



2025 ANNUAL REPORT FOR THE VANCOUVER LANDFILL

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EXECUTIVE SUMMARY

The purpose of this report is to fulfill the annual reporting requirements defined in the Landfill's Operational Certificate (OC) MR-01611 (BC Ministry of Environment and Parks, hereafter ENV, 2001) and the BC *Landfill Criteria for Municipal Solid Waste, Second Edition* (ENV, 2016). The report covers the period of January 1 to December 31, 2025. The ENV Annual Compliance Status Form is appended.

Background

The Vancouver Landfill (Landfill) opened in 1966 and is owned and operated by the City of Vancouver. It is located at 5400 72 Street in Delta, in the southwest corner of Burns Bog, and is only accessible via Highway 99 Southbound. Further details on the site background and regulatory structure are included in the report.

The Landfill plays an integral role in the management of municipal solid waste (MSW) from commercial and residential sources within Metro Vancouver as part of Metro Vancouver's *Integrated Solid Waste and Resource Management Plan* (Metro Vancouver, 2010). The waste received at the Landfill is either direct-hauled or transferred through the Vancouver South Transfer Station (VSTS), also owned and operated by the City of Vancouver, or one of Metro Vancouver's Recycling and Waste Centres.

Authorized waste discharge

The Landfill's OC authorizes disposal of up to 750,000 tonnes of MSW annually. In 2025, a total of 741,654 tonnes was landfilled. Beneficially used materials (e.g., cover soil, road-building materials) are excluded from the annual tonnage limit.

To date, a total of 135.8 hectares (ha) has been progressively closed, representing approximately 60 percent of the 225 ha Landfill footprint.

Recycling

The Zero Waste Centre diverted 1,562 tonnes of materials for recycling in 2025. Pilot initiatives for the collection of upholstered furniture and durable plastics continued.

Composting

The City's Composting Facility processed approximately 20,300 tonnes of yard trimmings in 2025 and distributed approximately 7,060 tonnes of finished compost through sales and donations.

Leachate and stormwater management

In 2025, approximately 1.7 million cubic metres (cu. m) of leachate and surface runoff were delivered to Annacis Island Wastewater Treatment Plant for treatment at a cost of approximately \$4.5 million.

The Water Quality Monitoring Program included quarterly sampling at 51 monitoring stations. An additional 12 stations were monitored in winter and fall to assess stormwater quality in closed areas and potential receiving environments.



As an ongoing operational practice, clean stormwater is periodically released from storage ponds to the dredge pond, diverting flow from the leachate collection and containment system and subsequently reducing leachate treatment and conveyance costs. In 2025, approximately 1.58 million cu. m or 60 percent of the total precipitation fell on closed areas and was ultimately diverted.

Landfill gas control

System expansion in 2025 included installation of new horizontal collectors (Phase 5) and vertical extraction wells (Phases 3 and 5). At year end, the gas collection system comprised 499 collection points (317 vertical wells, 159 horizontal collectors, 13 DRAINTUBE® collectors and 10 side-slope collectors).

Approximately 51 percent of collected landfill gas (LFG) was sold for beneficial use to partner renewable natural gas (RNG) facilities with the remaining volume managed through flaring. Total LFG collected and destroyed was approximately 90.8 million cu. m (normalized to 50 percent methane).

Table of Contents

1.	Introduction	1
2.	Design and Operating Plans	3
2.1	Site plan and progressive closure status	3
2.2	Operational efficiency	6
2.3	Remaining capacity	7
3.	Closure and post closure costs	8
4.	Planned improvements	9
4.1	Leachate, surface water runoff and stormwater management	9
4.2	Landfill gas collection	9
4.3	Progressive landfill closure	10
4.4	Landfill facilities	10
4.4.1	Landfill civil works	11
4.4.2	Diesel pump replacement and pond water supply	11
4.4.3	Road paving and speed bump installation	11
4.4.4	Unattended scales operationalization	11
4.4.5	Landfill electrical upgrades	11
4.4.6	Additional office and workshop space	12
5.	Waste disposal and beneficial use materials	13
5.1	Municipal solid waste disposal	13
5.1.1	Bottom ash	14
5.1.2	Demolition material	14
5.2	Soil including Cover	14
5.3	Road construction and other beneficial use materials	14
5.4	Capital and closure materials	15
5.5	Other authorized wastes	15
5.5.1	Asbestos waste	15
5.5.2	Wastewater treatment plant residuals	15
5.5.3	Drinking water treatment plant residuals	16
5.5.4	Avian Influenza material	16
5.6	Nuisance waste	16
6.	Waste composition	18
7.	Waste reduction and recycling initiatives	19
7.1	Zero Waste Centre (ZWC)	19
7.2	Household Hazardous Waste	21
7.3	Disposal bans	21
7.4	Yard trimmings collection and composting	21
7.5	Diversion projections	22
8.	Environmental protection programs	23
8.1	Leachate, surface runoff, and stormwater management system	23
8.2	Leachate generation	25
8.3	Water quality monitoring program and annual review	26
8.4	Landfill gas management system	27
8.5	Landfill gas collection efficiency	29
9.	Operational information	30
9.1	Bird control	30
9.2	Site inspections	30

9.3	Operating problems and corrective actions	31
9.4	Operational and maintenance expenditures	33
9.5	Public complaints and resolutions	33
9.6	Landfill tours	34

List of Tables

Table 1:	Operational Certificate Reporting Requirements	1
Table 2:	Additional Reporting Items as per the Landfill Criteria	2
Table 3:	Design and Operating Plan Updates	3
Table 4:	Implemented Upgrades to the LFG Collection System in 2025	9
Table 5:	Planned Upgrades to the LFG Collection System in 2026	10
Table 6:	Inbound Material Quantities for 2024 and 2025	13
Table 7:	2025 Nuisance Waste Quantities	17
Table 8:	Recycling Quantities for 2024 and 2025	20
Table 9:	Compost Quality for 2024 and 2025	22
Table 10:	Pond Storage Capacity	25
Table 11:	2025 Leachate Flow Volumes and Precipitation	26
Table 12:	2025 Landfill Gas Collection and Beneficial Use	29
Table 13:	2025 Site Inspection Activities	30
Table 14:	2025 Operating Problems and Corrective Actions	31
Table 15:	Operational and Maintenance Expenditures for 2024 and 2025	33

List of Figures

Figure 1:	Vancouver Landfill Property and Footprint	4
Figure 2:	2025 Vancouver Landfill Site Plan	5
Figure 3:	2025 Landfill Fill and Progressive Closure Plan	5
Figure 4:	Leachate Collection System Cross-Section	24
Figure 5:	Leachate, Surface Runoff and Stormwater Management	24
Figure 6:	Landfill Gas Control and Beneficial Use System	28
Figure 7:	2025 Landfill Gas Collection System	28

List of Appendices

Appendix 1:	Progressive closure status	38
Appendix 2:	Annual waste quantities	39
Appendix 3:	2025 Recyclable and banned materials	43
Appendix 4:	2025 Water quality monitoring location plan	46
Appendix 5:	2025 Water quality monitoring program parameters	47
Appendix 6:	2025 Annual water quality monitoring report executive summary	48
Appendix 7:	2025 Weekly leachate and drainage ditch water elevations	54
Appendix 8:	2025 Public complaint and resolution log	60
Appendix 9:	2025 Annual Compliance Status Form	62

1. Introduction

This report covers the period from January 1 to December 31, 2025 and is available online at vancouver.ca/landfill-annual-report, along with reports from previous years.

This report fulfills the reporting requirements described in Section 3.5.2 of the Landfill's Operational Certificate MR-01611 with Table 1 summarizing where the required information can be found.

Table 1: Operational Certificate Reporting Requirements

OC Reporting Requirement	2025 Annual Report Section(s)
Revised design and operating plan and planned improvements	2. Design and operating plans 4. Planned improvements
Revised closure/post closure costs and amount of funds currently available	3. Closure and post closure costs
Waste, recyclable material and compost records	Table 6: Inbound Material Quantities for 2024 and 2025 Table 8: 2024 and 2025 Recycling Quantities 7.4 Yard trimmings collection and composting Appendix 2: Annual Waste quantities
An evaluation of recycling and composting programs, including waste diversion projections	7. Waste reduction and recycling initiatives
An evaluation of leachate generation control measures	8.2 Leachate generation
Leachate flow data and leachate/drainage ditch levels suitable tabulated	8.2 Leachate generation Appendix 7: 2025 Weekly leachate and drainage ditch water elevations
A review and interpretation of receiving environmental monitoring for the preceding year	8.3 Water quality monitoring program and annual review Appendix 6: 2025 Water quality monitoring program review executive summary
An evaluation of the efficiency of the landfill gas management systems, including an estimation of the landfill gas generation rate, percent recovery and the actual rates/volumes of gas collected, utilized and flared	8.5 Landfill gas collection efficiency
Identification of operating problems and corrective actions taken	9.3 Operating problems and corrective actions
Public complaint/resolution log for the Landfill	9.5 Public complaints and resolutions Appendix 8: 2025 Public complaint and resolution log

This report also addresses the reporting guidance in Section 10.6 of the BC *Landfill Criteria for Municipal Solid Waste, Second Edition* (ENV, 2016) with Table 2 summarizing where the information can be found.

Table 2: Additional Reporting Items as per the Landfill Criteria

Landfill Criteria Reporting Item	2025 Annual Report Section(s)
Operational plan for the next 12 months	2. Design and operating plans
Remaining site life and capacity	2.3 Remaining capacity
Closure works completed	2.1 Site plan and progressive closure status Appendix 1: Progressive closure status
Results of regular inspection for cover integrity, health of vegetation, undesirable plant species, burrowing animals, erosion, settlement, etc.	9.2 Site inspections
Compaction, waste to cover ratio, waste to road ratio and airspace utilization factor	2.2 Operational efficiency
Operational and maintenance expenditures	9.4 Operational and maintenance expenditures

As of January 1, 2016, annual reports for high priority authorizations must include the ENV Annual Compliance Status Form. The form for the Vancouver Landfill lists all OC conditions, all of which were met in 2025, and is included in Appendix 9.

2. Design and Operating Plans

Golder Associates Ltd. (Golder) completed the *Design Plan, Vancouver Landfill, Delta, BC* (Golder, 2019a) and *Operating Plan, Vancouver Landfill, Delta, BC* (Golder, 2019b) in early 2019. The Design Plan is a reference for landfill design and progressive closure, while the Operating Plan is a guide for day-to-day operation of the Landfill.

Table 3 lists the updates made to the 2019 Design and Operating Plans to the end of 2025.

Table 3: Design and Operating Plan Updates

Year	Update	Documented	Annual Report Reference
2019	Changes made during Phase 4 closure design to the final contours of Phases 4 and 5 and filling sequence in Phase 5 to fill South ahead of North	Letter to ENV, September 2019	2020
2020	Figures referencing final contours and filling sequence of Phase 4 (superseding Figures 11 and 18 in the Operating Plan)	Phase 4 Closure and Gas System Upgrades (Sperling Hansen Associates Inc. (SHA), 2020)	2021
2021	Figures referencing final contours and filling sequence of Phase 5 (superseding Figures 19 – 26 in the Operating Plan)	Letter to ENV, October 2021, Phase 5 South and North Filling Plan – DOPC Updates (SHA, 2021)	2021
2024	Divided Phase 5 into three areas instead of two, creating Phase 5 Centre and adjusting closure boundaries (Design Plan) Filling plan amended to recover airspace on the south/west banks of Phase 5 South, deferring Phase 5 South Closure to 2025 (Design Plan)	Phase 5 South Closure and Gas System Upgrades (SHA, 2024b)	2024
2025	Updated drawings and surfaces were developed for Phase 5 Centre, Phase 5 North (including an airspace recovery), and Phase 6 East	Landfill Design, Operations and Progressive Closure Plan – 2025 – Figures 5-118 to 5-184 (SHA, 2025)	2025

In 2025, the City continued work with SHA on a fully updated Design, Operations and Progressive Closure Plan for completion in 2026.

2.1 Site plan and progressive closure status

The Landfill property is 320 ha in size, which contains the operational area (within the perimeter ditches) of 225 ha, a 16.7 ha pond historically used for dredging cover material, and perimeter

buffer zone. In 2009, a 200 ha area of undeveloped land known as Parcel 2 that was part of the original Landfill property was transferred to the City of Delta, the Greater Vancouver Sewerage and Drainage District (GVS&DD) and Metro Vancouver (formerly Greater Vancouver Regional District). In 2013, an additional 100 ha area known as the Lot 9 Transferred Portion was transferred to the City of Delta. The transferred areas are shown in Figure 1, and the site plan for the Landfill property is shown in Figure 2.

Progressive closure phases and a profile view of the engineered fill plan are shown in Figure 3.

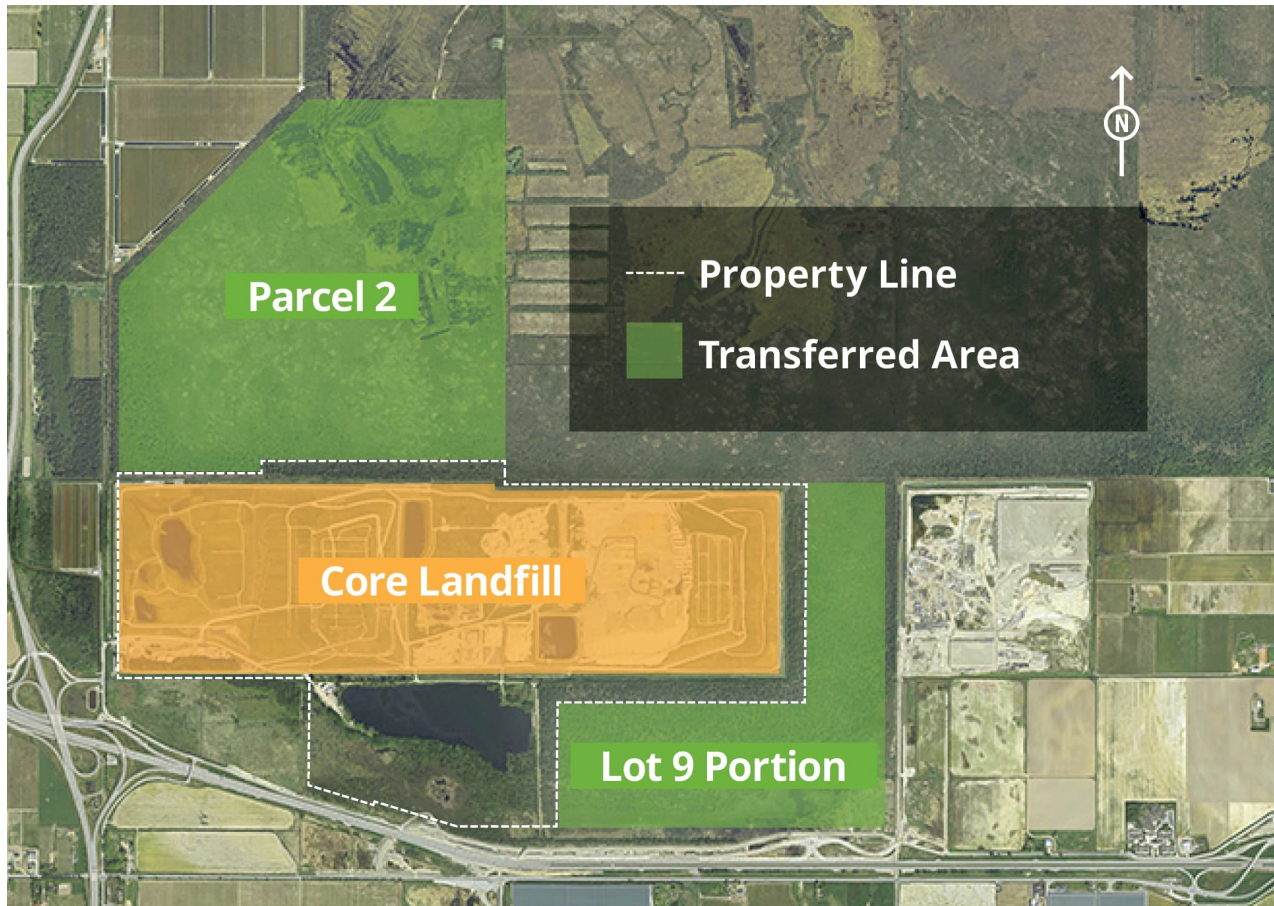


Figure 1: Vancouver Landfill Property and Footprint

In 2025, MSW filling and asbestos disposal occurred in Phase 5 and Phase 6 East. In the first half of 2025, Phase 5 South was completed in preparation for closure, with nine hectares completed in summer 2025 and the remaining one hectare to be closed in 2026. Filling also occurred in Phase 5 Centre and North, with the active face moving as needed to facilitate construction of horizontal gas collectors. Phase 6 East accepted mainly asbestos and end-dump trucks for safety reasons.

The operational plan over the next 12 months includes completing filling activities in Phase 5 Centre in preparation for its closure in 2027, followed by continued filling in Phase 5 North. Phase 6 East will remain in use for asbestos disposal and end-dump trucks. Litter fencing will continue to be installed on each lift, and gas collection infrastructure in Phase 5 will be added progressively as filling advances.

As of the end of 2025, several phases have been progressively closed with engineered cover systems, including the Western 40 Hectares and Phases 1, 2, 3, 4 and most of Phase 5 South. A more detailed breakdown of the progressive closure status, up to and including 2025, is available in Appendix 1.

2.2 Operational efficiency

Aerial mapping and analyses have been completed at the Landfill annually since 2000. The flight to generate contour data typically occurs around the beginning of April (weather permitting), and the data are typically available within three months. SHA was retained by the City to complete the annual data analysis from 2022 to 2026.

The purpose of this project is to analyze contour data from both the previous and current years, together with tonnage records for disposed and beneficially used materials, to evaluate the following parameters:

- Landfill settlement
- Compaction density
- Air space consumption
- Waste to cover ratio and waste to road¹ materials ratio
- Remaining capacity
- Lifespan analysis

According to SHA's *Vancouver Landfill 2024-05-03 to 2025-05-02 Aerial Mapping Report* (SHA, 2026), the following operational efficiencies were achieved in the Phase 5 active area between May 3, 2024 and May 2, 2025:

- **Compaction density:** 0.77 tonnes per cu. m for MSW. This value was back-calculated using assumed densities from various geotechnical sources and survey volumes, with adjustments made for settlement.

¹Road materials include beneficial use materials such as clean wood waste, demo hog and crushed concrete/rubble.

- **Airspace utilization factor:** 1.31 cu. m per tonne.
- **Waste to cover ratio (by volume):** 2.11:1. This ratio reflects several factors, including estimated settlement and the significant amount of cover soil received at the site.
- **Waste to road materials ratio (by volume):** 5.55:1.

2.3 Remaining capacity

According to the 1999 agreement between the City of Vancouver and City of Delta (City of Vancouver and the Corporation of Delta, 1999), the total Landfill capacity was defined as 20 million tonnes of MSW as of October 1, 1997.

Based on this agreed-upon definition, the remaining capacity as of December 31, 2025, was 3,442,308 tonnes. The remaining airspace is estimated at 5.15 million cu. m, calculated from the difference between the final design contours and the 2025 flight contours.

3. Closure and post closure costs

The Operational Certificate (OC) requires the City to maintain a dedicated reserve fund sufficient to finance closure, post-closure, and environmental contingency costs associated with the Landfill. The Solid Waste Capital Reserve (SWCR) was established for this purpose. In 2001, Vancouver City Council set the minimum balance of the SWCR at \$30 million and directed that reserve requirements be reviewed every five years. At the end of 2025, the SWCR had a closing balance of approximately \$80.4 million, representing a net decrease of \$8.6 million from 2024.

Closure and post-closure costs are reviewed annually and updated with most current information available. For the 2025 Landfill liability calculation, the Design Plan – with staff updates – served as the primary resource. The net present value for closure and post-closure costs is \$142 million, down from \$148 million in 2024.

According to the 1989 Tripartite Agreement (GVS&DD, City of Vancouver and City of Delta, 1989), which remained in effect to the end of 2025, Metro Vancouver is responsible for closure and post-closure costs based on the proportion of regional waste in place at the Landfill. The City of Vancouver is responsible for the proportion of closure and post-closure costs for Vancouver and Delta waste. These proportions are reviewed and adjusted annually. At the end of 2025, regional waste accounted for 40 percent of the total waste in place, with the remaining 60 percent originating from Vancouver and Delta. This reflects one-percent increase in the proportion of Metro Vancouver regional waste compared with 2024.

4. Planned improvements

4.1 Leachate, surface water runoff and stormwater management

In October 2022, the City awarded the 2022-2026 Water Quality Consulting and Stormwater Management Planning Project to AECOM Canada ULC (AECOM). Key tasks advanced in 2025 included:

- Annual Water Quality Monitoring Review (completed Q1 2026)
- Annual Water Quality Sampling Program (monthly and quarterly sampling)
- Perimeter Stormwater Management Strategy (initiated in 2024 – in progress)

In addition, the City completed Phase 2 of the *Landfill Leachate Pump Station Assessment* (AECOM, 2022) which includes inflow and capacity analysis, a system risk assessment and the development of an upgrade strategy.

In 2026, the City plans to focus on:

- Soliciting proposals for the 2027-2031 Water Quality and Stormwater Management Planning contract
- Completing the Perimeter Stormwater Management Strategy and subsequent conceptual design
- Updating the *City of Vancouver Landfill Stormwater Management Plan* (AECOM, 2020)
- Initiating the design of a north perimeter berm cut-off wall to enhance groundwater and surface water separation between the Landfill and Burns Bog
- Initiating the design of a conveyance ditch from the dredge pond to the property boundary to connect to the City of Delta’s 84 Street pump station (under construction)

4.2 Landfill gas collection

Upgrades to the LFG collection system undertaken in 2025 are summarized in Table 4.

Table 4: Implemented Upgrades to the LFG Collection System in 2025

Landfill Sub Area	Description
Phase 3	1 vertical gas extraction well (replacement)
Phase 5	Lift 4 horizontal gas collectors
	13 vertical gas extraction wells

In 2024, the City was awarded \$8.8M through the CleanBC Industry Fund for works beyond business-as-usual, with planned construction between 2025 and 2029. These funding opportunities advance the City’s ongoing efforts to increase the LFG collection efficiency (CE) and reduce greenhouse gas (GHG) emissions. Planned modifications and upgrades to the LFG collection system scheduled for 2026 (subject to detailed design) are summarized in Table 5.

Table 5: Planned Upgrades to the LFG Collection System in 2026

Landfill Sub Area	Description
Various	5 vertical gas extraction wells for densification
Phase 5 Centre	Lift 6 horizontal gas collectors
	Lift 8 horizontal gas collectors
	7 vertical gas extraction wells
Phase 5 North	Lift 4 horizontal gas collectors

In 2025, the following modifications were completed at the Flare Station in addition to regular maintenance activities:

- Siemens Ultramat 6 gas analyzer was replaced with a new unit of the same model due to equipment failure.
- Gas analyzer sample pump was replaced due to sample flow deterioration.
- Gas analyzer pressure regulator was replaced as it was no longer adjustable.
- Worn bearings on Blower 3 were replaced.
- Blower 3 actuator was replaced following damage observed in routine inspection.

The following upgrades to the Flare Station are planned for 2026:

- Replacement of the Programmable Logic Controller (PLC).
- Addition of a redundant gas analyzer.
- Annual planned maintenance activities.
- Addition of new Blower 4.
- Initiation of Flare Station upgrades including replacement of Flare 1, new valves for flow control, and upgrades to meet Canadian Standards Association (CSA) requirements.

4.3 Progressive landfill closure

The contract for design and construction supervision of Phase 5 Closure was awarded to SHA in March 2023. Construction of Phase 5 South Closure began in May 2025 following completion of filling and is anticipated to be complete in May 2026. Phase 5 Centre Closure is currently in the design stage and scheduled to begin construction in spring 2027.

4.4 Landfill facilities

The following projects were completed in 2025:

- Landfill Civil Works

- Diesel Pump Replacement and Pond Water Supply
- Road Paving and Speed Bump Installation
- Unattended Scales Operationalization

The following works are planned for construction in 2026:

- Landfill Electrical Upgrades
- Additional Office and Workshop Space

Details on these completed and planned works are found below.

4.4.1 Landfill civil works

In 2024, Scott Construction Group was awarded the construction contract to install a cover over the household hazardous waste storage area, two bin canopies for the drop-off bays to support new waste diversion opportunities, and an additional covered storage area for operations. Intercoms were also installed at the scale by-pass lanes. Construction was completed in 2025.

4.4.2 Diesel pump replacement and pond water supply

A contractor-owned and operated diesel pump was historically used to supply collected rainwater from the Phase 3 stormwater pond for on-site dust control throughout the dry summer months. In this project, the City identified the opportunity to purchase an electric pump to reduce rental costs and GHG emissions. The new pump was installed and commissioned in 2025.

4.4.3 Road paving and speed bump installation

The City's Streets Operations Branch completed asphalt paving of over 8,300 square metres, including repairs made to roads and at the Composting Facility. Additionally, 20 speed bumps along the main road and four in the Zero Waste Centre were installed to help reduce speeding and improve safety for all facility users.

4.4.4 Unattended scales operationalization

In 2025, the City commissioned unattended inbound and outbound weigh scales to enhance operational efficiency, improve site safety and reduce customer queuing times. By year end, radio-frequency-identification-based access was implemented for a number of commercial customers. In addition, the City introduced access cards for staff, contractors, service providers and visitors to support improved site access and security.

4.4.5 Landfill electrical upgrades

Following BC Hydro's recent power line upgrade adjacent to the Landfill (Stage I), PBX Engineering Ltd. was retained in 2024 to provide design and construction supervision for Stage II, including generator replacement, transformer upgrade and a capacity assessment of the existing buildings on site. The design was finalized in 2025, and Sasco Contractors Ltd. was contracted to complete the installation by early 2027.

4.4.6 Additional office and workshop space

Detailed design work for updated and expanded office space and indoor workshop/storage areas was advanced in 2025 by McGinn Engineering and Preservation Ltd. This work also includes upgrades required for municipal permitting of other site facilities where needed. Construction is planned in 2026.

5. Waste disposal and beneficial use materials

The Landfill is authorized to accept up to 750,000 tonnes of waste each year. The 2024 and 2025 totals for MSW, soil, road construction and other beneficial use materials, as well as capital and closure materials, are provided in Table 6.

Table 6: Inbound Material Quantities for 2024 and 2025

Material	2025 Quantity (tonnes)	2024 Quantity (tonnes)
Waste Discharge		
Municipal Solid Waste	699,045	674,763
Bottom Ash	32,145	39,347
Demolition Material	10,464	21,069
Soil, including Cover	557,886	603,027
Road Construction and Other Beneficial Use Materials		
Demo hog	71,895	89,727
Wood waste	3,536	3,109
Crushed concrete/asphalt	31,378	40,293
Purchased concrete and rock	36,031	49,588
Capital and Closure Materials		
Aggregate	112,133	2,001
Sand and Soil	65,769	364
Total*	1,620,281	1,523,289
Note:		
* Totals may vary due to rounding errors.		

Table A1 in Appendix 2 provides a breakdown of material type, origin and disposal location for 2025. Table A2 provides the 2024 breakdown for comparison. Table A3 shows the breakdown by month of material types for 2025. Historical quantities are shown in Figure A1. Details on some of these materials are included in the following sections.

5.1 *Municipal solid waste disposal*

Waste disposed at the Landfill is either direct-hauled or transferred through the VSTS or one of Metro Vancouver's Recycling and Waste Centres.

In 2025, a total of 741,654 tonnes of waste (MSW, bottom ash, and demolition material) was disposed of at the Landfill, representing an increase of approximately one-percent from 2024. Of this, 142,316 tonnes were transferred through the VSTS, and 447,706 tonnes were transferred through Metro Vancouver Recycling and Waste Centres.

5.1.1 Bottom ash

The Landfill receives bottom ash from the regional Waste-To-Energy Facility. Approximately 95 percent of bottom ash received at the Landfill undergoes a metal-recovery process and is acceptable for direct disposal or beneficial use. The remaining unprocessed bottom ash is required to be stockpiled pending analysis results to confirm that it is not Hazardous Waste before it is landfilled, in accordance with Metro Vancouver's *Bottom Ash Management Plan* (Metro Vancouver, 2020a). A total of 32,145 tonnes of bottom ash was received in 2025, down from 39,347 tonnes in 2024.

5.1.2 Demolition material

Demolition material is mainly wood waste with small amounts of soft construction material, which must meet the minimum criteria for wood content of 80 percent. In 2025, a total of 10,464 tonnes of demolition material was received at the Landfill, compared to 21,069 tonnes in 2024. Demolition material was used for preparation of roads and drainage layers in Phase 5, and the remainder was landfilled.

5.2 Soil including Cover

Soil received at the Landfill is typically excavation material generated by sewer, water and street construction activities in the Metro Vancouver region.

In 2025, the Landfill received 557,886 tonnes of soil. The majority of soil received was sent directly to Phase 5 for cover or disposed. The remaining soil was directed to the soil stockpile area (see Figure 2). The stockpile area is managed by the Landfill Services contractor, who is required to maintain a minimum of 30,000 cu. m for emergency use, such as additional cover in the event of fire. Articulated ('Yuke') dump trucks are used to deliver soil to the active face as needed.

5.3 Road construction and other beneficial use materials

Road construction materials for temporary access roads on the active areas at the Landfill include demolition (demo) hog, wood waste, and purchased and recycled concrete.

Demo hog is ground construction wood waste received at a reduced fee from local processors for use as top dressing on tipping pads and cover to reduce windblown litter. Demo hog is classified as a beneficial use material and not counted towards the annual authorized discharge as approved by ENV in February 2008 (ENV, 2008). Approximately 71,895 tonnes of demo hog were received in 2025, down from 89,730 tonnes in 2024.

Since January 1, 2011, residential quantities of wood waste have been accepted at the Landfill at a reduced fee to encourage diversion. Wood waste is ground on site and used as road base. A total of 3,536 tonnes of wood waste was received and reused in 2025, up from 3,109 tonnes in 2024.

The City regularly retains a contractor for processing clean concrete and asphalt received at the Landfill. Crushed material is used for Landfill operations and in closure works. In 2025, crushing took place from February to July and again from November to December. Approximately 31,380 tonnes of concrete and asphalt were received for crushing, along with 36,030 tonnes of purchased aggregate for road construction in 2025.

5.4 Capital and closure materials

Materials used for the construction of engineered cover systems, roads and other improvements in completed areas of the Landfill are periodically sourced and brought to the Landfill. In 2025, contractors sourced 112,133 tonnes of aggregate and 65,769 tonnes of sand and soil.

5.5 Other authorized wastes

Other ongoing wastes authorized for disposal by ENV are asbestos waste, non-recyclable wastewater treatment plant (WWTP) residuals and non-recyclable drinking water treatment plant (WTP) residuals generated by regional facilities, and Avian Influenza contaminated waste.

5.5.1 Asbestos waste

In addition to the Landfill's OC authorization in accordance with the BC *Hazardous Waste Regulation* (ENV, 1988), asbestos waste is disposed at the Landfill under Hazardous Waste Authorization RS-108600 (ENV, 2024). The Landfill receives asbestos waste from commercial and residential sources. The definition of asbestos waste used in the Landfill's *Asbestos Policy* (City of Vancouver, 2024) follows the *Occupational Health & Safety Regulation* (BC Ministry of Labour, 1998).

Commercial asbestos waste is received for direct burial, while residential asbestos waste is received in a dedicated bin at the Zero Waste Centre. Commercial loads of asbestos waste must meet the *Transportation of Dangerous Goods Regulation* (Transport Canada, 1985).

Burials occur a minimum of 20 metres away from all active areas and include the placement of a minimum of 0.5 m of material on the waste. An exposure control plan is in place that includes periodic exposure monitoring to confirm the risk of asbestos exposure is low.

A total of 8,586 tonnes of asbestos waste was disposed of in 2025, up from 6,341 tonnes in 2024. Of the total asbestos waste received, 424 tonnes of used residential drywall (suspect asbestos-containing material) was received at the Landfill in 2025, down from 509 tonnes in 2024. Used drywall from commercial customers is not accepted due to the availability of alternative disposal options within the commercial sector.

5.5.2 Wastewater treatment plant residuals

The Landfill has a consolidated authorization from ENV to dispose of WWTP residuals from any of the five regional WWTPs (ENV, 2012) including:

- Grit, which is primarily composed of materials that are denser than water and may include sand, pebbles, cinders, coffee grounds, seeds, cigarette filters and organic matter.
- Sludge screenings, which are solids composed of hair, plastic debris, paper fibers and other finer materials. Scum screenings are floating materials such as toilet paper, waste paper products, plastics and other buoyant materials, which are generally combined with fat and grease.

As part of ENV's authorization to accept WWTP residuals, the City and Metro Vancouver were required to develop a sampling and reporting program. Metro Vancouver completes characterization sampling and reporting on a biennial basis. Further, Metro Vancouver

completes a Landfill Waste Assessment Form annually, confirming that WWTP residuals are not Hazardous Waste.

The most recent *Grit and Screenings Characterization Study Sub-Report* was completed for Metro Vancouver in December 2024 (WSP, 2024). This report summarizes the 2024 sampling program results of the non-recyclable WWTP residuals disposed of at the Landfill. In 2024, all samples from WWTPs disposing residuals at the Landfill met the applicable guidelines. The next report is expected in 2026.

In 2025, 2,377 tonnes of grit were buried in Phase 5. The tonnage of WWTP residuals received is reported as a separate line item (Sewage Treatment Plant Residuals) in Table A1 in Appendix 2. No sludge and scum screenings were received in 2025.

5.5.3 Drinking water treatment plant residuals

The Landfill receives WTP residuals from the Seymour Capilano Filtration Plant under authorization by ENV for disposal as MSW (ENV, 2011). The residuals consist of silt and sediment from the raw water reservoir and the coagulants added to bind the sediment together. In 2025, 4,289 tonnes of WTP residuals were accepted at the Landfill, up from 4,063 tonnes in 2024. The tonnage of WTP residuals received is reported as a separate line item (Water Treatment Plant Residuals) in Table A1 in Appendix 2.

5.5.4 Avian Influenza material

In response to an outbreak of Avian Influenza Disease (AI), the City received authorization from ENV on June 12, 2025 (ENV, 2025) for the disposal of AI-contaminated carcasses and associated waste for a one-year period. The authorization states the waste materials must be double bagged in 6 mil plastic bags and sealed, then immediately buried with a minimum of 0.5 metres of cover material. The authorization also permits disposal of AI-contaminated waste from out of region.

The Landfill received 45.4 tonnes of AI-contaminated waste on November 8, 2025 (Transaction No. 407080 and 407081). The waste was buried in Phase 6 in accordance with the operational requirements set out in the authorization and the Landfill's related standard operating procedure.

5.6 Nuisance waste

Nuisance waste is defined as material that requires special consideration, documentation, handling or disposal (such as direct burial) for safety or operational reasons. These materials typically originate from small businesses or light industry and are not classified as Hazardous Waste. The waste generator completes a Landfill Waste Assessment Form and submits it for review and approval by City staff.

Nuisance waste also includes materials such as invasive species or food that has been ordered for destruction or burial by the Canadian Food Inspection Agency (CFIA). Deep burial is required to meet CFIA requirements and often witnessed by a CFIA Officer. The Canadian Border Services Agency (CBSA) also periodically orders destruction of specific materials entering Canada.

Table 7 lists the types of nuisance wastes and quantities received at the Landfill in 2025. A total of 10,011 tonnes of nuisance waste was buried in 2025, representing a one-percent increase from 2024.

Table 7: 2025 Nuisance Waste Quantities

Material	2025 Quantity (tonnes)
Invasive and toxic species (CFIA)	9300.6
Tree stumps and roots	175.1
Non-compostable food (CFIA)	163.3
Marine nets and ropes	104.6
Fish and shellfish waste	101.6
Non-asbestos construction material	45.0
Non-recyclable foam/Styrofoam	24.5
Street sweepings	6.1
Film plastics	5.2
Other*	84.9
Total	10,011.0

Note:

* Other includes fibreglass boat, piano, furniture under CBSA destruction order, expired medical equipment, odorous wastes and other miscellaneous wastes requiring special handling.

6. Waste composition

Metro Vancouver publishes waste composition study reports for the region, and the City contributes as a partner by coordinating waste audits at the VSTS and Landfill. The data is combined with data gathered at other regional facilities.

Metro Vancouver published three waste composition studies in 2025, focusing on different sectors within the region's solid waste system. All three studies were prepared by Dillon Consulting Limited:

1. The *2024 Multi-Family Waste Composition Study* (Dillon, 2025a) examines garbage, recycling and organics from multi-family residences throughout the region.
2. The *2024 Commercial and Institutional Waste Composition Study* (Dillon, 2025b) examines garbage, recycling and organics from the following sectors:
 - Retail and Wholesale Trade
 - Food and Accommodation
 - Manufacturing
 - Business and Commercial Services (Offices)
 - Education
 - Health and Welfare
3. The *2024 Full-Scale Waste Composition Study* (Dillon, 2025c), provides composition breakdowns from the following sources:
 - Single-family Residential
 - Multi-family Residential
 - Commercial/Institutional
 - Small Loads

These studies, as well as those completed in previous years, are available on Metro Vancouver's website: <https://metrovancover.org/services/solid-waste/reports-resources>

7. Waste reduction and recycling initiatives

7.1 Zero Waste Centre (ZWC)

The ZWC offers a recycling area for large items not typically included in curbside collection programs (e.g. mattresses, scrap metal), as well as a range of Product Stewardship Program materials such as paper and packaging, appliances, electronics, household batteries, lead acid batteries, smoke alarms, tires, thermostats, used oil, and used oil filters.

In 2023, a pilot project was launched to test the collection of upholstered furniture and bulky, durable plastics for recycling and energy recovery. The purpose of the pilot project is to assess the operational and financial feasibility of collecting and preparing to haul these difficult-to-recycle items for off-site processing. The pilot continued in 2025.

Recycled quantities received are provided in Table 8. The total amount of materials recycled in 2025, including the tonnes associated with materials measured in litres and other units was 1,562 tonnes. This is a nine-percent decrease from the 1,709 tonnes recycled in 2024.

Table 8: Recycling Quantities for 2024 and 2025

Item	2025	2024	Units
Books	6.4	7.0	tonnes
Clothing	7.3	8.6	tonnes
Containers (Plastic, Metal, Paper) ¹	1.1	2.3	tonnes
Cooking Oil	0.7	1.0	tonnes
Drywall, new scraps only	64	67	tonnes
Durable Plastics	28.8	23.6	tonnes
Electronics and Small Appliances ¹	127	138	tonnes
Fire Extinguishers	2.5	1.6	tonnes
	1,118	706	units
Furniture (Upholstered)	114	86	tonnes
	1,958	1,522	units
Glass Bottles and Jars ¹	2.7	3.6	tonnes
Household Batteries and Cell Phones ^{1,2}	0	1.0	tonnes
Lead Acid Batteries ¹	16.4	25.6	tonnes
Light Bulbs ^{1,3}	2.3	2.2	tonnes
	302	408	tonnes
Mattresses	12,100	16,354	units
Mixed Paper and Cardboard, Residential ¹	167	166	tonnes
Flexible Plastics ¹	6.0	7.4	tonnes
Plastic Foam Packaging ¹	3.4	3.8	tonnes
Product Care Items (Paint, Aerosol, Pesticide, Solvent) ^{1,3}	36	49	tonnes
	7,244	6,316	units
Propane Tanks	8.3	7.8	tonnes
	141	151	tonnes
Refrigerators, Freezers and Air Conditioners ¹	2,234	2,383	units
Scrap Metal (excluding Refrigerators, Freezers and Air Conditioners)	486	495	tonnes
	0	4	boxes
Smoke Alarms ¹	0	0.05	tonnes
Thermostats ¹	0	0	units
	32	30	tonnes
Tires ¹	3,073	2,862	units
	0.9	1.2	tonnes
Waste Antifreeze ¹	905	1,210	litres
	5.9	22	tonnes
Waste Oil ¹	6,579	25,055	litres
Waste Oil Filters ¹	0.02	0.9	tonnes
Total³	1,562	1,709	tonnes

Note:

¹ Product Stewardship Program material

² Cell phone weights not tracked by vendor. Included in battery totals.

³ Includes tonnes calculated for items measured in units, pieces and litres. Conversion factors are provided by Metro Vancouver and Product Stewards.

7.2 Household Hazardous Waste

Household hazardous wastes (HHW), such as paints, used oil, flammable liquids and pesticides, are banned from disposal at the Landfill. The City partners with the Product Care Association of Canada to accept a variety of HHW products regulated under the Product Stewardship Program at the ZWC. However, residents periodically abandon or discard non-program HHW in loads of refuse. These materials are stored in a secure area until they are collected and properly disposed of by a third-party contractor.

In 2025, a total of 1.12 tonnes of non-program hazardous wastes were collected at the HHW facility. The cost of contracted services for the removal and disposal of HHW not covered by stewardship programs was \$12,167, down from \$16,999 in 2024. This reduction in costs can be partially attributed to the temporary closure of the HHW depot in April and May 2025 during construction for the Landfill Civil Works project, as well as improved staff training and increased rejection of non-program hazardous wastes. When non-program wastes are rejected, customers are provided with information on alternative disposal locations.

7.3 Disposal bans

Since 2008, the City has implemented disposal bans in alignment with Metro Vancouver to reduce the amount of material being landfilled that could otherwise be recycled, and to support compliance with the BC *Recycling Regulation* (ENV, 2004), which defines materials to be managed under provincial Extended Producer Responsibility Programs.

Materials banned from disposal as garbage at the Landfill are defined in the appendices of the City's *Solid Waste By-law No. 8417* (City of Vancouver, 2025) and, as much as practical, mirror those which are banned in Metro Vancouver's *Tipping Fee Bylaw* (GVS&DD, 2025).

Disposal bans are enforced by Metro Vancouver's inspection officers, who routinely visit the City's disposal facilities. Disposal ban violation notices and surcharges are issued to those customers that dispose of banned materials in excess of the defined thresholds. Appendix 3 contains a complete list of materials that are accepted for recycling at the Landfill and those banned from disposal as garbage.

7.4 Yard trimmings collection and composting

In 2025, approximately 20,300 tonnes of yard trimmings were received directly at the Landfill or transferred through VSTS, up from approximately 19,400 tonnes in 2024.

The Composting Facility includes a 4.2 ha paved surface, a dual-shaft shredder, an excavator, two front-end loaders, two inclined belt conveyors, a windrow turner and a star screener.

The static windrow composting method is used to process yard trimmings into finished compost. The feedstock is ground up and placed in windrows (piles), then turned regularly to maintain optimal oxygen and temperature levels. After a minimum of six months in windrows, the material is screened and stockpiled for curing and subsequent sale or donation.

A total of 7,060 tonnes of finished compost were distributed in 2025, up from 6,043 tonnes in 2024. Compost sales totaled 6,203 tonnes in 2025, and the remaining 857 tonnes were donated to City of Delta and City of Vancouver residents during free compost campaigns.

Compost quality is compared to standards set out in the BC *Organic Matter Recycling Regulation* (ENV, 2002) based on the feedstock and composting method used. In 2025, the compost met the standards for unrestricted distribution for all parameters listed in the Regulation. A summary of the annual mean compost quality in 2024 and 2025, and the standards for unrestricted use are provided in Table 9.

Table 9: Compost Quality for 2024 and 2025

Parameter	BC Standard	2025 Mean Value	2024 Mean Value
	mg/kg unless stated	mg/kg unless stated	mg/kg unless stated
Arsenic	13	3.24	3.28
Cadmium	3	0.48	0.38
Chromium	100	18.2	16.4
Cobalt	34	4.24	3.93
Copper	400	67.3	36.2
Lead	150	24.7	18.4
Mercury	2	0.07	0.09
Molybdenum	5	1.29	1.20
Nickel	62	13.1	12.2
Selenium	2	<0.50	<0.50
Zinc	500	141.0	130.8
Foreign Matter (%)	1	<0.10	<0.10

7.5 Diversion projections

The *Integrated Solid Waste and Resource Management Plan* (ISWRMP) (Metro Vancouver, 2010) established future diversion targets for the region and outlined initiatives for achieving these targets. According to Metro Vancouver's *2021 ISWRMP Biennial Report* (Metro Vancouver, 2022), 65 percent of the waste generated in the region in 2020 was recycled or diverted from disposal.

8. Environmental protection programs

8.1 Leachate, surface runoff, and stormwater management system

Water management at the Landfill is described using the following terminology:

- **Leachate** - produced by rainwater percolating through waste.
- **Surface runoff** - rainwater that flows along the surface of areas of the Landfill (subject to the placement of daily or intermediate cover) and may be impacted by leachate.
- **Stormwater** - rainwater that is collected above the engineered cover system installed in closed areas of the Landfill. Stormwater is not impacted by leachate.

The Landfill site is underlain by compressed peat and a continuous layer of relatively impermeable clayey-silt, which is referred to as the natural soil barrier layer. Prior to the placement of waste in each landfill cell, a layer of demolition material was placed on top of the peat to provide a conduit for lateral leachate flow to the perimeter ditch system. The demolition material layer, natural soil barrier layer and perimeter ditch system are collectively referred to as the leachate collection and containment system. The inner ditch collects leachate and impacted surface runoff, while the outer ditch, more commonly known as the drainage ditch, collects clean water that runs off adjacent land. The drainage ditch is maintained at a higher level than the inner ditch to contain leachate in the inner ditch as shown in Figure 4. Leachate is conveyed from the pump station located in the southwest corner of the Landfill through force mains to the Annacis Island WWTP under *Waste Discharge Permit SC-100168-FSA* (GVS&DD, 2011), referred to as WDP.

The Phase 2, Phase 3 and Phase 4 closure areas each have a dedicated pond for stormwater retention, while Phase 1 utilizes a toe ditch. In the Western 40 Hectares, six retention ponds manage clean stormwater. Following storm events, stormwater is released to the dredge pond in accordance with the *City of Vancouver Landfill Stormwater Management Plan* (AECOM, 2020), from which it overflows into the local drainage system.

In 2025, a new pond was developed for temporary leachate storage to reduce peak discharge to the sewer system during heavy storm events. This pond replaced Linear Pond 4, which was buried during Phase 6 filling area preparation.

The leachate, surface runoff, and stormwater management system is shown in Figure 5.

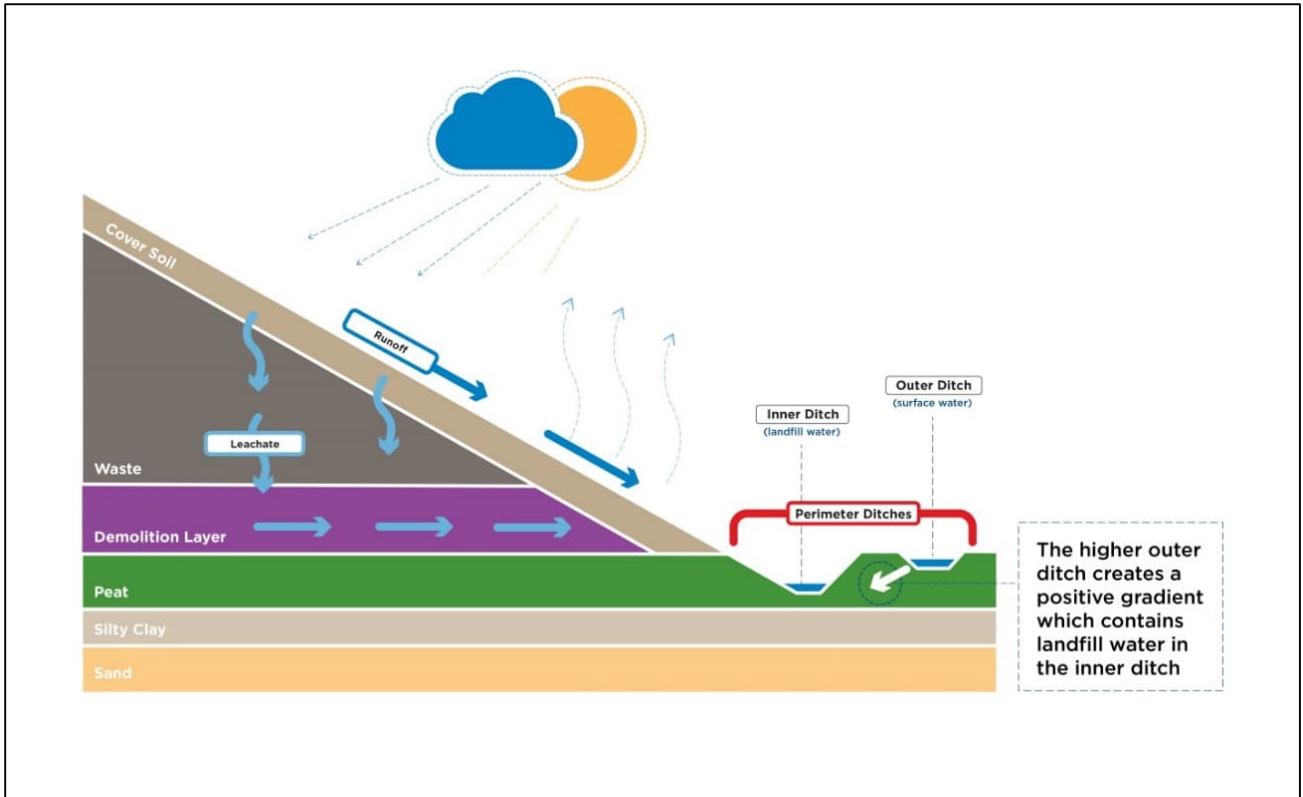


Figure 4: Leachate Collection System Cross-Section



Figure 5: Leachate, Surface Runoff and Stormwater Management

Table 10 shows the pond storage capacity for stormwater and leachate throughout the Landfill.

Table 10: Pond Storage Capacity

Landfill Area	Storage Type	Approximate Capacity (cu. m)
W40 Ponds 1-6	Stormwater	87,000
Phase 1 Toe Ditch	Stormwater	7,000
Phase 2 Pond	Stormwater	10,500
Phase 3 Pond	Stormwater	54,900
Phase 4 Pond	Stormwater	100,000
Phase 5 Pond	Leachate	42,800

8.2 Leachate generation

Leachate generation at the Landfill is controlled through several mechanisms, which include the following:

- Progressive closure of completed phases, with an impermeable geomembrane cover system installed to minimize infiltration from precipitation and leachate generation.
- A dedicated storage pond for leachate and impacted surface runoff to control flows to the leachate pump station.
- Use of daily and intermediate cover at the active face and keeping the active face as small as possible to minimize infiltration from precipitation.
- Erosion control measures on side slopes, such as swales and down chutes, to convey water to internal ditches.

Leachate from the Vancouver Landfill is considered dilute compared to other MSW landfills because of the contribution of surface runoff as well as stormwater from the closed areas that cannot be directed by gravity to the stormwater ponds. As closure activities continue to progress, the volume of leachate generated is expected to decrease.

In 2025, the Landfill received approximately 2.61 million cubic metres of precipitation. Of this, about 1.58 million cubic metres, or 60 percent, of the total precipitation fell on closed areas equipped with diversion infrastructure and was diverted from the leachate collection and containment system through controlled releases to the dredge pond, as well as evapotranspiration from the cover system and stormwater ponds. This represents a 17 percent increase in clean surface water diverted compared with 2024.

Monthly leachate flow and precipitation data for 2025 are provided in Table 11. A total of 1,666,481 cu. m of leachate, surface runoff and stormwater were pumped to Annacis Island WWTP in 2025.

Table 11: 2025 Leachate Flow Volumes and Precipitation

Month	Leachate Flow (cu. m)	Precipitation ² (mm)	Precipitation Volume (cu. m)	Ratio of Leachate Flow to Precipitation Volume
January	185,324	51.7	116,325	159%
February ¹	181,564	96.3	216,675	84%
March ¹	278,756	153.1	344,475	81%
April	166,424	63.6	143,100	116%
May	59,432	71.2	160,200	37%
June	45,856	26.8	60,300	76%
July	28,105	14.7	33,075	85%
August	46,374	76.7	172,575	27%
September	38,826	44.0	99,000	39%
October	61,185	143.0	321,750	19%
November	199,866	183.6	413,100	48%
December	374,769	236.5	532,125	70%
Total	1,666,481	1,161.2	2,612,700	64%

Notes:

¹ The high ratio of leachate flow to precipitation volume reported in select months can be due to the release of stored water that occurs when the Landfill becomes saturated, groundwater flow into the leachate ditch, and the controlled release of stormwater from storage ponds.

² Recorded at the Landfill Weather Station.

The annual fees associated with leachate, surface runoff and stormwater management include a conveyance fee paid to City of Delta for the use of the sewer system and an industrial discharge fee made up of capacity and usage components for treatment of the leachate at the WWTP. The capacity and usage charges account for biological oxygen demand, total suspended solids and flow.

In 2025, the cost associated with leachate conveyance and treatment totaled \$4.46 million. Approximately 75 percent of this cost was associated with conveyance, which represents a two percent decrease compared to 2024. While total precipitation in 2025 was 14 percent lower than 2024, an increase in the 2025 conveyance rate resulted in higher overall costs.

8.3 Water quality monitoring program and annual review

The OC requires regular sampling and analysis of leachate, as well as surface and ground waters in the vicinity of the Landfill, at specific stations and for defined parameters. Leachate flow measurement and leachate/drainage ditch water level measurements are also required. The Landfill's WDP also requires regular sampling and analysis of leachate, in addition to leachate flow measurement.

To meet these obligations, the Landfill Water Quality Monitoring Program (WQM Program) is in place and also incorporates stormwater sampling. Sampling and data collection is carried out by contracted consultants, in accordance with the *Leachate, Groundwater, Surface Water and Stormwater Monitoring and Sampling Manual* (AECOM, 2021).

In 2025, one leachate station, 13 surface water locations, 18 shallow groundwater wells and 20 deep groundwater wells were sampled quarterly. Shallow groundwater wells are screened in the peat aquifer and range from 2.5 – 4 m in depth, while deep groundwater wells are screened in the sand aquifer and range from 6 – 9 m in depth. Well and sampling locations are shown in Appendix 4. Additionally, a 24-hour composite sample representing the leachate pumped to Annacis Island WWTP was collected monthly. Samples were analyzed for the parameters listed in Appendix 5.

Consultants hired by the City have completed annual reviews of the WQM Program each year since 1999. The *City of Vancouver Landfill - 2025 Annual Water Quality Monitoring Report* (AECOM, 2026) confirms that the 2025 Landfill WQM Program meets or exceeds the requirements set out in the OC and WDP with respect to the number, type and locations of stations monitored; sampling frequency; water quality parameters; and detection limits. The only exceptions were three surface water stations (Stations 43, 44, 45), which were not sampled in the third quarter due to dry ditch conditions, consistent with past years.

The December 2019 *City of Vancouver – 2018/19 Stormwater and Surface Water Monitoring Report* (AECOM, 2019) recommended that a regular monitoring program for stormwater be implemented and include monthly sample collection from October to March each year. Sampling began in December 2019 and continued in 2025 at 12 stations. Results from the sampling events are included in the 2025 WQM Report.

The executive summary from the 2025 WQM Report, including recommendations, is included in Appendix 6. A tabulation of the leachate/drainage ditch levels is included in Appendix 7.

8.4 Landfill gas management system

Figure 6 provides an overview of the current LFG collection and beneficial use system. LFG sales to two RNG facilities continued in 2025, specifically Delta RNG and FortisBC RNG. Approximately 51 percent of collected LFG was sold for beneficial use to these facilities in 2025 with the remaining volume managed through flaring. The distribution of LFG infrastructure across the Landfill footprint is shown in Figure 7.

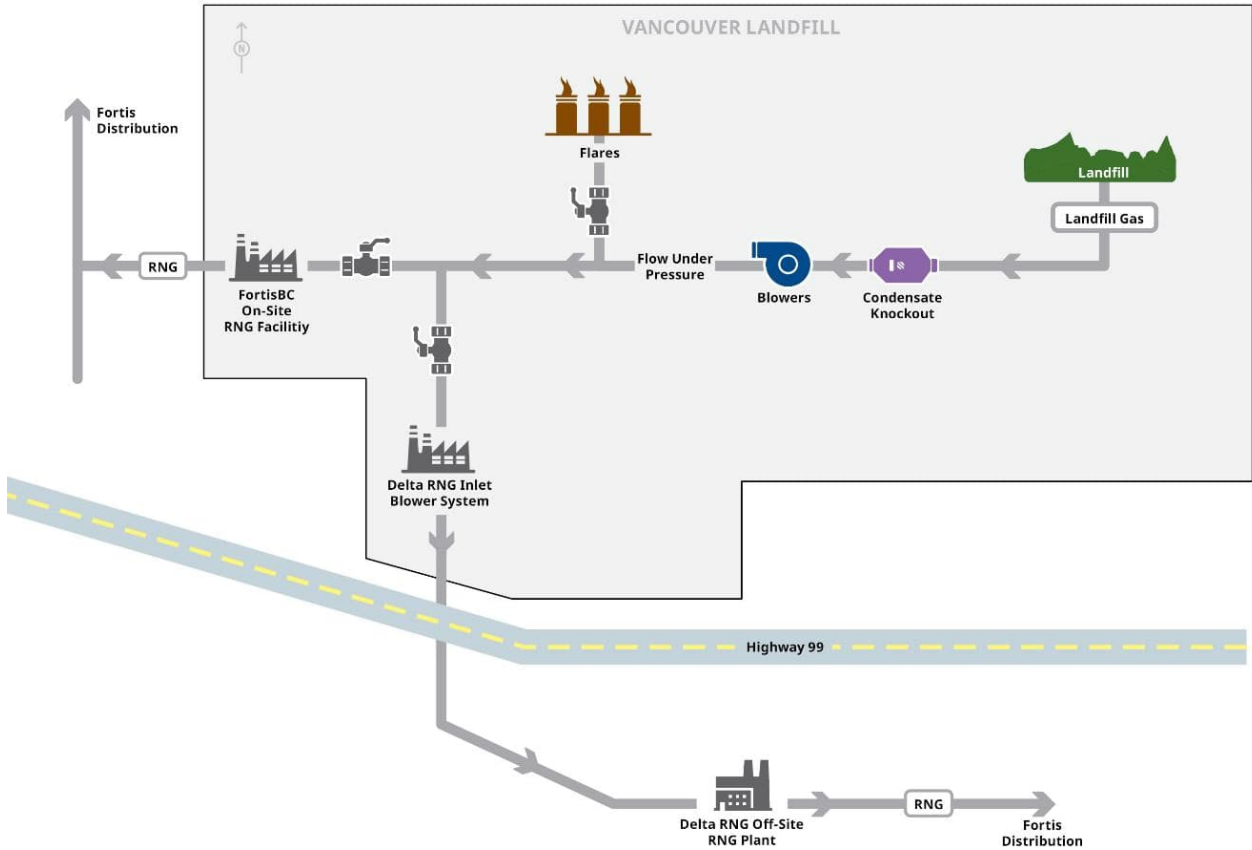


Figure 6: Landfill Gas Control and Beneficial Use System



Figure 7: 2025 Landfill Gas Collection System

8.5 Landfill gas collection efficiency

The total volume of LFG collected in 2025 is reported in two ways in Table 12:

1. As measured by individual meters; and,
2. On a normalized basis (to 50 percent methane by volume) as per the methodology used by ENV in Section 3.2 of the *Landfill Gas Management Facilities Design Guidelines* (Conestoga-Rovers and Associates, 2010).

Table 12: 2025 Landfill Gas Collection and Beneficial Use

2025	Weighted Average Methane Content (% by vol.)	LFG to Utilization Facility (cu. m)	LFG to Flare (cu. m)	LFG Captured for Period (cu .m)
Total (metered)	52.8	43,881,365	42,096,195	85,977,560
Total (normalized to 50 percent methane)	50	46,331,851	44,446,992	90,778,843
Daily Average (metred)	52.8	120,223	115,332	235,555
Daily Average (normalized)	50	126,937	121,773	248,709

LFG collection efficiency (CE) is defined as the normalized average collected flow rate of LFG in the given calendar year divided by the estimated generated LFG flow rate in the given calendar year multiplied by 100 percent.

The LFG generation rate was estimated to be 10,955 cu. m per hour for 2025 using a site-specific calibrated model developed by GHD Limited for the Landfill. The 2025 Landfill CE was calculated to be 94.6 percent, which is a nine-percent increase from 2024. The Landfill's CE exceeds ENV's target of 75 percent.

As shown in Table 5, the City will continue to implement LFG system modifications and upgrades to maximize CE. Further details on LFG activities in 2025, LFG CE calculations and the plan to increase future CE can be found in the *2025 Landfill Gas Annual Report for the Vancouver Landfill* (City of Vancouver, 2026).

9. Operational information

9.1 Bird control

Birds, particularly gulls, are a nuisance at landfill sites. In large numbers, they create a negative image of landfills and scatter litter onto surrounding areas. Birds are also a potential aviation hazard. A formal program using birds of prey started at the Landfill in July 2001. The program includes the use of trained raptors near the active face as the primary control method. Trained raptors discourage gulls and other birds from approaching the waste. Secondary control methods are used when trained raptors are not an option, such as when traffic is heavy or during very windy or rainy conditions. These methods include noise deterrents (stock or bull whips, pyrotechnics, whistles), visual deterrents (aerial projectiles, laser pointers, kites), and positioning the bird control vehicle close to the active face. Pacific Northwest Raptors (PNWR) has been providing bird control services since January 2016 and is contracted until 2027.

In early 2018, the City began working the Hancock Wildlife Foundation (HWF) in collaboration with Simon Fraser University for the Bald Eagle Tracking Alliance Project. This project aims to better understand the movements of bald eagles using tracking devices. The City continued to support HWF in 2025 by accommodating periodic visits to the Landfill for the purpose of plotting, baiting and catching bald eagles for banding and GPS tracking.

9.2 Site inspections

Formal site inspection activities beyond those conducted as part of environmental monitoring programs, are summarized in Table 13.

Table 13: 2025 Site Inspection Activities

Type of Inspection	Description	Findings and Action Taken (if applicable)
Site Tour	Conducted weekly by the Landfill Engineer, GPS Technician and Superintendent to assess progress of filling, cover integrity, health of vegetation, erosion and settlement in active areas.	Any signs of leachate breakouts or erosion on side slopes are addressed promptly by Operations Staff at the direction of the Superintendent. Vegetation issues are referred to the LFG Team Staff.
Workplace Inspections	Conducted monthly by representatives from the Joint Operational Health and Safety (OH&S) Committee and Staff to verify compliance with the Landfill's Safety Management Program and <i>OH&S Regulation</i> .	Any deficiencies identified are logged and addressed as soon as practical with discussion following in the monthly OH&S Committee meetings.

Type of Inspection	Description	Findings and Action Taken (if applicable)
Construction and Operations Site Safety Observations	Conducted during construction projects and regular Landfill operations by contracted safety consultants to ensure safety standards are being met and identify potential hazards or safety concerns arising from construction activities.	Construction contractor or City to complete recommended action items as soon as possible. Report summaries are reviewed during OH&S committee meetings.
Leachate Collection and Stormwater Systems Inspection	Conducted in advance of and during significant precipitation events by the Environmental Technician and/or Operations Staff to ensure ditches and culverts are not obstructed by debris, leachate and stormwater flows are unobstructed, and freeboard exists in the leachate and drainage ditches. Signs of burrowing animals are also monitored.	Any accumulation of debris is managed promptly by Operations Staff. Beaver dams are removed by the Landfill Services Contractor as practical.
Vegetation Inspection	Regular monthly inspections for invasive plants completed by the Landscaping Services contractor in established naturescaping areas.	Several different invasive plants are present in large numbers throughout the landfill closed areas. In the naturescaping areas, multiple invasive plants were removed by hand as part of regular monthly maintenance tasks, including: Himalayan Blackberries, Creeping Buttercup, Teasel, Common Mullein, Reed Canary Grass and Common Butterfly Bush. Further work may be conducted by the Landfill Services contractor.

9.3 Operating problems and corrective actions

The operating problems noted and corrective actions taken in 2025 are detailed in Table 14.

Table 14: 2025 Operating Problems and Corrective Actions

Problem	Commercial mattress drop-off volumes
Description	In 2025, ZWC Staff observed an increase in the frequency of commercial trucks dropping off the maximum daily limit of eight mattresses for recycling. Analysis of weigh scale data showed that the number of these transactions increased by 242 percent compared with the previous year. This surge resulted in operational challenges in efficiently managing mattresses at the ZWC.

Corrective Action After analysis of transaction data, Landfill Staff decided to lower the maximum daily limit for mattresses from eight to four for all customers. Lowering the daily limit allows for ZWC Staff to manage mattresses safely in the dedicated storage area. The policy change was communicated to customers and relevant stakeholders. A limit of four mattresses per customer per day is consistent with limits at Metro Vancouver’s Recycling and Waste Centres and the Vancouver South Transfer Station.

Problem **Perimeter ditch beaver dams**

Description Due to the proximity to Burns Bog, activity from beavers is regularly observed within the perimeter ditches of the Landfill, particularly in the northwest corner of the site. As a result of beaver activity, dams are observed in the inner and outer ditches, which can obstruct flow of leachate and stormwater and subsequently increase water levels within the ditches and the risk of berm overtopping.

Corrective Action In 2025, City staff regularly monitored the northwest corner for beaver activity. As beaver dams were constructed periodically throughout the year, City staff directed the Landfill Services Contractor to remove the dams as needed to maintain flow, following requirements set out in the BC *Wildlife Act* (ENV, 1996). Occasionally, the City worked with licensed wildlife trappers and biologists to humanely trap nuisance beavers and relocate them to a different region; however, this did not seem to discourage dam construction. The perimeter berm was also monitored for beaver burrowing, which can lead to structural failure or development of flow paths through the berm. No burrowing was observed in 2025.

Problem **Traffic queuing times and capacity challenges at Landfill entrance**

Description In recent years, increased demand for recycling opportunities and a higher volume of small vehicles using the Landfill facilities have strained capacity. Additionally, changes to Hwy 99 due to the South Fraser Perimeter Road construction restricts Landfill access to the southbound lanes only, significantly reducing available queuing space and contributing to longer traffic lineups.

Corrective Action In 2025, a new system was commissioned, enabling registered commercial vehicles to enter and exit the Landfill facilities using unattended terminals. This system offers operational flexibility between attended and unattended modes and provides redundancy for maintenance purposes. Immediate benefits included faster transaction processing, reduced queuing times, and more accurate, accessible data, enhancing overall site safety and efficiency for operations and customers.

Problem **Water line leak**

Description Reviews of water use invoices from the City of Delta indicating that Landfill water use was abnormally high continued in 2025. Although two water line leaks were identified and repaired in 2023, Staff concluded that at least one leak persisted and, despite considerable effort, could not find the exact location to facilitate necessary repairs.

Corrective Action In 2025, City staff identified the water leak is originating in an area between Phase 3 (under the closure system) and the Composting Facility. The exact location is unknown, and investigation efforts will continue in 2026 to identify and repair the leak. To help mitigate the impacts, City staff were able to take steps to reduce water usage in the Composting Facility in 2025.

9.4 Operational and maintenance expenditures

As detailed in Table 15, the total spent on operations and maintenance in 2025 was \$41.9 million, 28 percent higher than in 2024. The observed increase in operational and maintenance expenditures is significantly attributed to a pay-as-you-go capital costs incurred from the scope of non-closure capital work in 2025.

Table 15: Operational and Maintenance Expenditures for 2024 and 2025

Item¹	2025	2024
Salaries, Administration, Wages and Fringe Benefits	\$8,923,532	\$7,674,851
Vehicle and Equipment Rental	\$4,656,204	\$6,338,131
Capital Projects, Insurance, Taxes, Utilities, Building Maintenance, Permits and Landscaping	\$16,274,456	\$8,237,887
Recycling	\$525,928	\$512,952
Roads and Cover	\$3,093,266	\$2,074,155
Water Quality, Gas Management, Ditch Maintenance, Bird Control, Household Hazardous Waste Disposal, etc.	\$2,475,284	\$2,233,887
Consulting Projects (Leachate Upgrades, Gas, etc.)	\$177,419	\$460,704
Sewer and Soil Deposit Fees	\$4,714,360	\$4,296,732
Weighscales	\$1,076,099	\$1,037,440
Total	\$41,916,548	\$32,866,739

Note:

¹ Items do not include capital loan repayments and other cost allocations.

9.5 Public complaints and resolutions

In 2025, there were 11 complaints logged related to the Landfill, up from 10 received in 2024. The Public Complaint and Resolution Log for 2025 is available in Appendix 8.

Complaints above one related to each of the following categories were received:

- Website Clarity
 - Customers raised concerns about the City website being unclear about mattress disposal, charges during statutory holidays and electric scooter recycling at the

Landfill. When this type of complaint is received, Staff review related information and make necessary changes to the website or clarify information with the customer.

- Facility Wait Times
 - Customers raised concerns about potential wait times at the Landfill entrance. Wait times are frequently monitored, and traffic control is used during periods of high traffic. In 2025, the unattended scales were operationalized, reducing line ups overall, and live traffic cameras were implemented to allow customers to monitor the line ups on the City's website.
- ZWC refusals
 - Customers raised concerns being denied entry as a commercial vehicle, and drop-off of soggy cardboard and motor oil. In each case, the customer was called and alternative locations or reasons for denial were provided (residential limits, product quality required for Extended Producer Responsibility items, items not accepted at the ZWC).

9.6 Landfill tours

Landfill Staff typically provide tours for a variety of visitors, including school groups (grade 5 to university level), special interest groups, industry associations and professionals, delegates from other countries and members of the public. Tours provide the opportunity to showcase how waste is responsibly managed to minimize environmental impacts, and how much additional progress is required to reduce the amount of waste sent for disposal.

In 2025, City staff delivered 49 Landfill tours to the public.

Teachers interested in signing up their classes for this tour can visit the Metro Vancouver website: <https://metrovancover.org/school-programs/vancouver-landfill>

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Appendix 1: Progressive closure status

Area	Construction Timeframe	As of Dec 31, 2025	
		Area Closed	Additional Infrastructure Installed
Phase 1	2009-2010	14 ha	22 vertical gas wells and 1 horizontal gas collector; 9 stormwater discharge bridges
	2012-2013	3.5 ha	Toe closure and ditch to divert stormwater to 2 southern discharge bridges only
Phase 2	2012-2013	19 ha	89 vertical gas wells and 12 horizontal gas collectors; 1 stormwater retention pond with 11,500 m ³ design capacity
Phase 3W	2013	9.5 ha	13 vertical gas wells; 1 stormwater retention pond with 88,500 m ³ design capacity (to serve all of Phase 3)
Phase 3SE	2017-2018	9.7 ha	11 vertical gas wells
Phase 3NE	2018-2019	15.2 ha	33 vertical gas wells and 7 horizontal gas collectors
W40 ha	2017-2020	36.4 ha	27 vertical gas wells, 32 DRAINTUBE gas collectors; 6 stormwater retention ponds with 87,700 m ³ design capacity
Phase 4S	2020	10.8 ha	19 vertical gas wells, 28 horizontal gas collectors; 1 stormwater retention pond with 100,000 m ³ design capacity
Phase 4N	2021-2022	8.7 ha	27 vertical gas wells and 6 horizontal gas collectors; 7 temporary vertical gas wells
Phase 5S	2025-2026	9.0 ha	30 vertical gas wells; 1 leachate pond with 42,800 m ³ design capacity
Total (ha)		135.8	

Appendix 2: Annual waste quantities

Table A1: 2025 Material Summary by Source

Source	Waste Discharge				Cover	Road Construction & Other Beneficial Use					Capital & Closure		VLF Composting	
	VSTS MSW	VLF MSW	Demo	Total MSW	Cover Soil	Sand	Demo hog	Wood Waste	Crushed Concrete & Asphalt Grindings	Purchased Aggregate	Aggregate	Sand & Soil	VSTS Yard Trimmings	VLF Yard Trimmings
	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes
By Municipality	142,316	102,357	10,464	255,137									9,007	11,292
Vancouver Residential Collection	34,894	0.03		34,894										
Vancouver Public Works	7,295	1,978		9,273	333,069			19	5,083	13,556			1,180	9,026
Vancouver Commercial & Residential Drop-Off	53,780	10,290	3,308	67,378	5,908		18	311	1,211				7,629	496
Delta Residential Contractor		15,629		15,629										
Delta Public Works		3,603		3,603	172,494			14	13,276					281
Delta Commercial	990	25,228	1,717	27,935	24,252		41	340	1,484		112	76	2	163
Delta Residential Drop-Off	15	4,765		4,780	1			1,612					2	943
Richmond	41,473	33,272	485	75,230			53,018	731	137	22,424	100,464	1,023	136	165
UEL	2,879	208		3,086									9	
Surrey	74	3,578	2,417	6,069	8,181		18,817	325	2,622			63,811	13	146
White Rock	14	621		636	839			66	288				0.3	23
Other Municipalities*	902	3,138	2,538	6,578	13,142			118	7,277	51	1,316	859	36	48
Out of Region		45		45							10,240			
Metro Vancouver Regional Waste Transfer		447,706		447,706										
Other Authorized Waste		38,811		38,811										
Bottom Ash		32,145		32,145										
Water Treatment Plant Residuals		4,289		4,289										
Sewage Treatment Plant Residuals		2,377		2,377										
Totals	142,316	588,874	10,464	741,654	557,886	0	71,895	3,536	31,378	36,031	112,133	65,769	9,007	11,292
Total Materials to Vancouver Landfill												1,620,281	20,299	

* Burnaby, City of Langley, City of North Vancouver, Coquitlam, District of North Vancouver, District of West Vancouver, Langley Township, Maple Ridge, New Westminster, Pitt Meadows, Port Coquitlam, Port Moody.

Note: Totals may vary due to rounding errors.

Table A2: 2024 Material Summary by Source

Source	Waste Discharge				Cover	Road Construction & Other Beneficial Use					Capital & Closure		VLF Composting	
	VSTS MSW tonnes	VLF MSW tonnes	Total MSW tonnes	Demo tonnes	Cover Soil tonnes	Sand tonnes	Demo hog tonnes	Wood Waste tonnes	Crushed Concrete & Asphalt Grindings tonnes	Purchased Aggregate tonnes	Aggregate tonnes	Sand & Soil tonnes	VSTS Yard Trimmings tonnes	VLF Yard Trimmings tonnes
By Municipality	142,005	120,519	262,515										10,144	9,247
Vancouver Residential Collection	34,500	0.03	34,500											
Vancouver Public Works	7,961	3,252	11,214		435,823			16	13,035	18,526			1,004	7,185
Vancouver Commercial & Residential Drop-Off	55,771	13,060	68,832	5,332	3,042		6,268	290	5,470	713		29	8,769	300
Delta Residential Contractor		15,407	15,407											
Delta Public Works		4,591	4,591		94,618			12	9,361					162
Delta Commercial	1,049	18,589	19,639	2,027	10,017			159	1,128		.73	170	0.4	159
Delta Residential Drop-Off	21	4,484	4,505					1,590					6	1,089
Richmond	38,428	32,900	71,328	201	47		55,962	465	1,383	30,349			230	109
UEL	3,000	152	3,152	14									10	
Surrey	91	23,561	23,652	6,964	8,308		27,498	416	18			95	34	183
White Rock	14	318	332	316				42	177				0.4	31
Other Municipalities*	1,169	4,195	5,364	6,215	51,173			118	9,722				90	28
Out of Region											1,928	70		
Regional Waste Transfer		405,660	405,660											
Coquitlam Recycling and Waste Centre		133,898	133,898											
North Shore Recycling and Waste Centre		98,921	98,921											
Surrey Recycling and Waste Centres		157,209	157,209											
Maple Ridge Recycling and Waste Centre		8,804	8,804											
Langley Recycling and Waste Centre		6,827	6,827											
Other Authorized Waste		45,936	45,936											
Bottom Ash		39,347	39,347											
Water Treatment Plant Residuals		4,063	4,063											
Sewage Treatment Plant Residuals		2,525	2,525											
Totals	142,005	572,105	714,110	21,069	603,027	0	89,727	3,109	40,293	49,588	2,001	364	10,144	9,247
Total Materials to Vancouver Landfill												1,523,289	19,391	

* Burnaby, City of Langley, City of North Vancouver, Coquitlam, District of North Vancouver, District of West Vancouver, Langley Township, Maple Ridge, New Westminster, Pitt Meadows, Port Coquitlam, Port Moody.

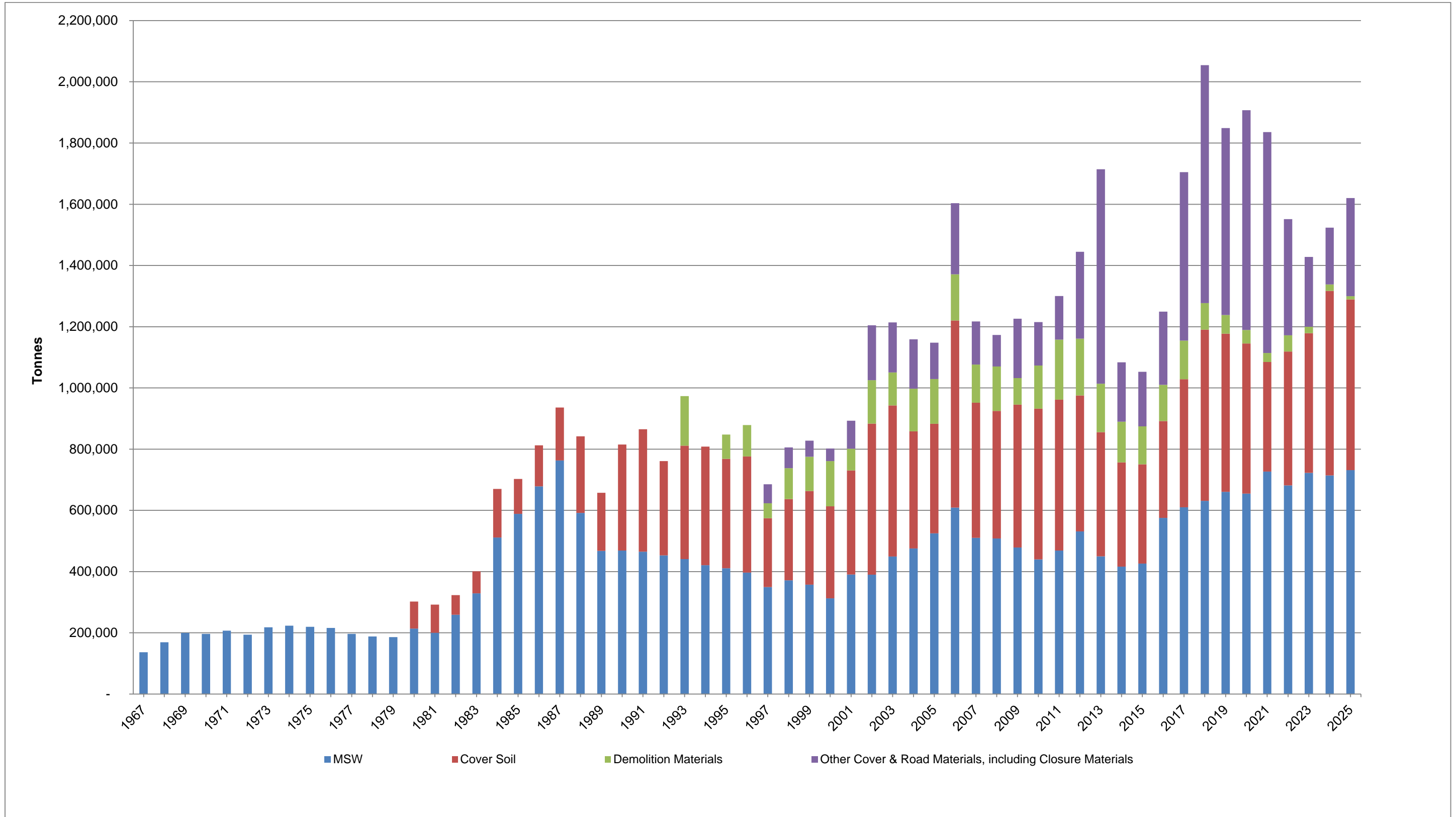
Note: Totals may vary due to rounding errors.

Table A3: 2025 Material Summary by Month

Month	Waste Discharge					Cover, Road, Capital & Closure Materials			VLF Composting		
	VSTS tonnes	VLF tonnes	Total tonnes	Bottom Ash tonnes	Demolition Material tonnes	Cover Material tonnes	Road & Other Beneficial Use Materials tonnes	Capital & Closure Materials tonnes	VSTS Yard Trimming tonnes	VLF Yard Trimming tonnes	Yard Trimming Total tonnes
January	12,227	43,582	55,809	2,144	1,653	46,638	14,013	0	491	1,578	2,069
February	9,725	35,462	45,187	2,640	831	42,947	11,382	231	264	403	667
March	11,449	47,463	58,911	2,896	1,049	52,029	15,957	1,096	735	469	1,204
April	11,586	47,521	59,108	2,877	1,215	37,936	13,167	276	585	334	919
May	11,887	52,067	63,954	2,742	806	28,733	12,912	6,075	616	312	928
June	12,031	48,704	60,735	2,683	768	29,760	13,433	13,155	692	319	1,012
July	12,704	48,357	61,060	3,212	529	46,206	12,398	21,957	586	401	986
August	12,167	48,240	60,407	3,202	701	32,591	8,629	52,897	520	348	869
September	12,065	49,928	61,994	2,515	1,069	68,262	9,901	61,596	542	366	909
October	13,154	52,394	65,548	1,540	944	69,990	13,091	10,519	891	454	1,345
November	10,814	45,030	55,844	2,561	469	57,054	10,734	8,872	2,172	2,202	4,374
December	12,509	37,980	50,489	3,133	429	45,742	7,222	1,227	913	4,104	5,018
Totals	142,316	556,729	699,045	32,145	10,464	557,886	142,839	177,902	9,007	11,292	20,299
Total Materials to Vancouver Landfill									1,620,281		

Note: Totals may vary due to rounding errors.

Figure A1: Historical Waste Quantities



Appendix 3: 2025 Recyclable and banned materials

Recyclable Materials – Accepted for FREE (Residential Only)

- ✓ Aerosol paint and empty containers
- ✓ Antifreeze and empty antifreeze containers
- ✓ Books
- ✓ Cardboard (flatten)
- ✓ Cell phones
- ✓ Clothing
- ✓ Cooking oil and grease (maximum 10 L per day)
- ✓ Electronics, small appliances and power tools (max 5 large items)
- ✓ Flammable liquids
- ✓ Flexible Plastics
- ✓ Fluorescent light bulbs and tubes
- ✓ Foam packaging (no foam peanuts)
- ✓ Glass bottles and jars
- ✓ Household batteries
- ✓ Large appliances (including refrigerators, freezers, air conditioners)
- ✓ Lawnmowers – electric, battery, or gas-powered (drain gasoline and oil)
- ✓ Lead acid car and truck batteries
- ✓ Light ballasts (non-PCB)
- ✓ Metal containers (cans, tins, foil, empty aerosol cans excluding spray paint cans)
- ✓ Paint and empty paint cans
- ✓ Paper containers (tetra-packs, coffee cups)
- ✓ Pesticides
- ✓ Plastic containers (jars, jugs, bottles)
- ✓ Printed paper and paper packaging (newspaper, magazines, catalogues, writing paper, paper bags)
- ✓ Propane tanks (maximum 4 disposable and 2 refillable)
- ✓ Scrap metal
- ✓ Smoke and carbon monoxide alarms
- ✓ Thermostats
- ✓ Tires (passenger or light truck with or without rims; maximum of 10)
- ✓ Used oil (maximum 15 litres), oil filters (maximum 3) and empty oil containers

Recyclable Materials – Accepted for a FEE

- ✓ Gypsum drywall, new scraps only (maximum level pick-up truckload)
- ✓ Food scraps (maximum 130 kg)
- ✓ Mattresses and box springs (maximum 8 pieces)
- ✓ Wood waste (includes painted, stained and treated wood, residential quantities)
- ✓ Yard & garden trimmings

Banned Materials

The lists of Banned Materials that follow are taken from City of Vancouver *Solid Waste By-Law No. 8417*, in effect as of January 1, 2025.

Banned Hazardous and Operational Impact Materials (Schedule E)

The following wastes are prohibited from disposal at the Vancouver Landfill and Vancouver South Transfer Station:

1. Automobile bodies.
2. Refuse that is on fire, smoldering, flammable or explosive.
3. Hazardous Waste as defined in the *Hazardous Waste Regulation* (B.C. Reg. 63/88), with the exception of asbestos waste delivered to the Vancouver Landfill in accordance with the Asbestos Policy.

4. Propane tanks, with the exception of Propane Tanks delivered as recyclable materials;
5. Liquids or sludge.
6. Coated or uncoated wire and cable that exceeds either 1% of the total weight of the load or 1% of the total volume of the load.
7. Dead animals from personal or business activities.
8. Inert fill material including soil, sod, gravel, concrete and asphalt exceeding 0.5 cubic metres per load, with the exception of those materials meeting the City Engineer's specifications for landfill cover, road building, and closure.
9. Excrement, other than amounts of pet excrement that are double bagged and discarded with Municipal Solid Waste and that do not exceed either 5% of the total weight of the load or 5% of the total volume of the load.
10. Barrels, drums, pails or other large (205 litre or greater) liquid containers.
11. New or used gypsum (drywall), with the exception of residential used gypsum (drywall) delivered to the Vancouver Landfill in accordance with the Drywall Policy.
12. Mattresses, with the exception of Mattresses that are delivered in dedicated loads to the Vancouver Landfill for management as special handle waste requiring burial
13. Railroad ties or creosote treated wood.
14. Toxic Plants, with the exception of Toxic Plants that are double bagged and delivered in dedicated loads to the Vancouver Landfill for management as special handle waste requiring burial.
15. Personal hygiene products where the personal hygiene products make up more than 10% of the total weight of the load unless the personal hygiene products are double bagged in sealed plastic bags that are sufficiently durable to resist leaking or breaking during collection and disposal.
16. Any material that would cause undue risk of injury or occupational disease to any person at the Vancouver Landfill and Transfer Station or that would otherwise contravene the *Occupational Health and Safety Regulation* (B.C. Reg. 296/97) enacted pursuant to the *Workers Compensation Act*, as amended or replaced from time to time.
17. Any other material deemed by the City Engineer as unacceptable for disposal at the Vancouver Landfill or Vancouver South Transfer Station.

Banned Recyclable Materials (Schedule F)

1. Beverage containers identified in "Schedule 1 — Beverage Container Product Category" to the *Recycling Regulation* (B.C. Reg. 449/2004) of the *Environmental Management Act*.
2. Containers other than beverage containers made of:
 - i. Metal,
 - ii. Glass,
 - iii. Plastic identified by the SPI Code #1 (Polyethylene Terephthalate or PET) or SPI Code #2 (High Density Polyethylene or HDPE) or SPI Code #4 (Low Density Polyethylene or LDPE) or SPI Code #5 (Polypropylene or PP), or
 - iv. Composite materials to create rigid packaging consisting of paper and polyethylene (gable top cartons, frozen food boxes, ice cream cartons, and microwaveable dinner cartons) or paper, polyethylene and aluminum (aseptic cartons).
3. Recyclable Paper.
4. Corrugated Cardboard.
5. Yard Waste.
6. Food Waste.
7. Clean Wood Waste.

8. Expanded Polystyrene Packaging.

Banned Product Stewardship Materials (Schedule G)

The following materials included in the effective Product Stewardship Program product categories of the *Recycling Regulation* of the *Environmental Management Act*, are banned from garbage containers, and from disposal as garbage at the Vancouver South Transfer Station, and Vancouver Landfill:

1. The following materials pursuant to Schedule 2 – Residual Product Category to the *Recycling Regulation*:
 - i. Solvents and flammable liquids;
 - ii. Pesticides;
 - iii. Gasoline;
 - iv. Pharmaceutical products and medications;
 - v. Oil, oil filters and oil containers;
 - vi. Paint and paint containers;
 - vii. Lead-acid batteries; and
 - viii. Antifreeze and antifreeze containers.
2. Electronics and electrical products, including metal household and commercial appliance, as identified in Schedule 3 – Electronics and Electrical Products Category to the *Recycling Regulation*;
3. Tires pursuant to Schedule 4 – Tire Product Category to the *Recycling Regulation*.

Appendix 4: 2025 Water quality monitoring location plan



Appendix 5: 2025 Water quality monitoring program parameters

Surface Water

alkalinity as CaCO ₃	dissolved organic carbon	sodium, total dissolved
aluminium, total	hardness as CaCO ₃	specific conductivity
ammonia	iron, total & dissolved	sulphate
arsenic, total	lead, total	zinc, total
cadmium, total	magnesium, total & dissolved	temperature*
calcium, total & dissolved	manganese, total & dissolved	turbidity
chloride	nickel, total	TSS
chromium, total	pH*	TOC
cobalt, total	true colour	VOCs
copper, total	phenols	
dissolved oxygen*	potassium, total & dissolved	

Groundwater

alkalinity as CaCO ₃	cobalt, dissolved	pH*
aluminium, dissolved	copper, dissolved	phenols
ammonia	hardness as CaCO ₃	potassium, dissolved
arsenic, dissolved	iron, dissolved	sodium, dissolved
cadmium, dissolved	lead, dissolved	specific conductivity
calcium, dissolved	magnesium, dissolved	sulphate
chloride	manganese, dissolved	temperature*
chromium, dissolved	nickel, dissolved	zinc, dissolved
		VOCs

Leachate Grab Samples

alkalinity as CaCO ₃	cyanide	potassium, total & dissolved
aluminium, total	dissolved oxygen*	sodium, total & dissolved
ammonia	hardness as CaCO ₃	specific conductivity
cadmium, total	iron, total & dissolved	sulphate
calcium, total & dissolved	lead, total	sulphide, total & dissolved
chloride	magnesium, total & dissolved	temperature*
chromium, total	manganese, total & dissolved	toxicity
cobalt, total	pH*	volatile organic compounds
copper, total	phenols, total**	zinc, total

Leachate Composite Samples

aluminium, total	copper, total	nickel, total
cadmium, total	iron, total	pH
chemical oxygen demand	lead, total	total suspended solids
chromium, total	manganese, total	zinc, total
cobalt, total	molybdenum, total	

Note:

* Field Data

** Total of 2,3,4,5 and 2,3,4,6 tetrachlorophenols and pentachlorophenols

Appendix 6: 2025 Annual water quality monitoring report executive summary

The City of Vancouver (CoV) has owned and operated the Vancouver Landfill (landfill) since 1966. AECOM Canada ULC (AECOM) reviewed historical data and interpreted leachate, groundwater, surface water and stormwater quality data collected at the landfill by CoV and AECOM staff between January 1, 2025 and December 31, 2025. This annual monitoring report presents the findings of the monitoring program review in accordance with the landfill Operational Certificate MR-01611 (OC). The requirements of the monitoring program and subsequent interpretation and reporting are specified within the OC and Waste Discharge Permit SC-100168-FSA (WDP). Section 3.5.2 of the OC requires that the annual report include a review and interpretation of the analytical data from receiving environment monitoring for the preceding year, and leachate flow data and Leachate/Drainage Ditch levels. The WDP governs the discharge of leachate from the landfill. Leachate discharged from the landfill is conveyed through City of Delta and Metro Vancouver force mains to the Annacis Island Wastewater Treatment Plant.

Monitoring data included measurements of leachate flows and leachate quality at the leachate pump station near the southwest corner of the landfill. Groundwater elevations and groundwater quality were measured in the shallow and deep aquifers with monitoring stations that surround the footprint of the landfill and are located immediately outside the perimeter ditch leachate collection and containment system (perimeter ditch system). Surface water elevations and surface water quality were measured in the outer surface water drainage ditch (Drainage Ditch) surrounding the landfill footprint, in downstream municipal ditches, and in Crescent Slough and the Delta Irrigation Enhancement Project Canal (DIEP Canal), which are connected to the Fraser River. A Remote Water Level Monitoring System (RWLMS) was commissioned in 2021 and became operational in May 2022. The new system continuously monitors water levels at 13 stations at the landfill, including the Dredge Pond, stormwater ponds, and the Leachate and Drainage Ditches in support of stormwater management at the landfill.

A routine stormwater monitoring program commenced in December 2019. Stormwater monitoring is not a requirement of the OC or the WDP. The purpose of the program is to monitor the quality of stormwater from closed phases/lined ponds at the landfill to support discharge of stormwater outside the perimeter ditch system. Three pilot stormwater discharge tests were carried out in 2019/2020 to assess the potential impacts of discharging clean stormwater to the Dredge Pond. Following favorable results, discharge of clean stormwater to the Dredge Pond became standard operating practice in 2021.

The 2025 monitoring program met or exceeded the requirements of the OC and WDP with respect to the number of stations, media being monitored, and parameters being analyzed, with the exception of a few surface water monitoring stations when ditches were dry and prohibited monitoring in late summer, similar to previous years.

The 2025 monitoring program included a quality assurance and quality control component that confirmed groundwater, surface water, leachate, and stormwater quality data were acceptably precise and reliable.

Flow Control System - Perimeter Ditch System

The perimeter ditch system consists of the inner leachate ditch (Leachate Ditch) and the outer drainage ditch (Drainage Ditch), which are separated by an intermediate soil berm. The Drainage Ditch diverts natural surface runoff and shallow groundwater flow from Burns Bog around the landfill footprint.

The Leachate Ditch collects the following waters, which are collectively referred to as 'leachate' once they reach the Leachate Ditch:

- Leachate – Precipitation that is contaminated after the water percolates through waste.
- Surface Runoff – Precipitation that flows along other surfaces at the landfill such as intermediate cover areas (temporarily closed) and operational areas (i.e., entrance area buildings and scales) that may be impacted by leachate.

- Stormwater – Precipitation that is collected above the impermeable geomembrane in closed areas of the landfill, that is not able to be redirected outside of the leachate collection system. It is not impacted by leachate.
- Impacted Stormwater – Precipitation that is collected above the impermeable geomembrane in closed areas of the landfill that is not yet suitable for discharge to the environment. Impacts are temporary and associated with recently closed phases of the landfill. It is not impacted by leachate.

Water collected in the Leachate Ditch flows to the landfill's leachate pump station before being discharged off-site through the municipal sanitary sewer system. Water in the sanitary line is conveyed to the Annacis Island Wastewater Treatment Plant.

The purpose of the perimeter ditch system is to maintain an inward hydraulic gradient around the landfill footprint to ensure leachate is collected and conveyed to the leachate pump station. To achieve this, water levels in the Leachate Ditch are actively maintained at a lower elevation than the Drainage Ditch through pump station control. Water levels in the Drainage Ditch are reflective of natural inputs from the surrounding lands; however, a system of weirs is in place to increase retention of natural runoff and maintain higher water elevations adjacent to Burns Bog.

Prior to 2022, leachate collection system containment efficiency was assessed using daily/weekly manual measurements from five staff gauge locations, and the average containment efficiency between 1995 to 2021 was 93%. An apparent sudden reduction in containment efficiencies in 2022 (78%) and 2023 (76%) is an artifact of the change in monitoring method, not a result of landfill operational changes, and does not signify a sudden decrease in containment efficiency. In 2024, discrepancies (up to 10 cm) were identified between manual water level measurements and RWLMS outputs which biased results toward outward gradients. Sediment build-up was identified in the stilling wells, and system performance was restored following sediment removal and re-calibration of the system. In 2025, weekly to monthly manual water level measurements were collected to confirm the accuracy of RWLMS outputs, and similar issues were identified. RWLMS accuracy improved following maintenance and re-calibration in June 2025. However, measurement drift was observed at some stations at the end of the year, indicating that more frequent maintenance and calibration is required to optimize system performance. CoV is planning to increase maintenance frequency in 2026.

Based on continuous and manual water level measurements from eight RWLMS stations, the overall efficiency of the system in 2025 was estimated to be 83%, which was lower than the overall containment efficiency in 2024 (93%, which used biased RWLMS data), and average containment efficiency results before the biased RWLMS data was used to calculate containment efficiency (93%). Decreased containment efficiency in 2025 is attributed to a drier, prolonged summer season. Although temporary outward gradients were observed at nearly all perimeter ditch monitoring stations throughout the dry season, calculated groundwater flow velocities across the berm (from Leachate Ditch to the Drainage Ditch) indicate that it is highly unlikely that leachate migrated to the Drainage Ditch in 2025.

Leachate Flow

The CoV maintained suitable flow measuring devices for the purpose of recording the volume of leachate discharged to the sanitary sewer each month as required under Section 3.2.2 of the OC. The total leachate discharge volume was approximately 19% lower than in 2024, while total precipitation in 2025 was about 14% lower than in 2024. The leachate to precipitation ratio in 2025 was 64%, which is 4% lower than in 2024 and noticeably lower than the results recorded between 2010 and 2022. The reduced leachate to precipitation ratio indicates that on-going stormwater management works continue to be effective at decreasing the volume of leachate-impacted waters generated at the landfill.

The highest daily leachate flow rate (25,348 m³/day) occurred on December 11, 2025. This is below the WDP maximum (under review) daily limit of 45,000 m³/day. Leachate discharge volumes remained in compliance with OC and WDP requirements during 2025.

Groundwater Flow

Two groundwater flow systems are present beneath the landfill. The shallow aquifer consists primarily of organic peat that extends from ground surface to approximately six metres depth and is underlain by a thick permeable deep sand aquifer (known as the deep aquifer). The shallow and deep aquifers are separated by a low permeability silt/clay aquitard that varies in thickness from 1 to 5 metres. Water levels are monitored in both aquifers on a quarterly basis using a series of monitoring wells located around the perimeter of the landfill. The perimeter ditch system and Dredge Pond are important hydrologic features that influence groundwater levels and flow directions in both aquifers. Groundwater elevations fluctuated on the order of one metre seasonally. Groundwater levels were lower than the historical range in both the shallow and deep aquifers but lower than in 2024, due to reduced precipitation in 2025. However, seasonal patterns and flow gradient directions were generally similar to previous years. Groundwater flow directions were predominantly from northeast to southwest, and because topography is relatively flat, horizontal groundwater gradients and flow velocities in both the shallow and deep aquifers are relatively low.

Surface Water Flow

Regional surface water flows southwest from Burns Bog toward the perimeter ditch system. Surface water and shallow groundwater that enters the perimeter ditch system is diverted around the landfill footprint and discharged into Crescent Slough, the DIEP Canal, or the municipal ditch network from connection points at the northwestern and southwestern corners of the landfill. The City of Delta intermittently opens a floodgate to allow river water to flow into Crescent Slough and the DIEP Canal for irrigation purposes on nearby agricultural lands. As a result, periodic surface water flow reversals have been observed under certain tidal, river discharge and operational scenarios. In late summer, portions of the perimeter ditch system on the north, east and southeast sides of the landfill cease to flow or become dry following prolonged periods of dry weather. Surface water in the Drainage Ditch near the leachate pump station receives water inputs from the municipal ditch network west of the landfill. Surface water in this area is primarily discharged to the DIEP Canal and the municipal ditch network south of the landfill.

Leachate Quality Summary

Monthly leachate quality samples were collected from the approved sampling point at the leachate pump station in accordance with OC and WDP requirements. All samples were analyzed for the parameters stipulated in the OC and WDP. All leachate quality samples met applicable discharge criteria in 2025, with some exceptions. Toxicity exceeded HWR criteria in three leachate grab samples (similar to previous years). One leachate grab sample marginally exceeded HWR criteria for dissolved manganese. Despite this minor exceedance, overall leachate quality met the intent of the WDP because the annual mean manganese concentration was well below the HWR criteria.

Groundwater Quality

As per the OC, quarterly monitoring must be conducted on five shallow monitoring wells and seven deep monitoring wells. In 2025, the monitoring program included 18 shallow monitoring wells and 20 deep monitoring wells. Quarterly groundwater quality samples were collected from the monitoring stations required by the OC. The remaining monitoring wells were also sampled on a quarterly basis, except for three wells that were only monitored for water levels and field parameters. All samples were analyzed for the parameters stipulated in the OC.

Groundwater quality in the shallow aquifer is strongly influenced by bog water chemistry. Upgradient groundwater flowing from Burns Bog toward the landfill is naturally acidic and contains elevated

concentrations of several constituents that are readily mobilized under acidic conditions. Deep groundwater chemistry appears to have minimal influence from Burns Bog and represents a compilation of upgradient sources. Water chemistry in both shallow and deep aquifers naturally evolves along the flow path, particularly in the shallow aquifer, as groundwater travels away from the bog hydrologic system. Professional judgement was used to assess the nature and degree of any water quality impacts that may have occurred due to leachate, road salt, runoff from neighbouring lands, upwelling of saline groundwater, and saline waters from tidal fluctuations and municipal floodgate operations.

Groundwater quality results were tabulated and compared against applicable *Contaminated Sites Regulation* (CSR) standards. The shallow aquifer is not considered to be a drinking water aquifer due to the presence of organic soils. Primary leachate indicator parameters are considered to be ammonia, conductivity, and chloride. Secondary leachate indicator parameters include alkalinity and hardness. All of these parameters were used to assess any leachate impacts in consideration of background concentrations of leachate indicator parameters and the results of statistical trend analysis.

Similar to previous years, leachate impacted groundwater was contained within the landfill property.

Shallow Groundwater Quality

Background water quality in the shallow aquifer was similar to previous years and reflected natural water chemistry in Burns Bog. Shallow groundwater quality at all monitoring stations does not appear to be impacted by leachate, with one exception (54-2013).

Shallow groundwater quality at monitoring station 54-2013 (south of the landfill and northeast of the Dredge Pond) continued to exhibit dilute leachate impacts. Based on the results of the *2023 Hydrogeology Review*, groundwater quality at this location, and up to 25 metres beyond the perimeter ditch system, is impacted by dilute leachate. The impacts are relatively minor, localized, stable, and are contained within the landfill property boundary due to net-inward hydraulic gradients from the bog towards the perimeter ditch system. Water quality at 54-2013 met all applicable CSR standards.

The consistently elevated chloride and conductivity in shallow groundwater near the pump station in the southwest corner of the landfill (wells 123 and 126) are attributed to upwelling and mixing of deep saline groundwater and not associated with leachate impacts due to relatively low ammonia concentrations.

Shallow groundwater quality data met all applicable CSR Freshwater Aquatic Life (AW) and Irrigation Water Use (IW) standards in 2025 except at the well adjacent to the Cranberry Research Facility (39-2013), which exceeded the AW standards for zinc and arsenic in Q1 and Q4, respectively. Elevated metal concentrations were observed at this location in 2023 and 2024, but water quality has otherwise met applicable CSR standards in the past. The exceedances are likely attributed to off-site activities in the vicinity of the well.

Deep Groundwater Quality

In 2025, deep groundwater quality at all monitoring stations does not appear to be impacted by leachate. Background water quality in the deep aquifer was similar to previous years and reflected natural water chemistry. Concentrations of leachate indicator parameters and other dissolved minerals are higher than those observed in the overlying shallow aquifer. Concentrations of select leachate indicator parameters at downgradient monitoring wells are slightly higher than upgradient of the landfill, which may be the result of off-site sources (i.e., upwelling saline waters, municipal irrigation system, road salt impacts, tidal influences, etc.).

Deep groundwater quality data met the applicable CSR Irrigation Water Use (IW) standards, with the exception of chloride at well 124 (located at the southwest corner of the landfill) and chromium at well 57. Chloride concentrations at well 124 are inferred to be the result of DIEP Canal construction in

2013 and slow eastward migration of the salinity plume due to localized groundwater flow and concentration gradients. Chromium is not considered an accurate indicator of landfill leachate impacts at the landfill due to the low concentrations of chromium in leachate.

Deep groundwater quality data met CSR AW standards, except for chromium at well 57. As mentioned above, localized chromium impacts are not associated with leachate.

Deep groundwater quality data met applicable CSR Drinking Water Use (DW) standards, with the exception of dissolved vanadium at background well 121 and downgradient well 57. Vanadium impacts are not considered an indicator of landfill leachate due to relatively low concentrations of vanadium in leachate and high natural background concentrations.

Surface Water Quality

As per the OC, quarterly monitoring and sampling must be conducted at eight surface water monitoring stations. In 2025, 13 surface water monitoring stations were monitored and sampled to confirm compliance with the OC.

In 2025, the surface water monitoring program exceeded the requirements stipulated in the OC based on the number of stations and parameters monitored. The only exceptions were associated with locations that could not be sampled in the summer when ditches were dry.

Surface water quality at monitoring stations located north, northwest, northeast, and south of the landfill generally does not appear to be impacted by leachate. Water chemistry at these locations is strongly influenced by naturally acidic surface water runoff and groundwater seepage from Burns Bog. Similar to previous years, pH, turbidity, total suspended solids, and select metals concentrations exceeded BCWQG AW criteria. Exceedances at these stations are consistent with background water quality and are attributed to the naturally acidic water quality due to water inputs from Burns Bog.

Surface water quality at monitoring stations located west and southwest of the landfill do not appear to be impacted by leachate in 2025. Similar to previous years, pH, turbidity, total suspended solids, and select metals concentrations exceeded BCWQG AW criteria. Water quality impacts at these locations are attributed to poor water quality in the municipal irrigation network caused by seasonal runoff from nearby agricultural fields, roadways, upwelling of deep saline groundwater, and influences from the Fraser River.

Stormwater Quality

The purpose of the stormwater monitoring program is to characterize the quality of stormwater discharging from closed landfill phases and lined stormwater detention ponds to confirm if the water is suitable for discharge outside the leachate collection system.

Based on 2025 results, stormwater quality from the closed Phases 1, 2, 3, Western 40 Pond 4, Western 40 Pond 6, and Phase 4 Pond was similar to or better than water quality in nearby on-site and off-site receiving environments (e.g., Dredge Pond, Crescent Slough, and Centre Ditch). Stormwater from these locations was discharged to the Dredge Pond in 2025 and water quality in the Dredge Pond was not affected. As such, it is acceptable to continue discharging stormwater from Phases 1, 2, 3, Western 40 Pond 4, and Phase 4 Pond outside the leachate collection system. Stormwater from Western 40 Pond 6 is discharged into the Leachate Ditch due to absence of suitable water conveyance infrastructure and the practice of directing landfill stormwater away from Burns Bog.

Following favourable water quality results between 2021 and 2024, herbicide and pesticide analysis was not conducted in 2025. Monitoring for these parameters should resume if increased use of herbicides or pesticides are used on closed phases of the landfill.

Based on the findings of the 2025 Water Quality Monitoring Program Review, the following recommendations were made, and are presented with ongoing recommendations from previous years.

2025 - Monitoring Network		Status
2025-1	Leachate, groundwater, surface water and stormwater monitoring (i.e., water level monitoring and sampling) should be conducted as per the recommended 2026 Water Monitoring Program as outlined in Appendix G of this report.	New
2025-2	<p>Manual water level verification checks should be performed weekly to confirm the accuracy of the RWLMS until modifications to the existing maintenance program are implemented and shown to be effective at reducing accuracy issues. Once established, the frequency of manual measurements may be reduced. Manual measurements should be collected from a surveyed point at the stilling wells to obtain accurate water level readings during the summer season when dry conditions are present in the perimeter ditches. Manual measurements should not be collected from outside the stilling wells as this is not effective in dry ditch conditions.</p> <p>If discrepancies between manual and system readings exceeding 10% or +/- 5 cm are identified, system maintenance and recalibration should be conducted as directed by the manufacturer (DEVA Solutions Inc.). At minimum, the maintenance program should include: quarterly cleaning of the stilling wells to remove sediments, quarterly cleaning of solar panels, quarterly battery checks/ replacements, and quarterly vegetation clearing. Maintenance activities should be documented along with RWLMS readings before and after maintenance was performed. More frequent maintenance may need to be conducted at some stations if they are more prone water level discrepancy issues.</p>	New
2025-3	Continue to resurvey the RWLMS stilling wells and groundwater wells on an annual basis to account for settlement impacts. Total station methods are recommended due to increased accuracy (± 1 cm) compared to GPS methods (± 4 cm).	New
2019 - Monitoring Network		
2019-2	Inactive monitoring Wells 19 and 20 should be decommissioned once access to the property south of the landfill is granted. To date, the landowner has not responded to requests from the City.	On-going

Appendix 7: 2025 Weekly leachate and drainage ditch water elevations

Date	L1/D1		Flow Direction	L2/D2		Flow Direction	L3/D3		Flow Direction	L4/D4		Flow Direction	L5/D5		Flow Direction	L6/D6		Flow Direction	L7/D7		Flow Direction	L8/D8		Flow Direction
	L1 m asl	D1 m asl		L2 m asl	D2 m asl		L3 m asl	D3 m asl		L4 m asl	D4 m asl		L5 m asl	D5 m asl		L6 m asl	D6 m asl		L7 m asl	D7 m asl		L8 m asl	D8 m asl	
Daily Data - Remote Water Level Monitoring System (Jan 01, 2025 - Dec 31, 2025)																								
2025-01-01	-0.32	0.02	inward	0.09	0.63	inward	0.50	0.94	inward	0.63	1.10	inward	0.05	0.77	inward	1.65	1.70	inward	1.54	1.82	inward	0.91	1.16	inward
2025-01-02	-0.34	-0.06	inward	0.04	0.64	inward	0.48	0.92	inward	0.60	1.08	inward	0.01	0.76	inward	1.63	1.88	inward	1.52	1.82	inward	0.88	1.15	inward
2025-01-03	-0.37	-0.08	inward	0.01	0.65	inward	0.46	0.90	inward	0.57	1.06	inward	-0.02	0.76	inward	1.61	1.66	inward	1.51	1.80	inward	0.86	1.13	inward
2025-01-04	-0.35	-0.09	inward	0.02	0.66	inward	0.46	0.89	inward	0.56	1.05	inward	-0.03	0.76	inward	1.61	1.66	inward	1.51	1.79	inward	0.85	1.12	inward
2025-01-05	-0.37	-0.09	inward	0.01	0.66	inward	0.46	0.89	inward	0.57	1.05	inward	-0.02	0.76	inward	1.61	1.67	inward	1.51	1.81	inward	0.85	1.12	inward
2025-01-06	-0.37	-0.09	inward	0.02	0.65	inward	0.46	0.90	inward	0.57	1.05	inward	0.00	0.76	inward	1.61	1.67	inward	1.51	1.84	inward	0.86	1.13	inward
2025-01-07	-0.41	-0.10	inward	0.00	0.67	inward	0.45	0.88	inward	0.56	1.04	inward	-0.03	0.75	inward	1.59	1.66	inward	1.49	1.82	inward	0.85	1.12	inward
2025-01-08	-0.41	-0.10	inward	-0.02	0.62	inward	0.43	0.87	inward	0.54	1.02	inward	-0.05	0.75	inward	1.58	1.65	inward	1.48	1.79	inward	0.83	1.11	inward
2025-01-09	-0.43	-0.11	inward	-0.04	0.61	inward	0.42	0.85	inward	0.53	1.01	inward	-0.07	0.74	inward	1.57	1.65	inward	1.46	1.80	inward	0.82	1.09	inward
2025-01-10	-0.42	-0.12	inward	-0.05	0.60	inward	0.42	0.84	inward	0.52	0.99	inward	-0.08	0.74	inward	1.56	1.65	inward	1.46	1.76	inward	0.81	1.08	inward
2025-01-11	-0.38	-0.09	inward	0.00	0.59	inward	0.44	0.85	inward	0.54	1.00	inward	-0.06	0.71	inward	1.57	1.65	inward	1.48	1.79	inward	0.82	1.09	inward
2025-01-12	-0.45	-0.12	inward	-0.03	0.58	inward	0.42	0.85	inward	0.53	0.99	inward	-0.09	0.73	inward	1.56	1.65	inward	1.46	1.81	inward	0.82	1.09	inward
2025-01-13	-0.51	-0.12	inward	-0.06	0.58	inward	0.41	0.84	inward	0.52	0.98	inward	-0.15	0.73	inward	1.55	1.65	inward	1.45	1.79	inward	0.81	1.09	inward
2025-01-14	-0.52	-0.13	inward	-0.06	0.60	inward	0.41	0.84	inward	0.51	0.97	inward	-0.17	0.69	inward	1.54	1.64	inward	1.44	1.77	inward	0.80	1.07	inward
2025-01-15	-0.52	-0.13	inward	-0.07	0.58	inward	0.40	0.83	inward	0.49	0.94	inward	-0.20	0.64	inward	1.53	1.63	inward	1.44	1.76	inward	0.80	1.06	inward
2025-01-16	-0.50	-0.13	inward	-0.08	0.59	inward	0.40	0.82	inward	0.49	0.94	inward	-0.21	0.67	inward	1.53	1.63	inward	1.44	1.75	inward	0.79	1.05	inward
2025-01-17	-0.49	-0.13	inward	-0.08	0.58	inward	0.40	0.81	inward	0.49	0.94	inward	-0.21	0.70	inward	1.53	1.63	inward	1.44	1.75	inward	0.79	1.05	inward
2025-01-18	-0.53	-0.13	inward	-0.09	0.53	inward	0.39	0.80	inward	0.47	0.93	inward	-0.22	0.70	inward	1.52	1.62	inward	1.43	1.76	inward	0.78	1.04	inward
2025-01-19	-0.53	-0.13	inward	-0.10	0.50	inward	0.38	0.79	inward	0.46	0.93	inward	-0.23	0.70	inward	1.51	1.62	inward	1.42	1.75	inward	0.77	1.03	inward
2025-01-20	-0.55	-0.14	inward	-0.11	0.44	inward	0.38	0.78	inward	0.46	0.92	inward	-0.23	0.69	inward	1.50	1.62	inward	1.41	1.75	inward	0.77	1.02	inward
2025-01-21	-0.55	-0.14	inward	-0.12	0.44	inward	0.38	0.77	inward	0.45	0.91	inward	-0.24	0.69	inward	1.50	1.62	inward	1.41	1.73	inward	0.77	1.02	inward
2025-01-22	-0.57	-0.14	inward	-0.13	0.41	inward	0.38	0.77	inward	0.45	0.90	inward	-0.25	0.68	inward	1.49	1.62	inward	1.41	1.73	inward	0.77	1.01	inward
2025-01-23	-0.58	-0.15	inward	-0.13	0.37	inward	0.37	0.76	inward	0.44	0.89	inward	-0.28	0.64	inward	1.49	1.61	inward	1.40	1.72	inward	0.77	1.01	inward
2025-01-24	-0.56	-0.15	inward	-0.13	0.34	inward	0.37	0.76	inward	0.44	0.88	inward	-0.27	0.62	inward	1.49	1.61	inward	1.41	1.70	inward	0.77	1.00	inward
2025-01-25	-0.56	-0.14	inward	-0.13	0.34	inward	0.37	0.75	inward	0.45	0.87	inward	-0.27	0.61	inward	1.49	1.61	inward	1.41	1.71	inward	0.76	1.00	inward
2025-01-26	-0.56	-0.14	inward	-0.14	0.31	inward	0.37	0.74	inward	0.45	0.87	inward	-0.27	0.62	inward	1.49	1.61	inward	1.42	1.70	inward	0.78	1.00	inward
2025-01-27	-0.57	-0.14	inward	-0.14	0.29	inward	0.36	0.73	inward	0.44	0.87	inward	-0.28	0.64	inward	1.48	1.61	inward	1.41	1.70	inward	0.78	0.99	inward
2025-01-28	-0.56	-0.15	inward	-0.13	0.28	inward	0.36	0.73	inward	0.44	0.86	inward	-0.29	0.59	inward	1.48	1.61	inward	1.42	1.68	inward	0.75	0.99	inward
2025-01-29	-0.55	-0.14	inward	-0.13	0.27	inward	0.35	0.72	inward	0.44	0.86	inward	-0.29	0.55	inward	1.48	1.60	inward	1.42	1.67	inward	0.75	0.99	inward
2025-01-30	-0.54	-0.15	inward	-0.13	0.25	inward	0.35	0.72	inward	0.44	0.85	inward	-0.30	0.55	inward	1.48	1.60	inward	1.43	1.67	inward	0.74	0.99	inward
2025-01-31	-0.54	-0.15	inward	-0.13	0.27	inward	0.35	0.72	inward	0.44	0.86	inward	-0.30	0.52	inward	1.49	1.60	inward	1.43	1.65	inward	0.74	0.99	inward
2025-02-01	-0.44	-0.12	inward	-0.06	0.36	inward	0.40	0.76	inward	0.51	0.88	inward	-0.23	0.54	inward	1.52	1.62	inward	1.48	1.68	inward	0.77	1.02	inward
2025-02-02	-0.47	-0.12	inward	-0.08	0.47	inward	0.40	0.80	inward	0.51	0.93	inward	-0.18	0.68	inward	1.53	1.66	inward	1.47	1.79	inward	0.78	1.06	inward
2025-02-03	-0.47	-0.12	inward	-0.10	0.49	inward	0.38	0.82	inward	0.49	0.95	inward	-0.19	0.71	inward	1.53	1.65	inward	1.49	1.78	inward	0.77	1.06	inward
2025-02-04	-0.49	-0.12	inward	-0.11	0.51	inward	0.37	0.81	inward	0.47	0.94	inward	-0.20	0.67	inward	1.53	1.65	inward	1.48	1.77	inward	0.76	1.05	inward
2025-02-05	-0.49	-0.12	inward	-0.11	0.48	inward	0.36	0.80	inward	0.46	0.93	inward	-0.22	0.69	inward	1.53	1.64	inward	1.49	1.76	inward	0.75	1.04	inward
2025-02-06	-0.51	-0.13	inward	-0.13	0.47	inward	0.35	0.80	inward	0.45	0.92	inward	-0.22	0.64	inward	1.53	1.63	inward	1.48	1.76	inward	0.75	1.03	inward
2025-02-07	-0.53	-0.13	inward	-0.13	0.46	inward	0.34	0.79	inward	0.44	0.90	inward	-0.24	0.59	inward	1.53	1.63	inward	1.46	1.74	inward	0.74	1.02	inward
2025-02-08	-0.55	-0.13	inward	-0.15	0.46	inward	0.34	0.78	inward	0.43	0.89	inward	-0.26	0.55	inward	1.52	1.63	inward	1.45	1.74	inward	0.73	1.01	inward
2025-02-09	-0.58	-0.13	inward	-0.16	0.43	inward	0.33	0.77	inward	0.41	0.87	inward	-0.29	0.56	inward	1.51	1.62	inward	1.43	1.73	inward	0.72	1.00	inward
2025-02-10	-0.59	-0.13	inward	-0.16	0.40	inward	0.33	0.77	inward	0.41	0.86	inward	-0.30	0.61	inward	1.51	1.62	inward	1.42	1.72	inward	0.72	1.00	inward
2025-02-11	-0.59	-0.13	inward	-0.17	0.35	inward	0.33	0.76	inward	0.40	0.86	inward	-0.30	0.58	inward	1.51	1.62	inward	1.42	1.71	inward	0.72	0.99	inward
2025-02-12	-0.57	-0.13	inward	-0.17	0.32	inward	0.33	0.75	inward	0.40	0.85	inward	-0.31	0.52	inward	1.50	1.61	inward	1.43	1.68	inward	0.72	1.00	inward
2025-02-13	-0.55	-0.13	inward	-0.17	0.32	inward	0.33	0.74	inward	0.40	0.85	inward	-0.31	0.50	inward	1.51	1.61	inward	1.46	1.66	inward	0.71	1.00	inward
2025-02-14	-0.49	-0.12	inward	-0.17	0.29	inward	0.33	0.73	inward	0.40	0.86	inward	-0.31	0.49	inward	1.51	1.60	inward	1.52	1.66	inward	0.71	1.01	inward
2025-02-15	-0.57	-0.13	inward	-0.17	0.30	inward	0.32	0.73	inward	0.39	0.85	inward	-0.32	0.48	inward	1.50	1.61	inward	1.44	1.72	inward	0.71	1.01	inward
2025-02-16	-0.59	-0.11	inward	-0.17	0.31	inward	0.32	0.73	inward	0.38	0.84	inward	-0.33	0.49	inward	1.50	1.60	inward	1.41	1.67	inward	0.71	1.00	inward
2025-02-17	-0.53	-0.07	inward	-0.12	0.37	inward	0.35	0.76	inward	0.42	0.86	inward	-0.29	0.55	inward	1.53	1.62	inward	1.47	1.67	inward	0.73	1.01	inward
2025-02-18	-0.53	-0.06	inward	-0.12	0.41	inward	0.35	0.79	inward	0.44	0.87	inward	-0.26	0.58	inward	1.54	1.63	inward	1.47	1.74	inward	0.74	1.01	inward
2025-02-19	-0.54	-0.06	inward	-0.13	0.43	inward	0.35	0.79	inward	0.42	0.89	inward	-0.27	0.61	inward	1.53	1.65	inward	1.46	1.74	inward	0.73	1.02	inward
2025-02-20	-0.51	-0.04	inward	-0.11	0.48	inward	0.36	0.80	inward	0.45	0.91	inward	-0.24	0.66	inward	1.56	1.66	inward	1.51	1.76	inward	0.74	1.03	inward
2025-02-21	-0.55	-0.03	inward	-0.12	0.47	inward	0.35	0.81	inward	0.46	0.93	inward	-0.23	0.67	inward	1.56	1.67	inward	1.46	1.82	inward	0.74	1.05	inward
2025-02-22	-0.51	0.03	inward	-0.09	0.52	inward	0.36	0.83	inward	0.47	0.94	inward	-0.22	0.65	inward	1.57	1.67	inward	1.49	1.77	inward	0.75		

Date	L1/D1		Flow Direction	L2/D2		Flow Direction	L3/D3		Flow Direction	L4/D4		Flow Direction	L5/D5		Flow Direction	L6/D6		Flow Direction	L7/D7		Flow Direction	L8/D8		Flow Direction
	L1 m asl	D1 m asl		L2 m asl	D2 m asl		L3 m asl	D3 m asl		L4 m asl	D4 m asl		L5 m asl	D5 m asl		L6 m asl	D6 m asl		L7 m asl	D7 m asl		L8 m asl	D8 m asl	
2025-03-06	-0.48	0.01	inward	-0.13	0.63	inward	0.36	0.81	inward	0.47	0.96	inward	-0.22	0.72	inward	1.58	1.67	inward	1.55	1.80	inward	0.74	1.05	inward
2025-03-07	-0.48	0.00	inward	-0.14	0.63	inward	0.35	0.80	inward	0.46	0.96	inward	-0.23	0.72	inward	1.57	1.66	inward	1.56	1.80	inward	0.74	1.04	inward
2025-03-08	-0.50	0.01	inward	-0.15	0.66	inward	0.35	0.79	inward	0.46	0.95	inward	-0.23	0.72	inward	1.56	1.66	inward	1.54	1.79	inward	0.73	1.04	inward
2025-03-09	-0.42	0.04	inward	-0.02	0.66	inward	0.40	0.82	inward	0.52	0.97	inward	-0.16	0.73	inward	1.60	1.69	inward	1.58	1.80	inward	0.77	1.07	inward
2025-03-10	-0.36	0.08	inward	0.00	0.66	inward	0.43	0.87	inward	0.55	1.05	inward	-0.09	0.76	inward	1.65	1.74	inward	1.63	1.86	inward	0.82	1.11	inward
2025-03-11	-0.39	0.07	inward	-0.05	0.63	inward	0.41	0.88	inward	0.53	1.05	inward	-0.12	0.76	inward	1.64	1.72	inward	1.62	1.86	inward	0.79	1.11	inward
2025-03-12	-0.32	0.07	inward	-0.02	0.63	inward	0.41	0.87	inward	0.52	1.04	inward	-0.15	0.74	inward	1.64	1.71	inward	1.68	1.82	inward	0.78	1.10	inward
2025-03-13	-0.30	0.02	inward	-0.06	0.49	inward	0.38	0.84	inward	0.50	1.00	inward	-0.14	0.71	inward	1.54	1.70	inward	1.70	1.81	inward	0.74	1.11	inward
2025-03-14	-0.36	-0.03	inward	-0.14	0.48	inward	0.34	0.81	inward	0.45	0.96	inward	-0.19	0.67	inward	1.45	1.68	inward	1.66	1.82	inward	0.70	1.11	inward
2025-03-15	-0.37	-0.03	inward	-0.17	0.48	inward	0.32	0.79	inward	0.44	0.94	inward	-0.22	0.65	inward	1.44	1.67	inward	1.65	1.79	inward	0.68	1.10	inward
2025-03-16	-0.38	-0.05	inward	-0.16	0.46	inward	0.32	0.78	inward	0.44	0.94	inward	-0.22	0.67	inward	1.44	1.67	inward	1.66	1.80	inward	0.68	1.09	inward
2025-03-17	-0.39	-0.05	inward	-0.15	0.39	inward	0.32	0.78	inward	0.44	0.94	inward	-0.21	0.68	inward	1.44	1.67	inward	1.64	1.81	inward	0.68	1.09	inward
2025-03-18	-0.47	-0.06	inward	-0.17	0.32	inward	0.31	0.77	inward	0.43	0.91	inward	-0.24	0.64	inward	1.42	1.67	inward	1.55	1.82	inward	0.67	1.09	inward
2025-03-19	-0.54	-0.07	inward	-0.20	0.26	inward	0.30	0.75	inward	0.41	0.90	inward	-0.25	0.66	inward	1.40	1.65	inward	1.48	1.80	inward	0.66	1.08	inward
2025-03-20	-0.48	ERR	inward	-0.20	0.24	inward	0.30	0.75	inward	0.40	0.89	inward	-0.26	0.62	inward	1.39	1.64	inward	1.55	1.73	inward	0.65	1.07	inward
2025-03-21	-0.45	ERR	inward	-0.20	0.18	inward	0.30	0.74	inward	0.39	0.87	inward	-0.28	0.60	inward	1.39	1.64	inward	1.58	1.76	inward	0.65	1.07	inward
2025-03-22	-0.42	ERR	inward	-0.18	0.19	inward	0.31	0.74	inward	0.40	0.87	inward	-0.27	0.64	inward	1.40	1.64	inward	1.60	1.77	inward	0.66	1.07	inward
2025-03-23	-0.47	ERR	inward	-0.19	0.19	inward	0.30	0.74	inward	0.40	0.89	inward	-0.24	0.66	inward	1.40	1.66	inward	1.55	1.80	inward	0.66	1.08	inward
2025-03-24	-0.38	ERR	inward	0.00	0.31	inward	0.38	0.78	inward	0.47	0.93	inward	-0.15	0.68	inward	1.46	1.71	inward	1.59	1.80	inward	0.74	1.12	inward
2025-03-25	-0.38	ERR	inward	0.01	0.41	inward	0.39	0.83	inward	0.48	0.98	inward	-0.13	0.69	inward	1.48	1.73	inward	1.56	1.85	inward	0.76	1.15	inward
2025-03-26	-0.37	ERR	inward	-0.02	0.46	inward	0.38	0.85	inward	0.48	0.99	inward	-0.15	0.69	inward	1.48	1.73	inward	1.58	1.81	inward	0.75	1.17	inward
2025-03-27	-0.33	ERR	inward	-0.06	0.48	inward	0.36	0.83	inward	0.45	0.98	inward	-0.20	0.69	inward	1.46	1.71	inward	1.67	1.78	inward	0.72	1.15	inward
2025-03-28	-0.20	ERR	inward	0.16	0.51	inward	0.45	0.89	inward	0.54	1.03	inward	-0.07	0.71	inward	1.53	1.77	inward	1.72	1.84	inward	0.82	1.19	inward
2025-03-29	-0.27	ERR	inward	0.01	0.51	inward	0.39	0.88	inward	0.49	1.01	inward	-0.15	0.70	inward	1.49	1.75	inward	1.69	1.84	inward	0.75	1.17	inward
2025-03-30	-0.35	ERR	inward	-0.05	0.50	inward	0.36	0.85	inward	0.46	0.98	inward	-0.19	0.70	inward	1.46	1.72	inward	1.60	1.82	inward	0.71	1.15	inward
2025-03-31	-0.32	ERR	inward	-0.09	0.49	inward	0.35	0.83	inward	0.44	0.97	inward	-0.22	0.69	inward	1.45	1.70	inward	1.66	1.75	inward	0.70	1.13	inward
2025-04-01	-0.33	ERR	inward	-0.10	0.44	inward	0.34	0.81	inward	0.43	0.96	inward	-0.23	0.68	inward	1.44	1.69	inward	1.57	1.79	inward	0.69	1.13	inward
2025-04-02	-0.35	ERR	inward	-0.12	0.40	inward	0.33	0.79	inward	0.42	0.94	inward	-0.25	0.67	inward	1.41	1.68	inward	1.55	1.78	inward	0.69	1.13	inward
2025-04-03	-0.35	-0.32	inward	-0.07	0.41	inward	0.35	0.79	inward	0.44	0.94	inward	-0.22	0.68	inward	1.41	1.70	inward	1.51	1.80	inward	0.71	1.13	inward
2025-04-04	-0.40	-0.20	inward	-0.12	0.37	inward	0.34	0.78	inward	0.42	0.93	inward	-0.25	0.67	inward	1.39	1.70	inward	1.46	1.79	inward	0.69	1.12	inward
2025-04-05	-0.43	-0.21	inward	-0.13	0.31	inward	0.33	0.78	inward	0.41	0.91	inward	-0.26	0.68	inward	1.37	1.68	inward	1.43	1.76	inward	0.69	1.11	inward
2025-04-06	-0.40	-0.21	inward	-0.14	0.29	inward	0.34	0.77	inward	0.40	0.91	inward	-0.27	0.68	inward	1.36	1.67	inward	1.45	1.73	inward	0.69	1.10	inward
2025-04-07	-0.33	-0.19	inward	-0.07	0.29	inward	0.37	0.77	inward	0.42	0.92	inward	-0.24	0.69	inward	1.39	1.68	inward	1.51	1.73	inward	0.71	1.11	inward
2025-04-08	-0.25	-0.18	inward	-0.01	0.38	inward	0.40	0.80	inward	0.48	0.97	inward	-0.17	0.70	inward	1.44	1.74	inward	1.57	1.80	inward	0.76	1.15	inward
2025-04-09	-0.26	-0.18	inward	-0.02	0.41	inward	0.39	0.83	inward	0.47	0.99	inward	-0.18	0.70	inward	1.44	1.74	inward	1.56	1.81	inward	0.75	1.15	inward
2025-04-10	-0.34	-0.18	inward	-0.05	0.42	inward	0.37	0.82	inward	0.46	0.99	inward	-0.19	0.70	inward	1.42	1.73	inward	1.50	1.82	inward	0.74	1.14	inward
2025-04-11	-0.30	-0.17	inward	-0.08	0.38	inward	0.36	0.81	inward	0.45	0.98	inward	-0.23	0.70	inward	1.41	1.71	inward	1.53	1.77	inward	0.72	1.13	inward
2025-04-12	-0.35	-0.20	inward	-0.08	0.37	inward	0.38	0.79	inward	0.43	0.95	inward	-0.26	0.66	inward	1.38	1.69	inward	1.49	1.78	inward	0.70	1.11	inward
2025-04-13	-0.36	-0.21	inward	-0.10	0.38	inward	0.36	0.78	inward	0.42	0.94	inward	-0.27	0.69	inward	1.37	1.68	inward	1.48	1.76	inward	0.69	1.09	inward
2025-04-14	-0.39	-0.21	inward	-0.13	0.33	inward	0.35	0.77	inward	0.40	0.93	inward	-0.27	0.69	inward	1.35	1.67	inward	1.47	1.74	inward	0.68	1.08	inward
2025-04-15	-0.33	-0.22	inward	-0.13	0.29	inward	0.35	0.76	inward	0.40	0.91	inward	-0.29	0.66	inward	1.35	1.66	inward	1.52	1.70	inward	0.67	1.08	inward
2025-04-16	-0.32	-0.22	inward	-0.13	0.24	inward	0.34	0.74	inward	0.39	0.82	inward	-0.31	0.64	inward	1.35	1.65	inward	1.55	1.71	inward	0.67	1.03	inward
2025-04-17	-0.32	-0.22	inward	-0.14	0.21	inward	0.33	0.73	inward	0.39	0.81	inward	-0.31	0.61	inward	1.34	1.65	inward	1.49	1.71	inward	0.66	1.06	inward
2025-04-18	-0.33	-0.22	inward	-0.15	0.14	inward	0.33	0.72	inward	0.38	0.80	inward	-0.32	0.60	inward	1.34	1.63	inward	1.47	1.69	inward	0.66	1.05	inward
2025-04-19	-0.32	-0.22	inward	-0.14	0.12	inward	0.33	0.71	inward	0.37	0.80	inward	-0.32	0.62	inward	1.33	1.63	inward	1.49	1.66	inward	0.65	1.05	inward
2025-04-20	-0.33	-0.23	inward	-0.15	0.10	inward	0.32	0.70	inward	0.35	0.81	inward	-0.33	0.63	inward	1.31	1.62	inward	1.48	1.68	inward	0.65	1.05	inward
2025-04-21	-0.33	-0.23	inward	-0.15	0.07	inward	0.32	0.69	inward	0.34	0.80	inward	-0.34	0.63	inward	1.31	1.61	inward	1.49	1.68	inward	0.65	1.04	inward
2025-04-22	-0.35	-0.23	inward	-0.16	0.04	inward	0.31	0.68	inward	0.33	0.79	inward	-0.34	0.62	inward	1.30	1.61	inward	1.48	1.69	inward	0.65	1.04	inward
2025-04-23	-0.35	-0.23	inward	-0.17	0.03	inward	0.31	0.67	inward	0.33	0.77	inward	-0.35	0.57	inward	1.29	1.60	inward	1.47	1.67	inward	0.65	1.04	inward
2025-04-24	-0.32	-0.23	inward	-0.17	0.03	inward	0.31	0.67	inward	0.32	0.74	inward	-0.36	0.56	inward	1.30	1.59	inward	1.43	1.65	inward	0.65	1.03	inward
2025-04-25	-0.30	-0.23	inward	-0.17	0.01	inward	0.31	0.65	inward	0.32	0.74	inward	-0.36	0.55	inward	1.31	1.59	inward	1.46	1.64	inward	0.65	1.03	inward
2025-04-26	-0.29	-0.24	inward	-0.17	0.03	inward	0.31	0.64	inward	0.32	0.73	inward	-0.37	0.54	inward	1.31	1.58	inward	1.46	1.64	inward	0.65	1.02	inward
2025-04-27	-0.31	-0.24	inward	-0.18	0.01	inward	0.30	0.63	inward	0.32	0.72	inward	-0.38	0.54	inward	1.30	1.58	inward	1.43	1.65	inward	0.65	1.02	inward
2025-04-28	-0.36	-0.24	inward	-0.19	0.01	inward	0.30	0.62	inward	0.31	0.71	inward	-0.38	0.53	inward	1.28	1.57	inward	1.40	1.66	inward	0.64	1.01	inward
2025-04-29	-0.41	-0.24	inward	-0.20	0																			

Date	L1/D1			Flow Direction	L2/D2			Flow Direction	L3/D3			Flow Direction	L4/D4			Flow Direction	L5/D5			Flow Direction	L6/D6			Flow Direction	L7/D7			Flow Direction	L8/D8			Flow Direction
	L1 m asl	D1 m asl			L2 m asl	D2 m asl			L3 m asl	D3 m asl			L4 m asl	D4 m asl			L5 m asl	D5 m asl			L6 m asl	D6 m asl			L7 m asl	D7 m asl			L8 m asl	D8 m asl		
2025-05-11	-0.29	-0.24	inward	-0.23	-0.05	inward	0.28	0.55	inward	0.28	0.65	inward	-0.42	0.46	inward	1.30	1.51	inward	1.44	1.55	inward	0.63	0.97	inward	0.63	0.97	inward	0.63	0.97	inward		
2025-05-12	-0.25	-0.25	inward	-0.23	-0.04	inward	0.28	0.55	inward	0.29	0.65	inward	-0.43	0.45	inward	1.31	1.51	inward	1.44	1.54	inward	0.63	0.97	inward	0.63	0.97	inward	0.63	0.97	inward		
2025-05-13	-0.27	-0.25	inward	-0.23	-0.03	inward	0.28	0.54	inward	0.28	0.65	inward	-0.43	0.45	inward	1.30	1.51	inward	1.39	1.55	inward	0.63	0.96	inward	0.63	0.96	inward	0.63	0.96	inward		
2025-05-14	-0.32	-0.25	inward	-0.24	-0.06	inward	0.28	0.53	inward	0.27	0.64	inward	-0.43	0.44	inward	1.27	1.50	inward	1.36	1.55	inward	0.63	0.96	inward	0.63	0.96	inward	0.63	0.96	inward		
2025-05-15	-0.34	-0.25	inward	-0.24	-0.05	inward	0.27	0.53	inward	0.27	0.63	inward	-0.45	0.44	inward	1.27	1.50	inward	1.36	1.54	inward	0.63	0.96	inward	0.63	0.96	inward	0.63	0.96	inward		
2025-05-16	-0.35	-0.25	inward	-0.24	-0.06	inward	0.28	0.53	inward	0.26	0.58	inward	-0.45	0.44	inward	1.27	1.49	inward	1.35	1.54	inward	0.63	0.96	inward	0.63	0.96	inward	0.63	0.96	inward		
2025-05-17	-0.31	-0.25	inward	-0.23	-0.01	inward	0.28	0.53	inward	0.27	0.47	inward	-0.45	0.44	inward	1.28	1.50	inward	1.39	1.52	inward	0.63	0.97	inward	0.63	0.97	inward	0.63	0.97	inward		
2025-05-18	-0.27	-0.24	inward	-0.21	-0.02	inward	0.29	0.54	inward	0.28	0.48	inward	-0.44	0.45	inward	1.31	1.51	inward	1.43	1.54	inward	0.64	0.98	inward	0.64	0.98	inward	0.64	0.98	inward		
2025-05-19	-0.33	-0.25	inward	-0.23	-0.01	inward	0.29	0.54	inward	0.27	0.49	inward	-0.44	0.45	inward	1.28	1.51	inward	1.40	1.57	inward	0.63	0.98	inward	0.63	0.98	inward	0.63	0.98	inward		
2025-05-20	-0.32	-0.24	inward	-0.21	-0.02	inward	0.29	0.55	inward	0.28	0.50	inward	-0.43	0.45	inward	1.30	1.53	inward	1.44	1.58	inward	0.64	0.99	inward	0.64	0.99	inward	0.64	0.99	inward		
2025-05-21	-0.37	-0.24	inward	-0.23	-0.01	inward	0.29	0.56	inward	0.27	0.50	inward	-0.44	0.45	inward	1.28	1.54	inward	1.40	1.58	inward	0.64	1.00	inward	0.64	1.00	inward	0.64	1.00	inward		
2025-05-22	-0.38	-0.24	inward	-0.23	-0.06	inward	0.28	0.55	inward	0.26	0.49	inward	-0.45	0.45	inward	1.27	1.53	inward	1.40	1.56	inward	0.63	1.00	inward	0.63	1.00	inward	0.63	1.00	inward		
2025-05-23	-0.34	-0.25	inward	-0.23	-0.06	inward	0.28	0.54	inward	0.26	0.48	inward	-0.46	0.45	inward	1.28	1.52	inward	1.45	1.54	inward	0.63	0.99	inward	0.63	0.99	inward	0.63	0.99	inward		
2025-05-24	-0.35	-0.25	inward	-0.23	-0.07	inward	0.28	0.53	inward	0.26	0.47	inward	-0.46	0.44	inward	1.28	1.51	inward	1.44	1.54	inward	0.63	0.98	inward	0.63	0.98	inward	0.63	0.98	inward		
2025-05-25	-0.32	-0.25	inward	-0.23	-0.06	inward	0.28	0.52	inward	0.26	0.47	inward	-0.45	0.44	inward	1.29	1.51	inward	1.43	1.52	inward	0.63	0.97	inward	0.63	0.97	inward	0.63	0.97	inward		
2025-05-26	-0.30	-0.26	inward	-0.22	-0.08	inward	0.28	0.52	inward	0.26	0.46	inward	-0.45	0.44	inward	1.29	1.50	inward	1.42	1.51	inward	0.63	0.96	inward	0.63	0.96	inward	0.63	0.96	inward		
2025-05-27	-0.34	-0.27	inward	-0.23	-0.08	inward	0.28	0.51	inward	0.26	0.46	inward	-0.46	0.43	inward	1.27	1.50	inward	1.39	1.53	inward	0.63	0.96	inward	0.63	0.96	inward	0.63	0.96	inward		
2025-05-28	-0.35	-0.27	inward	-0.22	-0.09	inward	0.28	0.51	inward	0.25	0.45	inward	-0.46	0.42	inward	1.27	1.49	inward	1.39	1.50	inward	0.62	0.95	inward	0.62	0.95	inward	0.62	0.95	inward		
2025-05-29	-0.26	-0.27	inward	-0.21	-0.09	inward	0.28	0.51	inward	0.26	0.45	inward	-0.46	0.42	inward	1.30	1.48	inward	1.42	1.50	inward	0.62	0.94	inward	0.62	0.94	inward	0.62	0.94	inward		
2025-05-30	-0.33	-0.22	inward	-0.20	-0.11	inward	0.28	0.51	inward	0.26	0.45	inward	-0.42	0.42	inward	1.27	1.49	inward	1.37	1.54	inward	0.63	0.94	inward	0.63	0.94	inward	0.63	0.94	inward		
2025-05-31	-0.34	-0.20	inward	-0.20	-0.08	inward	0.28	0.51	inward	0.25	0.45	inward	-0.43	0.41	inward	1.27	1.48	inward	1.36	1.49	inward	0.63	0.94	inward	0.63	0.94	inward	0.63	0.94	inward		
2025-06-01	-0.30	-0.13	inward	-0.15	-0.06	inward	0.31	0.52	inward	0.27	0.46	inward	-0.42	0.43	inward	1.28	1.50	inward	1.40	1.53	inward	0.66	0.96	inward	0.66	0.96	inward	0.66	0.96	inward		
2025-06-02	-0.34	-0.15	inward	-0.19	-0.06	inward	0.31	0.54	inward	0.28	0.48	inward	-0.43	0.43	inward	1.28	1.52	inward	1.37	1.55	inward	0.66	0.98	inward	0.66	0.98	inward	0.66	0.98	inward		
2025-06-03	-0.38	-0.18	inward	-0.26	-0.13	inward	0.29	0.34	inward	0.24	0.45	inward	-0.44	0.42	inward	1.10	1.51	inward	1.26	1.52	inward	0.59	0.96	inward	0.59	0.96	inward	0.59	0.96	inward		
2025-06-04	-0.52	-0.30	inward	-0.26	-0.11	inward	0.30	0.26	inward	0.24	0.46	inward	-0.48	0.38	inward	0.97	1.51	inward	1.23	1.48	inward	0.57	0.97	inward	0.57	0.97	inward	0.57	0.97	inward		
2025-06-05	-0.53	-0.33	inward	-0.26	-0.14	inward	0.31	0.25	inward	0.23	0.45	inward	-0.48	0.39	inward	0.98	1.50	inward	1.23	1.48	inward	0.58	0.97	inward	0.58	0.97	inward	0.58	0.97	inward		
2025-06-06	-0.54	-0.34	inward	-0.26	-0.14	inward	0.30	0.24	inward	0.23	0.45	inward	-0.47	0.38	inward	0.98	1.49	inward	1.23	1.47	inward	0.58	0.95	inward	0.58	0.95	inward	0.58	0.95	inward		
2025-06-07	-0.54	-0.33	inward	-0.26	-0.16	inward	0.30	0.23	inward	0.23	0.44	inward	-0.46	0.38	inward	0.99	1.48	inward	1.22	1.46	inward	0.58	0.94	inward	0.58	0.94	inward	0.58	0.94	inward		
2025-06-08	-0.54	-0.30	inward	-0.26	-0.13	inward	0.30	0.23	inward	0.23	0.43	inward	-0.46	0.37	inward	0.99	1.47	inward	1.22	1.45	inward	0.58	0.94	inward	0.58	0.94	inward	0.58	0.94	inward		
2025-06-09	-0.55	-0.30	inward	-0.27	-0.15	inward	0.29	0.22	inward	0.22	0.43	inward	-0.45	0.37	inward	0.98	1.47	inward	1.22	1.44	inward	0.57	0.93	inward	0.57	0.93	inward	0.57	0.93	inward		
2025-06-10	-0.55	-0.30	inward	-0.26	-0.16	inward	0.31	0.20	inward	0.22	0.42	inward	-0.44	0.36	inward	0.98	1.46	inward	1.22	1.43	inward	0.58	0.91	inward	0.58	0.91	inward	0.58	0.91	inward		
2025-06-11	-0.55	-0.30	inward	-0.27	-0.17	inward	0.29	0.20	inward	0.22	0.41	inward	-0.44	0.35	inward	0.99	1.45	inward	1.22	1.42	inward	0.58	0.90	inward	0.58	0.90	inward	0.58	0.90	inward		
2025-06-12	-0.52	-0.29	inward	-0.24	-0.17	inward	0.28	0.19	inward	0.22	0.41	inward	-0.44	0.34	inward	0.99	1.44	inward	1.21	1.42	inward	0.58	0.90	inward	0.58	0.90	inward	0.58	0.90	inward		
2025-06-13	-0.49	-0.29	inward	-0.24	-0.16	inward	0.28	0.18	inward	0.22	0.40	inward	-0.45	0.34	inward	0.98	1.43	inward	1.22	1.42	inward	0.58	0.89	inward	0.58	0.89	inward	0.58	0.89	inward		
2025-06-14	-0.51	-0.29	inward	-0.25	-0.16	inward	0.28	0.17	inward	0.22	0.40	inward	-0.45	0.33	inward	0.98	1.43	inward	1.22	1.40	inward	0.57	0.88	inward	0.57	0.88	inward	0.57	0.88	inward		
2025-06-15	-0.52	-0.29	inward	-0.26	-0.15	inward	0.28	0.17	inward	0.21	0.39	inward	-0.45	0.33	inward	0.98	1.43	inward	1.21	1.40	inward	0.57	0.86	inward	0.57	0.86	inward	0.57	0.86	inward		
2025-06-16	-0.54	-0.32	inward	-0.26	-0.17	inward	0.28	0.16	inward	0.22	0.39	inward	-0.46	0.32	inward	0.98	1.42	inward	1.21	1.38	inward	0.56	0.86	inward	0.56	0.86	inward	0.56	0.86	inward		
2025-06-17	-0.54	-0.33	inward	-0.25	-0.17	inward	0.28	0.15	inward	0.22	0.38	inward	-0.45	0.32	inward	0.99	1.42	inward	1.21	1.37	inward	0.58	0.85	inward	0.58	0.85	inward	0.58	0.85	inward		
2025-06-18	-0.54	-0.33	inward	-0.26	-0.16	inward	0.28	0.14	inward	0.22	0.38	inward	-0.45	0.31	inward	0.99	1.41	inward	1.21	1.36	inward	0.58	0.84	inward	0.58	0.84	inward	0.58	0.84	inward		
2025-06-19	-0.57	-0.34	inward	-0.27	-0.18	inward	0.28	0.14	inward	0.22	0.38	inward	-0.44	0.30	inward	1.00	1.41	inward	1.21	1.37	inward	0.58	0.83	inward	0.58	0.83	inward	0.58	0.83	inward		
2025-06-20	-0.57	-0.31	inward	-0.28	-0.16	inward	0.28	0.13	inward	0.22	0.37	inward	-0.41	0.30	inward	1.08	1.41	inward	1.20	1.34	inward	0.61	0.89	inward	0.61	0.89	inward	0.61	0.89	inward		
2025-06-21	-0.56	-0.22	inward	-0.32	-0.16	inward	0.30	0.15	inward	0.26	0.36	inward	-0.36	0.30	inward	1.21	1.44	inward	1.23	1.37	inward	0.66	1.01	inward	0.66	1.01	inward	0.66	1.01	inward		
2025-06-22	-0.54	-0.03	inward	-0.31	-0.15	inward	0.31	0.18	inward	0.32	0.37	inward	-0.34	0.33	inward	1.22	1.47	inward	1.24	1.44	inward	0.68	1.05	inward	0.68	1.05	inward	0.68	1.05	inward		
2025-06-23	-0.59	-0.16	inward	-0.33	-0.14	inward	0.30	0.19	inward	0.30	0.38	inward	-0.35	0.33	inward	1.21	1.47	inward	1.23	1.43	inward	0.64	1.05	inward	0.64	1.05	inward	0.64	1			

Date	L1/D1		Flow Direction	L2/D2		Flow Direction	L3/D3		Flow Direction	L4/D4		Flow Direction	L5/D5		Flow Direction	L6/D6		Flow Direction	L7/D7		Flow Direction	L8/D8		Flow Direction
	L1 m asl	D1 m asl		L2 m asl	D2 m asl		L3 m asl	D3 m asl		L4 m asl	D4 m asl		L5 m asl	D5 m asl		L6 m asl	D6 m asl		L7 m asl	D7 m asl		L8 m asl	D8 m asl	
2025-07-17	-0.51	-0.28	inward	-0.28	-0.19	inward	0.43	0.27	outward	0.28	0.24	outward	-0.16	0.21	inward	1.21	1.30	inward	1.27	1.22	outward	0.63	0.85	inward
2025-07-18	-0.51	-0.28	inward	-0.37	-0.19	inward	0.27	0.25	outward	0.28	0.24	outward	-0.23	0.21	inward	1.20	1.30	inward	1.26	1.22	outward	0.63	0.85	inward
2025-07-19	-0.54	-0.27	inward	-0.37	-0.16	inward	0.27	0.23	outward	0.28	0.23	outward	-0.24	0.20	inward	1.20	1.29	inward	1.26	1.23	outward	0.63	0.84	inward
2025-07-20	-0.55	-0.24	inward	-0.36	-0.20	inward	0.27	0.22	outward	0.28	0.22	outward	-0.18	0.19	inward	1.19	1.28	inward	1.26	1.22	outward	0.62	0.83	inward
2025-07-21	-0.59	-0.22	inward	-0.36	-0.17	inward	0.27	0.21	outward	0.28	0.21	outward	-0.13	0.19	inward	1.20	1.28	inward	1.26	1.19	outward	0.62	0.83	inward
2025-07-22	-0.63	-0.23	inward	-0.37	-0.19	inward	0.27	0.20	outward	0.28	0.20	outward	-0.10	0.18	inward	1.20	1.27	inward	1.26	1.18	outward	0.62	0.81	inward
2025-07-23	-0.67	-0.26	inward	-0.38	-0.19	inward	0.27	0.19	outward	0.28	0.20	outward	-0.06	0.18	inward	1.20	1.27	inward	1.26	1.19	outward	0.62	0.81	inward
2025-07-24	-0.61	-0.26	inward	-0.34	-0.20	inward	0.29	0.17	outward	0.28	0.19	outward	-0.04	0.17	inward	1.20	1.27	inward	1.25	1.17	outward	0.62	0.81	inward
2025-07-25	-0.60	-0.21	inward	-0.38	-0.20	inward	0.27	0.16	outward	0.28	0.18	outward	-0.01	0.17	inward	1.20	1.26	inward	1.24	1.16	outward	0.63	0.80	inward
2025-07-26	-0.61	-0.25	inward	-0.37	-0.21	inward	0.27	0.15	outward	0.28	0.18	outward	0.01	0.16	inward	1.20	1.25	inward	1.24	1.16	outward	0.62	0.79	inward
2025-07-27	-0.61	-0.21	inward	-0.37	-0.18	inward	0.27	0.14	outward	0.28	0.17	outward	0.03	0.15	inward	1.20	1.24	inward	1.24	1.14	outward	0.63	0.77	inward
2025-07-28	-0.62	-0.29	inward	-0.37	-0.17	inward	0.27	0.13	outward	0.28	0.16	outward	0.06	0.15	inward	1.20	1.24	inward	1.23	1.14	outward	0.62	0.77	inward
2025-07-29	-0.62	-0.28	inward	-0.37	-0.18	inward	0.27	0.12	outward	0.28	0.16	outward	0.07	0.14	inward	1.20	1.23	inward	1.23	1.13	outward	0.62	0.76	inward
2025-07-30	-0.61	-0.17	inward	-0.36	-0.17	inward	0.27	0.12	outward	0.27	0.15	outward	0.08	0.14	inward	1.19	1.23	inward	1.24	1.11	outward	0.62	0.75	inward
2025-07-31	-0.59	-0.11	inward	-0.35	-0.19	inward	0.27	0.11	outward	0.28	0.14	outward	0.10	0.13	inward	1.20	1.22	inward	1.24	1.10	outward	0.62	0.74	inward
2025-08-01	-0.57	-0.10	inward	-0.34	-0.18	inward	0.27	0.10	outward	0.28	0.13	outward	0.12	0.13	inward	1.20	1.22	inward	1.24	1.10	outward	0.63	0.73	inward
2025-08-02	-0.60	-0.17	inward	-0.35	-0.21	inward	0.27	0.09	outward	0.28	0.13	outward	0.02	0.13	inward	1.20	1.21	inward	1.24	1.10	outward	0.63	0.73	inward
2025-08-03	-0.57	-0.26	inward	-0.33	-0.19	inward	0.27	0.09	outward	0.28	0.12	outward	-0.11	0.11	inward	1.19	1.21	inward	1.24	1.09	outward	0.62	0.72	inward
2025-08-04	-0.60	-0.29	inward	-0.35	-0.20	inward	0.27	0.08	outward	0.28	0.12	outward	-0.06	0.11	inward	1.20	1.20	inward	1.24	1.07	outward	0.62	0.72	inward
2025-08-05	-0.63	-0.30	inward	-0.35	-0.22	inward	0.27	0.07	outward	0.29	0.11	outward	-0.03	0.10	inward	1.21	1.20	outward	1.24	1.06	outward	0.63	0.71	inward
2025-08-06	-0.63	-0.31	inward	-0.34	-0.19	inward	0.27	0.07	outward	0.29	0.11	outward	0.00	0.10	inward	1.21	1.19	outward	1.24	1.06	outward	0.63	0.70	inward
2025-08-07	-0.56	-0.21	inward	-0.31	-0.19	inward	0.32	0.18	outward	0.31	0.21	outward	0.03	0.12	inward	1.21	1.25	inward	1.26	1.12	outward	0.65	0.77	inward
2025-08-08	-0.60	-0.14	inward	-0.37	-0.21	inward	0.28	0.19	outward	0.31	0.21	outward	-0.01	0.12	inward	1.20	1.24	inward	1.27	1.12	outward	0.63	0.76	inward
2025-08-09	-0.61	-0.10	inward	-0.37	-0.21	inward	0.27	0.17	outward	0.29	0.19	outward	-0.13	0.12	inward	1.20	1.23	inward	1.27	1.09	outward	0.62	0.73	inward
2025-08-10	-0.59	-0.05	inward	-0.37	-0.20	inward	0.28	0.15	outward	0.29	0.18	outward	-0.09	0.11	inward	1.20	1.22	inward	1.27	1.07	outward	0.62	0.72	inward
2025-08-11	-0.60	-0.05	inward	-0.37	-0.18	inward	0.28	0.13	outward	0.29	0.16	outward	-0.06	0.10	inward	1.20	1.20	inward	1.27	1.05	outward	0.62	0.70	inward
2025-08-12	-0.61	-0.15	inward	-0.37	-0.18	inward	0.28	0.11	outward	0.30	0.15	outward	-0.03	0.10	inward	1.20	1.19	outward	1.27	1.04	outward	0.62	0.69	inward
2025-08-13	-0.60	-0.18	inward	-0.37	-0.18	inward	0.29	0.09	outward	0.31	0.14	outward	0.00	0.10	inward	1.21	1.19	outward	1.26	1.03	outward	0.63	0.69	inward
2025-08-14	-0.58	-0.18	inward	-0.37	-0.18	inward	0.29	0.08	outward	0.32	0.12	outward	0.02	0.09	inward	1.20	1.18	outward	1.26	1.04	outward	0.63	0.68	inward
2025-08-15	-0.58	-0.23	inward	-0.37	-0.16	inward	0.29	0.06	outward	0.32	0.12	outward	0.04	0.09	inward	1.20	1.18	outward	1.26	1.04	outward	0.62	0.66	inward
2025-08-16	-0.45	-0.06	inward	-0.17	-0.12	inward	0.45	0.25	outward	0.39	0.26	outward	0.09	0.12	inward	1.23	1.27	inward	1.30	1.12	outward	0.67	0.80	inward
2025-08-17	-0.41	-0.02	inward	-0.20	-0.14	inward	0.37	0.31	outward	0.37	0.28	outward	0.09	0.15	inward	1.22	1.30	inward	1.32	1.19	outward	0.67	0.84	inward
2025-08-18	-0.50	-0.18	inward	-0.32	-0.14	inward	0.33	0.29	outward	0.32	0.26	outward	0.09	0.16	inward	1.20	1.29	inward	1.31	1.16	outward	0.64	0.81	inward
2025-08-19	-0.52	-0.21	inward	-0.34	-0.17	inward	0.33	0.27	outward	0.31	0.25	outward	0.08	0.16	inward	1.20	1.28	inward	1.31	1.16	outward	0.63	0.80	inward
2025-08-20	-0.53	-0.21	inward	-0.34	-0.17	inward	0.32	0.26	outward	0.30	0.23	outward	0.09	0.15	inward	1.20	1.27	inward	1.30	1.15	outward	0.62	0.78	inward
2025-08-21	-0.52	-0.22	inward	-0.33	-0.14	inward	0.32	0.25	outward	0.30	0.22	outward	0.10	0.15	inward	1.20	1.26	inward	1.30	1.14	outward	0.62	0.77	inward
2025-08-22	-0.53	-0.23	inward	-0.34	-0.17	inward	0.32	0.25	outward	0.29	0.21	outward	0.10	0.14	inward	1.20	1.25	inward	1.30	1.11	outward	0.62	0.76	inward
2025-08-23	-0.52	-0.26	inward	-0.34	-0.17	inward	0.32	0.25	outward	0.30	0.20	outward	0.11	0.14	inward	1.22	1.24	inward	1.29	1.10	outward	0.62	0.74	inward
2025-08-24	-0.53	-0.27	inward	-0.35	-0.17	inward	0.32	0.23	outward	0.30	0.18	outward	0.11	0.13	inward	1.22	1.23	inward	1.29	1.09	outward	0.62	0.73	inward
2025-08-25	-0.54	-0.30	inward	-0.36	-0.16	inward	0.32	0.22	outward	0.31	0.17	outward	0.11	0.13	inward	1.22	1.23	inward	1.29	1.09	outward	0.62	0.71	inward
2025-08-26	-0.54	-0.30	inward	-0.36	-0.20	inward	0.32	0.21	outward	0.30	0.16	outward	0.12	0.13	inward	1.22	1.22	outward	1.30	1.08	outward	0.62	0.69	inward
2025-08-27	-0.53	-0.30	inward	-0.32	-0.20	inward	0.34	0.21	outward	0.30	0.15	outward	0.13	0.12	outward	1.24	1.21	outward	1.30	1.06	outward	0.62	0.69	inward
2025-08-28	-0.53	-0.28	inward	-0.35	-0.18	inward	0.31	0.20	outward	0.30	0.15	outward	0.14	0.12	outward	1.25	1.20	outward	1.30	1.07	outward	0.62	0.67	inward
2025-08-29	-0.53	-0.30	inward	-0.31	-0.21	inward	0.39	0.19	outward	0.29	0.15	outward	0.15	0.11	outward	1.25	1.20	outward	1.30	1.06	outward	0.61	0.66	inward
2025-08-30	-0.50	-0.30	inward	-0.25	-0.21	inward	0.42	0.19	outward	0.28	0.14	outward	0.15	0.11	outward	1.25	1.20	outward	1.31	1.05	outward	0.61	0.66	inward
2025-08-31	-0.51	-0.30	inward	-0.30	-0.21	inward	0.36	0.18	outward	0.28	0.13	outward	0.15	0.10	outward	1.25	1.19	outward	1.31	1.04	outward	0.61	0.65	inward
2025-09-01	-0.54	-0.30	inward	-0.34	-0.19	inward	0.34	0.18	outward	0.29	0.13	outward	0.15	0.10	outward	1.25	1.18	outward	1.32	1.02	outward	0.62	0.65	inward
2025-09-02	-0.54	-0.29	inward	-0.34	-0.20	inward	0.33	0.17	outward	0.29	0.12	outward	0.15	0.10	outward	1.25	1.18	outward	1.32	1.03	outward	0.62	0.63	inward
2025-09-03	-0.52	-0.27	inward	-0.28	-0.17	inward	0.42	0.17	outward	0.29	0.12	outward	0.15	0.10	outward	1.25	1.17	outward	1.32	1.02	outward	0.62	0.63	inward
2025-09-04	-0.50	-0.31	inward	-0.26	-0.17	inward	0.37	0.16	outward	0.29	0.12	outward	0.04	0.09	inward	1.25	1.17	outward	1.32	1.01	outward	0.62	0.62	inward
2025-09-05	-0.51	-0.30	inward	-0.28	-0.19	inward	0.33	0.15	outward	0.29	0.12	outward	-0.19	0.09	inward	1.26	1.16	outward	1.33	1.00	outward	0.63	0.62	outward
2025-09-06	-0.53	-0.30	inward	-0.33	-0.18	inward	0.31	0.15	outward	0.29	0.11	outward	-0.17	0.08	inward	1.26	1.16	outward	1.34	1.00	outward	0.63	0.62	outward
2025-09-07	-0.54	-0.30	inward	-0.34	-0.20	inward	0.31	0.14	outward	0.29	0.11	outward	-0.19	0.08	inward	1.26	1.16	outward	1.34	1.01	outward	0.63	0.61	outward
2025-09-08	-0.54	-0.31	inward	-0.35	-0.20	inward	0.30	0.14	outward	0.29	0.11	outward	-0.24	0.08	inward	1.26	1.15	outward	1.33	1.00	outward	0.63	0.61	outward
2025-09-09	-0																							

Date	L1/D1		Flow Direction	L2/D2		Flow Direction	L3/D3		Flow Direction	L4/D4		Flow Direction	L5/D5		Flow Direction	L6/D6		Flow Direction	L7/D7		Flow Direction	L8/D8		Flow Direction
	L1 m asl	D1 m asl		L2 m asl	D2 m asl		L3 m asl	D3 m asl		L4 m asl	D4 m asl		L5 m asl	D5 m asl		L6 m asl	D6 m asl		L7 m asl	D7 m asl		L8 m asl	D8 m asl	
2025-09-23	-0.55	-0.31	inward	-0.30	-0.22	inward	0.33	0.11	outward	0.27	0.12	outward	-0.26	0.04	inward	1.27	1.12	outward	1.34	0.96	outward	0.66	0.56	outward
2025-09-24	-0.55	-0.31	inward	-0.30	-0.23	inward	0.33	0.09	outward	0.27	0.10	outward	-0.26	0.04	inward	1.27	1.11	outward	1.34	0.94	outward	0.65	0.55	outward
2025-09-25	-0.56	-0.30	inward	-0.29	-0.24	inward	0.33	0.08	outward	0.28	0.09	outward	-0.26	0.04	inward	1.27	1.11	outward	1.34	0.94	outward	0.65	0.54	outward
2025-09-26	-0.56	-0.31	inward	-0.29	-0.20	inward	0.33	0.07	outward	0.27	0.09	outward	-0.25	0.03	inward	1.27	1.11	outward	1.34	0.94	outward	0.65	0.53	outward
2025-09-27	-0.55	-0.31	inward	-0.29	-0.22	inward	0.33	0.07	outward	0.27	0.09	outward	-0.25	0.03	inward	1.27	1.11	outward	1.34	0.92	outward	0.65	0.53	outward
2025-09-28	-0.55	-0.30	inward	-0.28	-0.22	inward	0.35	0.11	outward	0.28	0.14	outward	-0.24	0.04	inward	1.28	1.14	outward	1.35	0.95	outward	0.67	0.54	outward
2025-09-29	-0.54	-0.30	inward	-0.26	-0.21	inward	0.35	0.11	outward	0.28	0.14	outward	-0.24	0.04	inward	1.28	1.13	outward	1.35	0.96	outward	0.67	0.55	outward
2025-09-30	-0.51	-0.29	inward	-0.16	-0.19	inward	0.41	0.20	outward	0.29	0.22	outward	-0.22	0.05	inward	1.29	1.21	outward	1.36	1.04	outward	0.70	0.60	outward
2025-10-01	-0.47	-0.29	inward	-0.15	-0.21	inward	0.37	0.24	outward	0.30	0.24	outward	-0.19	0.07	inward	1.29	1.23	outward	1.36	1.06	outward	0.71	0.65	outward
2025-10-02	-0.52	-0.29	inward	-0.21	-0.21	inward	0.38	0.23	outward	0.28	0.23	outward	-0.21	0.07	inward	1.29	1.22	outward	1.35	1.07	outward	0.70	0.64	outward
2025-10-03	-0.50	-0.29	inward	-0.17	-0.18	inward	0.40	0.26	outward	0.29	0.25	outward	-0.20	0.08	inward	1.29	1.23	outward	1.35	1.11	outward	0.70	0.65	outward
2025-10-04	-0.51	-0.29	inward	-0.20	-0.19	inward	0.38	0.25	outward	0.28	0.23	outward	-0.19	0.08	inward	1.28	1.23	outward	1.35	1.07	outward	0.70	0.65	outward
2025-10-05	-0.53	-0.29	inward	-0.22	-0.22	inward	0.37	0.22	outward	0.27	0.22	outward	-0.17	0.07	inward	1.28	1.21	outward	1.35	1.05	outward	0.68	0.63	outward
2025-10-06	-0.54	-0.29	inward	-0.23	-0.21	inward	0.37	0.21	outward	0.27	0.21	outward	-0.16	0.07	inward	1.27	1.20	outward	1.34	1.04	outward	0.67	0.61	outward
2025-10-07	-0.55	-0.30	inward	-0.24	-0.20	inward	0.37	0.20	outward	0.28	0.20	outward	-0.17	0.07	inward	1.28	1.20	outward	1.35	1.02	outward	0.67	0.61	outward
2025-10-08	-0.55	-0.29	inward	-0.23	-0.19	inward	0.37	0.19	outward	0.28	0.19	outward	-0.19	0.07	inward	1.29	1.19	outward	1.35	1.00	outward	0.68	0.60	outward
2025-10-09	-0.54	-0.29	inward	-0.22	-0.19	inward	0.37	0.18	outward	0.28	0.19	outward	-0.17	0.07	inward	1.29	1.19	outward	1.35	1.02	outward	0.69	0.59	outward
2025-10-10	-0.55	-0.30	inward	-0.22	-0.21	inward	0.37	0.19	outward	0.28	0.20	outward	-0.15	0.07	inward	1.29	1.19	outward	1.35	1.03	outward	0.70	0.58	outward
2025-10-11	-0.54	-0.29	inward	-0.21	-0.22	inward	0.38	0.20	outward	0.28	0.21	outward	-0.13	0.07	inward	1.29	1.20	outward	1.35	1.03	outward	0.70	0.59	outward
2025-10-12	-0.53	-0.29	inward	-0.18	-0.20	inward	0.39	0.24	outward	0.28	0.23	outward	-0.12	0.08	inward	1.29	1.22	outward	1.36	1.06	outward	0.71	0.62	outward
2025-10-13	-0.63	-0.29	inward	-0.18	-0.21	inward	0.39	0.26	outward	0.29	0.24	outward	-0.12	0.08	inward	1.29	1.22	outward	1.36	1.07	outward	0.71	0.63	outward
2025-10-14	-0.54	-0.29	inward	-0.19	-0.22	inward	0.39	0.25	outward	0.28	0.23	outward	-0.12	0.09	inward	1.28	1.22	outward	1.35	1.07	outward	0.71	0.63	outward
2025-10-15	-0.54	-0.30	inward	-0.21	-0.20	inward	0.38	0.23	outward	0.27	0.22	outward	-0.12	0.08	inward	1.28	1.21	outward	1.35	1.04	outward	0.70	0.61	outward
2025-10-16	-0.55	-0.29	inward	-0.22	-0.21	inward	0.38	0.22	outward	0.27	0.21	outward	-0.12	0.08	inward	1.28	1.20	outward	1.35	1.03	outward	0.70	0.60	outward
2025-10-17	-0.55	-0.30	inward	-0.21	-0.22	inward	0.38	0.21	outward	0.27	0.21	outward	-0.12	0.08	inward	1.28	1.20	outward	1.35	1.01	outward	0.70	0.59	outward
2025-10-18	-0.54	-0.29	inward	-0.20	-0.21	inward	0.38	0.21	outward	0.27	0.21	outward	-0.12	0.08	inward	1.29	1.20	outward	1.35	1.02	outward	0.71	0.59	outward
2025-10-19	-0.53	-0.29	inward	-0.15	-0.14	inward	0.40	0.24	outward	0.29	0.23	outward	-0.11	0.09	inward	1.31	1.22	outward	1.36	1.03	outward	0.72	0.62	outward
2025-10-20	-0.35	-0.22	inward	0.09	-0.13	outward	0.49	0.36	outward	0.44	0.29	outward	0.00	0.14	inward	1.35	1.31	outward	1.40	1.20	outward	0.82	0.79	outward
2025-10-21	-0.42	-0.24	inward	-0.06	-0.20	outward	0.43	0.34	outward	0.33	0.28	outward	-0.02	0.17	inward	1.33	1.32	outward	1.38	1.25	outward	0.78	0.76	outward
2025-10-22	-0.47	-0.26	inward	-0.11	-0.20	inward	0.42	0.33	outward	0.31	0.27	outward	-0.03	0.18	inward	1.33	1.31	outward	1.38	1.21	outward	0.78	0.73	outward
2025-10-23	-0.48	-0.27	inward	-0.13	-0.21	inward	0.41	0.32	outward	0.31	0.27	outward	-0.02	0.18	inward	1.33	1.31	outward	1.38	1.22	outward	0.78	0.73	outward
2025-10-24	-0.50	-0.27	inward	-0.14	-0.20	inward	0.40	0.32	outward	0.30	0.26	outward	-0.01	0.18	inward	1.33	1.31	outward	1.37	1.21	outward	0.74	0.72	outward
2025-10-25	-0.49	-0.26	inward	-0.13	-0.22	inward	0.40	0.33	outward	0.31	0.26	outward	0.01	0.18	inward	1.33	1.32	outward	1.38	1.21	outward	0.73	0.73	outward
2025-10-26	-0.47	-0.28	inward	-0.12	-0.18	inward	0.41	0.34	outward	0.33	0.27	outward	-0.08	0.19	inward	1.34	1.32	outward	1.38	1.21	outward	0.72	0.73	inward
2025-10-27	-0.49	-0.28	inward	-0.11	-0.21	inward	0.40	0.34	outward	0.33	0.27	outward	-0.17	0.20	inward	1.33	1.32	outward	1.38	1.28	outward	0.71	0.74	inward
2025-10-28	-0.52	-0.28	inward	-0.16	-0.18	inward	0.39	0.32	outward	0.31	0.26	outward	-0.20	0.20	inward	1.32	1.32	outward	1.37	1.27	outward	0.69	0.72	inward
2025-10-29	-0.52	-0.28	inward	-0.15	-0.16	inward	0.40	0.33	outward	0.30	0.27	outward	-0.22	0.20	inward	1.33	1.32	outward	1.37	1.20	outward	0.69	0.74	inward
2025-10-30	-0.48	-0.14	inward	-0.08	-0.13	inward	0.42	0.35	outward	0.34	0.28	outward	-0.18	0.21	inward	1.21	1.35	inward	1.38	1.29	outward	0.72	0.78	inward
2025-10-31	-0.50	-0.25	inward	-0.12	-0.15	inward	0.41	0.35	outward	0.31	0.28	outward	-0.15	0.21	inward	1.19	1.35	inward	1.38	1.23	outward	0.70	0.77	inward
2025-11-01	-0.45	-0.24	inward	-0.01	-0.04	inward	0.46	0.37	outward	0.39	0.29	outward	-0.08	0.23	inward	1.26	1.37	inward	1.40	1.25	outward	0.74	0.82	inward
2025-11-02	-0.26	-0.02	inward	0.21	0.03	outward	0.55	0.45	outward	0.54	0.37	outward	0.07	0.30	inward	1.34	1.43	inward	1.44	1.37	outward	0.84	0.98	inward
2025-11-03	-0.32	-0.19	inward	0.07	-0.06	outward	0.47	0.50	inward	0.39	0.40	inward	0.06	0.38	inward	1.27	1.44	inward	1.41	1.42	inward	0.77	1.03	inward
2025-11-04	-0.37	-0.24	inward	-0.01	-0.10	inward	0.44	0.51	inward	0.36	0.45	inward	0.07	0.42	inward	1.26	1.46	inward	1.40	1.36	outward	0.74	1.03	inward
2025-11-05	-0.41	-0.25	inward	-0.04	-0.14	inward	0.42	0.52	inward	0.36	0.49	inward	0.07	0.45	inward	1.26	1.48	inward	1.40	1.38	outward	0.73	1.02	inward
2025-11-06	-0.41	-0.22	inward	-0.02	-0.13	inward	0.43	0.53	inward	0.38	0.51	inward	0.08	0.48	inward	1.29	1.51	inward	1.41	1.38	outward	0.74	1.03	inward
2025-11-07	-0.37	-0.23	inward	0.04	-0.08	outward	0.45	0.54	inward	0.43	0.53	inward	0.10	0.51	inward	1.31	1.55	inward	1.42	1.44	inward	0.77	1.05	inward
2025-11-08	-0.36	-0.24	inward	0.04	-0.11	outward	0.46	0.56	inward	0.43	0.58	inward	0.15	0.57	inward	1.31	1.59	inward	1.41	1.50	inward	0.79	1.07	inward
2025-11-09	-0.40	-0.24	inward	-0.02	-0.17	outward	0.43	0.57	inward	0.39	0.59	inward	0.15	0.58	inward	1.30	1.59	inward	1.41	1.46	inward	0.76	1.07	inward
2025-11-10	-0.44	-0.24	inward	-0.05	-0.17	outward	0.42	0.57	inward	0.37	0.58	inward	0.09	0.58	inward	1.30	1.59	inward	1.41	1.47	inward	0.76	1.07	inward
2025-11-11	-0.44	-0.22	inward	0.02	-0.17	outward	0.45	0.58	inward	0.42	0.60	inward	0.06	0.59	inward	1.32	1.59	inward	1.42	1.50	inward	0.80	1.11	inward
2025-11-12	-0.46	-0.23	inward	-0.02	-0.16	outward	0.43	0.59	inward	0.39	0.61	inward	0.11	0.60	inward	1.31	1.59	inward	1.42	1.49	inward	0.79	1.12	inward
2025-11-13	-0.47	-0.20	inward	-0.04	-0.19	outward	0.43	0.60	inward	0.39	0.59	inward	0.16	0.60	inward	1.32	1.59	inward	1.42	1.48	inward	0.79	1.12	inward
2025-11-14	-0.38	-0.12	inward	0.11	-0.02	outward	0.50	0.84	inward	0.50	0.63	inward	0.20	0.62	inward	1.38	1.60	inward	1.44	1.52	inward	0.85	1.15	inward
2025-11-15	-0.35	-0.14	inward	0.11	-0.07	outward	0.52	0.71	inward	0.49	0.70	inward	0.19	0.65	inward	1.39	1.62	inward	1.44	1.57	inward	0.87	1.18	inward
2025-11-																								

Date	L1/D1		Flow Direction	L2/D2		Flow Direction	L3/D3		Flow Direction	L4/D4		Flow Direction	L5/D5		Flow Direction	L6/D6		Flow Direction	L7/D7		Flow Direction	L8/D8		Flow Direction
	L1 m asl	D1 m asl		L2 m asl	D2 m asl		L3 m asl	D3 m asl		L4 m asl	D4 m asl		L5 m asl	D5 m asl		L6 m asl	D6 m asl		L7 m asl	D7 m asl		L8 m asl	D8 m asl	
2025-11-28	-0.34	-0.15	inward	0.17	0.18	inward	0.59	0.87	inward	0.54	0.74	inward	-0.03	0.67	inward	1.46	1.63	inward	1.47	1.62	inward	0.88	1.27	inward
2025-11-29	-0.35	-0.15	inward	0.12	0.17	inward	0.57	0.88	inward	0.51	0.74	inward	-0.05	0.67	inward	1.45	1.62	inward	1.47	1.66	inward	0.87	1.28	inward
2025-11-30	-0.39	-0.16	inward	0.08	0.14	inward	0.55	0.88	inward	0.46	0.70	inward	-0.09	0.67	inward	1.44	1.61	inward	1.46	1.61	inward	0.85	1.26	inward
2025-12-01	-0.43	-0.18	inward	0.05	0.06	inward	0.53	0.86	inward	0.44	0.68	inward	-0.12	0.66	inward	1.42	1.59	inward	1.45	1.60	inward	0.84	1.23	inward
2025-12-02	-0.43	-0.19	inward	0.04	0.05	inward	0.53	0.85	inward	0.44	0.67	inward	-0.13	0.66	inward	1.42	1.59	inward	1.46	1.57	inward	0.84	1.22	inward
2025-12-03	-0.41	-0.17	inward	0.08	0.07	inward	0.54	0.84	inward	0.47	0.68	inward	-0.10	0.66	inward	1.42	1.60	inward	1.46	1.61	inward	0.85	1.23	inward
2025-12-04	-0.41	-0.16	inward	0.05	0.06	inward	0.54	0.84	inward	0.45	0.66	inward	-0.10	0.64	inward	1.41	1.60	inward	1.46	1.59	inward	0.84	1.23	inward
2025-12-05	-0.36	-0.11	inward	0.14	0.16	inward	0.57	0.85	inward	0.51	0.69	inward	-0.07	0.66	inward	1.44	1.61	inward	1.47	1.61	inward	0.87	1.24	inward
2025-12-06	-0.29	-0.07	inward	0.22	0.27	inward	0.59	0.89	inward	0.55	0.75	inward	0.00	0.67	inward	1.48	1.64	inward	1.49	1.61	inward	0.89	1.29	inward
2025-12-07	-0.28	-0.09	inward	0.20	0.30	inward	0.58	0.91	inward	0.55	0.76	inward	0.00	0.68	inward	1.47	1.64	inward	1.48	1.70	inward	0.89	1.31	inward
2025-12-08	-0.29	-0.10	inward	0.16	0.30	inward	0.57	0.91	inward	0.53	0.74	inward	-0.02	0.68	inward	1.46	1.63	inward	1.48	1.66	inward	0.88	1.30	inward
2025-12-09	-0.31	-0.09	inward	0.12	0.31	inward	0.61	0.91	inward	0.54	0.73	inward	-0.03	0.67	inward	1.47	1.63	inward	1.48	1.64	inward	0.88	1.29	inward
2025-12-10	-0.34	-0.10	inward	0.04	0.30	inward	0.96	0.90	outward	0.54	0.72	inward	-0.03	0.68	inward	1.46	1.62	inward	1.48	1.66	inward	0.92	1.29	inward
2025-12-11	-0.11	0.19	inward	0.29	0.43	inward	1.22	0.96	outward	0.74	0.84	inward	0.15	0.69	inward	1.56	1.70	inward	1.57	1.70	inward	1.16	1.35	inward
2025-12-12	-0.11	0.42	inward	0.32	0.48	inward	1.25	0.99	outward	0.75	0.93	inward	0.18	0.70	inward	1.59	1.73	inward	1.59	1.78	inward	1.24	1.39	inward
2025-12-13	-0.13	0.23	inward	0.23	0.43	inward	0.83	0.96	inward	0.62	0.85	inward	0.07	0.69	inward	1.53	1.68	inward	1.52	1.71	inward	0.91	1.35	inward
2025-12-14	-0.26	-0.03	inward	0.11	0.42	inward	0.58	0.93	inward	ERR	ERR	-	0.02	0.69	inward	1.50	1.66	inward	1.50	1.69	inward	0.88	1.32	inward
2025-12-15	-0.32	-0.09	inward	0.09	0.40	inward	0.57	0.91	inward	ERR	ERR	-	-0.01	0.69	inward	1.50	1.64	inward	1.49	1.68	inward	0.87	1.30	inward
2025-12-16	-0.33	0.00	inward	0.14	0.41	inward	0.59	0.92	inward	ERR	ERR	-	-0.02	0.69	inward	1.53	1.66	inward	1.50	1.70	inward	0.89	1.31	inward
2025-12-17	-0.31	-0.03	inward	0.15	0.48	inward	0.59	0.93	inward	ERR	ERR	-	-0.03	0.67	inward	1.54	1.67	inward	1.51	1.68	inward	0.89	1.32	inward
2025-12-18	-0.02	0.37	inward	0.35	0.49	inward	0.67	0.98	inward	ERR	ERR	-	0.20	0.71	inward	1.61	1.74	inward	1.61	1.80	inward	0.98	1.38	inward
2025-12-19	-0.20	0.26	inward	0.21	0.49	inward	0.63	0.98	inward	ERR	ERR	-	0.23	0.71	inward	1.58	1.71	inward	1.56	1.69	inward	0.94	1.37	inward
2025-12-20	-0.24	0.07	inward	0.15	0.52	inward	0.61	0.96	inward	ERR	ERR	-	0.09	0.69	inward	1.57	1.70	inward	1.55	1.77	inward	0.92	1.35	inward
2025-12-21	-0.29	-0.02	inward	0.10	0.43	inward	0.58	0.94	inward	ERR	ERR	-	-0.01	0.69	inward	1.53	1.66	inward	1.51	1.72	inward	0.88	1.33	inward
2025-12-22	-0.29	-0.06	inward	0.13	0.32	inward	0.57	0.92	inward	ERR	ERR	-	-0.05	0.69	inward	1.53	1.65	inward	1.50	1.69	inward	0.87	1.31	inward
2025-12-23	-0.34	-0.08	inward	0.10	0.34	inward	0.56	0.91	inward	ERR	ERR	-	-0.10	0.63	inward	1.52	1.63	inward	1.50	1.70	inward	0.86	1.29	inward
2025-12-24	-0.35	-0.11	inward	0.08	0.28	inward	0.55	0.89	inward	ERR	ERR	-	-0.11	0.66	inward	1.51	1.63	inward	1.50	1.69	inward	0.85	1.29	inward
2025-12-25	-0.36	-0.13	inward	0.09	0.30	inward	0.56	0.88	inward	ERR	ERR	-	-0.10	0.68	inward	1.52	1.62	inward	1.50	1.67	inward	0.84	1.27	inward
2025-12-26	-0.34	-0.13	inward	0.08	0.25	inward	0.55	0.88	inward	ERR	ERR	-	-0.11	0.67	inward	1.51	1.62	inward	1.50	1.67	inward	0.84	1.27	inward
2025-12-27	-0.31	-0.11	inward	0.12	0.33	inward	0.57	0.89	inward	ERR	ERR	-	-0.07	0.68	inward	1.53	1.64	inward	1.50	1.70	inward	0.85	1.28	inward
2025-12-28	-0.34	-0.14	inward	0.07	0.31	inward	0.54	0.89	inward	ERR	ERR	-	-0.08	0.68	inward	1.49	1.64	inward	1.49	1.76	inward	0.85	1.29	inward
2025-12-29	-0.38	-0.15	inward	0.03	0.22	inward	0.52	0.88	inward	ERR	ERR	-	-0.11	0.68	inward	1.47	1.62	inward	1.48	1.69	inward	0.83	1.27	inward
2025-12-30	-0.41	-0.16	inward	0.01	0.17	inward	0.52	0.87	inward	ERR	ERR	-	-0.12	0.67	inward	1.47	1.61	inward	1.48	1.65	inward	0.82	1.25	inward
2025-12-31	-0.41	-0.15	inward	0.01	0.16	inward	0.52	0.85	inward	ERR	ERR	-	-0.13	0.67	inward	1.48	1.60	inward	1.48	1.63	inward	0.80	1.24	inward

Summary Statistics - Remote Water Level Monitoring System

Mean	-0.457	-0.187		-0.154	0.079		0.376	0.531		0.365	0.555		-0.178	0.432		1.345	1.477		1.403	1.467		0.710	0.955								
Standard Deviation	0.113	0.118		0.156	0.294		0.114	0.292		0.104	0.324		0.175	0.245		0.154	0.193		0.112	0.290		0.097	0.211								
Number of Remote Measurements			365			365			365			347			365			365			365			365							
Number of Days with Outward or No Flow			0			14			115			112			8			70			116			51							
Outward Flow Percentage			0.0%			3.8%			31.5%			32.3%			2.2%			19.2%			31.8%			14.0%							
2025 Average Outward Flow													16.84%																		

Notes:
 Data Source: Remote Water Level Monitoring System (RWLMS)
 Perimeter ditch stations are denoted by "L" for Leachate Ditch and "D" for Drainage Ditch, followed by the station number.
 All measured data are converted to geoidic elevations (m asl = metres above sea level).
 Outward Flow Percentages are averaged to obtain the overall Average Outward Flow. The system efficiency is 100% - Average Outward Flow. This information is used in Table 6-8.
 Annual cleaning of RWLMS stilling wells conducted on June 2 & 3, 2025 and resulted in erroneous RWLMS readings. Readings were corrected on June 19 & 25, 2025. See Table 6-A for further information.
 ERR = Indicates erroneous values resulting during system calibration or from system communication issues. See Table 6-A for further information.
 - = Gradient direction could not be determined due to system communication issues and lack of available manual measurements.
 0.25 = Indicates RWLMS data that may be biased by 10 cm or more based on weekly to monthly manual measurements. See Table 6-A for further information.
 inward = Indicates inferred gradient direction based on manual measurements where RWLMS data was erroneous/biased.
 outward = Indicates outward gradient flow direction.

Appendix 8: 2025 Public complaint and resolution log

No.	Issue	Resolution
1	A customer wrote to complain they could not find a location to put their used motor oil. The Zero Waste Centre at the Landfill did not accept as the area was closed due to renovations.	The customer was called and alternatives provided for locations that could take the used motor oil during Zero Waste Centre construction work in April and May.
2	A customer called stating they were directed to the Landfill by their GPS guide but ended up at a locked gate.	The customer was called and advised to consult the City website for directions.
3	A customer called to complain about the long lines at the Landfill and was unhappy that the trucks got priority, suggesting that someone should be directing traffic.	No response was requested. In 2025, the unattended scales were made operational, diverting truck traffic off the main scales and reducing traffic congestion overall. Cameras were installed with a live feed to show customers the Landfill entrance line-up on the City's website.
4	A customer wrote to report witnessing two City of Vancouver transfer trailers doing illegal U-turns on the off ramp towards the Landfill. The report included the identifying numbers on the vehicles.	No response was requested. The Superintendent was informed and the drivers were subsequently spoken to regarding this issue.
5	A customer called stating they had tried to recycle an electric scooter at the ZWC but were denied despite the Waste Wizard directing them to the Landfill.	No response requested. Waste Wizard website includes a note to remove the battery before drop-off at the Landfill. E-mobility devices containing batteries that cannot be easily removed are not accepted at the ZWC.
6	A customer noted through the online chat that the website does not state whether blackberries are accepted as garbage or yard trimmings at the Landfill.	No response was requested. The City website states that invasive species such as blackberries are excluded from yard trimmings.
7	A customer called noting there is no policy or instruction on what to do about ash trees referencing the City website link with information about ash borer beetles.	No response requested. The referenced website clearly states that the CFIA does not allow movement of any tree or parts of the tree to prevent the spread of this insect.
8	A customer stated that the website was unclear and was confused whether the \$15 minimum fee on garbage was charged on statutory holidays.	No response was requested. The City website was updated to improve clarity.

No.	Issue	Resolution
9	A customer called to complain that they were denied entry to the ZWC for disposal because they were in a commercial vehicle and were told they had more than the allowable amount. The customer expressed frustration that they drove to the site and were turned away with the material.	The customer was called back, and it was explained the ZWC is limited to accepting residential quantities for materials collected under Extended Producer Responsibility programs, as stated on the City website. If ZWC staff believe that material comes from a commercial source, they may reject the load.
10	A customer put in a complaint about customer service at the ZWC from a specific employee and wanted to talk to their supervisor. The employee said they were not permitted to drop-off “soggy” cardboard.	The customer was contacted and the issue was resolved. Wet/soggy cardboard is accepted for recycling at the ZWC but must be clean and free of mud/dirt.
11	A customer called to complain that the City website was not clear if it was four mattresses per day per customer or for the whole facility.	No response requested. The website was reviewed and updated to improve clarity.

Appendix 9: 2025 Annual Compliance Status Form



Annual Compliance Status Form

AUTHORIZATION NUMBER: 1611
 AUTHORIZATION TYPE: Operational Certificate
 LEGAL AUTHORIZATION HOLDER NAME: City of Vancouver
 PERIOD OF COMPLIANCE STATUS ASSESSMENT: 2025-01-01 to 2025-12-31

AUTHORIZED PERSON NAME: Mike Budzik

AUTHORIZED PERSON SIGNATURE: 

SIGNATURE DATE: March 17, 2026

*I understand that it is an offense to mislead a government official, and I declare that all of the information presented is accurate and true.
 I have been given the authority by the authorization holder to sign this form.*

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION	COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
1.1.1	The discharge of refuse [to a sanitary landfill from sources within the Greater Vancouver Regional District and other sources as specifically authorized by the Regional Waste Manager] is authorized for the full term of the Greater Vancouver Regional District Solid Waste Management Plan, dated July 1995. The solid waste management plan must be amended to authorize the discharge beyond this term.	Yes	Discharging waste under authorizations.	2025 Annual Report for the Vancouver Landfill (Sections referenced herein), Executive Summary. Greater Regional District Solid Waste Management Plan (Metro Vancouver, 2010) Annual Report Section 5. Waste disposal, Appendix 2 Table A1
1.1.2	The maximum authorized rate of discharge is 750,000 tonnes per year	Yes	Discharged less than 750 000 tonnes in 2024.	Annual Report Section 5. Waste disposal, Appendix 2 Table A1
1.1.3	The characteristics of the discharge shall be typical municipal solid waste and other materials as specifically authorized by the Regional Waste Manager. Asbestos waste may be discharged in accordance with the Special Waste Regulation.	Yes	MSW and other specifically authorized waste only accepted for discharge. All other authorized wastes are listed as separate line items in annual report. Special Waste (other than asbestos) is not accepted for disposal in the landfill.	Annual Report Section 5. Waste disposal, Appendix 2 Table A1
1.1.4	Waste shall not be discharged within a buffer zone as identified in Section 2.9. Putrescible and household waste shall not be discharged into water. The burning of waste is prohibited.	Yes	Minimum 50 metres wide buffer is present along all boundaries except where 30 metres maximum is allowed on northern boundary.	2019 Operating Plan report (Golder 2021b), Site Layout Plan (first drawing after references)
1.1.5	The authorized works common to this Section and Sections 1.2, 1.3 and 1.4 are a locking gate to control access by the public, a weigh scale and fire protection equipment, approximately located as shown on attached Site Plan A.	Yes	Locking gate and weigh scales operating near landfill entrance. Works laid out in accordance with Site Plan A from OC.	Annual Report Section 2. Design and operating plans, Figure 2
1.1.6	The authorized works specific to this Section are those associated with a landfill operation and include berms, covering material, surface water diversionary works, environmental monitoring systems, leachate collection/pumping works and a landfill gas management system consisting of existing and future collection works, a blower/flare station and gas utilization works, approximately located as shown on attached Site Plan B.	Yes	Environmental controls in operation include perimeter ditch system for leachate (inner) and surface water (outer) collection, stormwater ponds, suitable daily and final cover, gas collection system including blower and flare station.	Annual Report Sections 8. Environmental protection programs, 9. Operational information
1.1.7	The location of the point of discharge is Lot 9, Section 5 and 6, New Westminster District, Plan 38013. Discharge within the area identified as the "100 Acre Reserve", approximately as shown on Site Plan B, is restricted to construction and demolition waste in accordance with the approved closure plan required in Section 2.8.	Yes	Currently discharging within areas shown in Site Plan B. "100 Acre Reserve" is closed.	Annual Report Section 2. Design and operating Plans, Figure 3
1.2.1	The characteristics of the waste [at the landfill transfer station facility] are the same as set out in Section 1.1.3.	Yes	Waste accepted for discharge is typical MSW and other authorized wastes, all other materials accepted at this facility are for off-site recycling (Recycling depot and household hazardous waste storage facility, compost facility) or beneficial use.	Annual Report Section 5. Waste disposal, Appendix 2 Table A1, Section 7. Waste reduction and recycling initiatives

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION	COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
1.2.2	The authorized works are those associated with a transfer station and include a paved access area and roll off bins, approximately located as shown on attached Site Plan C.	Yes	The facility has paved access and roll off bins, operating as shown in Site Plan C of OC.	Annual Report Sections 7. Waste reduction and recycling initiatives, 2. Design and operating plans, Figure 2
1.2.3	The location of the facilities is Lot 9, Section 5 and 6, New Westminster District, Plan 38013.	Yes	Location is as described.	Annual Report Section 2. Design and operating plans, Figure 2
1.3.1	The type of materials which may be managed at this facility [recycling depot and household hazardous waste storage facility] are typical recyclable materials and household hazardous waste.	Yes	Accepting recyclables and household hazardous waste at this facility. See complete list of accepted items.	Annual Report Section 7. Waste reduction and recycling initiatives, Table 8 and Appendix 3
1.3.2	The authorized works are those associated with a recycling depot and household hazardous waste storage facility and include roll off bins, recycling containers, a secure (fenced) storage area and storage shed for household hazardous waste, approximately located as shown on attached Site Plan C.	Yes	Listed works are present at the facility, as shown on Site Plan C.	Annual Report Section 7. Waste reduction and recycling initiatives (7.1 and 7.2) and Figure 2
1.3.3	The location of the facilities is the same location as set out in Section 1.2.3.	Yes	Same location as as set out in Section 1.2.3.	Annual Report Section 2. Design and operating plans, Figure 2
1.4.1	The type of waste that may be composted is restricted to fruit and vegetable waste, typical yardwaste and christmas trees.	Yes	Yard trimmings/green waste only accepted for compost, no food scraps are composted on site.	Annual Report Section 7. Yard trimmings collection and composting (7.4)
1.4.2	The authorized works are those associated with a composting facility and include an impermeable pad, a stationary grinding plant, and windrow turning equipment, approximately located as shown on attached Site Plan A.	Yes	Facility is on paved pad, equipment include grinder, windrow turner and screener. Located in area shown in Site Plan A.	Annual Report Section 7. Yard trimmings collection and composting (7.4)
1.4.3	The location of the facilities [compost] is the same location as set out in Section 1.2.3.	Yes	Located as described.	Annual Report Figure 2
2.1	In the event of an emergency which prevents compliance with a requirement of this operational certificate, that requirement will be suspended for such time as the emergency continues or until otherwise directed by the Regional Waste Manager.	Yes	No emergencies in 2025 causing prevention of compliance.	N/A
2.2	The operational certificate holder shall inspect the authorized works regularly and maintain them in good working order. Notify the Regional Waste Manager of any malfunction of these works.	Yes	Landfill staff/contractors perform various regular inspection on works.	Annual Report Section 9. Operational information (9.2)
2.3	The operational certificate holder shall inspect the property boundaries regularly and notify the Regional Waste Manager of any visual evidence of environmental impacts on adjacent properties.	Yes	Monitoring effects on surrounding area (Burns Bog) through regular inspection of perimeter ditch system. Issues noticed in inspection are brought to attention of staff and environmental concerns are reported to ENV.	Annual Report Section 9. Operational information (9.2 and 9.3)
2.4	Provision of fencing, site access, vehicle safety barriers, surface water diversionary works, firebreaks and site restoration as required, shall be carried out to the satisfaction of the Regional Waste Manager.	Yes	Site access limited to entrance. Vehicle safety barriers present on main roads. Surface water diversionary works include perimeter ditch system and ponds. Firebreaks used in filling of active areas as per Design Plan.	Surface water diversionary works found in Annual report Section 8. Environmental protection programs (8.1). Other information not required in annual report by OC, available in Design and Operating Plans .
2.5	In preparation for the placement of putrescible waste, the operational certificate, holder shall construct a base cell consisting of an approximate 3 metre lift of demolition and construction waste covered with a minimum 0.15 metre layer of suitable cover material. Firebreaks shall be incorporated into each cell in such quantity and manner as to prevent fires from becoming an environmental or safety hazard. Putrescible and household waste shall not be discharged in the base cell. suitable cover consists of soil, utilized in accordance with Section 2.7 or other material as deemed acceptable by the Regional Waste Manager.	Yes	Base cell layer contains only construction and demolition waste. Firebreaks present throughout according to Landfill design, soil cover used on each lift.	Annual Report Section 8.0 Environmental protection programs. Detailed information available in 2019 Design Plan report (Golder, 2019a) Section 6.0 Regulatory Design and Closure Requirements
2.6	All waste shall be placed in cells of a size acceptable to the Regional Waste Manager. The working face shall be confined to the smallest practical area. Waste shall be discharged in layers of 0.6 metres or less and compacted to the smallest practical volume. Intermediate cover, consisting of a minimum 0.30 metre of suitable cover material shall be applied as the filling proceeds. Side slopes shall be a maximum of 1 :3 (vertical:horizontal). During non-discharge hours, the working face shall be covered with a tarp or other measures to the satisfaction of the manager to provide vector and litter control. The working face shall be covered with a minimum of 0.15 metres of suitable cover material once a week. The manager may vary the frequency of covering when freezing conditions adversely affect normal operation.	Yes	Active face kept as small as possible per operating procedure. Daily soil cover - minimum 0.15 m used. Intermediate soil cover - typical 0.6 m used. Litter fencing installed around active area. Side sloped maximum 1:3.	2019 Operating Plan Report (Golder, 2019b), Section 7.2 Operating Parameters (7.2.3 Active Face)

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2.7	Urban park quality soil may be utilized for berm construction, intermediate and final cover, top dressing and landscaping. Soil with any substance with a concentration exceeding the lowest applicable numerical soil standard for urban park land may only be used for internal berms or intermediate cover. The utilization or discharge of special waste soil is prohibited.	Yes	Urban Park quality soil is sourced and used for landscaping, berms, intermediate and final cover. Other soils exceeding PL soil quality are used for daily and intermediate cover or are stockpiled. PL soil stockpiled separately when needed.	2019 Operating Plan report, Sections 3.0 Regulatory Operating Requirements and 6.2.4 Temporary Soil Stockpile Area
2.8	The operational certificate holder shall submit a closure plan for the area identified as the "100 acre reserve"... the Regional Waste Manager by December 31, 2001 for approval. For the remainder of the landfill, the operational certificate holder shall apply final cover to any area of the landfill, which will not receive any further waste. Final cover shall be applied within one (1) year of completing the subject area. Final cover shall consist of a minimum of 1.0 metre of low permeability (<1 x 10 ⁻⁵ emfs) compacted soil (or equivalent) cap plus a minimum of 0.15 metre of topsoil and suitable vegetative cover. Soil shall be utilized in accordance with Section 2.7. Final cover shall be sloped to promote surface water runoff. Surface water runoff shall be directed outside of the leachate collection system.	Yes	Final closure of "100 Acre reserve" referred to as Western 40 Hectares was completed in 2019.	2019 Operating Plan report, Section 2.1 Site plan and progressive closure status. Closure design available in the report.
2.9	The operational certificate holder shall maintain a buffer zone along the north, east and south perimeters of the site, approximately as shown on Site Plan B and as follows: a minimum of 50 metres wide along the west half of the northern boundary and 30 metres wide along the balance of the northern boundary; and a minimum of 50 meters wide along all remaining boundaries . The buffer zone along the southern boundary of the site shall include a minimum fifteen (15) metre wide natural or landscaped screen.	Yes	Minimum buffer zones maintained.	2019 Operating Plan report, Site Layout Plan (first drawing after references)
2.10	The operational certificate holder shall post a sign, to the satisfaction of the Regional Waste Manager, at the entrance of the landfill site with the following current information: site name, owner and operator, contact telephone number and address for owner or operator, telephone number in case of emergency, hours of operation, materials and wastes accepted for recycling and landfilling, prohibited materials and wastes, and tipping fees.	Yes	Sign posted behind gates at landfill entrance with required information.	Google Maps Street View. 5400 72nd St. Delta, BC.
2.11	The operational certificate holder shall take all reasonable measures necessary to prevent fires from occurring at the site. Provide and maintain fire fighting equipment and materials to the satisfaction of the Regional Waste Manager. The operational certificate holder is responsible for complying with all municipal fire safety requirements. In the event of a landfill fire, immediately notify the local fire department, the Provincial Emergency Program and the manager.	Yes	Fire prevention and control plans in place. Safe Operating Guidelines in place for staff use with respect to fire monitoring, prevention and response.	2019 Operating Plan report Section 12.0 Fire Safety Plan
2.12	This operational certificate does not authorize the discharge of leachate to the environment. The operational certificate holder shall, to the satisfaction of the Regional Waste Manager, take measures to minimize leachate generation, including but not limited to, providing effective covering and surface water runoff. Measures taken, their effectiveness and any proposed measures shall be detailed in the annual report required in Section 3.5.2. The leachate collection works shall be maintained in accordance with sound engineering principles as supported by qualified personnel.	Yes	Leachate contained through perimeter ditch system and discharged to Annacis Island Waste Water Treatment Plant via sewers. Storm water runoff from closed areas of the landfill is collected in storage ponds. This water is discharged to the environment when proven to meet water quality criteria - otherwise it managed as leachate.	Annual Report Section 8.0 Environmental protection programs. (8.1 and 8.2)
2.13	Submit a report to the Regional Waste Manager by April 30, 2001 detailing measures taken to minimize odours and greenhouse gas emissions and their effectiveness. The report shall also include a description of any planned measures, including energy recovery, and an implementation schedule. The annual report required by Section 3.5.2. shall include a description of measures taken and the beneficial results accomplished by those measures, any revisions to the implementation schedule and any new measures planned for the coming year.	Yes	Report submitted in 1999. LFG collection system reduces odours and greenhouse gas emissions by collecting LFG and conveying to flare plant. Gas conditioning plants to convert LFG to RNG currently in construction.	Final Report Vancouver Landfill Gas Management System Project I (Conestoga-Rovers & Associates, 1999) Annual Report Section 8.4 Landfill gas management system
2.14	The amount of compostable materials and finished compost accumulated at the facility authorized in Section 1.4 shall be limited to the maximum which can be properly managed at the site.	Yes	Compostable materials received and compost produced reported in annual report. Amounts produced are manageable at the site.	Annual Report Section 7.4 Yard trimmings collection and composting
2.15	The amount of recyclable materials and household hazardous waste accumulated at the facility authorized in Section 1.3 shall be limited to the maximum which can be properly managed at the site.	Yes	Residential volumes only accepted for HHW and recyclable materials. Quantities and manageable and reported annually.	Annual Report Sections 7. Waste reduction and recycling initiatives (7.1 and 7.2)

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2.16	Conduct a hydrogeological assessment to determine the following: the hydrogeological impact of continuing extraction of sand and water from the dredge pond and its effect on leachate management; the natural attenuation properties of the peat and silt layers in the long term; the effect of additional height of waste on the horizontal hydraulic conductivity of the demolition layer (base cell); and the hydrogeological impact of current operating practices. The hydrogeological assessment shall be reviewed and updated every five (5) years. The first review shall occur prior to December 31, 2005.	Yes	Current hydrogeological review was completed in 2023. The next review will be submitted by end of 2028.	2023 Hydrogeology Review - Submitted to ENV Dec 22 2023
2.17	Register a covenant or other legal notification acceptable to the Regional Waste Manager, not later than 6 months following the subdivision of the property described in Section 1.1.7, that the property was used for the purpose of waste disposal as a charge against the title to the property. Notify the manager of the registration of the covenant or legal notification.	ND	N/A in 2025	N/A
2.18	Operate the facilities authorized in Sections 1.1, 1.2, 1.3 and 1.4 in accordance with a design and operating plan certified by a qualified professional licensed to practice in the Province of British Columbia. The operational certificate holder shall review the plan on an annual basis. Any revisions to the plan shall be submitted to the Regional Waste Manager as part of the annual report.	Yes	Updates to Operating Plan available in annual report.	Annual Report Section 2. Design and operating plan. Full reports are 2019 Design Plan report and 2019 Operating plan report.
2.19	Accrue, during the life of the landfill, a dedicated reserve fund in a form acceptable to the Regional Waste Manager, sufficient to finance closure, post-closure and environmental contingencies related to the landfill. The estimated cost of carrying out closure and post-closure activities for a minimum post-closure period of twenty five (25) years and how the fund will be accrued shall be included in the design and operating plan. The estimated costs of closure and post-closure activities shall be updated annually and reported to the manager as part of the annual report. Should the estimated costs of closure and post-closure increase then the operational certificate holder shall increase the rate of accrual accordingly.	Yes	NPV for closure + post closure costs = \$142 million Capital reserve balance = \$80.4 million	Annual Report Section 3. Closure and post closure costs
2.20	The operational certificate holder shall submit a closure plan for the facilities at least six (6) months prior to the closure of the landfill to the Regional Waste Manager for approval. The plan shall incorporate details of the closure plan and include the required information.	ND	N/A in 2025	N/A
2.21	In accordance with the Waste Management Act and its regulations, the operational certificate holder shall submit a site profile to the Regional Waste Manager not less than 10 days prior to decommissioning the facilities authorized in Section 1.	ND	Not yet decommissioned.	N/A
3.1	Record the quantity, in tonnes, of waste received at the landfill, recycling and composting facilities. Also, the quantity and destination of recyclable materials and mature compost removed from these facilities shall be recorded.	Yes	Records kept for all materials received at landfill and for outbound recycled materials. Summaries available in annual report.	For waste: Annual Report Appendix 2 Table A1 For recycling and compost: Annual Report Section 7. Waste reduction and recycling initiatives, Table 8. (7.1 and 7.3)
3.2.1	Maintain leachate, surface water and groundwater monitoring stations, approximately located as shown on the attached Site Plan D, and as outlined in Table I. Obtain grab samples at each station and analyze for each parameter at a frequency as indicated in Table 2. Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.	Yes	Currently exceeding the number of required monitoring stations. Samples taken at required frequency at all stations and best practices are used for sampling, storing and transporting including QA/QC .	Annual Report Section 8. Environmental protection programs, Appendix 4
3.2.2	Provide and maintain a suitable flow measuring device and record the volume of leachate discharged to sanitary sewer each month.	Yes	Monthly flows recorded and tabulated in annual report.	Annual Report Section 8. Environmental protection programs, Table 11
3.2.3	Establish and maintain a minimum of four (4) ditch water level monitoring stations and record once per month the water level elevation in the leachate and drainage ditches at each station.	Yes	Exceeding required monitoring in both number of stations and frequency of recordings. Using remote water level monitoring system at 8 stations in both ditches to record water level every 5 minutes.	Annual Report Section 8. Environmental protection programs, Appendix 7
3.3.1	Sampling and flow measurement shall be carried out in accordance with the procedures described in "British Columbia Field Sampling Manual for Continuous Monitoring plus the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment and Biological Samples", 1996 Edition (Permittee), 312 pp., or by suitable alternative procedures as authorized by the Regional Waste Manager.	Yes	Sampling is periodically supervised by contracted qualified professionals to verify that best practices are used during sampling.	Annual Report Section 8. Environmental protection programs, Appendix 6

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3.3.2	Analyses are to be carried out in accordance with procedures described in the latest version of "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials, (March 1994 Permittee Edition)", or by suitable alternative procedures as authorized by the Regional Waste Manager.	Yes	Samples are only sent to laboratories certified to perform the analyses.	Annual Report Section 8. Environmental protection programs, Appendix 6
3.3.3	All data analyses required to be submitted by the permit shall be conducted by a laboratory acceptable to the Regional Waste Manager. At the request of the manager, the operational certificate holder shall provide the laboratory quality assurance data, associated field blanks, and duplicate analysis results along with the submission of data required.	Yes	Same as 3.3.2.	Same as 3.3.2.
3.4	The operational certificate holder shall maintain the following information and records, current and suitably tabulated, at the landfill office for inspection: a copy of Operational Certificate MR-01611; training procedures and personnel training records; contingency plans and notification procedures; the current design and operating plan; inspection records from staff and regulatory agencies; hydrogeological, geotechnical and landfill gas assessments; incoming waste, and soil records; records of recyclable materials shipped off site; environmental monitoring results and interpretations; and annual operating and monitoring reports for the previous year.	Yes	All required records are stored at the Landfill Technical Trailer and electronically.	N/A. Documents available upon request.
3.5.1	Maintain data of analyses and records of waste and recyclable material quantities for inspection. Submit the data of analyses suitably tabulated, to the Regional Waste Manager for the previous three months. The reporting period ends March 31, June 30, September 30 and December 31. All reports shall be received by the manager within 31 days of the end of the reporting period.	Yes	Data maintained and reported in accordance with described schedule.	N/A. Reports submitted before each deadline.
3.5.2	Prepare an annual report which shall include a compendium of data submitted under Section 3.5.1. In addition, the annual report shall include the following: a review and interpretation of the analytical data from receiving environment monitoring for the preceding year; waste, recyclable material and compost records; leachate flow data and leachate/drainage ditch levels suitably tabulated; an evaluation of leachate generation control measures; an evaluation of the efficiency of the landfill gas management system, including an estimation of the landfill gas generation rate, percent recovery and the actual rates/volumes of gas collected, utilized and flared; revised closure/post closure costs and amount of funds currently available; revised design and operating plan and planned improvements; identification of operating problems and corrective actions taken; an evaluation of the recycling and composting programs including waste diversion projections; and public complaint/resolution log for the landfill. The annual report shall be submitted to the Regional Waste Manager on or before March 31 of the following year.	Yes	2025 annual report submitted meeting operational certificate requirements.	2025 Annual Report for the Vancouver Landfill

Authorized Person Initial: MB

Date: March 17, 2026