590	0.660	< 0.100
Gw-97-1-1	SS	N	2025-11-28	Clear and colourless	0.381	1.50	0.012	< 0.500	3.56	41.9	0.381	0.938	4.20	0.391	0.100	8210	< 0.005	3.51	131	18.8	0.008	< 0.200	< 0.500	0.274	0.290	1.22	< 0.100
Gw-97-1-1	SS	N	2026-02-27	Clear and colourless	0.245	1.00	< 0.005	< 0.500	3.14	14.3	0.279	0.486	4.50	0.344	0.048	6910	< 0.005	2.57	111	10.8	0.004	< 0.200	< 0.500	0.267	0.230	0.290	< 0.100
Gw-98-1-1	SS	N	2025-05-27	Clear and colourless	0.387	2.40	0.016	< 0.500	18.5	1.65	0.640	0.309	2.90	0.290	0.512	8050	< 0.005	5.74	261	113	0.005	< 0.200	< 0.500	0.335	0.810	1.05	< 0.100
Gw-98-1-1	SS	N	2025-10-06	Clear and colourless	0.830	13.6	0.022	< 0.500	20.9	2.57	0.442	0.838	3.90	0.291	0.371	8390	< 0.005	6.58	239	110	0.006	< 0.200	< 0.500	0.060	0.810	1.33	< 0.100
Gw-98-1-1	SS	N	2025-11-28	Moderately turbid, very slightly grey	0.867	5.00	0.021	< 0.500	29.4	2.55	0.379	0.394	4.90	0.282	0.598	9170	< 0.005	8.17	310	157	0.006	< 0.200	< 0.500	0.065	0.850	1.11	< 0.100
Gw-98-1-1	SS	N	2026-02-26	Moderately turbid, moderately grey	0.693	1.20	0.017	< 0.500	25.1	2.22	0.456	0.491	2.60	0.266	0.660	8580	< 0.005	7.42	281	143	0.003	< 0.200	< 0.500	0.143	0.710	1.39	< 0.100
Gw-104-1-1	SS	N	2025-05-27	Clear and colourless	27.6	28.8	0.031	< 0.500	15.8	2530	5.20	5.32	4.40	0.565	0.209	6560	< 0.005	18.5	344	89.0	0.024	< 0.200	0.950	0.688	1.74	2.14	< 0.100
Gw-104-1-1	SS	N	2025-10-07	Clear and colourless	33.0	34.2	0.028	< 0.500	21.8	3580	7.45	6.66	6.20	0.670	0.174	7900	< 0.005	21.9	471	115	0.037	< 0.200	6.94	0.912	1.93	4.18	< 0.100
Gw-104-1-1	SS	N	2025-11-28	Clear and colourless	28.2	18.4	0.011	< 0.500	19.9	1330	3.31	3.51	5.40	0.668	0.337	6580	< 0.005	17.7	399	119	0.024	< 0.200	< 0.500	0.484	1.46	3.25	< 0.100
Gw-104-1-1	SS	N	2026-02-26	Clear, very slightly yellow	25.6	7.70	< 0.005	< 0.500	13.2	1190	3.10	2.46	3.40	0.470	0.394	5990	< 0.005	11.7	285	65.2	0.022	< 0.200	< 0.500	0.455	1.05	1.34	< 0.100
Gw-108-1-1	SS	N	2025-05-27	Clear and colourless	0.265	5.50	0.022	1.87	31.7	9.76	5.49	0.687	8.30	1.01	0.060	14000	< 0.005	6.50	1350	85.2	0.011	< 0.200	< 0.500	0.124	0.530	0.480	< 0.100
Gw-108-1-1	SS	N	2025-10-08	Clear and colourless	0.217	4.20	0.024	1.33	35.9	16.7	3.16	0.595	11.1	0.719	0.042	15100	< 0.005	6.30	1550	82.3	0.012	< 0.200	< 0.500	0.064	0.510	0.380	< 0.100
Gw-108-1-1	FRM	N	2025-11-28	Mean of replicates	0.246	3.15	0.008	1.59	37.7	10.2	2.58	0.529	6.00	0.863	0.049	15650	< 0.005	6.88	1440	78.6	0.015	< 0.200	< 0.500	0.085	0.500	0.290	< 0.100
Gw-108-1-1	SS	N	2026-02-13	Clear and colourless	0.243	35.4	0.009	2.01	41.1	10.3	2.76	0.557	8.40	1.02	0.064	18000	< 0.005	7.95	1610	94.1	0.017	< 0.200	1.73	0.110	0.580	0.550	< 0.100
Gw-109-1-1	NS	N	2025-05-27	Inaccessible	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-109-1-1	FRM	N	2025-10-08	Mean of replicates	0.099	6.40	0.057	7.43	0.628	2.25	12.9	11.5	24.0	0.843	0.093	12100	< 0.005	114	27.5	27.1	0.003	< 0.200	< 0.500	1.07	0.275	0.185	< 0.100
Gw-109-1-1	SS	N	2025-11-28	Very high turbidity, very grey	0.117	4.00	0.053	8.09	0.293	1.36	12.1	0.454	24.4	0.913	0.105	12600	< 0.005	127	12.1	25.2	0.003	< 0.200	< 0.500	1.39	0.410	0.250	< 0.100
Gw-109-1-1	SS	N	2026-02-13	Very turbid, grey	0.243	35.4	0.009	2.01	41.1	10.3	2.76	0.557	8.40	1.02	0.064	18000	< 0.005	7.95	1610	94.1	0.017	< 0.200	1.73	0.110	0.580	0.550	< 0.100
Gw-111-1-1	FRM	Y	2025-05-21	Mean of replicates	0.104	5.20	0.011	< 0.500	6.25	20.0	0.333	0.193	6.10	0.648	0.091	6660	< 0.005	4.58	169	15.4	0.008	< 0.200	< 0.500	0.455	< 0.200	0.565	< 0.100
Gw-111-1-1	FRM	Y	2025-09-08	Mean of replicates	0.076	1.40	0.008	0.740	6.68	19.7	0.496	0.206	6.20	0.743	0.186	5941	< 0.005	4.47	186	24.4	0.007	< 0.200	< 0.500	0.714	0.235	0.350	< 0.100
Gw-111-1-1	SS	Y	2025-11-28	Clear and colourless	0.106	11.4	< 0.005	< 0.500	7.33	8.00	0.265	0.165	4.50	0.687	0.116	6100	< 0.005	5.06	202	33.0	0.006	< 0.200	< 0.500	0.419	0.230	0.930	< 0.100
Gw-111-1-1	FRM	Y	2026-02-06	Mean of replicates	0.067	2.60	< 0.005	< 0.500	6.52	7.88	0.266	0.261	3.20	0.588	0.148	6255	< 0.005	4.65	187	28.1	0.006	< 0.200	< 0.500	0.380	0.230	0.905	< 0.100
Gw-111-2-1	SS	Y	2025-05-21	Clear and colourless	0.570	9.00	0.009	< 0.500	7.35	12.1	0.278	0.497	4.60	0.602	0.079	6970	< 0.005	5.05	172	27.0	0.005	< 0.200	< 0.500	0.249	0.450	1.25	< 0.100
Gw-111-2-1	SS	Y	2025-09-08	Clear and colourless	0.555	1.70	0.015	< 0.500	7.82	22.5	0.358	0.723	3.80	0.708	0.132	6250	< 0.005	4.94	186	33.5	0.007	< 0.200	< 0.500	0.308	0.410	0.960	< 0.100
Gw-111-2-1	SS	Y	2025-11-28	Clear and colourless	1.61	159	0.127	< 0.500	7.54	54.3	0.324	1.02	9.30	0.683	0.068	6780	< 0.005	5.67	181	31.4	0.007	< 0.200	7.31	0.176	0.750	3.56	< 0.100
Gw-111-2-1	SS	Y	2026-02-06	Very slightly turbid, very slightly grey	0.608	4.60	0.013	< 0.500	6.19	10.8	0.316	0.697	3.60	0.593	0.132	6380	< 0.005	5.81	153	20.8	0.006	< 0.200	< 0.500	0.267	0.480	1.30	< 0.100
Gw-112-1-1	NS	Y	2025-05-20	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-112-1-1	SS	Y	2025-09-26	Clear and colourless	0.454	240	0.045	8.87	12.4	32.9	4.28	0.790	19.2	2.77	0.498	6710	< 0.005	70.8	531	96.4	0.019	< 0.200	2.25	8.19	0.260	10.1	< 0.100
Gw-112-1-1	NS	Y	2025-12-19	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-112-1-1	SS	Y	2026-02-25	Clear, colourless	0.387	5.70	0.018	5.09	13.7	0.222	3.28	0.522	6.30	2.42	0.398	6140	< 0.005	32.2	671	97.4	0.021	< 0.200	< 0.500	4.35	< 0.200	1.59	< 0.100
Gw-112-2-1	NS	Y	2025-05-20	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-112-2-1	NS	Y	2025-09-26	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-112-2-1	SS	Y	2025-12-19	Clear and colourless	0.405	1.30	0.008	0.820	12.4	153	3.63	2.78	3.20	1.79	0.136	6810	< 0.005	6.40	354	82.6	0.021	< 0.200	< 0.500	1.75	< 0.200	1.49	< 0.100
Gw-112-2-1	SS	Y	2026-02-25	Clear and colourless	0.356	3.60	< 0.005	0.560	12.7	19.7	4.50	1.30	3.20	2.21	0.135	6290	< 0.005	5.96	353	84.7	0.023	< 0.200	< 0.500	1.76	< 0.200	0.860	< 0.100
Gw-113-1-1	SS	N	2025-05-21	Clear and colourless	0.585	724	0.228	5.73	28.7	216	4.63	5.75	18.8	1.52	0.224	8030	< 0.005	51.0	773	232	0.026	0.450	13.0	11.5	1.62	2.34	< 0.100
Gw-113-1-1	SS	N	2025-09-18	Clear and colourless	0.050	6.70	0.013	6.36	30.2	262	4.87	5.37	4.80	1.97	0.216	8040	< 0.005	47.4	939	239	0.029	< 0.200	< 0.500	10.5	0.720	0.680	< 0.100
Gw-113-1-1	SS	N	2025-11-28	Clear and colourless	0.050	326	0.009	4.17	26.9	191	2.89	1.77	7.00	1.45	0.071	7140	< 0.005	23.2	685	187	< 0.002	< 0.200	< 0.500	7.50	< 0.200	0.170	< 0.100
Gw-113-1-1	FRM	N	2026-02-10	Mean of replicates	0.050	13.2	0.014	2.82	27.2	282	2.82	2.10	3.45	1.58	0.124	7205	< 0.005	18.3	691	200	0.018	< 0.200	< 0.500	5.52	0.440	0.410	< 0.100
Gw-113-2-1	SS	N	2025-05-22	Clear and colourless	0.451	17.2	0.072	5.42	31.8	68.7	2.50	2.75	9.20	2.88	0.841	9930	< 0.005	20.4	726	165	0.021	0.220	< 0.500	4.95	0.460	3.69	< 0.100
Gw-113-2-1	NS	N	2025-08-18	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-113-2-1	SS	N	2025-11-28	Clear and colourless	0.222	1.00	0.014	6.48	35.5	56.3	2.39	2.11	9.40	3.46	0.314	9450	< 0.005	28.9	815	211	0.029	< 0.200	< 0.500	7.05	0.260	1.28	< 0.100
Gw-113-2-1	SS	N	2026-02-10	Clear and colourless	0.168	7.10	< 0.005	4.06	33.1	61.0	2.40	2.22	9.40	2.93	0.296	9660	< 0.005	20.5	811	218	0.023	< 0.200	< 0.500	5.52	0.330	0.610	< 0.100
Gw-P1	SS	N	2025-05-22	Clear, very slightly orange	0.240	347	< 0.010	3.80	19.4	280	18.0	6.90	28.0	53.3	0.091	12900	< 0.010	181	846	< 6.00	< 0.004	< 0.400	< 1.00	0.004	1.79	< 0.200	2.10
Gw-P1	NS	N	2025-09-04	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-P1	SS	N	2025-11-27	Clear and colourless	0.100	17200	0.230	17.1	19.9	84.3	13.7	4.93	215	40.0	< 0.080	21200	< 0.010	124	875	< 6.00	< 0.004	< 0.400	< 1.00	0.010	0.510	2.03	< 0.200
Gw-P1	SS	N	2026-02-20	Clear, very slightly orange	0.460	21900	0.057	5.70	15.8	223	8.95	3.25	80.8	25.5	< 0.080	18100	< 0.010	70.5	796	< 6.00	< 0.004	< 0.400	< 1.00	0.009	< 0.400	3.63	< 0.200
Gw-P2	SS	N	2025-05-22	Clear, very slightly yellow	0.170	494	1.33	5.70	23.8	228	27.1	9.82	37.8	78.1	0.165	14400	< 0.010	269	898	< 6.00	< 0.004	< 0.400	< 1.00	0.005	3.03	0.810	0.330
Gw-P2	SS	N	2025-10-08	Clear, very slightly yellow	1.20	382	0.035	2.40	23.8	251	20.1	7.98	22.0	62.5	0.155	11800	< 0.010	220	981	< 6.00	< 0.004	< 0.400	< 1.00	0.010	2.22	10.6	0.280
Gw-P2	SS	N	2025-11-27	Clear, very slightly yellow	0.790	2660	0.211	3.40	25.8	331	14.7	7.84	42.8	70.9	0.134	14800	< 0.010	236	955	< 6.00	< 0.004	< 0.400	< 1.00	0.005	3.37	1.41	0.230
Gw-P2	SS	N	2026-02-20	Clear, very slightly orange	0.580	500	0.134	4.20	22.4	268	21.8	8.60	17.4	68.1	0.129	12300	< 0.010	231	832	< 6.00	< 0.004	< 0.400	< 1.00	0.008	2.24	4.79	0.310
Gw-P3	SS	N	2025-05-22	Clear, slightly yellow	0.150	638	0.047	6.90	25.6	226	29.1	10.7	37.9	85.2	0.098	15700	< 0.010	291	945	< 6.00	< 0.004	< 0.400	< 1.00	< 0.004	3.30	1.26	0.300
Gw-P3	SS	N	2025-10-08	Clear, slightly yellow	0.630	627	0.102	4.50	27.7	237	20.2	9.17	29.8	77.3	0.141	13800	< 0.010	266	1070	< 6.00	< 0.004	< 0.400	< 1.00	0.006	2.72	4.90	0.270
Gw-P3	SS	N	2025-11-27	Clear, slightly yellow	0.690	2550	0.032	3.70	26.7	334	14.9	7.81	41.1	73.1	0.139	15900	< 0.010	243	974	< 6.00	< 0.004	< 0.400	< 1.00	0.005	3.39	1.02	0.240
Gw-P3	SS	N	2026-02-20	Clear, very slightly yellow	0.170	592	0.039	5.80	29.2	282	20.6	9.05	20.4	82.4	0.146	15400	< 0.010	281	973	< 6.00	< 0.004	< 0.400	< 1.00	0.006	2.61	1.41	0.280
Gw-P4	SS	N	2025-05-22	Clear, slightly yellow	0.540	576	0.127	6.30	24.8	213	27.3	10.5	43.0	81.4	< 0.200	14200	< 0.025	277	858	< 15.0	< 0.010	< 1.00	< 2.50	< 0.010	2.90	3.64	< 0.500
Gw-P4	SS	N	2025-10-08	Clear, slightly yellow	0.980	1040	0.164	< 1.00	30.6	744	15.9	7.29	16.9	52.5	0.135	13200	< 0.010	193	962	< 6.00	< 0.004	< 0.400	< 1.00	0.015	1.61	7.41	< 0.200
Gw-P4	SS	N	2025-11-27	Clear, slightly yellow	0.730	6420	0.045	< 1.00	31.8	989	12.3	6.34	44.4	51.8	0.107	14500	< 0.010	175	887	< 6.00	< 0.004	< 0.400	< 1.00	0.027	2.52	3.68	< 0.200
Gw-P4	SS	N	2026-02-20	Clear, very slightly orange	0.200	1940	0.030	< 1.00	35.5	865	10.4	5.96	15.8	61.1	0.114	12400	< 0.010	182	877	< 6.00	< 0.004	< 0.400	< 1.00	0.011	1.56	3.52	< 0.200
Gw-P10	SS	N	2025-05-27	Clear, very slightly yellow	0.227	304	0.007	3.33	16.9	346	6.83	3.16	6.00	29.2	0.059	12600	< 0.005	81.7	855	< 3.00	< 0.002	< 0.200	< 0.500	0.004	0.720	0.320	< 0.100
Gw-P10	SS	N	2025-10-08	Clear, very slightly yellow	0.700	396	0.105	4.60	18.6	291	6.50	3.87	15.0	30.0	< 0.080	13700	< 0.010	92.1	954	< 6.00	< 0.004	< 0.400	< 1.00	< 0.004	0.800	3.19	< 0.200
Gw-P10	SS	N	2025-11-27	Clear, very slightly yellow	0.104	1.00	0.006	< 0.500	7.26	8.30	0.286	0.137	2.40	0.635	0.125	6380	< 0.005	4.97	199	36.0	0.005	< 0.200	< 0.500	0.439	0.270	0.530	< 0.100
Gw-P10	SS	N	2026-02-20	Clear, very slightly yellow	0.324	651	0.052	2.64	15.0	361	5.29	2.81	10.1	25.7	0.059	12000	< 0.005	72.9	752	< 3.00	< 0.002	< 0.200	< 0.500	0.004	0.540	1.77	< 0.100
Gw-P11	SS	N	2025-05-27	Clear, very slightly orange	5.58	5.20	0.011	< 0.500	19.6	11.9	0.933	1.22	2.90	1.03	0.302	7320	< 0.005	10.7	513	88.1	0.003	< 0.200	< 0.500	0.379	1.46	5.29	< 0.100
Gw-P11	SS	N	2025-10-07	Clear, very slightly orange	3.25	5.00	0.083	< 0.500	20.8	6.72	1.23	0.905	5.90	1.27	0.299	8270	< 0.005	7.07	410	61.7	0.004	< 0.200	< 0.500	0.725	1.59	9.12	< 0.100
Gw-P11	SS	N	2025-11-27	Clear and colourless	4.84	30.9	0.156	< 0.500	24.2	4.28	1.48	1.01	4.30	1.48	0.696	7190	< 0.005	13.7	504	113	0.005	< 0.200	< 0.500	0.478	1.26	11.2	< 0.100
Gw-P11	SS	N	2026-02-20	Clear, very slightly orange	3.15	68.9	0.061	< 0.500	16.4	18.6	1.10	0.754	6.50	1.22	0.364	6770	< 0.005	9.50	307	70.6	0.003	< 0.200	0.910	0.280	0.980	4.76	< 0.100
Gw-P12	NS	N	2025-05-13	Dry - no water for 48 hours	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-P12	NS	N	2025-09-04	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gw-P12	SS	N	2025-11-27	Clear and colourless	7.66	57.0	0.019	< 0.500	21.3	10.00	1.23	1.52	4.30	2.06	0.394	7030	< 0.005	12.0	410	90.9	0.005	< 0.200	< 0.500	0.250	0.99	0.800	< 0.100
Gw-P12	SS	N	2026-02-20	Clear, very slightly orange	5.91	144	0.008	< 0.500	13.0	4.97	0.777	0.903	5.70	0.989	0.350	6170	< 0.005	6.11	255	47.7	0.002	< 0.200	< 0.500	0.225	0.820	0.290	< 0.100
FB	FB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FB	FB	N	2025-10-07	Clear and colourless	0.459	10.7	0.056	< 0.500	< 0.050	0.151	< 0.050	0.094	4.50	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	0.068	< 3.00	< 0.002	< 0.200	< 0.500	0.003	< 0.200	2.59	< 0.100
FB	FB	N	2025-11-14	Clear and colourless	< 0.050	1.10	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	< 0.100	< 0.100
FB	FB	N	2026-02-10	Clear and colourless	< 0.050	< 1.00	0.007	< 0.500	< 0.050	0.101	< 0.050	0.022	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	0.230	< 0.100
TB	TB	N	2025-05-07	Not sampled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TB	TB	N	2025-10-07	Clear and colourless	< 0.050	< 1.00	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020	2.10	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	< 0.100	< 0.100
TB	TB	N	2025-11-14	Clear and colourless	< 0.050	< 1.00	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	0.160	< 0.100
TB	TB	N	2026-02-10	Clear and colourless	< 0.050	< 1.00	< 0.005	< 0.500	< 0.050	< 0.050	< 0.050	< 0.020	< 2.00	< 0.050	< 0.040	< 50.0	< 0.005	< 0.050	< 0.050	< 3.00	< 0.002	< 0.200	< 0.500	< 0.002	< 0.200	< 0.100	< 0.100

Notes:

a — *Above CSR Schedule 3.2 AW Standard.*

b — *Above CSR Schedule 3.2 DW Standard.*

BC CSR — CSR-Sch3.2: BC Contaminated Site Regulation - Schedule 3.2 - Generic Numerical Water Standards, last amended October 27, 2025.

FB — Field blank.

FRM — Field replicate mean (average of field replicates).

NS — Not sampled.

SS — Single sample.

TB — Travel blank.

(1) — Aquatic Life (AW) Freshwater Standard, Column 3 in CSR-Sch3.2

(2) — Drinking Water (DW) Standard, Column 6 in CSR-Sch3.2

(3) — Standard varies with pH.

(4) — Standard varies with chloride.

(5) — Standard varies with hardness.

(6) — BC CSR Schedule 3.2 criterion for iron and manganese were not applied as directed by the Stage 8 CSR Amendments.

(7) — Standard is based on the trivalent (Cr(III)) species. Cr(III) is the most common form of chromium.

(8) — CSR Stage 13 amendments, Protocol 9, background concentration is higher than the applicable CSR DW and/or most stringent CSR AW standard. A concentration above the CSR DW or most stringent CSR AW standard but below the regional background concentration (South Vancouver Island Region) is not considered contaminated and is not highlighted as a CSR DW or AW exceedance.

Appendix H-2

Domestic Well Quality

Appendix H-2. Domestic Well Quality - 2025 to 2026

AECOM

State	Parameters	Minimum Detection Limit	Units	Criteria		013 5100 Wildview Crescent	014 237 Meadowbrook Place	012 160 Lohr Road	008 176 Lohr Road	010 184 Lohr Road	011 187 Lohr Road (FR1)	011 187 Lohr Road (FR2)	009 200 Lohr Road
				DWQ Guidelines [1]	SDWQ Guidelines [2]	July 3 2025	July 3 2025	July 3 2025	July 3 2025	July 3 2025	July 3 2025	July 3 2025	July 3 2025
---	pH (field)	0.01	pH	7.0 to 10.5 [4]		**6.81**	**6.38**	**6.87**	**6.08**	7.06	**6.36**	**6.36**	7.18
TOT	Temperature °C (field)	0.01	°C	15 [3]	15 [3]	11.6	12.6	12.7	10.9	12	12	12.1	11.3
DIS	Total dissolved solids	10	mg/L	500 [3]		180	110	160	92	180	86	80	190
TOT	Conductivity (field)	2	µS/cm			326	203	297	177	345	157	157	372
DIS	Chloride, dissolved	1	mg/L	250 [3]	250 [3]	5.4	13	14	15	15	6	5.8	16
TOT	Sodium	0.001	mg/L	200 [3]									
TOT	Nitrogen - Ammonia	0.015	mg/L			< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	0.11	0.12	< 0.015
DIS	Nitrogen - Nitrite	0.005	mg/L	1	1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.006	< 0.005	< 0.005
DIS	Nitrogen - Nitrate	0.02	mg/L	10	10	< 0.02	0.26	< 0.02	0.478	1.36	0.572	0.557	0.483
DIS	Nitrogen - Nitrite + Nitrate	0.02	mg/L	10	10	< 0.02	0.26	< 0.02	0.478	1.36	0.578	0.557	0.483
DIS	Sulphate, dissolved	1	mg/L	500 [3]	500 [3]	6.9	7.8	7.2	8	11	6.2	5.8	9.3

State	Parameters	Minimum Detection Limit	Units	Criteria		161 5648 Wallace Drive Untreated	016 5648 Wallace Drive Treated	015 255 Farmington Road	351 5455 Spotts Close	007 5436 Spotts Close	006 5435 Kiowa Road	352 27 Hartland Avenue	005 1 Hartland Ave Municipal Water
				DWQ Guidelines [1]	SDWQ Guidelines [2]	July 3 2025	July 3 2025	July 3 2025	July 7 2025	July 7 2025	July 7 2025	July 3 2025	July 3 2025
---	pH (field)	0.01	pH	7.0 to 10.5 [4]		8.2	8.19	8.97	9.36	**6.49**	**6.98**	**5.97**	7.4
TOT	Temperature °C (field)	0.01	°C	15 [3]	15 [3]	12.4	13.4	12.3	10.9	**16.7**	14.6	11.5	**17**
DIS	Total dissolved solids	10	mg/L	500 [3]		180	180	140	150	290	290	110	34
TOT	Conductivity (field)	2	µS/cm			340	341	258	247	471	518	231	62
DIS	Chloride, dissolved	1	mg/L	250 [3]	250 [3]	13	13	9.3	16	37	22	23	4.5
TOT	Sodium	0.001	mg/L	200 [3]									
TOT	Nitrogen - Ammonia	0.015	mg/L			0.026	0.026	0.081	0.026	0.015	0.015	< 0.015	0.19
DIS	Nitrogen - Nitrite	0.005	mg/L	1	1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.0124
DIS	Nitrogen - Nitrate	0.02	mg/L	10	10	< 0.02	< 0.02	< 0.02	0.172	1.47	0.059	0.869	0.154
DIS	Nitrogen - Nitrite + Nitrate	0.02	mg/L	10	10	< 0.02	< 0.02	< 0.02	0.172	1.47	0.059	0.914	0.166
DIS	Sulphate, dissolved	1	mg/L	500 [3]	500 [3]	27	28	15	14	23	12	25	< 1

State	Parameters	Minimum Detection Limit	Units	Criteria		345 400 Durrance Close	349 7048 Mark Lane (FR1)	349 7048 Mark Lane (FR2)	348 6665 Mark Lane	346 6515 Willis Point Road	--- Field Blank	--- Trip Blank
				DWQ Guidelines [1]	SDWQ Guidelines [2]	July 3 2025	July 3 2025	July 3 2025	July 3 2025	July 23 2025	July 3 2025	July 3 2025
---	pH (field)	0.01	pH	7.0 to 10.5 [4]		7.42	7.48	7.48	7.84	8.33	8.47	---
TOT	Temperature °C (field)	0.01	°C	15 [3]	15 [3]	**13.4**	12.7	12.7	12.1	14.7	18.4	---
DIS	Total dissolved solids	10	mg/L	500 [3]							< 10	< 10
TOT	Conductivity (field)	2	µS/cm			432	572	572	411	220	7.8	< 2
DIS	Chloride, dissolved	1	mg/L	250 [3]	250 [3]	4.8	31	31	20	2.4	< 1	< 1
TOT	Hardness (as CaCO3)	0.5	mg/L	200 [3]		6.13	12.3	12.8	13.2	13.8	< 50	< 50
TOT	Nitrogen - Ammonia	0.015	mg/L			< 0.015	< 0.015	0.02	< 0.015	0.02	< 0.015	0.019
DIS	Nitrogen - Nitrite	0.005	mg/L	1	1						< 0.005	< 0.005
DIS	Nitrogen - Nitrate	0.02	mg/L	10	10						< 0.02	< 0.02
DIS	Nitrogen - Nitrite + Nitrate	0.02	mg/L	10	10						< 0.02	< 0.02
DIS	Sulphate, dissolved	1	mg/L	500 [3]	500 [3]						< 1	< 1

Notes:

[1] Health Canada Guidelines for Canadian Drinking Water Quality (DWQ) - Summary Table (2025 edition).

[2] British Columbia Approved Source Drinking Water Quality Guideline (SDWQGs) (2020 edition).

[3] Limit for this parameter is an aesthetic objective (AO), not a human health objective.

[4] Limit for this parameter is an operational guideline (OG) only.

FR1 - Field replicate 1.

FR2 - Field replicate 2.

***Bold** - Sample concentrations expressed in bold exceed AO drinking water quality guidelines.*

Appendix H-3

Surface Water Quality

BC Water Quality Guidelines				BC WQG-STA (1)	6.5-9.0									25 (5)			
				BC WQG-LTC (1)										5 (5)			
BC CSR Protocol 11				AW Upper Cap Concentration (10)													
Station	Sample Type	Compliance Point (Y/N?)	Date Sampled	Parameter	pH (Field)		Conductivity (Actual - Field)		Temperature (Field)		Hardness (As $CaCO_3$)	Hardness (As $CaCO_3$)		Total Suspended Solids (TSS)		Dissolved Organic Carbon (DOC)	
				State	---		TOT		TOT		TOT	DIS		TOT		DIS	
				Unit	pH		µS/cm		°C		mg/L	mg/L		mg/L		mg/L	
				Detection Limit	0.1		2		0.1		0.5	0.5		1		0.5	
SW-N-05	NS	Y	2025-05-05	Dry	---		---		---		---	---		---		---	
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	7.07		644.0		14.40		410.0	391.5		1.60		1.60	
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	7.32		777.0		10.40		492.5	521.5	<	1.50		3.90	
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	6.71		661.0		10.40		388.5	436.5	<	1.00		2.15	
SW-N-14	NS	N	2025-05-05	No access	---		---		---		---	---		---		---	
SW-N-14	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.30 & ORP 25.7	7.43		266.0		12.20		133.0	132.0	<	1.00		1.70	
SW-N-14	SS	N	2025-12-01	Moderate Flow, clear and colourless	7.74		424.0		7.20		244.0	263.0		2.40		3.80	
SW-N-14	SS	N	2026-02-02	High flow, clear and colourless	7.37		302.0		7.80		169.0	185.0		2.80		5.00	
SW-N-15	NS	N	2025-05-05	No access	---		---		---		---	---		---		---	
SW-N-15	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.32 & ORP -10.9	7.41		220.0		12.80		85.2	86.3	<	1.00		1.10	
SW-N-15	SS	N	2025-12-01	Moderate Flow, clear and colourless	7.70		179.0		8.40		100.0	99.7		1.20		1.70	
SW-N-15	SS	N	2026-02-02	High flow, clear and colourless	7.37		133.0		6.80		72.7	77.2	<	1.00		2.10	
SW-N-16	NS	Y	2025-05-05	Dry	---		---		---		---	---		---		---	
SW-N-16	NS	Y	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-16	SS	Y	2025-12-02	Moderately high flow, clear and colourless	6.86		350.0		7.50		167.0	188.0	<	1.0		8.40	
SW-N-16	SS	Y	2026-02-03	High flow, clear and colourless	7.01		286.0		8.40		112.0	141.0	<	1.00		9.40	
SW-N-17	NS	N	2025-05-05	No access	---		---		---		---	---		---		---	
SW-N-17	NS	N	2025-09-23	Dry (muddy/ damp)	---		---		---		---	---		---		---	
SW-N-17	SS	N	2025-12-01	Moderate Flow, clear and colourless	7.45		548.0		8.00		338.0	328.0		2.40		3.40	
SW-N-17	SS	N	2026-02-02	High flow, clear and colourless	7.27		429.0		8.50		241.0	258.0	<	1.00		3.40	
SW-N-18	NS	N	2025-05-05	Not flowing	---		---		---		---	---		---		---	
SW-N-18	NS	N	2025-09-23	Not flowing	---		---		---		---	---		---		---	
SW-N-18	SS	N	2025-12-02	Moderate flow, clear and colourless	6.63		787.0		13.70		474.0	492.0		1.60		1.20	
SW-N-18	SS	N	2026-02-03	High flow, clear and colourless	6.55		646.0		12.10		368.0	422.0	<	1.00		1.50	
SW-N-19	NS	N	2025-05-05	Dry	---		---		---		---	---		---		---	
SW-N-19	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-19	SS	N	2025-12-02		7.92		371.0		7.80		196.0	195.0	<	1.00		9.20	
SW-N-19	SS	N	2026-02-03		7.12		302.0		8.70		141.0	154.0	<	1.00		11.00	
SW-N-41S1	SS	Y	2025-05-06	Low flow, clear and colorless	8.11		279.0		12.40		159.0	163.0		12.00	b	2.10	
SW-N-41S1	NS	Y	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	7.78		321.0		8.50		197.5	206.0		6.60	b	2.00	
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	7.52		235.0		9.50		142.0	155.0		8.40	b	2.50	
SW-N-41S3	SS	N	2025-05-05	Low flow, clear and colorless	7.70		280.0		9.70		117.0	120.0		2.00		1.70	
SW-N-41S3	SS	N	2025-09-23	Low flow, clear and colourless	7.92		285.0		12.80		157.0	155.0		5.60	b	2.50	
SW-N-41S3	SS	N	2025-12-02	Moderate Flow, clear and colourless	7.58		241.0		7.80		143.0	152.0	<	1.00		2.40	
SW-N-41S3	SS	N	2026-02-02	High flow, clear and colourless	7.54		164.0		8.20		92.2	98.3	<	1.00		2.70	
SW-N-41S4	SS	N	2025-05-05	Low flow, clear and colorless	7.97		163.0		14.50		71.4	78.6		2.80		3.90	
SW-N-41S4	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-41S4	SS	N	2025-12-02	Moderate Flow, clear and colourless	8.03		160.0		7.20		86.3	85.1	<	1.00		3.20	
SW-N-41S4	SS	N	2026-02-02	High flow, clear and colourless	7.71		163.0		6.40		72.5	76.9	<	1.00		3.10	
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	7.76		417.0		9.90		209.5	216.5		1.80		3.10	
SW-N-42S1	NS	Y	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-42S1	SS	Y	2025-12-02	Moderate Flow, clear and colourless	7.21		409.0		7.60		222.0	237.0		1.20		3.30	
SW-N-42S1	SS	Y	2026-02-03	High flow, clear and colourless	6.99		307.0		8.80		154.0	170.0		3.20		3.50	
SW-N-45	NS	N	2025-05-05	No access	---		---		---		---	---		---		---	
SW-N-45	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-45	SS	N	2025-12-01	Moderate Flow, clear and colourless	7.21		665.0		9.20		421.0	411.0		1.20		3.10	
SW-N-45	SS	N	2026-02-02	High flow, clear and colourless	7.24		720.0		9.50		334.0	368.0		2.00		2.60	
SW-N-54	NS	N	2025-05-05	Dry	---		---		---		---	---		---		---	
SW-N-54	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-54	SS	N	2025-12-02	Moderate flow, very slightly yellow	7.28		642.0		11.30		348.0	347.0		1.60		15.00	
SW-N-54	SS	N	2026-02-03	High flow, clear and colourless	7.43		275.0		9.20		149.0	161.0		15.00	b	10.00	
SW-N-55	NS	Y	2025-05-05	Dry	---		---		---		---	---		---		---	
SW-N-55	NS	Y	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-55	SS	Y	2025-12-02	Low flow, clear and colourless	7.20		520.0		7.70		338.0	348.0	<	1.00		3.90	
SW-N-55	SS	Y	2026-02-03	High flow, clear and colourless	7.11		186.0		8.30		93.7	105.0	<	1.00		4.90	
SW-N-56	NS	Y	2025-05-05	Dry	---		---		---		---	---		---		---	
SW-N-56	NS	Y	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-56	SS	Y	2025-12-02	Low flow, clear and colourless	7.37		242.0		7.30		138.0	141.0	<	1.00		4.30	
SW-N-56	SS	Y	2026-02-03	High flow, clear and colourless	6.29	a	409.0		8.30		231.0	261.0	<	1.00		4.40	
SW-N-57	SS	N	2025-05-05	Moderate flow, clear and colorless	6.24	a	488.0		11.40		290.0	294.0	<	1.0		1.60	
SW-N-57	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-57	NS	N	2025-12-02	Not flowing	---		---		---		---	---		---		---	
SW-N-57	NS	N	2026-02-03	Not flowing	---		---		---		---	---		---		---	
SW-N-63	SS	N	2025-05-05	Moderate flow, clear and colorless	7.17		169.0		8.80		94.4	94.6		3.60		4.70	
SW-N-63	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-63	SS	N	2025-12-01	Moderate Flow, clear and colourless	7.48		224.0		6.20		129.0	131.0		2.00		4.50	
SW-N-63	SS	N	2026-02-02	High flow, clear and colourless	6.80		164.0		7.20		84.6	95.6		1.20		4.40	
SW-N-64	SS	N	2025-05-05	Moderate flow, clear and colorless	6.79		166.0		11.20		71.8	76.7		2.80		11.0	
SW-N-64	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-64	SS	N	2025-12-01	Moderate Flow, clear very slightly yellow	7.38		220.0		5.70		74.1	77.3		2.0		6.50	
SW-N-64	SS	N	2026-02-02	High flow, clear and very slightly yellow	6.60		115.0		7.50		55.1	55.0		2.80		7.80	
SW-N-65	SS	N	2025-05-05	Moderate flow, clear and colorless	6.87		182.0		11.90		78.1	80.2		3.20		9.6	
SW-N-65	NS	N	2025-09-23	Dry (stagnant water in Tod Creek, no flow)	---		---		---		---	---		---		---	
SW-N-65	SS	N	2025-12-01	Moderate flow, clear, very slightly yellow	7.78		193.0		5.80		103.0	102.0		2.4		6.60	
SW-N-65	SS	N	2026-02-02	High flow, clear and very slightly brown	6.53		151.0		7.80		58.00	60.8		4.40		7.40	
SW-N-66	NS	N	2025-05-05	Dry	---		---		---		---	---		---		---	
SW-N-66	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-66	NS	N	2025-12-02	Dry	---		---		---		---	---		---		---	
SW-N-66	SS	N	2026-02-02	Low flow, clear and colourless	7.22		87.0		8.30		47.20	48.3	<	1.00		1.90	
SW-N-CS2	NS	N	2025-05-05	Not sampled this round	---		---		---		---	---		---		---	
SW-N-CS2	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-N-CS2	NS	N	2025-12-02	Dry	---		---		---		---	---		---		---	
SW-N-CS2	SS	N	2026-02-02	High flow, clear and colourless	7.46		141.0		8.40		75.80	81.4	<	1.00		1.60	
SW-S-03	SS	N	2025-05-06	Moderate flow, clear and colorless	7.25		319.0		13.30		123.0	123.0		5.20	b	8.80	
SW-S-03	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-S-03	SS	N	2025-12-03	Moderately high flow, clear and colourless	7.46		274.0		11.50		106.0	119.0		7	b	5.9	
SW-S-03	SS	N	2026-02-04	Moderately high flow, clear and colourless	6.78		217.0		10.10		91.6	93.5	<	1.00		4.80	
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	6.97		277.0		11.00		110.5	111.5	<	1.00		2.70	
SW-S-04	NS	Y	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	7.72		267.0		8.80		114.50	116.0	<	1		3.80	
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	7.31		153.0		8.70		66.55	68.4	<	1.2		4.15	
SW-S-12	SS	N	2025-05-06	Moderate flow, clear and colorless	7.08		288.0		15.10		152.0	156.0		13.00	b	34.00	
SW-S-12	NS	N	2025-09-23	Dry (water in the weir, not flowing over)	---		---		---		---	---		---		---	
SW-S-12	SS	N	2025-12-03	Moderate flow, clear and colourless	7.19		307.0		11.10		126.0	140.0		8.4	b	10.0	
SW-S-12	SS	N	2026-02-04	Moderately high flow, clear and colourless	6.33	a	251.0		10.30		113.0	110.0	<	1.00		5.80	
SW-S-20	NS	N	2025-05-06	Not sampled in small set - added later	---		---		---		---	---		---		---	
SW-S-20	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-S-20	SS	N	2025-12-03	Moderately low flow, clear, slightly yellow	7.91		96.0		7.40		45.1	51.3	<	1.0		11.0	
SW-S-20	SS	N	2026-02-04	Moderately high flow, clear and colourless	7.25		80.3		8.40		43.1	43.1	<	1.00		5.30	
SW-S-21	NS	N	2025-05-06	Dry	---		---		---		---	---		---		---	
SW-S-21	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-S-21	NS	N	2025-12-03	Dry	---		---		---		---	---		---		---	
SW-S-21	SS	N	2026-02-04	Moderately high flow, clear and colourless	7.56		77.0		8.20		38.1	40.8	<	1.10		5.00	
SW-S-24	SS	N	2025-05-05	Low flow, clear and colorless	7.47		355.0		12.60		146.0	149.0		1.20		3.70	
SW-S-24	NS	N	2025-09-23	Dry (no water in the weir)	---		---		---		---	---		---		---	
SW-S-24	SS	N	2025-12-03	Moderate flow, clear and colourless	7.35		297.0		8.70		129.0	131.0		2		4.50	
SW-S-24	SS	N	2026-02-04	High flow, clear and colourless	7.20		225.0		9.40		95.1	98.5	<	1.00		4.20	
SW-S-27	SS	N	2025-05-06	Low flow, clear and colorless	7.94		298.0		15.70		103.0	103.0		18.00	b	6.40	
SW-S-27	NS	N	2025-09-23	Dry	---		---		---		---	---		---		---	
SW-S-27	SS	N	2025-12-03	Moderate flow, clear and colourless	7.43		276.0		10.50		111.0	112.0		4.4		5.2	
SW-S-27	SS	N	2026-02-04	Moderately high flow, clear and colourless	7.30		226.0		9.90		93.1	92.6	<	1.00		4.80	
SW-S-52	NS	N	2025-05-06	Removed from program	---		---		---		---	---		---		---	
SW-S-52	NS	N	2025-09-23	Removed from program	---		---		---		---	---		---		---	
SW-S-52	SS	N	2025-12-01	Re-added to program	7.80		142.0		8.10		79.3	80.7	<	1		2.40	
SW-S-52	SS	N	2026-02-04		7.44		86.0		8.50		45.5	45.5	<	1.00		2.30	
SW-N-Agg Pile Drain	SS	N	2025-05-05	Low flow, clear and colorless	7.99		86.0		15.80		17.6	18.6	<	1.00		3.60	
SW-N-Agg Pile Drain	NS	N	2025-09-23	Dry (no water)	---		---		---		---	---		---		---	
SW-N-Agg Pile Drain	SS	N	2025-12-02	Low flow, clear and colourless	7.51		759.0		8.50		516.0	545.0		1.20		2.70	
SW-N-Agg Pile Drain	SS	N	2026-02-03	Low flow, clear and colourless	7.14		488.0		8.90		288.0	327.0	<	1.00		3.50	
SW-E Agg Pump	SS	N	2026-02-03	Clear and colourless	7.24		392.0		9.70		238.00	246.00	<	1.00		4.40	
SW-TB	NS	N	2025-05-06	Missed - not sampled	---		---		---		---	---		---		---	
SW-TB	TB	N	2025-09-23	Sealed blank water from BV	---		---		---		< 0.50	< 0.50	<	1.00	<	0.50	
SW-TB	TB	N	2025-12-03		---		---		---		< 0.50	< 0.50	<	1.00	<	0.50	
SW-TB	TB	N	2026-02-04	Clear and colourless	---		---		---		< 0.50	< 0.50	<	1.00	<	0.50	
SW-FB	NS	N	2025-05-06	Missed - not sampled	---		---		---		---	---		---		---	
SW-FB	FB	N	2025-09-23	Decanted on the tailgate at Hartland North	8.66	<	9.6		6.70		< 0.50	4.94	<	1.00		0.78	
SW-FB	FB	N	2025-12-03		8.84		21.0		3.10		< 0.50	< 0.50	<	1.00	<	0.50	
SW-FB	FB	N	2026-02-04	Clear and colourless	---		---		---		< 0.50	< 0.50	<	1.00	<	0.50	

Notes:

a	*Above short-term acute (STA) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
b	*Above long-term chronic (LTC) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
FB	*Field blank.*
FRM	*Field replicate mean (average of field replicates).*
NS	*Not sampled.*
SS	*Single sample.*
TB	*Travel blank.*
(1)	*British Columbia Approved Water Quality Guidelines (Criteria), Updated February 2026.*
(2)	*Guideline is pH and temperature dependent.*
(3)	*Guideline is chloride dependent.*
(4)	*Guideline is hardness dependent.*
(5)	*The TSS guidelines are "change from background" and flow condition dependent. The background TSS in the landfill are derived from station Sw-S-52.*
(6)	*Dissolved copper and nickel guidelines vary with water hardness, temperature and DOC, and calcuated using BLM*
(7)	*Guideline is pH and hardness dependent.*
(8)	*Guideline is hardness and DOC dependent.*
(9)	*Guideline is pH, hardness, and DOC dependent.*
(10)	*Upper cap concentrations for water in BC are established under Protocol 11 of the Environmental Management Act's Contaminated Sites Regulation (CSR). These concentrations are defined as maximum levels that, when exceeded, indicate potential high risks to the environment or human health.*

BC Water Quality Guidelines				BC WQG-STA (1)	600		Variable (2)		0.06-0.6 (3)		32.8					
				BC WQG-LTC (1)	150		Variable (2)		0.02-0.2 (3)		3		128-429 (4)		Variable (9)	
BC CSR Protocol 11				AW Upper Cap Concentration (10)	15,000		13,1-184		2-20		4,000		12,800-42,900			
Station	Sample Type	Compliance Point (Y/N?)	Date Sampled	Parameter	Chloride		Nitrogen - Ammonia		Nitrogen - Nitrite		Nitrogen - Nitrate		Sulphate		Aluminum	
				State	DIS		TOT		DIS		DIS		DIS		TOT	
				Unit	mg/L		mg/L		mg/L		mg/L		mg/L		µg/L	
				Detection Limit	1		0.015		0.005		0.02		1		0.5	
SW-N-05	NS	Y	2025-05-05	Dry	---		---		---		---		---		---	
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	6.3	<	0.02	<	0.01		0.22		155		39.6	
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	17.0	<	0.02	<	0.01		2.66		305		78.3	
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	8.6	<	0.02	<	0.01		1.36		260		50.1	
SW-N-14	NS	N	2025-05-05	No access	---		---		---		---		---		---	
SW-N-14	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.30 & ORP 25.7	12.0	<	0.02	<	0.01		0.26		24		13.1	
SW-N-14	SS	N	2025-12-01	Moderate Flow, clear and colourless	23.0	<	0.02	<	0.01		1.59		150		26	
SW-N-14	SS	N	2026-02-02	High flow, clear and colourless	15.0	<	0.02	<	0.01		2.97		86.0		104.0	
SW-N-15	NS	N	2025-05-05	No access	---		---		---		---		---		---	
SW-N-15	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.32 & ORP -10.9	7.3	<	0.02	<	0.01		0.14		13.0		4.8	
SW-N-15	SS	N	2025-12-01	Moderate Flow, clear and colourless	8.6	<	0.02	<	0.01		0.49		15.0		5.6	
SW-N-15	SS	N	2026-02-02	High flow, clear and colourless	7.1	<	0.02	<	0.01		0.16		9.4		14.7	
SW-N-16	NS	Y	2025-05-05	Dry	---		---		---		---		---		---	
SW-N-16	NS	Y	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-16	SS	Y	2025-12-02	Moderately high flow, clear and colourless	14.0		0.08		0.06		7.21	b	72.0		47	
SW-N-16	SS	Y	2026-02-03	High flow, clear and colourless	14.0		0.04		0.02		7.30	b	33.0		65.1	
SW-N-17	NS	N	2025-05-05	No access	---		---		---		---		---		---	
SW-N-17	NS	N	2025-09-23	Dry (muddy/ damp)	---		---		---		---		---		---	
SW-N-17	SS	N	2025-12-01	Moderate Flow, clear and colourless	31.0	<	0.02	<	0.01		1.08		200		17.5	
SW-N-17	SS	N	2026-02-02	High flow, clear and colourless	17.0		0.02	<	0.01		0.53		140		31.7	
SW-N-18	NS	N	2025-05-05	Not flowing	---		---		---		---		---		---	
SW-N-18	NS	N	2025-09-23	Not flowing	---		---		---		---		---		---	
SW-N-18	SS	N	2025-12-02	Moderate flow, clear and colourless	7.30		0.06	<	0.01		1.95		240.0		23.4	
SW-N-18	SS	N	2026-02-03	High flow, clear and colourless	6.30		0.08	<	0.01		1.08		220.0		9.3	
SW-N-19	NS	N	2025-05-05	Dry	---		---		---		---		---		---	
SW-N-19	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-19	SS	N	2025-12-02		14.00		0.04		0.04		9.59	b	78.0		14.1	
SW-N-19	SS	N	2026-02-03		16.00		0.05		0.03		9.58	b	34.0		68.6	
SW-N-41S1	SS	Y	2025-05-06	Low flow, clear and colorless	7.50	<	0.02	<	0.01		0.29		49.0		188.0	
SW-N-41S1	NS	Y	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	7.4	<	0.02	<	0.01		0.62		75.5		139.0	
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	5.95	<	0.02	<	0.01		0.42		45.0		157.0	
SW-N-41S3	SS	N	2025-05-05	Low flow, clear and colorless	9.50	<	0.02	<	0.01		0.59		22.0		20.8	
SW-N-41S3	SS	N	2025-09-23	Low flow, clear and colourless	13.0	<	0.02	<	0.01		0.08		25.0		27.9	
SW-N-41S3	SS	N	2025-12-02	Moderate Flow, clear and colourless	13.00	<	0.02	<	0.01		0.14		27.0		18.3	
SW-N-41S3	SS	N	2026-02-02	High flow, clear and colourless	7.20	<	0.02	<	0.01		0.06		19.0		39.2	
SW-N-41S4	SS	N	2025-05-05	Low flow, clear and colorless	7.70	<	0.02	<	0.01	<	0.02		8.3		6.4	
SW-N-41S4	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-41S4	SS	N	2025-12-02	Moderate Flow, clear and colourless	8.30		0.02	<	0.01	<	0.02		6.9		3.8	
SW-N-41S4	SS	N	2026-02-02	High flow, clear and colourless	7.40		0.08	<	0.01		0.05		6.8		11.9	
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	57.0	<	0.02	<	0.01		0.09		58.5		21.6	
SW-N-42S1	NS	Y	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-42S1	SS	Y	2025-12-02	Moderate Flow, clear and colourless	41.00	<	0.02	<	0.01		0.14		77.0		16	
SW-N-42S1	SS	Y	2026-02-03	High flow, clear and colourless	24.0	<	0.02	<	0.01		0.18		56.0		54.4	
SW-N-45	NS	N	2025-05-05	No access	---		---		---		---		---		---	
SW-N-45	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-45	SS	N	2025-12-01	Moderate Flow, clear and colourless	19.00	<	0.02	<	0.01		2.41		250.0		8.3	
SW-N-45	SS	N	2026-02-02	High flow, clear and colourless	12.00	<	0.02	<	0.01		0.96		210.0		65.5	
SW-N-54	NS	N	2025-05-05	Dry	---		---		---		---		---		---	
SW-N-54	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-54	SS	N	2025-12-02	Moderate flow, very slightly yellow	20.00		0.06		0.07		33.00	a b	110.0		61.7	
SW-N-54	SS	N	2026-02-03	High flow, clear and colourless	5.20		0.03		0.01		5.37	b	37.0		662.0	b
SW-N-55	NS	Y	2025-05-05	Dry	---		---		---		---		---		---	
SW-N-55	NS	Y	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-55	SS	Y	2025-12-02	Low flow, clear and colourless	6.60		0.04		0.02		1.82		270.0		24.3	
SW-N-55	SS	Y	2026-02-03	High flow, clear and colourless	6.70	<	0.02	<	0.01		0.18		42.0		32.0	
SW-N-56	NS	Y	2025-05-05	Dry	---		---		---		---		---		---	
SW-N-56	NS	Y	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-56	SS	Y	2025-12-02	Low flow, clear and colourless	12.00	<	0.02	<	0.01		0.47		68.0		18.3	
SW-N-56	SS	Y	2026-02-03	High flow, clear and colourless	4.10		0.05		0.01		1.03		210.0		46.5	
SW-N-57	SS	N	2025-05-05	Moderate flow, clear and colorless	9.00		0.30	<	0.01		0.72		110		4	
SW-N-57	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-57	NS	N	2025-12-02	Not flowing	---		---		---		---		---		---	
SW-N-57	NS	N	2026-02-03	Not flowing	---		---		---		---		---		---	
SW-N-63	SS	N	2025-05-05	Moderate flow, clear and colorless	7.70		0.04	<	0.01		0.07		18.0		47.8	
SW-N-63	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-63	SS	N	2025-12-01	Moderate Flow, clear and colourless	12.00		0.02	<	0.01		0.56		54.0		43	
SW-N-63	SS	N	2026-02-02	High flow, clear and colourless	8.00	<	0.02	<	0.01		0.63		29.0		171	b
SW-N-64	SS	N	2025-05-05	Moderate flow, clear and colorless	14.0		0.07		0.01		0.07		11.0		65	
SW-N-64	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-64	SS	N	2025-12-01	Moderate Flow, clear very slightly yellow	16.0		0.14		0.02		0.43		27.0		80	
SW-N-64	SS	N	2026-02-02	High flow, clear and very slightly yellow	11.0		0.02	<	0.01		0.28		9.3		334	b
SW-N-65	SS	N	2025-05-05	Moderate flow, clear and colorless	14.0		0.07	<	0.01		0.15		13.0		53	
SW-N-65	NS	N	2025-09-23	Dry (stagnant water in Tod Creek, no flow)	---		---		---		---		---		---	
SW-N-65	SS	N	2025-12-01	Moderate flow, clear, very slightly yellow	14.0		0.07		0.01		0.51		42.0		59	
SW-N-65	SS	N	2026-02-02	High flow, clear and very slightly brown	11.0		0.02		0.01		0.32		11.0		323	b
SW-N-66	NS	N	2025-05-05	Dry	---		---		---		---		---		---	
SW-N-66	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-66	NS	N	2025-12-02	Dry	---		---		---		---		---		---	
SW-N-66	SS	N	2026-02-02	Low flow, clear and colourless	3.7	<	0.02	<	0.01		0.11		5.4		17	
SW-N-CS2	NS	N	2025-05-05	Not sampled this round	---		---		---		---		---		---	
SW-N-CS2	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-N-CS2	NS	N	2025-12-02	Dry	---		---		---		---		---		---	
SW-N-CS2	SS	N	2026-02-02	High flow, clear and colourless	4.3	<	0.02	<	0.01		0.12		22.0		7	
SW-S-03	SS	N	2025-05-06	Moderate flow, clear and colorless	36.0		0.73		0.18		2.58		38.0		80.5	
SW-S-03	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-S-03	SS	N	2025-12-03	Moderately high flow, clear and colourless	22.0		0.18		0.04		3.16	b	42.0		302	b
SW-S-03	SS	N	2026-02-04	Moderately high flow, clear and colourless	35.0		0.99		0.04		1.93		23.0		186.0	b
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	43.0	<	0.02	<	0.01		0.36		25.0		45.2	
SW-S-04	NS	Y	2025-09-23	Dry	---		---		---		---		---		---	
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	34.5	<	0.02	<	0.01		1.14		38.5		34	
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	14.5		0.02		0.01		0.91		15.5		65	
SW-S-12	SS	N	2025-05-06	Moderate flow, clear and colorless	33.0		1.60		0.22	b	2.11		73.0		396	b
SW-S-12	NS	N	2025-09-23	Dry (water in the weir, not flowing over)	---		---		---		---		---		---	
SW-S-12	SS	N	2025-12-03	Moderate flow, clear and colourless	18.0		0.55		0.05		5.53	b	55.0		396	b
SW-S-12	SS	N	2026-02-04	Moderately high flow, clear and colourless	15.0		1.80		0.04		2.66		26.0		43.8	
SW-S-20	NS	N	2025-05-06	Not sampled in small set - added later	---		---		---		---		---		---	
SW-S-20	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-S-20	SS	N	2025-12-03	Moderately low flow, clear, slightly yellow	8.2		0.05		0.01		0.15		2.8		66	
SW-S-20	SS	N	2026-02-04	Moderately high flow, clear and colourless	4.3		0.04	<	0.01		0.02		1.8		79.2	
SW-S-21	NS	N	2025-05-06	Dry	---		---		---		---		---		---	
SW-S-21	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-S-21	NS	N	2025-12-03	Dry	---		---		---		---		---		---	
SW-S-21	SS	N	2026-02-04	Moderately high flow, clear and colourless	4.3	<	0.02	<	0.01		0.06		2.6		51.2	
SW-S-24	SS	N	2025-05-05	Low flow, clear and colorless	53.0		0.02	<	0.01		0.12		28.0		22.0	
SW-S-24	NS	N	2025-09-23	Dry (no water in the weir)	---		---		---		---		---		---	
SW-S-24	SS	N	2025-12-03	Moderate flow, clear and colourless	35.0		0.02		0.01		1.08		42.0		83	
SW-S-24	SS	N	2026-02-04	High flow, clear and colourless	23.0		0.08		0.04		1.63		25.0		52.8	
SW-S-27	SS	N	2025-05-06	Low flow, clear and colorless	36.0	<	0.02	<	0.01		1.69		25.0		633	b
SW-S-27	NS	N	2025-09-23	Dry	---		---		---		---		---		---	
SW-S-27	SS	N	2025-12-03	Moderate flow, clear and colourless	30.0		0.04		0.03		1.75		38.0		187	
SW-S-27	SS	N	2026-02-04	Moderately high flow, clear and colourless	23.0		0.29		0.08		2.44		21.0		60.7	
SW-S-52	NS	N	2025-05-06	Removed from program	---		---		---		---		---		---	
SW-S-52	NS	N	2025-09-23	Removed from program	---		---		---		---		---		---	
SW-S-52	SS	N	2025-12-01	Re-added to program	7.7	<	0.02	<	0.01		0.03		8.3		13	
SW-S-52	SS	N	2026-02-04		4.6	<	0.02	<	0.01	<	0.02		5.0		14.3	
SW-N-Agg Pile Drain	SS	N	2025-05-05	Low flow, clear and colorless	4.1		0.25	<	0.01	<	0.02	<	1.0		15.7	
SW-N-Agg Pile Drain	NS	N	2025-09-23	Dry (no water)	---		---		---		---		---		---	
SW-N-Agg Pile Drain	SS	N	2025-12-02	Low flow, clear and colourless	5.70	<	0.02	<	0.01		5.03	b	380		19	
SW-N-Agg Pile Drain	SS	N	2026-02-03	Low flow, clear and colourless	4.0	<	0.02	<	0.01		1.69		230.0		24.9	
SW-E-Agg Pump	SS	N	2026-02-03	Clear and colourless	4.60	<	0.02	<	0.01		0.80		160.0		34.4	
SW-TB	NS	N	2025-05-06	Missed - not sampled	---		---		---		---		---		---	
SW-TB	TB	N	2025-09-23	Sealed blank water from BV	< 1.00	<	0.02	<	0.01	<	0.02	<	1.0	<	0.5	
SW-TB	TB	N	2025-12-03		< 1.00	<	0.02	<	0.01	<	0.02	<	1.0	<	3.0	
SW-TB	TB	N	2026-02-04	Clear and colourless	< 1.00	<	0.02	<	0.01	<	0.02	<	1.0	<	0.5	
SW-FB	NS	N	2025-05-06	Missed - not sampled	---		---		---		---		---		---	
SW-FB	FB	N	2025-09-23	Decanted on the tailgate at Hartland North	< 1.00	<	0.02	<	0.01	<	0.02	<	1.0	<	0.5	
SW-FB	FB	N	2025-12-03		< 1.00	<	0.02	<	0.01		0.03	<	1.0	<	3.0	
SW-FB	FB	N	2026-02-04	Clear and colourless	< 1.00	<	0.02	<	0.01	<	0.02	<	1.0	<	0.5	

Notes:

a *Above short-term acute (STA) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
b *Above long-term chronic (LTC) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
FB Field blank.
FRM Field replicate mean (average of field replicates).
NS Not sampled.
SS Single sample.
TB Travel blank.
(1) British Columbia Approved Water Quality Guidelines (Criteria), Updated February 2026.
(2) Guideline is pH and temperature dependent.
(3) Guideline is chloride dependent.
(4) Guideline is hardness dependent.
(5) The TSS guidelines are "change from background" and flow condition dependent. The background TSS in the landfill are derived from station Sw-S-52.
(6) Dissolved copper and nickel guidelines vary with water hardness, temperature and DOC, and calcuated using BLM
(7) Guideline is pH and hardness dependent.
(8) Guideline is hardness and DOC dependent.
(9) Guideline is pH, hardness, and DOC dependent.
(10) Upper cap concentrations for water in BC are established under Protocol 11 of the Environmental Management Act's Contaminated Sites Regulation (CSR). These concentrations are defined as maximum levels that, when exceeded, indicate potential high risks to the environment or human health.

| BC Water Quality Guidelines | | | BC WQG-STA (1) | | |

BC Water Quality Guidelines				BC WQG-STA (1)			46,000												
				BC WQG-LTC (1)			7,600					2		0.12					
BC CSR Protocol 11				AW Upper Cap Concentration (10)			100,000			2,500-15,000		200		5-150				750-24,000	
Station	Sample Type	Compliance Point (Y/N?)	Date Sampled	Parameter	Manganese		Molybdenum		Nickel			Selenium		Silver			Sodium		Zinc
				State	TOT		TOT		TOT			TOT		TOT			TOT		TOT
				Unit	µg/L		µg/L		µg/L			µg/L		µg/L			mg/L		µg/L
				Detection Limit	0.1		0.05		0.02			0.04		0.005			0.05		1
SW-N-05	NS	Y	2025-05-05	Dry	---		---		---			---		---			---		---
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	3.49		2.92		0.70			0.30	<	0.01			5.87		2.10
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	4.82		2.46		1.04			0.43	<	0.01			7.24		4.55
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	2.4		1.03		1.07			0.47	<	0.01			5.76		3.45
SW-N-14	NS	N	2025-05-05	No access	---		---		---			---		---			---		---
SW-N-14	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.30 & ORP 25.7	21.10		0.55		0.24			0.04	<	0.01			14.10		1.04
SW-N-14	SS	N	2025-12-01	Moderate Flow, clear and colourless	2.9		0.55		0.40			0.12	<	0.01			11.60		4.10
SW-N-14	SS	N	2026-02-02	High flow, clear and colourless	16.4		0.59		0.80			0.10	<	0.01			9.52		2.90
SW-N-15	NS	N	2025-05-05	No access	---		---		---			---		---			---		---
SW-N-15	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.32 & ORP -10.9	1.69		0.41	<	0.10		<	0.04	<	0.01			4.92	<	1.00
SW-N-15	SS	N	2025-12-01	Moderate Flow, clear and colourless	0.73		0.23		0.13			0.10	<	0.01			5.73	<	1.00
SW-N-15	SS	N	2026-02-02	High flow, clear and colourless	1.40		0.24	<	0.10		<	0.04	<	0.01			4.39	<	1.00
SW-N-16	NS	Y	2025-05-05	Dry	---		---		---			---		---			---		---
SW-N-16	NS	Y	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-16	SS	Y	2025-12-02	Moderately high flow, clear and colourless	108.0		0.63		1.90			0.09	<	0.01			12.90		12.10
SW-N-16	SS	Y	2026-02-03	High flow, clear and colourless	41.4		0.57		2.40			0.10	<	0.01			11.20		7.90
SW-N-17	NS	N	2025-05-05	No access	---		---		---			---		---			---		---
SW-N-17	NS	N	2025-09-23	Dry (muddy/ damp)	---		---		---			---		---			---		---
SW-N-17	SS	N	2025-12-01	Moderate Flow, clear and colourless	11.60		1.05		0.25			0.19	<	0.01			12.60		1.30
SW-N-17	SS	N	2026-02-02	High flow, clear and colourless	6.88		0.86		0.26			0.17	<	0.01			8.89		1.20
SW-N-18	NS	N	2025-05-05	Not flowing	---		---		---			---		---			---		---
SW-N-18	NS	N	2025-09-23	Not flowing	---		---		---			---		---			---		---
SW-N-18	SS	N	2025-12-02	Moderate flow, clear and colourless	78.40		1.00		2.74			0.70	<	0.01			5.29		3.20
SW-N-18	SS	N	2026-02-03	High flow, clear and colourless	44.10		0.75		2.06			0.60	<	0.01			4.44		3.49
SW-N-19	NS	N	2025-05-05	Dry	---		---		---			---		---			---		---
SW-N-19	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-19	SS	N	2025-12-02		13.00		0.84		3.03			0.13	<	0.01			15.90		2.70
SW-N-19	SS	N	2026-02-03		4.83		0.85		3.71			0.15	<	0.01			15.20		4.40
SW-N-41S1	SS	Y	2025-05-05	Low flow, clear and colorless	126.0		0.29		0.28			0.08	<	0.01			4.89		2.80
SW-N-41S1	NS	Y	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	137.5		0.34		0.27			0.14	<	0.01			5.28		1.60
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	82.1		0.30		0.29			0.12	<	0.01			4.46		1.10
SW-N-41S3	SS	N	2025-05-05	Low flow, clear and colorless	2.94		0.31	<	0.10			0.10	<	0.01			5.37	<	1.00
SW-N-41S3	SS	N	2025-09-23	Low flow, clear and colourless	5.26		0.50		0.13			0.11	<	0.01			6.56	<	1.00
SW-N-41S3	SS	N	2025-12-02	Moderate Flow, clear and colourless	4.34		0.35		0.11			0.16	<	0.01			6.06	<	1.00
SW-N-41S3	SS	N	2026-02-02	High flow, clear and colourless	3.46		0.29		0.35			0.10	<	0.01			4.36		1.10
SW-N-41S4	SS	N	2025-05-05	Low flow, clear and colorless	12.90		0.18	<	0.10		<	0.04	<	0.01			4.50	<	1.00
SW-N-41S4	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-41S4	SS	N	2025-12-02	Moderate Flow, clear and colourless	23.30		0.20		0.11		<	0.04	<	0.01			5.52	<	1.00
SW-N-41S4	SS	N	2026-02-02	High flow, clear and colourless	28.40		0.16	<	0.10			0.04	<	0.01			4.58	<	1.00
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	26.6		0.46		0.16		<	0.04	<	0.01			12.10	<	1.00
SW-N-42S1	NS	Y	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-42S1	SS	Y	2025-12-02	Moderate Flow, clear and colourless	19.4		0.54		0.18			0.09	<	0.01			13.40		1.20
SW-N-42S1	SS	Y	2026-02-03	High flow, clear and colourless	14.00		0.55		0.18			0.09	<	0.01			10.40	<	1.00
SW-N-45	NS	N	2025-05-05	No access	---		---		---			---		---			---		---
SW-N-45	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-45	SS	N	2025-12-01	Moderate Flow, clear and colourless	5.46		2.43		0.34			0.38	<	0.01			10.30	<	1.00
SW-N-45	SS	N	2026-02-02	High flow, clear and colourless	6.71		1.53		0.59			0.32	<	0.01			7.08		2.00
SW-N-54	NS	N	2025-05-05	Dry	---		---		---			---		---			---		---
SW-N-54	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-54	SS	N	2025-12-02	Moderate flow, very slightly yellow	99.70		0.89		2.03			0.29	<	0.01			9.28		1.40
SW-N-54	SS	N	2026-02-03	High flow, clear and colourless	44.40		0.56		2.28			0.20	<	0.01			4.39		4.30
SW-N-55	NS	Y	2025-05-05	Dry	---		---		---			---		---			---		---
SW-N-55	NS	Y	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-55	SS	Y	2025-12-02	Low flow, clear and colourless	9.11		0.15		0.16			0.23	<	0.01			6.77		15.80
SW-N-55	SS	Y	2026-02-03	High flow, clear and colourless	0.92		0.13		0.29			0.06	<	0.01			5.50	<	1.00
SW-N-56	NS	Y	2025-05-05	Dry	---		---		---			---		---			---		---
SW-N-56	NS	Y	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-56	SS	Y	2025-12-02	Low flow, clear and colourless	0.14		0.18		0.19			0.05	<	0.01			7.11	<	1.00
SW-N-56	SS	Y	2026-02-03	High flow, clear and colourless	6.93		0.11		0.20			0.17	<	0.01			5.27		11.90
SW-N-57	SS	N	2025-05-05	Moderate flow, clear and colorless	30.4		0.86		1.03			0.50	<	0.01			5.33		1.70
SW-N-57	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-57	NS	N	2025-12-02	Not flowing	---		---		---			---		---			---		---
SW-N-57	NS	N	2026-02-03	Not flowing	---		---		---			---		---			---		---
SW-N-63	SS	N	2025-05-05	Moderate flow, clear and colorless	90.4		0.28		0.84			0.12	<	0.01			5.74		1.10
SW-N-63	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-63	SS	N	2025-12-01	Moderate Flow, clear and colourless	18.4		0.40		0.66			0.13	<	0.01			7.12		1.50
SW-N-63	SS	N	2026-02-02	High flow, clear and colourless	13.20		0.31		0.53			0.08	<	0.01			5.05		1.30
SW-N-64	SS	N	2025-05-05	Moderate flow, clear and colorless	251.0		0.22		1.78			0.10	<	0.01			8.72		2.00
SW-N-64	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-64	SS	N	2025-12-01	Moderate Flow, clear very slightly yellow	20.1		0.43		1.22			0.07	<	0.01			9.28		3.70
SW-N-64	SS	N	2026-02-02	High flow, clear and very slightly yellow	16.0		0.27		1.05			0.07	<	0.01			7.26		3.10
SW-N-65	SS	N	2025-05-05	Moderate flow, clear and colorless	220.0		0.22		1.66			0.13	<	0.01			8.58		2.10
SW-N-65	NS	N	2025-09-23	Dry (stagnant water in Tod Creek, no flow)	---		---		---			---		---			---		---
SW-N-65	SS	N	2025-12-01	Moderate flow, clear, very slightly yellow	19.50		0.44		0.94			0.10	<	0.01			8.24		2.40
SW-N-65	SS	N	2026-02-02	High flow, clear and very slightly brown	17.90		0.27		1.00			0.08	<	0.01			6.95		2.80
SW-N-66	NS	N	2025-05-05	Dry	---		---		---			---		---			---		---
SW-N-66	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-66	NS	N	2025-12-02	Dry	---		---		---			---		---			---		---
SW-N-66	SS	N	2026-02-02	Low flow, clear and colourless	0.24	<	0.05	<	0.10		<	0.04	<	0.01			2.50	<	1.00
SW-N-CS2	NS	N	2025-05-05	Not sampled this round	---		---		---			---		---			---		---
SW-N-CS2	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-N-CS2	NS	N	2025-12-02	Dry	---		---		---			---		---			---		---
SW-N-CS2	SS	N	2026-02-02	High flow, clear and colourless	0.21		0.08	<	0.10			0.09	<	0.01			2.89	<	1.00
SW-S-03	SS	N	2025-05-06	Moderate flow, clear and colorless	831.00		0.48		8.28			0.10		0.01			20.70		8.90
SW-S-03	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-S-03	SS	N	2025-12-03	Moderately high flow, clear and colourless	44.1		0.28		2.59			0.09	<	0.01			14.60		12.70
SW-S-03	SS	N	2026-02-04	Moderately high flow, clear and colourless	174.0		0.14		1.87			0.08	<	0.01			11.50		8.70
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	10.20		0.11		0.33		<	0.04	<	0.01			18.15		2.00
SW-S-04	NS	Y	2025-09-23	Dry	---		---		---			---		---			---		---
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	3.4		0.16		0.56			0.06	<	0.01			20.40		2.20
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	7.7		0.13		0.46			0.06	<	0.01			8.94		5.00
SW-S-12	SS	N	2025-05-06	Moderate flow, clear and colorless	3250		1.44		25.80			0.18		0.04			24.60		40.90
SW-S-12	NS	N	2025-09-23	Dry (water in the weir, not flowing over)	---		---		---			---		---			---		---
SW-S-12	SS	N	2025-12-03	Moderate flow, clear and colourless	147.0		0.20		5.31			0.09	<	0.01			14.20		14.10
SW-S-12	SS	N	2026-02-04	Moderately high flow, clear and colourless	289.0		0.12		2.57			0.08	<	0.01			11.40		8.40
SW-S-20	NS	N	2025-05-06	Not sampled in small set - added later	---		---		---			---		---			---		---
SW-S-20	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-S-20	SS	N	2025-12-03	Moderately low flow, clear, slightly yellow	7.9		0.08		0.36			0.06	<	0.01			3.08		4.00
SW-S-20	SS	N	2026-02-04	Moderately high flow, clear and colourless	5.6		0.07		0.21			0.05	<	0.01			2.85		8.00
SW-S-21	NS	N	2025-05-06	Dry	---		---		---			---		---			---		---
SW-S-21	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-S-21	NS	N	2025-12-03	Dry	---		---		---			---		---			---		---
SW-S-21	SS	N	2026-02-04	Moderately high flow, clear and colourless	0.8		0.07		0.18			0.04	<	0.01			2.81		7.60
SW-S-24	SS	N	2025-05-05	Low flow, clear and colorless	106.00		0.20		0.51			0.05	<	0.01			20.30		2.94
SW-S-24	NS	N	2025-09-23	Dry (no water in the weir)	---		---		---			---		---			---		---
SW-S-24	SS	N	2025-12-03	Moderate flow, clear and colourless	17		0.21		0.90			0.06	<	0.01			20.70		4.4
SW-S-24	SS	N	2026-02-04	High flow, clear and colourless	27.40		0.16		0.87			0.06	<	0.01			14.00		4.10
SW-S-27	SS	N	2025-05-06	Low flow, clear and colorless	223		0.39		2.54			0.08	<	0.01			19.80		15.10
SW-S-27	NS	N	2025-09-23	Dry	---		---		---			---		---			---		---
SW-S-27	SS	N	2025-12-03	Moderate flow, clear and colourless	25.7		0.26		1.43			0.07	<	0.01			19.60		8.30
SW-S-27	SS	N	2026-02-04	Moderately high flow, clear and colourless	69.5		0.16		1.43			0.08	<	0.01			15.00		6.30
SW-S-52	NS	N	2025-05-06	Removed from program	---		---		---			---		---			---		---
SW-S-52	NS	N	2025-09-23	Removed from program	---		---		---			---		---			---		---
SW-S-52	SS	N	2025-12-01	Re-added to program	1	<	0.05		0.07			0.04	<	0.01			3.99		5.2
SW-S-52	SS	N	2026-02-04		0.29	<	0.05	<	0.01		<	0.04	<	0.01			2.53	<	1.00
SW-N-Agg Pile Drain	SS	N	2025-05-05	Low flow, clear and colorless	3.38		0.07		0.25		<	0.04	<	0.01			5.54		2.20
SW-N-Agg Pile Drain	NS	N	2025-09-23	Dry (no water)	---		---		---			---		---			---		---
SW-N-Agg Pile Drain	SS	N	2025-12-02	Low flow, clear and colourless	1.73		0.88		0.90			0.36	<	0.01			7.76	<	1.00
SW-N-Agg Pile Drain	SS	N	2026-02-03	Low flow, clear and colourless	1.30		1.00		0.84			0.19	<	0.01			4.95		3.00
SW-E-Agg Pump	SS	N	2026-02-03	Clear and colourless	1.16		1.94		0.40			0.24	<	0.01			4.26	<	1.0
SW-TB	NS	N	2025-05-06	Missed - not sampled	---		---		---			---		---			---		---
SW-TB	TB	N	2025-09-23	Sealed blank water from BV	< 0.05	<	0.05	<	0.02		<	0.04	<	0.01		<	0.05	<	0.1
SW-TB	TB	N	2025-12-03		< 0.10	<	0.05	<	0.10		<	0.04	<	0.01		<	0.25	<	1.00
SW-TB	TB	N	2026-02-04	Clear and colourless	< 0.05	<	0.05		0.04		<	0.04	<	0.01		<	0.05	<	0.1
SW-FB	NS	N	2025-05-06	Missed - not sampled	---		---		---			---		---			---		---
SW-FB	FB	N	2025-09-23	Decanted on the tailgate at Hartland North	< 0.05	<	0.05	<	0.02		<	0.04	<	0.01		<	0.05	<	0.1
SW-FB	FB	N	2025-12-03		< 0.10	<	0.05	<	0.10		<	0.04	<	0.01		<	0.25	<	1.0
SW-FB	FB	N	2026-02-04	Clear and colourless	< 0.05	<	0.05	<	0.02		<	0.04	<	0.01		<	0.05	<	0.1

Notes:

a *Above short-term acute (STA) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
b *Above long-term chronic (LTC) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
FB Field blank.
FRM Field replicate mean (average of field replicates).
NS Not sampled.
SS Single sample.
TB Travel blank.
(1) British Columbia Approved Water Quality Guidelines (Criteria), Updated February 2026.
(2) Guideline is pH and temperature dependent.
(3) Guideline is chloride dependent.
(4) Guideline is hardness dependent.
(5) The TSS guidelines are "change from background" and flow condition dependent. The background TSS in the landfill are derived from station Sw-S-52.
(6) Dissolved copper and nickel guidelines vary with water hardness, temperature and DOC, and calcuated using BLM
(7) Guideline is pH and hardness dependent.
(8) Guideline is hardness and DOC dependent.
(9) Guideline is pH, hardness, and DOC dependent.
(10) Upper cap concentrations for water in BC are established under Protocol 11 of the Environmental Management Act's Contaminated Sites Regulation (CSR). These concentrations are defined as maximum levels that, when exceeded, indicate potential high risks to the environment or human health.

BC Water Quality Guidelines				BC WQG-STA (1)						Variable (4)			BC BLM (6)		350		
				BC WQG-LTC (1)						Variable (4)	Variable (4)		BC BLM (6)				Variable (8)
BC CSR Protocol 11				AW Upper Cap Concentration (10)													
Station	Sample Type	Compliance Point (Y/N?)	Date Sampled	Parameter	Aluminum		Arsenic	Boron		Cadmium	Cobalt		Copper		Iron		Lead
				State	DIS		DIS	DIS		DIS	DIS		DIS		DIS		DIS
				Unit	µg/L		µg/L	µg/L		µg/L	µg/L		µg/L		µg/L		µg/L
				Detection Limit	0.5		0.02	10		0.005	0.005		0.05		1		0.005
SW-N-05	NS	Y	2025-05-05	Dry	---		---	---		---	---		---		---		---
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	4.9		0.17	41.5		0.01	0.03		1.53	b	6.7		0.07
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	15.6		0.17	106.5		0.02	0.07		2.26	b	10.5		0.01
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	10.02		0.14	58.5		0.02	0.07		1.58	b	5.7	<	0.01
SW-N-14	NS	N	2025-05-05	No access	---		---	---		---	---		---		---		---
SW-N-14	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.30 & ORP 25.7	1.71		0.14	78.0		0.01	0.10		0.53		9.2		0.07
SW-N-14	SS	N	2025-12-01	Moderate Flow, clear and colourless	5.77		0.11	90.0		0.01	0.08		1.18		8.9		0.01
SW-N-14	SS	N	2026-02-02	High flow, clear and colourless	15.80		0.13	81.0		0.01	0.15		2.89	b	26.1		0.02
SW-N-15	NS	N	2025-05-05	No access	---		---	---		---	---		---		---		---
SW-N-15	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.32 & ORP -10.9	1.69		0.08	33.0	<	0.01	0.01		0.89	b	12.6		0.12
SW-N-15	SS	N	2025-12-01	Moderate Flow, clear and colourless	3.83		0.11	39.0		0.01	0.01		0.39		2.6		0.01
SW-N-15	SS	N	2026-02-02	High flow, clear and colourless	3.74		0.11	32.0		0.01	0.02		0.34		8.9		0.02
SW-N-16	NS	Y	2025-05-05	Dry	---		---	---		---	---		---		---		---
SW-N-16	NS	Y	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-16	SS	Y	2025-12-02	Moderately high flow, clear and colourless	12.9		0.20	131.0		0.02	0.46		6.66	b	120.0		0.02
SW-N-16	SS	Y	2026-02-03	High flow, clear and colourless	21.4		0.22	128.0		0.02	0.58	b	12.30	a b	121.0		0.02
SW-N-17	NS	N	2025-05-05	No access	---		---	---		---	---		---		---		---
SW-N-17	NS	N	2025-09-23	Dry (muddy/ damp)	---		---	---		---	---		---		---		---
SW-N-17	SS	N	2025-12-01	Moderate Flow, clear and colourless	5.2		0.10	122.0		0.01	0.07		0.73		14.6		0.01
SW-N-17	SS	N	2026-02-02	High flow, clear and colourless	10.90		0.11	100.0		0.01	0.07		0.79		19.1		0.02
SW-N-18	NS	N	2025-05-05	Not flowing	---		---	---		---	---		---		---		---
SW-N-18	NS	N	2025-09-23	Not flowing	---		---	---		---	---		---		---		---
SW-N-18	SS	N	2025-12-02	Moderate flow, clear and colourless	1.10		0.16	38.0		0.03	0.55		0.39	b	23.4		0.02
SW-N-18	SS	N	2026-02-03	High flow, clear and colourless	0.96		0.12	40.0		0.03	0.53		1.24	a b	38.2		0.01
SW-N-19	NS	N	2025-05-05	Dry	---		---	---		---	---		---		---		---
SW-N-19	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-19	SS	N	2025-12-02		13.90		0.24	127.0		0.01	0.58		11.80	b	36.7		0.02
SW-N-19	SS	N	2026-02-03		23.20		0.25	136.0		0.01	0.59	b	20.80	a b	29.2		0.02
SW-N-41S1	SS	Y	2025-05-05	Low flow, clear and colorless	6.59		0.20	24.0	<	0.01	0.04		1.27		19.8		0.01
SW-N-41S1	NS	Y	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	3.84		0.19	21.0	<	0.01	0.06		0.21		28.7		0.01
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	6.51		0.16	19.0	<	0.01	0.03		0.21		14.6	<	0.01
SW-N-41S3	SS	N	2025-05-05	Low flow, clear and colorless	4.44		0.13	33.0		0.01	0.02		0.33		6.1		0.01
SW-N-41S3	SS	N	2025-09-23	Low flow, clear and colourless	5.09		0.20	57.0		0.01	0.01		0.49		5.4		0.02
SW-N-41S3	SS	N	2025-12-02	Moderate Flow, clear and colourless	6.4		0.15	43.0	<	0.01	0.02		0.31		10.1		0.02
SW-N-41S3	SS	N	2026-02-02	High flow, clear and colourless	7.88		0.09	23.0		0.01	0.02		0.61		8.3		0.03
SW-N-41S4	SS	N	2025-05-05	Low flow, clear and colorless	1.76		0.09	35.0	<	0.01	0.02		0.39		17.5		0.01
SW-N-41S4	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-41S4	SS	N	2025-12-02	Moderate Flow, clear and colourless	6.91		0.14	48.0	<	0.01	0.02		0.19		17.8		0.03
SW-N-41S4	SS	N	2026-02-02	High flow, clear and colourless	6.63		0.11	37.0		0.01	0.03		0.31		39.0		0.06
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	6.17		0.09	41.5	<	0.01	0.06		0.33		16.9		0.04
SW-N-42S1	NS	Y	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-42S1	SS	Y	2025-12-02	Moderate Flow, clear and colourless	3.76		0.09	72.0	<	0.01	0.06		0.39		15.4		0.02
SW-N-42S1	SS	Y	2026-02-03	High flow, clear and colourless	7.72		0.07	70.0	<	0.01	0.04		0.44		19.1		0.01
SW-N-45	NS	N	2025-05-05	No access	---		---	---		---	---		---		---		---
SW-N-45	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-45	SS	N	2025-12-01	Moderate Flow, clear and colourless	5.47		0.10	120.0		0.01	0.11		1.18	b	23.0		0.01
SW-N-45	SS	N	2026-02-02	High flow, clear and colourless	9.30		0.12	80.0		0.02	0.09		1.18	b	18.3		0.02
SW-N-54	NS	N	2025-05-05	Dry	---		---	---		---	---		---		---		---
SW-N-54	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-54	SS	N	2025-12-02	Moderate flow, very slightly yellow	6.82		0.34	88.0		0.01	0.41		20.40	b	72.5		0.01
SW-N-54	SS	N	2026-02-03	High flow, clear and colourless	12.20		0.30	65.0		0.01	0.23		15.60	b	22.2		0.01
SW-N-55	NS	Y	2025-05-05	Dry	---		---	---		---	---		---		---		---
SW-N-55	NS	Y	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-55	SS	Y	2025-12-02	Low flow, clear and colourless	15.40		0.11	17.0		0.07	0.11		0.74		13.7		0.01
SW-N-55	SS	Y	2026-02-03	High flow, clear and colourless	19.30		0.09	25.0	<	0.01	0.05		0.61		10.6		0.01
SW-N-56	NS	Y	2025-05-05	Dry	---		---	---		---	---		---		---		---
SW-N-56	NS	Y	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-56	SS	Y	2025-12-02	Low flow, clear and colourless	14.40		0.09	25.0	<	0.01	0.05		0.62		4.3		0.01
SW-N-56	SS	Y	2026-02-03	High flow, clear and colourless	30.50		0.10	14.0		0.07	0.12		0.77	b	23.0		0.01
SW-N-57	SS	N	2025-05-05	Moderate flow, clear and colorless	2.3		0.12	30.0		0.01	0.13		0.51	b	7.3	<	0.01
SW-N-57	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-57	NS	N	2025-12-02	Not flowing	---		---	---		---	---		---		---		---
SW-N-57	NS	N	2026-02-03	Not flowing	---		---	---		---	---		---		---		---
SW-N-63	SS	N	2025-05-05	Moderate flow, clear and colorless	16.40		0.17	38.0		0.01	0.35		0.76		468.0	a	0.03
SW-N-63	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-63	SS	N	2025-12-01	Moderate Flow, clear and colourless	13.40		0.17	50.0		0.01	0.14		1.66	b	98.8		0.08
SW-N-63	SS	N	2026-02-02	High flow, clear and colourless	19.7		0.16	38.0		0.01	0.10		1.65	b	90.6		0.11
SW-N-64	SS	N	2025-05-05	Moderate flow, clear and colorless	26.5		0.69	35.0		0.01	1.06	b	3.16	b	1200.0	a	0.09
SW-N-64	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-64	SS	N	2025-12-01	Moderate Flow, clear very slightly yellow	26.10		0.51	43.0		0.01	0.19		2.22		270.0		0.14
SW-N-64	SS	N	2026-02-02	High flow, clear and very slightly yellow	43.50		0.35	28.0		0.01	0.16		1.90	b	250.0		0.17
SW-N-65	SS	N	2025-05-05	Moderate flow, clear and colorless	26.0		0.56	35.0		0.01	0.84	b	1.95	b	978.0	a	0.08
SW-N-65	NS	N	2025-09-23	Dry (stagnant water in Tod Creek, no flow)	---		---	---		---	---		---		---		---
SW-N-65	SS	N	2025-12-01	Moderate flow, clear, very slightly yellow	21.0		0.33	46.0		0.01	0.17		1.75		167.0		0.07
SW-N-65	SS	N	2026-02-02	High flow, clear and very slightly brown	42.4		0.33	29.0		0.01	0.15		1.82	b	227.0		0.17
SW-N-66	NS	N	2025-05-05	Dry	---		---	---		---	---		---		---		---
SW-N-66	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-66	NS	N	2025-12-02	Dry	---		---	---		---	---		---		---		---
SW-N-66	SS	N	2026-02-02	Low flow, clear and colourless	11.3		0.04	< 10.0		0.01	0.02		0.52	b	3.2		0.01
SW-N-CS2	NS	N	2025-05-05	Not sampled this round	---		---	---		---	---		---		---		---
SW-N-CS2	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-N-CS2	NS	N	2025-12-02	Dry	---		---	---		---	---		---		---		---
SW-N-CS2	SS	N	2026-02-02	High flow, clear and colourless	3.0		0.04	< 10.0		0.01	0.02		0.26		1.6		0.02
SW-S-03	SS	N	2025-05-06	Moderate flow, clear and colorless	11.00		0.36	96.0		0.06	1.75	b	8.73	b	272.0		0.28
SW-S-03	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-S-03	SS	N	2025-12-03	Moderately high flow, clear and colourless	18.1		0.32	77.0		0.02	0.19		6.76	b	31.1		0.06
SW-S-03	SS	N	2026-02-04	Moderately high flow, clear and colourless	21.4		0.17	66.0		0.02	0.47		6.70	a b	240.0		0.14
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	9.86		0.13	53.5	<	0.01	0.06		1.06	b	3.6	<	0.01
SW-S-04	NS	Y	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	13.7		0.14	92.0		0.01	0.08		1.80	b	8.3		0.02
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	24.10		0.12	46.5		0.01	0.05		1.88	b	21.1		0.01
SW-S-12	SS	N	2025-05-06	Moderate flow, clear and colorless	37.10		1.60	237.0		0.27	11.20	b	23.40	b	962.0	a	2.98
SW-S-12	NS	N	2025-09-23	Dry (water in the weir, not flowing over)	---		---	---		---	---		---		---		---
SW-S-12	SS	N	2025-12-03	Moderate flow, clear and colourless	36.8		0.63	117.0		0.05	0.49		13.50	b	61.1		0.16
SW-S-12	SS	N	2026-02-04	Moderately high flow, clear and colourless	26.00		0.26	84.0		0.02	0.79	b	8.75	a b	610.0	a	0.03
SW-S-20	NS	N	2025-05-06	Not sampled in small set - added later	---		---	---		---	---		---		---		---
SW-S-20	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-S-20	SS	N	2025-12-03	Moderately low flow, clear, slightly yellow	73.5		0.18	14.0	<	0.01	0.09		2.31		73.2		0.08
SW-S-20	SS	N	2026-02-04	Moderately high flow, clear and colourless	34.50		0.09	15.0	<	0.01	0.04		0.89		26.6		0.05
SW-S-21	NS	N	2025-05-06	Dry	---		---	---		---	---		---		---		---
SW-S-21	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-S-21	NS	N	2025-12-03	Dry	---		---	---		---	---		---		---		---
SW-S-21	SS	N	2026-02-04	Moderately high flow, clear and colourless	38.60		0.11	15.0	<	0.01	0.05		1.05		29.2		0.03
SW-S-24	SS	N	2025-05-05	Low flow, clear and colorless	9.5		0.14	96.0		0.02	0.15		1.56	b	12.9		0.01
SW-S-24	NS	N	2025-09-23	Dry (no water in the weir)	---		---	---		---	---		---		---		---
SW-S-24	SS	N	2025-12-03	Moderate flow, clear and colourless	28.1		0.20	122.0		0.02	0.10		3.00	b	18.3		0.27
SW-S-24	SS	N	2026-02-04	High flow, clear and colourless	14.2		0.18	84.0		0.01	0.11		3.20	b	32.1		0.04
SW-S-27	SS	N	2025-05-06	Low flow, clear and colorless	11.70		0.24	71.0	<	0.01	0.14		4.35	b	27.3		0.03
SW-S-27	NS	N	2025-09-23	Dry	---		---	---		---	---		---		---		---
SW-S-27	SS	N	2025-12-03	Moderate flow, clear and colourless	34.2		0.27	84.0		0.01	0.13		4.00	b	50.7		0.06
SW-S-27	SS	N	2026-02-04	Moderately high flow, clear and colourless	22.50		0.19	67.0		0.02	0.20		5.26	b	58.5		0.09
SW-S-52	NS	N	2025-05-06	Removed from program	---		---	---		---	---		---		---		---
SW-S-52	NS	N	2025-09-23	Removed from program	---		---	---		---	---		---		---		---
SW-S-52	SS	N	2025-12-01	Re-added to program	6.4		0.05	19.0	<	0.01	0.03		0.40		6.8	<	0.01
SW-S-52	SS	N	2026-02-04		9.1		0.04	18.0		0.01	0.03		0.37		7.0		0.01
SW-N-Agg Pile Drain	SS	N	2025-05-05	Low flow, clear and colorless	14.60		0.13	< 10.0	<	0.01	0.02		1.01		9.8		0.01
SW-N-Agg Pile Drain	NS	N	2025-09-23	Dry (no water)	---		---	---		---	---		---		---		---
SW-N-Agg Pile Drain	SS	N	2025-12-02	Low flow, clear and colourless	7.2		0.19	42.0		0.02	0.11		1.21		11.1		0.02
SW-N-Agg Pile Drain	SS	N	2026-02-03	Low flow, clear and colourless	7.55		0.14	34.0		0.01	0.07		1.24	b	3.0		0.01
SW-E-Agg Pump	SS	N	2026-02-03	Clear and colourless	11.60		0.13	27.0		0.01	0.05		2.09	b	7.5		0.07
SW-TB	NS	N	2025-05-06	Missed - not sampled	---		---	---		---	---		---		---		---
SW-TB	TB	N	2025-09-23	Sealed blank water from BV	< 0.50		< 0.02	< 10.0	<	0.01	< 0.01		< 0.05		< 1.0	<	0.01
SW-TB	TB	N	2025-12-03		< 0.50		< 0.02	< 10.0	<	0.01	< 0.01		< 0.05		< 1.0	<	0.01
SW-TB	TB	N	2026-02-04	Clear and colourless	< 0.50		< 0.02	< 10.0	<	0.01	< 0.01		< 0.05		< 1.0	<	0.01
SW-FB	NS	N	2025-05-06	Missed - not sampled	---		---	---		---	---		---		---		---
SW-FB	FB	N	2025-09-23	Decanted on the tailgate at Hartland North	4.70		< 0.02	< 10.0		0.01	0.01		0.40	b	12.30		0.17
SW-FB	FB	N	2025-12-03		< 0.50		< 0.02	< 10.0	<	0.01	< 0.01		0.07		22.50	<	0.01
SW-FB	FB	N	2026-02-04	Clear and colourless	< 0.50		< 0.02	< 10.0	<	0.01	< 0.01		< 0.05		< 1.00		0.01

Notes:

a *Above short-term acute (STA) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
b *Above long-term chronic (LTC) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
FB Field blank.
FRM Field replicate mean (average of field replicates).
NS Not sampled.
SS Single sample.
TB Travel blank.
(1) British Columbia Approved Water Quality Guidelines (Criteria), Updated February 2026.
(2) Guideline is pH and temperature dependent.
(3) Guideline is chloride dependent.
(4) Guideline is hardness dependent.
(5) The TSS guidelines are "change from background" and flow condition dependent. The background TSS in the landfill are derived from station Sw-S-52.
(6) Dissolved copper and nickel guidelines vary with water hardness, temperature and DOC, and calcuated using BLM
(7) Guideline is pH and hardness dependent.
(8) Guideline is hardness and DOC dependent.
(9) Guideline is pH, hardness, and DOC dependent.
(10) Upper cap concentrations for water in BC are established under Protocol 11 of the Environmental Management Act's Contaminated Sites Regulation (CSR). These concentrations are defined as maximum levels that, when exceeded, indicate potential high risks to the environment or human health.

BC Water Quality Guidelines				BC WQG-STA (1)	Variable (4)					BC BLM (6)								Variable (8)	
				BC WQG-LTC (1)	Variable (7)					BC BLM (6)								Variable (9)	
BC CSR Protocol 11				AW Upper Cap Concentration (10)															
Station	Sample Type	Compliance Point (Y/N?)	Date Sampled	Parameter	Manganese		Molybdenum			Nickel		Selenium		Silver		Sodium		Zinc	
				State	DIS		DIS			DIS		DIS		DIS		DIS		DIS	
				Unit	µg/L		µg/L			µg/L		µg/L		µg/L		mg/L		µg/L	
				Detection Limit	0.05		0.05			0.02		0.04		0.005		0.05		0.1	
SW-N-05	NS	Y	2025-05-05	Dry	---		---			---		---		---		---		---	
SW-N-05	FRM	Y	2025-09-23	Mean of replicates	0.39		2.62			0.65		0.28		< 0.01		5.87		4.08	
SW-N-05	FRM	Y	2025-12-02	Mean of replicates	1.15		2.54			0.99		0.46		< 0.01		7.68		2.57	
SW-N-05	FRM	Y	2026-02-03	Mean of replicates	1.31		1.08			1.05		0.50		< 0.01		6.50		2.94	
SW-N-14	NS	N	2025-05-05	No access	---		---			---		---		---		---		---	
SW-N-14	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.30 & ORP 25.7	21.20		0.49			0.30	<	0.04	<	0.01		13.40		4.01	
SW-N-14	SS	N	2025-12-01	Moderate Flow, clear and colourless	0.54		0.58			0.35		0.14	<	0.01		12.10		1.45	
SW-N-14	SS	N	2026-02-02	High flow, clear and colourless	2.49		0.65			0.75		0.13	<	0.01		10.60		1.26	
SW-N-15	NS	N	2025-05-05	No access	---		---			---		---		---		---		---	
SW-N-15	SS	N	2025-09-23	Low flow, clear and colourless, DO was 0.32 & ORP -10.9	1.54		0.37			0.16		0.04	<	0.01		5.19		6.18	
SW-N-15	SS	N	2025-12-01	Moderate Flow, clear and colourless	0.39		0.25			0.09		0.10	<	0.01		7.53		0.97	
SW-N-15	SS	N	2026-02-02	High flow, clear and colourless	0.51		0.27			0.07	<	0.04	<	0.01		4.83		0.14	
SW-N-16	NS	Y	2025-05-05	Dry	---		---			---		---		---		---		---	
SW-N-16	NS	Y	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-16	SS	Y	2025-12-02	Moderately high flow, clear and colourless	103.00		0.72			2.06		0.10	<	0.01		14.30		10.70	
SW-N-16	SS	Y	2026-02-03	High flow, clear and colourless	47.70		0.71			2.94		0.12	<	0.01		14.40		9.04	
SW-N-17	NS	N	2025-05-05	No access	---		---			---		---		---		---		---	
SW-N-17	NS	N	2025-09-23	Dry (muddy/ damp)	---		---			---		---		---		---		---	
SW-N-17	SS	N	2025-12-01	Moderate Flow, clear and colourless	10.20		1.10			0.20		0.18	<	0.01		12.40		0.99	
SW-N-17	SS	N	2026-02-02	High flow, clear and colourless	6.63		0.95			0.28		0.18	<	0.01		10.10		1.01	
SW-N-18	NS	N	2025-05-05	Not flowing	---		---			---		---		---		---		---	
SW-N-18	NS	N	2025-09-23	Not flowing	---		---			---		---		---		---		---	
SW-N-18	SS	N	2025-12-02	Moderate flow, clear and colourless	81.4		1.02			2.94		0.69	<	0.01		5.39		3.26	
SW-N-18	SS	N	2026-02-03	High flow, clear and colourless	50.2		0.79			2.35		0.64	<	0.01		5.38		3.20	
SW-N-19	NS	N	2025-05-05	Dry	---		---			---		---		---		---		---	
SW-N-19	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-19	SS	N	2025-12-02		13.0		0.91			3.12		0.13	<	0.01		15.90		2.67	
SW-N-19	SS	N	2026-02-03		3.5		0.85			3.70		0.14	<	0.01		15.90		4.13	
SW-N-41S1	SS	Y	2025-05-06	Low flow, clear and colorless	28.20		0.34			0.26		0.07	<	0.01		4.90		1.26	
SW-N-41S1	NS	Y	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-41S1	FRM	Y	2025-12-03	Mean of replicates	58.10		0.34			0.10		0.14	<	0.01		5.47		0.38	
SW-N-41S1	FRM	Y	2026-02-03	Mean of replicates	23.85		0.28			0.08		0.12	<	0.01		4.76		0.41	
SW-N-41S3	SS	N	2025-05-05	Low flow, clear and colorless	1.24		0.32			0.06		0.10	<	0.01		5.68		0.51	
SW-N-41S3	SS	N	2025-09-23	Low flow, clear and colourless	1.93		0.45			0.12		0.10	<	0.01		6.41		1.27	
SW-N-41S3	SS	N	2025-12-02	Moderate Flow, clear and colourless	2.78		0.38			0.09		0.16	<	0.01		6.52		0.49	
SW-N-41S3	SS	N	2026-02-02	High flow, clear and colourless	1.52		0.32			0.07		0.09	<	0.01		4.70		0.21	
SW-N-41S4	SS	N	2025-05-05	Low flow, clear and colorless	6.2		0.18			0.07	<	0.04	<	0.01		5.00		0.70	
SW-N-41S4	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-41S4	SS	N	2025-12-02	Moderate Flow, clear and colourless	20.6		0.18			0.08	<	0.04	<	0.01		5.52		1.02	
SW-N-41S4	SS	N	2026-02-02	High flow, clear and colourless	29.4		0.18			0.12		0.04	<	0.01		4.84		1.60	
SW-N-42S1	FRM	Y	2025-05-05	Mean of replicates	18.25		0.45			0.15		0.04	<	0.01		12.25		1.17	
SW-N-42S1	NS	Y	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-42S1	SS	Y	2025-12-02	Moderate Flow, clear and colourless	16.00		0.57			0.16		0.09	<	0.01		13.40		0.94	
SW-N-42S1	SS	Y	2026-02-03	High flow, clear and colourless	9.01		0.59			0.11		0.08	<	0.01		11.40		0.52	
SW-N-45	NS	N	2025-05-05	No access	---		---			---		---		---		---		---	
SW-N-45	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-45	SS	N	2025-12-01	Moderate Flow, clear and colourless	5.4		2.51			0.32		0.36	<	0.01		10.30		0.82	
SW-N-45	SS	N	2026-02-02	High flow, clear and colourless	4.7		1.62			0.52		0.35	<	0.01		7.96		1.22	
SW-N-54	NS	N	2025-05-05	Dry	---		---			---		---		---		---		---	
SW-N-54	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-54	SS	N	2025-12-02	Moderate flow, very slightly yellow	102.0		0.91			2.17		0.29	<	0.01		9.57		0.63	
SW-N-54	SS	N	2026-02-03	High flow, clear and colourless	28.9		0.59			1.53		0.18	<	0.01		4.82		0.61	
SW-N-55	NS	Y	2025-05-05	Dry	---		---			---		---		---		---		---	
SW-N-55	NS	Y	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-55	SS	Y	2025-12-02	Low flow, clear and colourless	9.4		0.16			0.16		0.24	<	0.01		6.92		16.40	
SW-N-55	SS	Y	2026-02-03	High flow, clear and colourless	0.2		0.15			0.18		0.05	<	0.01		6.18		0.45	
SW-N-56	NS	Y	2025-05-05	Dry	---		---			---		---		---		---		---	
SW-N-56	NS	Y	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-56	SS	Y	2025-12-02	Low flow, clear and colourless	0.1		0.19			0.20		0.06	<	0.01		7.37		0.43	
SW-N-56	SS	Y	2026-02-03	High flow, clear and colourless	6.7		0.12			0.17		0.17	<	0.01		5.93		13.60	
SW-N-57	SS	N	2025-05-05	Moderate flow, clear and colorless	31.3		0.86			1.01		0.48	<	0.01		5.37		1.70	
SW-N-57	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-57	NS	N	2025-12-02	Not flowing	---		---			---		---		---		---		---	
SW-N-57	NS	N	2026-02-03	Not flowing	---		---			---		---		---		---		---	
SW-N-63	SS	N	2025-05-05	Moderate flow, clear and colorless	89.60		0.31			0.77		0.10	<	0.01		5.83		0.66	
SW-N-63	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-63	SS	N	2025-12-01	Moderate Flow, clear and colourless	18.30		0.43			0.67		0.12	<	0.01		7.51		3.35	
SW-N-63	SS	N	2026-02-02	High flow, clear and colourless	13.40		0.35			0.51		0.09	<	0.01		5.89		2.74	
SW-N-64	SS	N	2025-05-05	Moderate flow, clear and colorless	288.0	b	0.26			1.88		0.07		0.01		9.46		3.18	
SW-N-64	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-64	SS	N	2025-12-01	Moderate Flow, clear very slightly yellow	21.30		0.48			1.20		0.07	<	0.01		10.00		3.60	
SW-N-64	SS	N	2026-02-02	High flow, clear and very slightly yellow	15.30		0.27			0.83		0.05	<	0.01		7.54		1.88	
SW-N-65	SS	N	2025-05-05	Moderate flow, clear and colorless	236.0		0.23			1.68		0.11		0.01		8.99		2.39	
SW-N-65	NS	N	2025-09-23	Dry (stagnant water in Tod Creek, no flow)	---		---			---		---		---		---		---	
SW-N-65	SS	N	2025-12-01	Moderate flow, clear, very slightly yellow	19.10		0.43			0.87		0.10	<	0.01		8.36		2.25	
SW-N-65	SS	N	2026-02-02	High flow, clear and very slightly brown	15.20		0.30			0.80		0.07	<	0.01		7.35		1.89	
SW-N-66	NS	N	2025-05-05	Dry	---		---			---		---		---		---		---	
SW-N-66	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-66	NS	N	2025-12-02	Dry	---		---			---		---		---		---		---	
SW-N-66	SS	N	2026-02-02	Low flow, clear and colourless	0.12	<	0.05			0.03		0.05	<	0.01		2.65		0.77	
SW-N-CS2	NS	N	2025-05-05	Not sampled this round	---		---			---		---		---		---		---	
SW-N-CS2	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-N-CS2	NS	N	2025-12-02	Dry	---		---			---		---		---		---		---	
SW-N-CS2	SS	N	2026-02-02	High flow, clear and colourless	0.07		0.08			0.02		0.09	<	0.01		3.09		0.22	
SW-S-03	SS	N	2025-05-06	Moderate flow, clear and colorless	779.0	b	0.50			7.88	b	0.08		0.01		19.70		7.50	
SW-S-03	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-S-03	SS	N	2025-12-03	Moderately high flow, clear and colourless	40.4		0.28			2.19		0.10	<	0.01		16.30		7.0	
SW-S-03	SS	N	2026-02-04	Moderately high flow, clear and colourless	173.0		0.17			1.78		0.07	<	0.01		11.30		10.9	
SW-S-04	FRM	Y	2025-05-05	Mean of replicates	1.19		0.12			0.25		0.04	<	0.01		18.65		1.41	
SW-S-04	NS	Y	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-S-04	FRM	Y	2025-12-03	Mean of replicates	0.64		0.17			0.55		0.06	<	0.01		19.80		2.57	
SW-S-04	FRM	Y	2026-02-04	Mean of replicates	2.25		0.12			0.40		0.05	<	0.01		9.07		4.04	
SW-S-12	SS	N	2025-05-06	Moderate flow, clear and colorless	3180.0	b	1.53			25.50	b	0.18		0.01		25.10		30.90	
SW-S-12	NS	N	2025-09-23	Dry (water in the weir, not flowing over)	---		---			---		---		---		---		---	
SW-S-12	SS	N	2025-12-03	Moderate flow, clear and colourless	148.0		0.20			5.85		0.10	<	0.01		15.60		9.7	
SW-S-12	SS	N	2026-02-04	Moderately high flow, clear and colourless	296.0		0.10			2.55		0.07	<	0.01		11.60		7.75	
SW-S-20	NS	N	2025-05-06	Not sampled in small set - added later	---		---			---		---		---		---		---	
SW-S-20	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-S-20	SS	N	2025-12-03	Moderately low flow, clear, slightly yellow	8.9		0.10			0.43		0.06	<	0.01		3.58		5.7	
SW-S-20	SS	N	2026-02-04	Moderately high flow, clear and colourless	4.9		0.07			0.17	<	0.04	<	0.01		2.77		8.23	
SW-S-21	NS	N	2025-05-06	Dry	---		---			---		---		---		---		---	
SW-S-21	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-S-21	NS	N	2025-12-03	Dry	---		---			---		---		---		---		---	
SW-S-21	SS	N	2026-02-04	Moderately high flow, clear and colourless	0.4		0.08			0.19		0.11	<	0.01		2.98		7.45	b
SW-S-24	SS	N	2025-05-05	Low flow, clear and colorless	100.0		0.22			0.49	<	0.04	<	0.01		21.50		2.97	
SW-S-24	NS	N	2025-09-23	Dry (no water in the weir)	---		---			---		---		---		---		---	
SW-S-24	SS	N	2025-12-03	Moderate flow, clear and colourless	5.69		0.23			0.98		0.06	<	0.01		21.30		16.50	
SW-S-24	SS	N	2026-02-04	High flow, clear and colourless	22.30		0.16			0.85		0.07	<	0.01		14.40		3.77	
SW-S-27	SS	N	2025-05-06	Low flow, clear and colorless	2.5		0.40			1.14		0.07	<	0.01		20.20		1.74	
SW-S-27	NS	N	2025-09-23	Dry	---		---			---		---		---		---		---	
SW-S-27	SS	N	2025-12-03	Moderate flow, clear and colourless	7.9		0.27			1.20		0.07	<	0.01		20.70		4.0	
SW-S-27	SS	N	2026-02-04	Moderately high flow, clear and colourless	62.4		0.16			1.37		0.05	<	0.01		14.50		8.37	
SW-S-52	NS	N	2025-05-06	Removed from program	---		---			---		---		---		---		---	
SW-S-52	NS	N	2025-09-23	Removed from program	---		---			---		---		---		---		---	
SW-S-52	SS	N	2025-12-01	Re-added to program	0.33	<	0.05			0.07		0.04	<	0.005		3.66		5.67	
SW-S-52	SS	N	2026-02-04		0.62	<	0.05			0.06	<	0.04	<	0.01		2.51		1.52	
SW-N-Agg Pile Drain	SS	N	2025-05-05	Low flow, clear and colorless	1.06		0.15			0.23	<	0.04	<	0.01		3.58		1.83	
SW-N-Agg Pile Drain	NS	N	2025-09-23	Dry (no water)	---		---			---		---		---		---		---	
SW-N-Agg Pile Drain	SS	N	2025-12-02	Low flow, clear and colourless	1.7		0.93			0.92		0.39	<	0.01		8.11		1.25	
SW-N-Agg Pile Drain	SS	N	2026-02-03	Low flow, clear and colourless	0.88		1.09			0.73		0.20	<	0.01		5.43		0.58	
SW-E-Agg Pump	SS	N	2026-02-03	Clear and colourless	0.57		2.04			0.44		0.24	<	0.01		4.51		4.05	
SW-TB	NS	N	2025-05-06	Missed - not sampled	---		---			---		---		---		---		---	
SW-TB	TB	N	2025-09-23	Sealed blank water from BV	< 0.05		< 0.05			< 0.02		< 0.04		< 0.01		< 0.05		< 0.10	
SW-TB	TB	N	2025-12-03		< 0.05		< 0.05			< 0.02		< 0.04		< 0.01		< 0.05		< 0.10	
SW-TB	TB	N	2026-02-04	Clear and colourless	< 0.05		< 0.05			< 0.02		< 0.04		< 0.01		< 0.05		< 0.10	
SW-FB	NS	N	2025-05-06	Missed - not sampled	---		---			---		---		---		---		---	
SW-FB	FB	N	2025-09-23	Decanted on the tailgate at Hartland North	1.02	<	0.05			0.21	<	0.04	<	0.01		0.53		7.34	a b
SW-FB	FB	N	2025-12-03		0.20	<	0.05			0.02	<	0.04	<	0.01	<	0.05		0.17	b
SW-FB	FB	N	2026-02-04	Clear and colourless	< 0.05	<	0.05		<	0.02	<	0.04	<	0.01	<	0.05		0.49	a

Notes:

a *Above short-term acute (STA) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
b *Above long-term chronic (LTC) British Columbia Water Quality Guideline for Aquatic Life Water Use (AW).*
FB Field blank.
FRM Field replicate mean (average of field replicates).
NS Not sampled.
SS Single sample.
TB Travel blank.
(1) British Columbia Approved Water Quality Guidelines (Criteria), Updated February 2026.
(2) Guideline is pH and temperature dependent.
(3) Guideline is chloride dependent.
(4) Guideline is hardness dependent.
(5) The TSS guidelines are "change from background" and flow condition dependent. The background TSS in the landfill are derived from station Sw-S-52.
(6) Dissolved copper and nickel guidelines vary with water hardness, temperature and DOC, and calcuated using BLM
(7) Guideline is pH and hardness dependent.
(8) Guideline is hardness and DOC dependent.
(9) Guideline is pH, hardness, and DOC dependent.
(10) Upper cap concentrations for water in BC are established under Protocol 11 of the Environmental Management Act's Contaminated Sites Regulation (CSR). These concentrations are defined as maximum levels that, when exceeded, indicate potential high risks to the environment or human health.

Appendix H-4

Monthly Leachate Quality Data – Hartland Valve Chamber

Appendix H-4. Monthly Leachate Quality Data - Hartland Valve Chamber 2025-2026

State	Parameter	Minimum Detection Limit	Unit	Sewer Use Criteria		Hartland Valve Chamber SS	Hartland Valve Chamber FR1	Hartland Valve Chamber FR2	Hartland Valve Chamber FRM	Hartland Valve Chamber SS	Hartland Valve Chamber SS	Hartland Valve Chamber FR1	Hartland Valve Chamber FR2	Hartland Valve Chamber FRM	Hartland Valve Chamber SS
				min	max	8-Apr-2025	22-May-2025	22-May-2025	22-May-2025	20-Jun-2025	18-Jul-2025	15-Aug-2025	15-Aug-2025	15-Aug-2025	22-Sep-2025
CONVENTIONALS															
TOT	Total Sulphide	0.0018	mg/L	---	1	0.0250	0.0670	0.0580	0.0625	0.1500	0.2100	0.4900	0.4200	0.4600	0.3500
DISS	Dissolved Sulphide	0.009	mg/L	---	1	0.0180	0.0540	0.0760	0.0650	0.0940	0.1900	0.1500	0.1500	0.1500	0.3400
TOT	Total Suspended Solids	1	mg/L	---	350	37.0	43.0	54.0	48.5	28.0	250.0	470.0 a	720.0 a	595.0 a	29.0
TOT	Biochemical Oxygen Demand	2	mg/L	---	500	12.0	24.0	22.0	23.0	25.0	12.0	380.0	340.0	360.0	34.0
TOT	Chemical Oxygen Demand	10	mg/L	---	1,000	414.0	662.0	602.0	632.0	570.0	1240.0 a	1180.0 a	1210.0 a	1195.0 a	830.0
DISS	Chloride	1	mg/L	---	1,500	210.0	320.0	320.0	320.0	330.0	380.0	390.0	390.0	390.0	520.0
DISS	Sulphate	1	mg/L	---	1,500	150.0	36.0	23.0	29.5	24.0	12.0	27.0	34.0	30.5	< 1.0
TOT	Oil & Grease, Total	1	mg/L	---	100	< 1.30	< 2.50	< 2.50	< 2.50	1.00	1.40	1.20	4.60	2.90	< 1.00
TOT	Oil & Grease, Mineral	2	mg/L	---	15	< 2.00	< 5.00	< 5.00	< 5.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00
TOT	Strong Acid Dissociable Cyanide	0.0005	mg/L	---	1	0.0119	0.0160	0.0148	0.0154	0.0217	0.0146	0.0171	0.0182	0.0177	0.0150
TOT	Weak Acid Dissociable Cyanide	0.0005	mg/L	---	1	0.0048	0.0066	0.0056	0.0061	0.0105	0.0039	0.0082	0.0100	0.0091	0.0040
TOT	Phenols	0.015	mg/L	---	1	0.012	< 0.010	< 0.008	< 0.009	0.014	< 0.021	0.030	0.029	0.295	0.016
TOT	Ammonia	1.5	mg/L	---	---	180.0	220.0	260.0	240.0	310.0	330.0	310.0	310.0	310.0	370.0
TOT	Nitrite	0.005	mg/L	---	---	0.721	0.152	0.149	0.151	0.052	< 0.500	2.470	2.300	2.385	< 0.500
TOT	Nitrate	0.02	mg/L	---	---	8.81	10.40	10.30	10.35	0.48	< 2.00	3.60	22.90	13.25	< 2.00
TOT	pH	0.01	pH	5.5	11	8.21	8.16	8.16	8.16	8.11	8.72	8.66	8.66	8.66	8.15
TOT	Conductivity	0.1	µS/cm	---	---	1782.0	2780.0	2780.0	2780.0	1694.0	1927.0	1798.0	1798.0	1798.0	1895.0
TOT	Temperature	0.1	°C	---	---	16.2	14.5	14.5	14.5	17.1	18.2	19.8	19.8	19.8	18.7
TOT	Dissolved Oxygen	0.01	mg/L	---	---	2.2	1.2	1	1.21	2.19	2.21	2.86	2.86	2.86	2.16
TOT	Oxidation-Reduction Potential	1	mV	---	---	112.7	124.0	124.0	124.0	104.1	116.3	114.2	114.2	114.2	120.4
METALS															
TOT	Arsenic	0.04	µg/L	---	400	10.30	9.52	9.85	9.69	13.80	15.20	15.60	15.60	15.60	17.60
TOT	Cadmium	0.01	µg/L	---	300	0.05	0.06	0.07	0.07	0.05	0.07	0.06	0.05	0.05	0.03
TOT	Chromium	0.2	µg/L	---	4,000	64.3	68.5	71.7	70.1	63.0	79.3	62.9	68.7	65.8	124.0
TOT	Cobalt	0.02	µg/L	---	5,000	10.10	12.90	13.10	13.00	15.00	14.20	15.50	15.80	15.65	21.20
TOT	Copper	0.2	µg/L	---	1,000	13.60	11.90	12.40	12.15	9.36	12.00	13.80	13.60	13.70	6.75
TOT	Iron	10	µg/L	---	50,000	1720	1870	1930	1900	2630	2200	1480	1610	1545	2650
TOT	Lead	0.04	µg/L	---	1,000	1.14	0.95	0.99	0.97	0.85	0.73	0.87	0.85	0.86	0.90
TOT	Manganese	0.2	µg/L	---	5,000	410.0	438.0	450.0	444.0	419.0	357.0	388.0	390.0	389.0	482.0
TOT	Mercury	0.019	µg/L	---	20	< 0.0095	< 0.0095	< 0.0095	< 0.0095	0.0110	0.0135	< 0.0095	< 0.0095	< 0.0095	< 0.0095
TOT	Molybdenum	0.1	µg/L	---	5,000	2.81	2.45	2.74	2.60	0.84	2.45	1.06	1.29	1.18	2.23
TOT	Nickel	0.2	µg/L	---	3,000	28.70	36.50	37.30	36.90	42.00	41.70	47.50	49.00	48.25	64.50
TOT	Selenium	0.08	µg/L	---	300	0.59	0.46	0.52	0.49	0.47	0.47	0.41	0.42	0.42	0.61
TOT	Sodium	0.5	mg/L	---	---	215.0	262.0	270.0	266.0	338.0	322.0	373.0	383.0	378.0	484.0
TOT	Silver	0.02	µg/L	---	500	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	0.01	0.02	0.02	< 0.05
TOT	Zinc	2	µg/L	---	3,000	33.80	23.10	23.10	23.10	16.80	23.20	32.20	28.90	30.55	20.10
POLYCYCLIC AROMATIC HYDROCARBONS															
TOT	Total PAH	0.01	µg/L	---	50	6.40	7.90	7.10	7.50	7.90	13.00	8.60	9.70	9.15	11.00
TOT	Acenaphthene	0.01	µg/L	---	---	1.80	1.70	1.70	1.70	1.30	1.30	1.00	1.00	1.00	1.60
TOT	Acenaphthylene	0.01	µg/L	---	---	0.02	0.07	0.07	0.07	0.02	0.05	< 0.10	< 0.10	< 0.10	0.01
TOT	Anthracene	0.01	µg/L	---	---	0.29	0.97	0.75	0.86	0.48	0.56	0.36	0.46	0.41	0.44
TOT	Benzo(a)anthracene	0.01	µg/L	---	---	0.14	0.16	0.13	0.15	0.10	0.49	0.29	0.34	0.32	0.24
TOT	Benzo(a)pyrene	0.005	µg/L	---	---	0.027	0.035	0.028	0.032	0.024	0.100	0.074	0.089	0.082	0.072
TOT	Benzo(b,j)fluoranthene	0.01	µg/L	---	---	0.04	0.06	0.05	0.06	0.04	0.20	0.11	0.10	0.11	0.12
TOT	Benzo(g,h,i)perylene	0.02	µg/L	---	---	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.20	< 0.20	< 0.20	0.03
TOT	Benzo(k)fluoranthene	0.01	µg/L	---	---	0.02	0.02	0.02	0.02	0.02	0.06	< 0.10	< 0.10	< 0.10	0.04
TOT	Chrysene	0.01	µg/L	---	---	0.11	0.18	0.16	0.17	0.11	0.52	0.29	0.36	0.33	0.27
TOT	Dibenzo(a,h)anthracene	0.02	µg/L	---	---	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.20	< 0.20	< 0.20	0.03
TOT	Fluoranthene	0.01	µg/L	---	---	1.00	1.20	1.10	1.15	0.84	3.00	1.30	1.60	1.45	1.70
TOT	Fluorene	0.01	µg/L	---	---	1.10	1.30	1.30	1.30	0.92	1.30	0.83	0.92	0.88	1.30
TOT	Indeno(1,2,3-c,d)pyrene	0.02	µg/L	---	---	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.20	< 0.20	< 0.20	0.04
TOT	Naphthalene	0.01	µg/L	---	---	0.18	0.12	0.09	0.11	1.70	0.52	1.70	1.70	1.70	1.00
TOT	Phenanthrene	0.01	µg/L	---	---	0.44	0.82	0.74	0.78	1.10	1.90	1.20	1.40	1.30	2.00
TOT	Pyrene	0.01	µg/L	---	---	0.61	0.81	0.72	0.77	0.58	1.90	0.90	1.10	1.00	1.20
BTEX															
DISS	Benzene	0.4	µg/L	---	100	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
DISS	Toluene	0.4	µg/L	---	200	0.57	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	15.00	16.00	15.50	22.00
DISS	Ethylbenzene	0.4	µg/L	---	200	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
DISS	Xylenes	0.4	µg/L	---	200	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40

Notes:

a - Exceeded maximum allowable value specified in CRD Sewer Use Bylaw 2922.

FR1 - Field replicate 1.

FR2 - Field replicate 2.

FRM - Field replicate mean (average of field replicates).

SS - Single sample.

Appendix H-4. Monthly Leachate Quality Data - Hartland Valve Chamber 2025-2026

AECOM

State	Parameter	Minimum Detection Limit	Unit	Sewer Use Criteria		Hartland Valve Chamber SS	Hartland Valve Chamber FR1	Hartland Valve Chamber FR2	Hartland Valve Chamber FRM	Hartland Valve Chamber SS	Hartland Valve Chamber SS	Hartland Valve Chamber FR1	Hartland Valve Chamber FR2	Hartland Valve Chamber FRM	Hartland Valve Chamber SS
				min	max	31-Oct-2025	26-Nov-2025	26-Nov-2025	26-Nov-2025	18-Dec-2025	15-Jan-2026	11-Feb-2026	11-Feb-2026	11-Feb-2026	10-Mar-2026
CONVENTIONALS															
TOT	Total Sulphide	0.0018	mg/L	---	1	0.0790	0.0350	0.0420	0.0390	0.0030	0.0051	0.0450	0.1100	0.0650	0.0910
DISS	Dissolved Sulphide	0.009	mg/L	---	1	0.0430	0.0280	0.0270	0.0275	< 0.0018	0.0051	0.0660	0.0690	0.0675	0.0330
TOT	Total Suspended Solids	1	mg/L	---	350	35.0	35.0	38.0	36.5	4.4	2.0	31.0	31.0	31.0	46.0
TOT	Biochemical Oxygen Demand	2	mg/L	---	500	12.0	53.0	60.0	56.5	2.0	12.0	43.0	47.0	45.0	40.0
TOT	Chemical Oxygen Demand	10	mg/L	---	1,000	493.0	508.0	523.0	515.5	16.0	122.0	642.0	662.0	652.0	549.0
DISS	Chloride	1	mg/L	---	1,500	290.0	240.0	240.0	240.0	14.0	36.0	300.0	290.0	295.0	280.0
DISS	Sulphate	1	mg/L	---	1,500	110.0	160.0	150.0	155.0	410.0	140.0	37.0	25.0	31.0	38.0
TOT	Oil & Grease, Total	1	mg/L	---	100	< 1.30	< 1.00	1.00	1.00	< 1.00	< 1.00	1.20	2.00	1.60	< 1.00
TOT	Oil & Grease, Mineral	2	mg/L	---	15	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00
TOT	Strong Acid Dissociable Cyanide	0.0005	mg/L	---	1	0.0152	0.0131	0.0115	0.0123	< 0.0025	0.0052	0.0180	0.0091	0.0136	0.0157
TOT	Weak Acid Dissociable Cyanide	0.0005	mg/L	---	1	0.0071	0.0084	0.0060	0.0072	< 0.0025	0.0055	0.0080	0.0032	0.0086	0.0051
TOT	Phenols	0.015	mg/L	---	1	0.500	0.029	0.020	0.025	0.000	0.500	0.018	0.018	0.018	0.017
TOT	Ammonia	1.5	mg/L	---	---	240.0	160.0	230.0	195.0	8.1	37.0	280.0	280.0	280.0	230.0
TOT	Nitrite	0.005	mg/L	---	---	1.070	0.014	0.016	0.015	0.081	0.159	0.117	0.116	0.117	1.280
TOT	Nitrate	0.02	mg/L	---	---	6.40	< 0.02	< 0.02	< 0.02	4.18	0.66	0.98	0.97	0.98	5.29
TOT	pH	0.01	pH	5.5	11	7.66	8.11	8.11	8.11	8.10	8.34	8.24	8.24	8.24	8.15
TOT	Conductivity	0.1	µS/cm	---	---	4988.0	4765.0	4765.0	4765.0	3280.0	1437.0	1538.0	1538.0	769.0	1625.0
TOT	Temperature	0.1	°C	---	---	18.2	17.9	17.9	17.9	16.7	16.3	16.8	16.8	16.8	16.2
TOT	Dissolved Oxygen	0.01	mg/L	---	---	0.79	0.24	0.24	0.24	0.18	2.11	2.21	2.21	1.11	2.15
TOT	Oxidation-Reduction Potential	1	mV	---	---	0.0	81.2	81.2	81.2	75.2	108.1	110.1	110.1	55.1	109.1
METALS															
TOT	Arsenic	0.04	µg/L	---	400	11.70	11.40	11.20	11.30	1.06	2.58	11.30	11.30	11.30	10.70
TOT	Cadmium	0.01	µg/L	---	300	0.07	0.08	0.06	0.07	0.01	0.02	0.09	0.09	0.09	0.07
TOT	Chromium	0.2	µg/L	---	4,000	61.6	60.5	58.2	59.4	1.7	8.5	74.6	76.0	75.3	68.6
TOT	Cobalt	0.02	µg/L	---	5,000	13.10	13.30	12.70	13.00	1.43	2.05	11.90	12.50	12.20	11.90
TOT	Copper	0.2	µg/L	---	1,000	14.80	15.80	15.00	15.40	3.26	3.16	10.90	11.60	11.25	12.20
TOT	Iron	10	µg/L	---	50,000	2340	2170	2130	2150	111	860	2180	2230	2205	2240
TOT	Lead	0.04	µg/L	---	1,000	1.68	1.85	1.75	1.80	0.06	0.23	1.23	1.28	1.26	1.24
TOT	Manganese	0.2	µg/L	---	5,000	491.0	546.0	525.0	535.5	359.0	248.0	609.0	643.0	626.0	554.0
TOT	Mercury	0.019	µg/L	---	20	0.0040	< 0.0095	< 0.0095	< 0.0095	< 0.0019	0.0030	< 0.0190	0.0290	0.0240	0.0114
TOT	Molybdenum	0.1	µg/L	---	5,000	4.51	2.84	2.70	2.77	1.22	0.76	2.62	2.29	2.46	2.80
TOT	Nickel	0.2	µg/L	---	3,000	33.90	30.80	30.00	30.40	2.29	4.95	34.10	35.70	34.90	32.00
TOT	Selenium	0.08	µg/L	---	300	0.44	0.46	0.42	0.44	1.39	0.40	0.59	0.64	0.61	0.62
TOT	Sodium	0.5	mg/L	---	---	525.0	229.0	217.0	223.0	225.0	34.6	283.0	293.0	288.0	255.0
TOT	Silver	0.02	µg/L	---	500	< 0.02	< 0.02	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.05	< 0.04	< 0.02
TOT	Zinc	2	µg/L	---	3,000	19.70	20.00	19.30	19.65	3.20	3.90	23.10	23.20	23.15	19.90
POLYCYCLIC AROMATIC HYDROCARBONS															
TOT	Total PAH	0.01	µg/L	---	50	11.00	13.00	12.00	12.50	0.66	3.90	30.00	34.00	32.00	19.00
TOT	Acenaphthene	0.01	µg/L	---	---	2.50	2.10	2.20	2.15	0.13	0.70	5.10	5.70	5.40	4.80
TOT	Acenaphthylene	0.01	µg/L	---	---	0.05	0.03	0.03	0.03	< 0.01	0.02	0.07	0.07	0.07	0.08
TOT	Anthracene	0.01	µg/L	---	---	0.35	0.42	0.43	0.43	0.05	0.10	0.76	0.93	0.85	1.40
TOT	Benzo(a)anthracene	0.01	µg/L	---	---	0.07	0.16	0.15	0.16	0.02	0.04	0.07	0.09	0.08	0.11
TOT	Benzo(a)pyrene	0.005	µg/L	---	---	0.018	0.065	0.050	0.058	0.005	0.009	0.018	0.021	0.020	0.030
TOT	Benzo(b,j)fluoranthene	0.01	µg/L	---	---	0.03	0.10	0.08	0.09	0.01	< 0.01	0.02	0.03	0.02	0.03
TOT	Benzo(g,h,i)perylene	0.02	µg/L	---	---	< 0.02	0.04	0.03	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
TOT	Benzo(k)fluoranthene	0.01	µg/L	---	---	0.01	0.06	0.03	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
TOT	Chrysene	0.01	µg/L	---	---	0.08	0.18	0.15	0.17	0.02	0.04	0.09	0.09	0.09	0.12
TOT	Dibenzo(a,h)anthracene	0.02	µg/L	---	---	< 0.02	0.04	< 0.02	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
TOT	Fluoranthene	0.01	µg/L	---	---	0.60	1.10	1.10	1.10	0.14	0.33	0.70	0.88	0.79	1.10
TOT	Fluorene	0.01	µg/L	---	---	1.70	1.50	1.50	1.50	0.07	0.43	3.00	3.40	3.20	2.80
TOT	Indeno(1,2,3-c,d)pyrene	0.02	µg/L	---	---	< 0.02	0.03	0.02	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
TOT	Naphthalene	0.01	µg/L	---	---	2.30	2.70	2.50	2.60	0.04	1.20	12.00	13.00	12.50	1.60
TOT	Phenanthrene	0.01	µg/L	---	---	1.60	1.80	1.80	1.80	0.05	0.38	3.20	3.70	3.45	3.40
TOT	Pyrene	0.01	µg/L	---	---	0.40	0.69	0.69	0.69	0.08	0.19	0.42	0.57	0.50	0.64
BTEX															
DISS	Benzene	0.4	µg/L	---	100	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	0.54
DISS	Toluene	0.4	µg/L	---	200	1.50	1.00	1.20	1.10	< 0.40	0.47	1.60	1.50	1.55	2.50
DISS	Ethylbenzene	0.4	µg/L	---	200	< 0.40	0.59	0.58	0.59	< 0.40	< 0.40	0.93	0.86	0.90	0.74
DISS	Xylenes	0.4	µg/L	---	200	1.00	3.30	3.40	3.35	< 0.40	0.49	3.50	3.40	3.45	2.90

Notes:

a *- Exceeded maximum allowable value specified in CRD Sewer Use Bylaw 2922.*

FR1 - Field replicate 1.

FR2 - Field replicate 2.

FRM - Field replicate mean (average of field replicates).

SS - Single sample.

Appendix H-5

Quarterly Leachate Quality – Trace Organics

Appendix H-5. Quarterly Leachate Quality - Trace Organics 2025-2026

AECOM

State	Parameters	Minimum Detection Limit	Units	Sewer Use Criteria		Hartland Valve Chamber	Hartland Valve Chamber	Hartland Valve Chamber	Hartland Valve Chamber	Hartland Valve Chamber	Hartland Valve Chamber
						FR1	FR2	FRM	SS	SS	SS
				min	max	22-May-2025	22-May-2025	22-May-2025	28-Jul-2025	31-Oct-2025	15-Jan-2026
CHLORINATED PHENOLS											
TOT	Chlorinated Phenols (total)	0.41	µg/L	---	50	0.31	0.26	0.285	< 5	< 0.5	< 0.41
TOT	Total Dichlorophenols	0.22	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.22
TOT	Total Monochlorophenols	0.09	µg/L	---	---	0.31	0.26	0.285	< 4	< 0.4	0.22
TOT	Total Nonchlorinated Phenols	1.6	µg/L	---	---	< 10	< 10	< 10	< 500	< 10	9.3
TOT	Total Phenolic Compounds	0.17	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.17
TOT	Total Tetrachlorophenols	0.17	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.24
TOT	Total Trichlorophenols	0.24	µg/L	---	---	< 0.08	< 0.08	< 0.08	< 4	< 0.4	0.22
TOT	2-Chlorophenol	0.05	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	0.13
TOT	2,4 + 2,5 Dichlorophenol	0.1	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.1
TOT	2,4,6-Trichlorophenol	0.1	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.1
TOT	Pentachlorophenol	0.1	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.1
TOT	2,3,4,5-Tetrachlorophenol	0.1	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.1
TOT	2,3,4,6-Tetrachlorophenol	0.1	µg/L	---	---	< 0.1	< 0.1	< 0.1	< 5	< 0.5	< 0.1

Notes:
FR1 - Field replicate 1.
FR2 - Field replicate 2.
FRM - Field replicate mean (average of field replicates).
SS - Single sample.

Appendix H-6

Quarterly Leachate Quality – Phase 2 Cleanout

Appendix H-6. Quarterly Leachate Quality - Phase 2 Cleanout 2025-2026

No samples were collected from the Phase 2 Cleanout in 2025-26 due to ongoing maintenance.

Appendix H-7

Quarterly Leachate Quality – North Purge Wells

Appendix H-7. Quarterly Leachate Quality - North Purge Wells 2025-2026

AECOM

State	Parameters	Minimum Detection Limit	Units	Sewer Use Criteria		North Purge Well System	North Purge Well System	North Purge Well System		North Purge Well System	
						NS (1)	NS (2)	SS		SS	
				min	max	Q2 2025	Q3 2025	5-Dec-2025		10-Mar-2026	
CONVENTIONALS											
TOT	Total Sulphide	0.0018	mg/L	---	1	---	---	0.035		0.028	
TOT	Total Suspended Solids	1	mg/L	---	350	---	---	32		12	
TOT	Biochemical Oxygen Demand	2	mg/L	---	500	---	---	12		14	
TOT	Chemical Oxygen Demand	10	mg/L	---	1,000	---	---	197		266	
DISS	Chloride	1	mg/L	---	1,500	---	---	220		260	
DISS	Sulphate	1	mg/L	---	1,500	---	---	56		8.8	
TOT	Oil & Grease, Total	1	mg/L	---	100	---	---	4.5	<	1	
TOT	Oil & Grease, Mineral	2	mg/L	---	15	---	---	2	<	2	
TOT	Strong Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.0025		0.00644	
TOT	Weak Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.0042		0.00233	
TOT	Phenols	0.015	mg/L	---	1	---	---	0.02		0.005	
TOT	Ammonia	1.5	mg/L	---	---	---	---	160		160	
TOT	Nitrite	0.005	mg/L	---	---	---	---	0.005	<	0.05	
TOT	Nitrate	0.02	mg/L	---	---	---	---	0.02	<	0.2	
TOT	pH	0.01	pH	5.5	11	---	---	8.62		8.87	
TOT	Conductivity	0.1	µS/cm	---	---	---	---	3681		987	
TOT	Temperature	0.1	°C	---	---	---	---	15.1		13.7	
TOT	Dissolved Oxygen	0.01	mg/L	---	---	---	---	7.8		2.16	
TOT	Oxidation-Reduction Potential	1	mV	---	---	---	---	65.2		101.3	
METALS											
TOT	Arsenic	0.04	µg/L	---	400	---	---	6.64		5	
TOT	Cadmium	0.01	µg/L	---	300	---	---	0.015	<	0.01	
TOT	Chromium	0.2	µg/L	---	4,000	---	---	7.37		10.7	
TOT	Cobalt	0.02	µg/L	---	5,000	---	---	5.27		5.92	
TOT	Copper	0.2	µg/L	---	1,000	---	---	4.56		3.43	
TOT	Iron	10	µg/L	---	50,000	---	---	13400		8200	
TOT	Lead	0.04	µg/L	---	1,000	---	---	0.147		0.136	
TOT	Manganese	0.2	µg/L	---	5,000	---	---	1030		1240	
TOT	Mercury	0.019	µg/L	---	20	---	---	0.0034		0.0042	
TOT	Molybdenum	0.1	µg/L	---	5,000	---	---	0.98		1	
TOT	Nickel	0.2	µg/L	---	3,000	---	---	13.3		14.9	
TOT	Selenium	0.08	µg/L	---	300	---	---	0.182		0.28	
TOT	Silver	0.02	µg/L	---	500	---	---	0.02	<	0.02	
TOT	Zinc	2	µg/L	---	3,000	---	---	2	<	2	
BTEX											
DISS	Benzene	0.4	µg/L	---	100	---	---	0.4	<	0.4	
DISS	Toluene	0.4	µg/L	---	200	---	---	2.2		2.7	
DISS	Ethylbenzene	0.4	µg/L	---	200	---	---	3.1		4.7	
DISS	Xylenes	0.4	µg/L	---	200	---	---	16		15	

Notes:

NS - Not sampled.

SS - Single sample.

(1) Sampling not completed due to scheduling error.

(2) Samples destroyed during transport.

Appendix H-8

Quarterly Leachate Quality – Controlled Waste Drainage

Appendix H-8. Quarterly Leachate Quality - Controlled Waste Drainage 2025-2026

AECOM

State	Parameters	Minimum Detection Limit	Units	Sewer Use Criteria		Controlled Waste Ditch	Controlled Waste Ditch	Controlled Waste Ditch		Controlled Waste Ditch
						NS (1)	NS (2)	SS		SS
				min	max	Q2 2025	Q3 2025	5-Dec-2025		10-Mar-2026
CONVENTIONALS										
TOT	Total Sulphide	0.0018	mg/L	---	1	---	---	0.18		0.13
TOT	Total Suspended Solids	1	mg/L	---	350	---	---	180		28
TOT	Biochemical Oxygen Demand	2	mg/L	---	500	---	---	79		91
TOT	Chemical Oxygen Demand	10	mg/L	---	1,000	---	---	386		774
DISS	Chloride	1	mg/L	---	1,500	---	---	260		390
DISS	Sulphate	1	mg/L	---	1,500	---	---	5.5	<	1
TOT	Oil & Grease, Total	1	mg/L	---	100	---	---	2.5	<	1
TOT	Oil & Grease, Mineral	2	mg/L	---	15	---	---	< 2	<	2
TOT	Strong Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.0093		0.0188
TOT	Weak Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.003		0.00618
TOT	Phenols	0.015	mg/L	---	1	---	---	0.046		0.047
TOT	Ammonia	1.5	mg/L	---	---	---	---	270		430
TOT	Nitrite	0.005	mg/L	---	---	---	---	2.57		2.54
TOT	Nitrate	0.02	mg/L	---	---	---	---	1.24		3.5
TOT	pH	0.01	pH	5.5	11	---	---	9.12		8.38
TOT	Conductivity	0.1	µS/cm	---	---	---	---	3945		3780
TOT	Temperature	0.1	°C	---	---	---	---	14.9		16.2
TOT	Dissolved Oxygen	0.01	mg/L	---	---	---	---	0.72		3.78
TOT	Oxidation-Reduction Potential	1	mV	---	---	---	---	130.4		122.1
METALS										
TOT	Arsenic	0.04	µg/L	---	400	---	---	3.66		14.9
TOT	Cadmium	0.01	µg/L	---	300	---	---	0.079		0.033
TOT	Chromium	0.2	µg/L	---	4,000	---	---	33.3		84.8
TOT	Cobalt	0.02	µg/L	---	5,000	---	---	13.4		14.5
TOT	Copper	0.2	µg/L	---	1,000	---	---	8.17		5.56
TOT	Iron	10	µg/L	---	50,000	---	---	13200		3030
TOT	Lead	0.04	µg/L	---	1,000	---	---	0.93		1.3
TOT	Manganese	0.2	µg/L	---	5,000	---	---	1660		945
TOT	Mercury	0.019	µg/L	---	20	---	---	0.0071		0.012
TOT	Molybdenum	0.1	µg/L	---	5,000	---	---	1.44		1.96
TOT	Nickel	0.2	µg/L	---	3,000	---	---	33.4		38
TOT	Selenium	0.08	µg/L	---	300	---	---	0.437		0.79
TOT	Silver	0.02	µg/L	---	500	---	---	0.022		0.05
TOT	Zinc	2	µg/L	---	3,000	---	---	102		46.5
BTEX										
DISS	Benzene	0.4	µg/L	---	100	---	---	< 0.4		0.98
DISS	Toluene	0.4	µg/L	---	200	---	---	1.4		15
DISS	Ethylbenzene	0.4	µg/L	---	200	---	---	< 0.4		14
DISS	Xylenes	0.4	µg/L	---	200	---	---	< 0.4		70

Notes:

NS - Not sampled.

SS - Single sample.

(1) Sampling not completed due to scheduling error.

(2) Samples destroyed during transport.

Appendix H-9

Quarterly Leachate Quality – South Purge Wells

Appendix H-9. Quarterly Leachate Quality - South Purge Wells - 2025-2026

AECOM

State	Parameters	Minimum Detection Limit	Units	Sewer Use Criteria		South Purge Wells	South Purge Wells	South Purge Wells		South Purge Wells
						NS (1)	NS (2)	SS (3)		SS
				min	max	Q2 2025	Q3 2025	15-Jan-2026		10-Mar-2026
CONVENTIONALS										
TOT	Total Sulphide	0.0018	mg/L	---	1	---	---	< 0.0018		0.017
TOT	Total Suspended Solids	1	mg/L	---	350	---	---	56		50
TOT	Biochemical Oxygen Demand	2	mg/L	---	500	---	---	2		4.1
TOT	Chemical Oxygen Demand	10	mg/L	---	1,000	---	---	73		44
DISS	Chloride	1	mg/L	---	1,500	---	---	52		64
DISS	Sulphate	1	mg/L	---	1,500	---	---	3.6	<	1
TOT	Oil & Grease, Total	1	mg/L	---	100	---	---	< 1	<	1
TOT	Oil & Grease, Mineral	2	mg/L	---	15	---	---	< 2	<	2
TOT	Strong Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.0032		0.00154
TOT	Weak Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.0029	<	0.0005
TOT	Phenols	0.015	mg/L	---	1	---	---	0.013	<	0.0015
TOT	Ammonia	1.5	mg/L	---	---	---	---	31		34
TOT	Nitrite	0.005	mg/L	---	---	---	---	< 0.005		0.0118
TOT	Nitrate	0.02	mg/L	---	---	---	---	0.022	<	0.02
TOT	pH	0.01	pH	5.5	11	---	---	8.87		7.98
TOT	Conductivity	0.1	µS/cm	---	---	---	---	987		921
TOT	Temperature	0.1	°C	---	---	---	---	13.7		11.2
TOT	Dissolved Oxygen	0.01	mg/L	---	---	---	---	2.16		2.1
TOT	Oxidation-Reduction Potential	1	mV	---	---	---	---	101.3		107.1
METALS										
TOT	Arsenic	0.04	µg/L	---	400	---	---	4.18		6.29
TOT	Cadmium	0.01	µg/L	---	300	---	---	0.039	<	0.01
TOT	Chromium	0.2	µg/L	---	4,000	---	---	0.59		1.05
TOT	Cobalt	0.02	µg/L	---	5,000	---	---	0.99		1.31
TOT	Copper	0.2	µg/L	---	1,000	---	---	0.28		0.28
TOT	Iron	10	µg/L	---	50,000	---	---	19700		19900
TOT	Lead	0.04	µg/L	---	1,000	---	---	0.205		0.198
TOT	Manganese	0.2	µg/L	---	5,000	---	---	213		259
TOT	Mercury	0.019	µg/L	---	20	---	---	< 0.0019	<	0.0019
TOT	Molybdenum	0.1	µg/L	---	5,000	---	---	7.18		10.1
TOT	Nickel	0.2	µg/L	---	3,000	---	---	2.92		3.7
TOT	Selenium	0.08	µg/L	---	300	---	---	< 0.08		0.128
TOT	Silver	0.02	µg/L	---	500	---	---	< 0.02	<	0.02
TOT	Zinc	2	µg/L	---	3,000	---	---	3.1		4.3
BTEX										
DISS	Benzene	0.4	µg/L	---	100	---	---	< 0.4	<	0.4
DISS	Toluene	0.4	µg/L	---	200	---	---	< 0.4	<	0.4
DISS	Ethylbenzene	0.4	µg/L	---	200	---	---	< 0.4	<	0.4
DISS	Xylenes	0.4	µg/L	---	200	---	---	< 0.4		0.49

Notes:

NS - Not sampled.

SS - Single sample.

(1) Sampling not completed due to scheduling error.

(2) Samples destroyed during transport.

(3) Unable to collect sample during Q4 2025. Sample collected the following month.

Appendix H-10

Quarterly Leachate Quality – West Face Drainage

Appendix H-10. Quarterly Leachate Quality - West Face Drainage 2025-2026

AECOM

State	Parameters	Minimum Detection Limit	Units	Sewer Use Criteria		West Face Drainage	West Face Drainage	West Face Drainage		West Face Drainage	
						NS (1)	NS (2)	SS		SS	
				min	max	Q2 2025	Q3 2025	31-Oct-2025		10-Mar-2026	
CONVENTIONALS											
TOT	Total Sulphide	0.0018	mg/L	---	1	---	---	<	0.009	0.051	
TOT	Total Suspended Solids	1	mg/L	---	350	---	---		49	46	
TOT	Biochemical Oxygen Demand	2	mg/L	---	500	---	---		55	120	
TOT	Chemical Oxygen Demand	10	mg/L	---	1,000	---	---		880	1790	a
DISS	Chloride	1	mg/L	---	1,500	---	---		420	700	
DISS	Sulphate	1	mg/L	---	1,500	---	---		340	210	
TOT	Oil & Grease, Total	1	mg/L	---	100	---	---		2.1	1.6	
TOT	Oil & Grease, Mineral	2	mg/L	---	15	---	---	<	2	< 2	
TOT	Strong Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---		0.0251	0.0114	
TOT	Weak Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---		0.0092	0.0051	
TOT	Phenols	0.015	mg/L	---	1	---	---		0.042	0.075	
TOT	Ammonia	1.5	mg/L	---	---	---	---		440	640	
TOT	Nitrite	0.005	mg/L	---	---	---	---		1.05	4.15	
TOT	Nitrate	0.02	mg/L	---	---	---	---		15.8	27.3	
TOT	pH	0.01	pH	5.5	11	---	---		8.61	8.2	
TOT	Conductivity	0.1	µS/cm	---	---	---	---		2022	3780	
TOT	Temperature	0.1	°C	---	---	---	---		21.2	16.2	
TOT	Dissolved Oxygen	0.01	mg/L	---	---	---	---		2.11	3.78	
TOT	Oxidation-Reduction Potential	1	mV	---	---	---	---		72.1	102.9	
METALS											
TOT	Arsenic	0.04	µg/L	---	400	---	---		21.9	34.3	
TOT	Cadmium	0.01	µg/L	---	300	---	---		0.059	0.272	
TOT	Chromium	0.2	µg/L	---	4,000	---	---		118	210	
TOT	Cobalt	0.02	µg/L	---	5,000	---	---		19.1	32.4	
TOT	Copper	0.2	µg/L	---	1,000	---	---		8.51	62.9	
TOT	Iron	10	µg/L	---	50,000	---	---		1460	2260	
TOT	Lead	0.04	µg/L	---	1,000	---	---		1.1	2.9	
TOT	Manganese	0.2	µg/L	---	5,000	---	---		138	324	
TOT	Mercury	0.019	µg/L	---	20	---	---	<	0.0095	0.0123	
TOT	Molybdenum	0.1	µg/L	---	5,000	---	---		3.83	5.23	
TOT	Nickel	0.2	µg/L	---	3,000	---	---		55.6	95	
TOT	Selenium	0.08	µg/L	---	300	---	---		0.88	1.61	
TOT	Silver	0.02	µg/L	---	500	---	---	<	0.05	< 0.1	
TOT	Zinc	2	µg/L	---	3,000	---	---		27	59	
BTEX											
DISS	Benzene	0.4	µg/L	---	100	---	---	<	0.4	1.1	
DISS	Toluene	0.4	µg/L	---	200	---	---		0.63	4.6	
DISS	Ethylbenzene	0.4	µg/L	---	200	---	---	<	0.4	1.9	
DISS	Xylenes	0.4	µg/L	---	200	---	---	<	0.4	6.8	

Notes:

a - Exceeded maximum allowable value specified in CRD Sewer Use Bylaw 2922.

NS - Not sampled.

SS - Single sample.

(1) Sampling not completed due to scheduling error.

(2) Samples destroyed during transport.

Appendix H-11

Quarterly Leachate Quality – Cell 3 Pipe Outlet

Appendix H-11. Quarterly Leachate Quality - Cell 3 Pipe Outlet 2025-2026

State	Parameters	Minimum Detection Limit	Units	Sewer Use Criteria		Cell 3 Pipe Outlet	Cell 3 Pipe Outlet	Cell 3 Pipe Outlet		Cell 3 Pipe Outlet	
						NS (1)	NS (2)	SS		SS	
				min	max	Q2 2025	Q3 2025	31-Oct-2025		10-Mar-2026	
CONVENTIONALS											
TOT	Total Sulphide	0.0018	mg/L	---	1	---	---	0.037		0.13	
TOT	Total Suspended Solids	1	mg/L	---	350	---	---	78		110	
TOT	Biochemical Oxygen Demand	2	mg/L	---	500	---	---	130		130	
TOT	Chemical Oxygen Demand	10	mg/L	---	1,000	---	---	1350	a	1320	a
DISS	Chloride	1	mg/L	---	1,500	---	---	480		490	
DISS	Sulphate	1	mg/L	---	1,500	---	---	320		5.4	
TOT	Oil & Grease, Total	1	mg/L	---	100	---	---	5.1		< 2.1	
TOT	Oil & Grease, Mineral	2	mg/L	---	15	---	---	< 2		< 4.2	
TOT	Strong Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.0267		0.0249	
TOT	Weak Acid Dissociable Cyanide	0.0005	mg/L	---	1	---	---	0.0092		0.00688	
TOT	Phenols	0.015	mg/L	---	1	---	---	0.11		0.12	
TOT	Ammonia	1.5	mg/L	---	---	---	---	490		520	
TOT	Nitrite	0.005	mg/L	---	---	---	---	1.21		< 0.05	
TOT	Nitrate	0.02	mg/L	---	---	---	---	7.9		< 0.2	
TOT	pH	0.01	pH	5.5	11	---	---	8.92		8.51	
TOT	Conductivity	0.1	µS/cm	---	---	---	---	24164		49355	
TOT	Temperature	0.1	°C	---	---	---	---	21.4		20.5	
TOT	Dissolved Oxygen	0.01	mg/L	---	---	---	---	3.16		1.33	
TOT	Oxidation-Reduction Potential	1	mV	---	---	---	---	88.1		107.1	
METALS											
TOT	Arsenic	0.04	µg/L	---	400	---	---	42.1		35.2	
TOT	Cadmium	0.01	µg/L	---	300	---	---	0.269		0.173	
TOT	Chromium	0.2	µg/L	---	4,000	---	---	202		161	
TOT	Cobalt	0.02	µg/L	---	5,000	---	---	38.5		20.5	
TOT	Copper	0.2	µg/L	---	1,000	---	---	40.8		18.6	
TOT	Iron	10	µg/L	---	50,000	---	---	2180		5340	
TOT	Lead	0.04	µg/L	---	1,000	---	---	4.54		3.4	
TOT	Manganese	0.2	µg/L	---	5,000	---	---	1290		894	
TOT	Mercury	0.019	µg/L	---	20	---	---	< 0.0095		0.0124	
TOT	Molybdenum	0.1	µg/L	---	5,000	---	---	4.48		1.08	
TOT	Nickel	0.2	µg/L	---	3,000	---	---	80.3		54.5	
TOT	Selenium	0.08	µg/L	---	300	---	---	1.18		0.87	
TOT	Silver	0.02	µg/L	---	500	---	---	0.054		< 0.05	
TOT	Zinc	2	µg/L	---	3,000	---	---	70		52.9	
BTEX											
DISS	Benzene	0.4	µg/L	---	100	---	---	0.79		1.3	
DISS	Toluene	0.4	µg/L	---	200	---	---	4.4		19	
DISS	Ethylbenzene	0.4	µg/L	---	200	---	---	1.4		4.5	
DISS	Xylenes	0.4	µg/L	---	200	---	---	7		18	

Notes:

a *- Exceeded maximum allowable value specified in CRD Sewer Use Bylaw 2922.*

NS - Not sampled.

SS - Single sample.

(1) Sampling not completed due to scheduling error.

(2) Samples destroyed during transport.

Appendix H-12

Quarterly Leachate Quality – Emerging Contaminants

Appendix H-12. Quarterly Leachate Quality - Emerging Contaminants 2025-2026

AECOM

State	Parameter	Minimum Detection Limit	Units	Sewer Use Criteria		Hartland Valve Chamber	Hartland Valve Chamber	Hartland Valve Chamber	Hartland Valve Chamber
						SS	NS (1)	SS	SS
				min	max	22-May-2025	Q3 2025	31-Oct-2025	15-Jan-2026
EMERGING CONTAMINANTS									
TOT	1-Methylnaphthalene	0.01	µg/L	---	---	0.30	---	1.00	0.26
TOT	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	7	ng/L	---	---	4.0	---	< 4.0	< 4.0
TOT	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) (F-53B Minor)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	2,3,4,5-tetrachlorophenol	0.5	µg/L	---	---	0.10	---	< 0.50	< 0.25
TOT	2-Chloronaphthalene	0.25	µg/L	---	---	< 0.25	---	< 0.25	< 0.25
TOT	2-Methylnaphthalene	0.01	µg/L	---	---	0.08	---	0.78	0.28
TOT	2H2H3H3H-Perfluorooctanoic acid (2H2H3H3H PFOA)	4	ng/L	---	---	4900	---	7400	< 640
TOT	3:3 Fluorotelomer carboxylic acid (3:3 FTCA)	100	ng/L	---	---	77	---	110	10
TOT	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4	ng/L	---	---	110	---	88	10
TOT	7:3 Fluorotelomer carboxylic acid (7:3 FTCA)	4	ng/L	---	---	< 1200	---	570	< 44
TOT	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4	ng/L	---	---	< 17.0	---	< 4.0	< 4.0
TOT	8:2 Fluorotelomer unsaturated carboxylic acid (8:2 FTUCA)	2	ng/L	---	---	< 119.0	---	< 2.0	< 2.0
TOT	Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS) (F53B Major)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Bis(2-Chloroethoxy)Methane	0.25	µg/L	---	---	0.43	---	< 0.25	< 0.25
TOT	Bis(2-Chloroethyl)Ether	0.25	µg/L	---	---	< 0.25	---	< 0.25	< 0.25
TOT	Bis(2-Chloroisopropyl)Ether	0.25	µg/L	---	---	< 0.25	---	< 0.25	< 0.25
TOT	Bis(2-Ethylhexyl)Phthalate	5	µg/L	---	---	< 5.0	---	< 5.0	< 5.0
TOT	Butylbenzyl Phthalate	2.5	µg/L	---	---	< 2.5	---	< 2.5	< 2.5
TOT	Di-N-Butyl Phthalate	5	µg/L	---	---	< 25	---	< 25	< 25
TOT	Di-N-Octyl Phthalate	0.25	µg/L	---	---	< 0.56	---	< 0.25	< 0.25
TOT	Dimethyl Phthalate	0.25	µg/L	---	---	< 0.25	---	0.38	< 0.25
TOT	N-methyl perfluorooctane sulfonamide (MeFOSA)	4	ng/L	---	---	< 4.0	---	< 4.0	< 4.0
TOT	N-methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	4	ng/L	---	---	280	---	180	< 54
TOT	N-ethyl perfluorooctane sulfonamide (N-EtFOSA)	4	ng/L	---	---	< 4.0	---	< 4.0	4.0
TOT	N-ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	4	ng/L	---	---	< 170	---	140	< 37
TOT	N-ethyl perfluorooctane sulfonamidoethanol (N-EtFOSE)	4	ng/L	---	---	< 4.0	---	< 4.0	< 4.0
TOT	N-methyl perfluorooctane sulfonamide, linear isomer (N-MeFOSA)	4	ng/L	---	---	< 6.9	---	< 4.0	< 4.3
TOT	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	4	ng/L	---	---	< 4.0	---	< 4.0	< 4.0
TOT	Perfluoro-3-methoxypropanoic acid (PFMOPrA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluoro-4-methoxybutanoic acid (PFMBA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluorobutanoic acid (PFBA)	2	ng/L	---	---	< 620	---	690	64
TOT	Perfluorobutanesulfonic acid (PFBS)	2	ng/L	---	---	770	---	680	650
TOT	Perfluorodecanoic acid (PFDA)	2	ng/L	---	---	95	---	55	27
TOT	Perfluorododecanoic acid (PFDoA)	2	ng/L	---	---	5.0	---	< 2.0	< 2.3
TOT	Perfluorodecanesulfonic acid (PFDS)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluoro-2-ethoxyethane sulfonic acid (PFEESA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluoro-4-ethylcyclohexane sulfonate (PFEtCHxS)	2	ng/L	---	---	< 4.0	---	< 2.0	< 2.0
TOT	Perfluoroheptanoic acid (PFHpA)	2	ng/L	---	---	< 230	---	230	< 33
TOT	Perfluoroheptanesulfonic acid (PFHpS)	2	ng/L	---	---	< 2.9	---	< 2.0	< 2.0
TOT	Perfluorohexanoic acid (PFHxA)	2	ng/L	---	---	< 1600	---	1300	< 240
TOT	Perfluorohexadecanoic acid (PFHxDA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluorohexanesulfonic acid(PFHxS)	2	ng/L	---	---	< 430	---	400	40
TOT	Perfluorononanoic acid (PFNA)	2	ng/L	---	---	< 54	---	48	< 10
TOT	Perfluorononanesulfonic acid (PFNS)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluorooctanoic acid (PFOA)	2	ng/L	---	---	880	---	800	< 130
TOT	Perfluorooctadecanoic acid (PFODA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluorooctanesulfonic acid (PFOS)	2	ng/L	---	---	250	---	180	< 34
TOT	Perfluorooctane Sulfonamide (PFOSA)	4	ng/L	---	---	18.0	---	4.0	4.0
TOT	Perfluoropentanoic acid (PFPeA)	4	ng/L	---	---	670	---	700	< 97
TOT	Perfluoropentanesulfonic acid (PFPes)	2	ng/L	---	---	13.0	---	< 2.0	< 2.0
TOT	Perfluoro-2-propoxypropanoic acid (PFPrOPrA)	4	ng/L	---	---	< 4.0	---	< 4.0	< 4.0
TOT	Perfluoropropanesulfonic acid (PFPRS)	2	ng/L	---	---	8.1	---	< 2.0	< 2.0
TOT	Perfluorotetradecanoic acid (PFTEDA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluorotridecanoic acid (PFTRDA)	2	ng/L	---	---	< 2.0	---	< 2.0	< 2.0
TOT	Perfluoroundecanoic acid (PFUnA)	2	ng/L	---	---	4.7	---	< 2.0	< 2.0

Notes:

NS - Not sampled.

SS - Single sample.

(1) Samples destroyed during transport.

Appendix I

Leachate Pipeline Flow Data

Appendix I. Leachate Pipeline Flow Data - 2006 to 2026

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2006	0	3415	1123	3075	95329
Feb-2006	2	3435	0	2206	61795
Mar-2006	8	2926	0	846	26247
Apr-2006	14	2141	0	558	16762
May-2006	19	2058	0	464	14402
Jun-2006	21	2175	0	359	10795
Jul-2006	28	1996	0	105	3277
Aug-2006	23	1991	0	327	10148
Sep-2006	22	1770	0	255	7654
Oct-2006	23	2043	0	304	9427
Nov-2006	2	3677	0	2872	86167
Dec-2006	0	3563	3130	3425	106180
TOTAL	**162**	**3677**	**0**	**1233**	**448183**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2007	0	3657	3272	3464	107411
Feb-2007	0	3619	815	2398	67168
Mar-2007	0	3442	38	2130	66034
Apr-2007	6	1929	0	872	26177
May-2007	14	2120	0	572	17740
Jun-2007	18	2127	0	477	14331
Jul-2007	22	2157	0	387	12019
Aug-2007	28	1730	0	92	2859
Sep-2007	29	76	0	2	76
Oct-2007	14	3288	0	945	29316
Nov-2007	11	2306	0	793	23813
Dec-2007	1	3715	0	2549	79041
TOTAL	**143**	**3715**	**0**	**1223**	**445985**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2008	0	2949	260	1644	50970
Feb-2008	2	2927	0	1322	38343
Mar-2008	0	1874	0	901	27953
Apr-2008	7	1849	0	845	25364
May-2008	18	2946	0	537	16670
Jun-2008	25	2695	0	286	8594
Jul-2008					0
Aug-2008					0
Sep-2008					28892
Oct-2008					29892
Nov-2008					17433
Dec-2008					37620
TOTAL	**52**	**2949**	**0**	**923**	**281731**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2009	0	3522	799	2400	74404
Feb-2009	2	1551	0	867	24263
Mar-2009	0	2388	42	1040	32247
Apr-2009	5	2838	0	1056	31692
May-2009	11	2292	0	761	23589
Jun-2009	18	1839	0	427	13224
Jul-2009	9	2880	0	805	25749
Aug-2009	0	2871	402	942	29208
Sep-2009	18	2847	0	313	9396
Oct-2009	7	2838	0	815	25250
Nov-2009	0	3345	210	2426	72783
Dec-2009	0	3246	1125	2169	67251
TOTAL	**70**	**3522**	**0**	**1168**	**429056**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2010	0	3438	1080	2461	76278
Feb-2010	0	1824	387	1013	28377
Mar-2010	10	1617	0	629	19509
Apr-2010	10	2853	0	1281	38419
May-2010	11	1989	0	704	21834
Jun-2010	16	1776	0	499	14961
Jul-2010	17	1815	0	400	12396
Aug-2010	18	2481	0	392	12147
Sep-2010	13	1752	0	648	19425
Oct-2010	7	1719	0	792	24540
Nov-2010	1	2034	0	1108	33237
Dec-2010	1	3462	0	2674	82893
TOTAL	**104**	**3462**	**0**	**1050**	**384016**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2011	1	3324	0	2521	75630
Feb-2011	5	2823	0	1544	46323
Mar-2011	2	2832	0	1762	52860
Apr-2011	5	2715	0	1430	42891
May-2011	7	2847	0	895	27735
Jun-2011	13	1563	0	535	16044
Jul-2011	15	1428	0	441	13677
Aug-2011	13	1434	0	338	10818
Sep-2011	8	2604	0	455	14103
Oct-2011	20	1932	0	360	11148
Nov-2011	8	3288	0	1020	30609
Dec-2011	6	2589	0	1012	31365
TOTAL	**103**	**3324**	**0**	**1026**	**373203**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2012	0	2556	156	1694	52512
Feb-2012	1	2742	0	1634	47394
Mar-2012	1	2472	0	1519	47079
Apr-2012	3	2121	0	915	27438
May-2012	11	1671	0	563	17458
Jun-2012	16	1848	0	450	13493
Jul-2012	10	2979	0	607	18816
Aug-2012	20	1266	0	206	6372
Sep-2012	9	1410	0	461	13827
Oct-2012	15	2688	0	641	19872
Nov-2012	3	2847	0	1602	48051
Dec-2012	0	2610	779	2347	72747
TOTAL	**89**	**2979**	**0**	**1053**	**385059**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2013	0	2526	43	1616	50094
Feb-2013	2	1986	0	1017	28476
Mar-2013	3	2694	0	1750	54258
Apr-2013	5	2136	0	997	29919
May-2013	10	1840	0	627	19437
Jun-2013	12	2515	0	594	17829
Jul-2013	14	1390	0	379	11757
Aug-2013	16	1590	0	356	11022
Sep-2013	9	2199	0	524	15705
Oct-2013	6	2448	0	773	23957
Nov-2013	6	2418	0	845	25346
Dec-2013	7	1848	0	709	21971
TOTAL	**90**	**2694**	**0**	**849**	**309771**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2014	1	2316	0	1349	41804
Feb-2014	2	3366	0	1951	54634
Mar-2014	0	3387	150	2252	69824
Apr-2014	2	2535	0	1004	30128
May-2014	7	2562	0	797	24704
Jun-2014	5	1677	0	474	14213
Jul-2014	18	2517	0	486	15056
Aug-2014	14	911	0	303	9379
Sep-2014	16	959	0	305	9163
Oct-2014	16	2163	0	447	13872
Nov-2014	8	2808	0	1420	42601
Dec-2014	0	2589	600	1814	56247
TOTAL	**89**	**3387**	**0**	**1050**	**381625**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2015	0	2472	460	1976	61260
Feb-2015	0	2508	312	1750	49008
Mar-2015	0	2481	45	1494	46305
Apr-2015	1	2763	0	1118	33549
May-2015	15	2078	0	519	16096
Jun-2015	17	1744	0	450	13487
Jul-2015	23	1758	0	267	8283
Aug-2015	19	2595	0	377	11678
Sep-2015	15	1679	0	455	13649
Oct-2015	15	2251	0	460	14271
Nov-2015	3	3186	0	2154	64629
Dec-2015	0	3350	386	2693	83492
TOTAL	**108**	**3350**	**0**	**1143**	**415707**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2016	1	3240	0	1836	56923
Feb-2016	1	3267	0	2639	76542
Mar-2016	1	3099	0	1819	56385
Apr-2016	8	3096	0	784	23532
May-2016	16	3098	0	540	16740
Jun-2016	10	1251	0	455	13642
Jul-2016	16	1222	0	340	10540
Aug-2016	16	1553	0	330	10243
Sep-2016	19	1707	0	324	9720
Oct-2016	7	2610	0	1329	41193
Nov-2016	0	3228	603	2038	61152
Dec-2016	0	3378	774	2344	72675
TOTAL	**95**	**3378**	**0**	**1232**	**449287**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2017	1	2436	0	1390	43099
Feb-2017	2	3234	0	2049	57377
Mar-2017	0	3192	384	2050	63555
Apr-2017	0	2328	111	1547	46422
May-2017	11	3312	0	759	23526
Jun-2017	21	1410	0	292	8748
Jul-2017	7	882	0	356	11037
Aug-2017	15	2790	0	494	15324
Sep-2017	17	3375	0	494	14820
Oct-2017	23	2028	0	290	9000
Nov-2017	3	3324	0	1851	55527
Dec-2017	5	3276	0	1764	54681
TOTAL	**105**	**3375**	**0**	**1111**	**403116**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2018	2	3213	0	2401	74436
Feb-2018	1	3438	0	2098	58736
Mar-2018	9	27775	0	1049	32518
Apr-2018	11	3111	0	1023	30690
May-2018	17	2892	0	629	19497
Jun-2018	17	2184	0	482	14473
Jul-2018	11	1608	0	385	11942
Aug-2018	21	1593	0	158	4908
Sep-2018	18	1286	0	234	7026
Oct-2018	8	1692	0	520	16127
Nov-2018	1	2676	0	1157	35865
Dec-2018	1	3234	0	2428	75255
TOTAL	**117**	**27775**	**0**	**1047**	**381473**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2019	2	3300	0	2607	80823
Feb-2019	3	2787	0	1302	36442
Mar-2019	5	2439	0	1013	31393
Apr-2019	8	2526	0	769	23078
May-2019	11	2172	0	595	18437
Jun-2019	21	802	0	152	4546
Jul-2019	29	14	0	1	19
Aug-2019	25	3320	0	158	4888
Sep-2019	12	3298	0	858	25725
Oct-2019	14	3010	0	897	27803
Nov-2019	7	2114	0	785	23560
Dec-2019	2	2196	0	1196	37091
TOTAL	**139**	**3320**	**0**	**861**	**313805**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2020	0	3108	1092	2793	86573
Feb-2020	0	2990	2608	2910	84399
Mar-2020	3	2892	0	1117	34616
Apr-2020	6	2772	0	711	21319
May-2020	13	1342	0	483	14962
Jun-2020	26	1502	0	126	3791
Jul-2020	21	692	0	68	2107
Aug-2020	15	2840	0	356	11031
Sep-2020	17	4804	0	710	21298
Oct-2020	4	1956	0	976	30254
Nov-2020	4	2474	0	1749	52828
Dec-2020	0	3396	274	1767	54774
TOTAL	**109**	**4804**	**0**	**1147**	**417952**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2021	0	6558	2122	3284	101810
Feb-2021	15	18835	0	1722	48208
Mar-2021	20	12720	0	1444	44771
Apr-2021	29	3446	0	114	3446
May-2021	25	32661	0	1297	40133
Jun-2021	30	0	0	0	0
Jul-2021	21	17081	0	1158	37060
Aug-2021	25	2067	0	318	9846
Sep-2021	7	6273	0	954	28633
Oct-2021	9	3532	0	894	27700
Nov-2021	0	6133	1496	3850	115487
Dec-2021	0	5258	1377	3079	95452
TOTAL	**181**	**32661**	**0**	**1510**	**552546**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2022	0	6256	1303	3202	99263
Feb-2022	2	4019	0	1443	40395
Mar-2022	3	6506	0	2118	65646
Apr-2022	4	3539	0	1880	56406
May-2022	10	6914	0	1538	47688
Jun-2022	20	5661	0	854	25631
Jul-2022	14	5058	0	1293	41368
Aug-2022	8	4974	0	716	22212
Sep-2022	0	6619	3	1266	38006
Oct-2022	1	2454	0	578	17933
Nov-2022	5	4306	0	1052	31578
Dec-2022	2	6489	0	1588	49249
TOTAL	**69**	**6914**	**0**	**1461**	**535375**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2023	0	7783	538	2912	90297
Feb-2023	0	4881	503	1762	49340
Mar-2023	5	5463	0	1701	51032
Apr-2023	4	3388	0	1199	35963
May-2023	11	2487	0	752	23303
Jun-2023	15	6015	0	507	15212
Jul-2023	20	5557	0	783	24282
Aug-2023	18	4496	0	659	20421
Sep-2023	8	5228	0	818	24528
Oct-2023	10	3905	0	915	28373
Nov-2023	0	3951	0	1606	48193
Dec-2023	0	907	4531	2564	79476
TOTAL	**91**	**7783**	**0**	**1348**	**490420**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2024	0	4225	388	2705	83858
Feb-2024	0	5096	1254	2764	80149
Mar-2024	0	3240	958	2161	66977
Apr-2024	0	1873	464	998	29947
May-2024	17	2793	0	431	13369
Jun-2024	20	4287	0	598	17932
Jul-2024	22	3787	0	561	17382
Aug-2024	22	2905	0	440	13629
Sep-2024	23	2792	0	386	11577
Oct-2024	12	4257	0	1394	43204
Nov-2024	0	3210	361	1747	52417
Dec-2024	1	4613	0	2468	76519
TOTAL	**117**	**5096**	**0**	**1388**	**506960**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2025	2	3509	0	1862	57727
Feb-2025	0	4221	138	1824	51072
Mar-2025	0	4710	1258	2418	74960
Apr-2025	1	4161	0	1550	46496
May-2025	15	1789	0	558.65	17318
Jun-2025	21	3323	0	481.83	14455
Jul-2025	22	2437	0	462.00	14322
Aug-2025	20	2846	0	341.84	10597
Sep-2025	12	771	0	253.13	7594
Oct-2025	9	3448	0	779.19	24155
Nov-2025	8	3207	0	1209.87	36296
Dec-2025	1	5388	0	3452.77	107036
TOTAL	**111**	**5388**	**0**	**1266**	**462028**

Hartland Leachate System Monthly Flow Data					
	Days Without Flow	Maximum Daily Flow (m^3)	Minimum Daily Flow (m^3)	Average Daily Flow (m3)	Monthly Total Flow (m3)
Jan-2026	0	4806	1164	2582	80043
Feb-2026	0	3371	1065	2035	56982
Mar-2026	0	3234	657	1983	63460
TOTAL	**0**	**4806**	**657**	**2200**	**200485**

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