

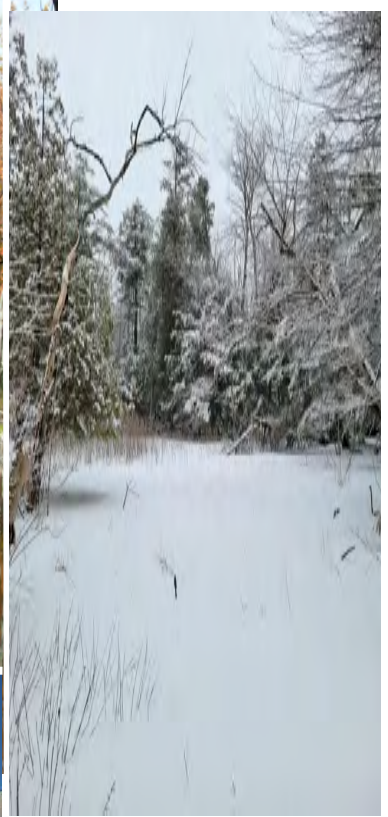
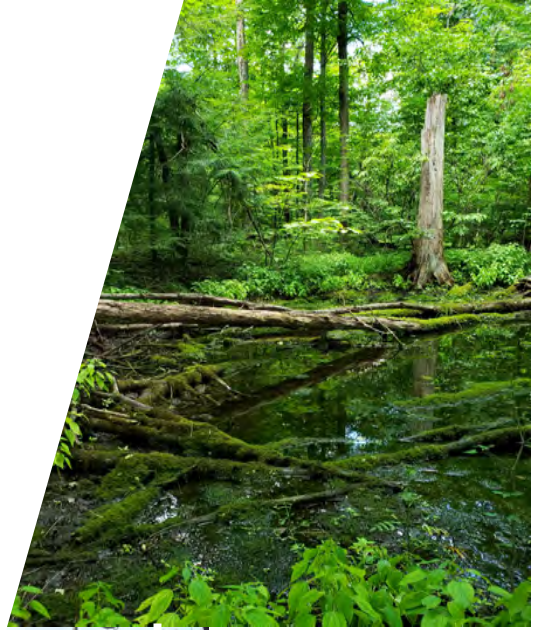


# 2025 Annual Water Monitoring Report

Dufferin Aggregates Milton Quarry  
Region of Halton

Dufferin Aggregates,  
A CRH Company

Technical Reference Report Version





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## **MEMORANDUM**

**To:** Neil Hannington, District Manager, Halton-Peel District Office  
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Ted Belayneh, Supervisor, Ground Water Unit  
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Kevin Okimi, Town of Halton Hills  
Keith Hamilton, Town of Halton Hills  
SCP Aurora Mailbox, MNRF  
Sandy Dobbyn, Niagara Escarpment Commission

**From:** Rigoberto Ceballos, Site Manager, DFA Milton

**Date:** March 31, 2026

**Subject: 2025 Monitoring Report**  
**Dufferin Aggregates Milton Quarry, Region of Halton, Ontario**

Please find enclosed a copy of our 2025 Monitoring Report for the Milton Quarry, dated March 31, 2026. The report was prepared by GHD and covers the 2025 calendar year. Dufferin Aggregates is a CRH company.

A link to download the report will be provided via Microsoft SharePoint to each addressee on the distribution list. Should you require additional access please contact Kyle Fritz of GHD at [Kyle.Fritz@GHD.com](mailto:Kyle.Fritz@GHD.com).

Should you have any questions I may be contacted at 905-208-1009 or by email at [Rigoberto.Ceballos@ca.crh.com](mailto:Rigoberto.Ceballos@ca.crh.com).

Sincerely,

*Rigoberto Ceballos*

Rigoberto Ceballos  
Site Manager – Milton Quarry

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**Our ref:** 010978-LTR-46

**31 March 2026**

**Mr. Rigoberto Ceballos  
Dufferin Aggregates  
9410 Dublin Line  
Milton, Ontario  
L9T 2Y3**

**2025 Annual Water Monitoring Report  
Dufferin Aggregates Milton Quarry, Region of Halton, Ontario**

Dear Mr. Ceballos

Enclosed please find a copy of the 2025 Annual Water Monitoring Report for the Milton Quarry, Region of Halton, Ontario prepared by GHD.

If you should have any questions, please do not hesitate to contact us.

Regards

A handwritten signature in black ink that reads "Kyle Fritz". The signature is written in a cursive, flowing style.

**Kyle Fritz, P. Eng.**  
Project Manager

519 340-3754  
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Encl.

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# 1. Introduction

GHD Limited (GHD) was retained by Dufferin Aggregates (Dufferin), a CRH Company, to complete the 2025 Annual Water Monitoring Report for the water-related monitoring program at the Milton Quarry (Site). The Site is located within the Towns of Milton and Halton Hills, in the Regional Municipality of Halton. The Site location is presented on Figure 1.1.

The Site consists of the Main Quarry, North Quarry, and East and West Cell (Extension Quarry) areas. In total, an area of 552 hectares (ha) (1,364 acres) is licensed by the Ministry of Natural Resources and Forestry (MNR) under the Aggregates Resources Act (ARA) for aggregate extraction at the Site, including 468 ha (1,156 acres) in the Main Quarry and North Quarry, and 85 ha (209 acres) in the Extension. Quarrying operations are ongoing in the Main Quarry and the North Quarry under ARA License No. 5481 and in the Extension under ARA License No. 608621. Extension extraction commenced in 2007 with Phase 1 (East). Phase 2 (West Cell) extraction above the water table began in fall 2012. Extraction below the water table in Phase 2 began in June 2013 and continued through 2020. Phase 3 (East Cell) extraction above the water table began in 2016, and extraction below the water table in Phase 3 began in 2017 and continued through 2025.

Dufferin has received all necessary approvals for an extension of the East Cell, referred to as the Milton Quarry East Extension (MQEE). Extraction has not commenced in the MQEE. Monitoring results for the MQEE will be reported formally in the Annual Monitoring Report for calendar 2026, with submission to the agencies for review in March 2027.

The various approvals and agreements related to aggregate extraction at the Site have resulted in the development of an environmental monitoring program and the construction and operation of a Water Management System (WMS) that supports aggregate extraction activities and facilitates water storage/handling, mitigation of water-related environmental features, and long-term rehabilitation.

This report presents the results of the monitoring programs for the Main Quarry, North Quarry, and Extension.

The results and interpretations presented in this report are based on monitoring data collected by Dufferin, GHD, Goodban Ecological Consulting Inc. (GEC), and WSP at the Site and surrounding area, up to and including 2025. The 2025 monitoring program was undertaken based on the conditions presented in the following permits/approvals:

- Aggregate Resources Act Licenses 5481 and 608621.
- Amended Permit to Take Water (PTTW) No. PTTW No. 5256-BUUP62 (issued November 2, 2020).
- Amended Permit to Take Water (PTTW) No. PTTW No. P-300-1533635456 (issued July 31, 2025).
- Amended Environmental Compliance Approval No. 6124-C42GL4 (issued June 21, 2021).
- Amended Environmental Compliance Approval No. A-500-9336689907 (issued September 5, 2025).
- Work Permit No. AUR-45-03/04 issued by MNR under the Lakes and Rivers Improvement Act (LRIA) on September 3, 2003.
- October 2003 Water Management Agreement (Extension Quarry) between Dufferin and Conservation Halton (CH).
- Updated Adaptive Environmental Management and Protection Plan (AMP) May 2003 – Modified December 2011 implemented through the Extension Site Plans, Ontario Water Resources Act (OWRA approvals), and the AMP Agreement.

This report and previous annual reports present the results of the monitoring activities required by the various applicable permits/approvals for the Site. In addition to the required monitoring, various additional monitoring activities have been undertaken in the areas of the North Quarry and the Extension since the mid-late 1990s. This additional monitoring has been conducted to establish baseline hydrogeologic conditions and to facilitate evaluation of various aspects related to quarrying and mitigation in the Extension. All monitoring data collected in relation to the Site in 2025

are presented in this report. Historical data are also presented and discussed, where appropriate, to facilitate interpretation of the 2025 monitoring results.

This report is organized as follows:

Section 1	Introduction
Section 2	Background
Section 3	Quarrying and WMS Construction/Operation
Section 4	Hydrometeorologic Monitoring
Section 5	Hydrologic/Hydrogeologic Monitoring
Section 6	Water Taking and Discharge
Section 7	Water Quality Monitoring
Section 8	Residential Well Monitoring
Section 9	Ecological Monitoring
Section 10	Annual AMP Reporting Summary
Section 11	Conclusions
Section 12	Recommendations
Section 13	References

An electronic copy of this document is provided in Appendix A.

## 2. Background

This section presents background information relevant to the monitoring activities that are conducted at the Site.

This section is organized as follows:

Section 2.1	Hydrologic/Hydrogeologic Setting
Section 2.2	Permits and Approvals
Section 2.3	AMP
Section 2.4	Additional Monitoring

### 2.1 Hydrologic/Hydrogeologic Setting

The physiographic setting of the Milton area comprises two distinct features. The two features are the Dolostone Plain above the Niagara Escarpment (Escarpment) and the Halton Till Plain below the Escarpment. The Escarpment is a major feature, which trends in a general northeast to southwest direction (directions refer to "planning" north, which is approximately 45 degrees west of true north), and locally represents approximately 60 metres (m) of topographic relief.

The Dolostone Plain is characterized by undulating topography and localized wetlands. The bedrock of the Escarpment consists of a sequence of dolostones, shales, and sandstones, which overlies a thick shale formation that extends easterly at the base of the Escarpment.

The upper rock in the Niagara Escarpment is the dolostone of the Amabel Formation<sup>1</sup>, which is approximately 15 to 30 m in thickness in the Main Quarry, 15 to 35 m in thickness in the North Quarry, and 25 to 35 m thick in the Extension. Structural features that occur within the Amabel Formation include fractures, joints, and bedding planes. The Amabel Formation is underlain by the Reynales Formation, which is a thin (generally 2 to 3 m) grey-brown, fine-grained, interbedded argillaceous dolostone, with similar or lower permeability relative to the Amabel Formation.

The dominant hydrostratigraphic unit at the Site is the unconfined dolostone bedrock aquifer consisting of the Amabel and Reynales Formations. Underlying the dolostone bedrock aquifer is the Cabot Head shale, which is approximately 18 m in thickness in the Main Quarry, 14 m in thickness in the North Quarry, and approximately 19 m in thickness in the Extension. This formation has a relatively low hydraulic conductivity and acts as an aquitard. The elevation of the groundwater table is typically observed in the upper portion of the Amabel Formation, except where it is lowered by quarry and/or Escarpment dewatering effects. The Quarry is located in the West Sixteen Mile Creek Watershed. A generally shallow tributary of the West Sixteen Mile Creek, referred to as Sixth Line Tributary, receives surface water runoff and groundwater discharge from the Site and surrounding lands. Sixth Line Tributary is located to the north of the Extension and west of the Main and North Quarries, as shown on Figure 1.1. Sixth Line Tributary has permanent flow due to groundwater discharge (from seeps, springs, and upwelling), and is designated as a cold water fishery along Sixth Line Road near the North Quarry and to the north of the Extension.

In the Main Quarry, a tributary channel of Sixteen Mile Creek (referred to as the Hilton Falls Reservoir Tributary [HFRT]) was intercepted in 1990 to allow for quarrying activities. The flow regime intercepted by the quarry has been replaced by discharge from the Main Quarry to maintain base flow.

## 2.2 Permits and Approvals

This section provides the background for the annual hydrologic/hydrogeologic monitoring program for the Main Quarry, North Quarry, and Extension, including the various permits, approvals, and agreements pertaining to monitoring at the Site.

### 2.2.1 Summary of Monitoring Program Requirements

The Site monitoring program was first implemented in 1990 and has evolved since that time through permit/approval requirements and the collection of baseline data to support licensing and extraction in the Extension. In June 2013, with the commencement of extraction below the water table in Phase 2 of the Extension, the full mitigation and monitoring provisions of the AMP came into effect.

Monitoring locations are presented on Figures 2.1 through 2.5. Table 2.1 summarizes the monitoring requirements of the AMP that apply for 2025, along with references to where the required monitoring results can be found in this report. Table 2.2 summarizes the monitoring requirements of the other (i.e., non-AMP) approvals/agreement, along with references to where the required monitoring results can be found in this report.

### 2.2.2 ARA Licenses 5481 and 608621

Dufferin conducts aggregate extraction and processing in the Main Quarry and North Quarry under ARA License No. 5481. Environmental monitoring is required under the PTTW, ECA, and the LRIA permit for the Site.

The MNR issued ARA License No. 608621 to Dufferin in February 2007 for aggregate extraction in the Extension. This license addresses environmental mitigation by requiring that the AMP be implemented for extraction below the water table in Phase 2 and Phase 3 of the Extension.

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<sup>1</sup> The traditional nomenclature has been retained to be consistent with the Site Approvals.

## 2.2.3 Amended Permit to Take Water (PTTW)

The MECP issued Amended PTTW No. 0117-8BHQPL to Dufferin on December 16, 2010 for water taking in the Main Quarry and Extension. This permit was valid for the Site until Amended PTTW No. 8575-A3BKYB was issued on November 23, 2015 when the PTTW amendment was conducted to reflect Dufferin's corporate name change. The MECP issued PTTW No. 5226-UUP62 to Dufferin on November 2, 2020. PTTW No. 5226-UUP62 was replaced when MECP issued PTTW No. P-300-1533635456 on July 31, 2025. Both PTTW No. 5226-UUP62 and PTTW No. P-300-1533635456 are valid for the Site in 2025 and are presented in Appendix B.

The PTTW establishes limits on water takings and requires the implementation of a monitoring program. The PTTW contains conditions for both interim and long-term operating conditions at the Site. The Site is currently operating under **interim conditions** and will continue to do so in the near term. Once it is clear that water quantity and quality criteria can be reliably met for the Reservoir over the long term and the Reservoir becomes the sole source to provide the required base flow to the HFRT, Dufferin will notify the MECP District Manager and apply to the MECP Director for an amendment to the ECA to transition from interim to long-term conditions, as specified in the ECA and as noted in the PTTW.

## 2.2.4 Amended Environmental Compliance Approval (ECA)

The MECP issued Amended Environmental Compliance Approval (ECA) No. 3406-8U6RQ5 to Dufferin on September 13, 2012. The amendment to the existing approval was conducted at that time to reflect the satisfaction of Condition 10 of the October 27, 2009 approval (MECP approval of the Pre-Extraction Report). On June 6, 2016 MECP issued a letter to CRH advising that their corporate name change has been registered with respect to ECA No. 3406-8U6RQ5 in MECP's records. An ECA amendment was submitted in 2021 to allow for flow monitoring to clusters of recharge wells, rather than requiring individual metering. Amended ECA No. 6124-C42GL4 was issued on June 21, 2021. The MECP issued ECA No. A-500-9336689907 on September 5, 2025. This ECA replaced the previous version issued on June 21, 2021 and both are valid for the Site in 2025. . The ECA permits in effect for the Site in 2025 are presented in Appendix C.

The ECA contains conditions for both interim and long-term operating conditions at the Quarry. The quarry is currently operating under **interim conditions** and will continue to do so in the near term. Once it is clear that water quantity and quality criteria can be reliably met for the Reservoir over the long term and the Reservoir becomes the sole source to provide the required base flow to the HFRT, Dufferin will notify the MECP District Manager and apply to the MECP Director for an amendment to the ECA to transition from interim to long-term conditions, as specified in Condition 3 of the ECA.

The ECA requires water quality monitoring of all effluent discharged from the Site, water level monitoring at trigger and recharge monitoring wells, and ecological monitoring of the Brook Trout spawning areas in the Sixth Line Tributary.

## 2.2.5 Lakes and River Improvement Act (LRIA) Work Permit No. Aur-45-03/04 and Main Quarry Rehabilitation Plan

The LRIA Work Permit No. AUR-45-03/04 was issued to Dufferin on September 3, 2003 for the construction of the Main Quarry west side rehabilitation components, including the Reservoir. A copy of LRIA Work Permit No. AUR-45-03/04 is presented in Appendix D. The LRIA permit requires that the Main Quarry Discharge (to the HFRT) be done in accordance with plans agreed to by CH (based on their modelling analyses) and that the temperature of discharge flows to the Hilton Falls Reservoir Tributary be recorded hourly with a data logger, from June 1 to September 30.

## 2.2.6 CH Agreement and CH/Region Agreement

The following two agreements between Dufferin, CH, and the Region (AMP Agreement Only) are in effect:

- Amended Water Management Agreement (Extension Quarry & MQEE) (June 7, 2024)

– Amended AMP Agreement (April 23, 2025)

These agreements are discussed below.

### ***Amended Water Management Agreement (Extension Quarry & MQEE)***

The Water Management Agreement (Extension Quarry) between CH and Dufferin initially took effect on June 12, 2007, superseding the previous Water Management Agreement (Main Quarry). Subsequently, the agreement was amended on June 7, 2024 to include the MQEE. This agreement includes requirements for discharge from the Main Quarry to the HFRT and a monitoring program for the Main Quarry/North Quarry.

### ***Amended AMP Agreement***

The Amended AMP Agreement between the Region, CH, and Dufferin took effect following MNR issuance of ARA License No. 608621 and commencement of Site preparation activities in Phase 1 (East) of the Extension. This agreement was amended on April 23, 2025 with provisions for the MQEE. This agreement requires the implementation of the AMP for extraction activities in the Extension Phases 2 and 3, and in the MQEE.

## **2.3 AMP**

The AMP was developed in support of the mitigation and management measures for the Extension Quarry. The AMP forms the framework for managing the implementation and operation of the mitigation measures to ensure that water resources and associated ecological features are protected.

The AMP is required to be implemented for aggregate extraction in Phases 2 and 3 of the Extension by ARA License No. 608621 and the associated Site Plans, the Water Management Agreement (Extension Quarry) between Dufferin and CH, and the AMP Agreement between Dufferin, CH, and the Region. Although the AMP pertains to Extension Phase 2 and Phase 3 extraction, it included requirements for background data collection and other work prior to the commencement of Phase 2 extraction. The overall approach of the AMP is discussed below.

Groundwater flow within the Amabel aquifer supports water resources in the area, including private water supply wells, cold water fisheries, and wetlands. The AMP incorporates comprehensive mitigation measures to prevent any adverse effects on water resources from either a water quantity or water quality perspective. Under active quarry conditions, mitigation measures include operation of the WMS consisting of quarry dewatering and discharge to the Reservoir and drawing water from the Reservoir for use in a groundwater recharge system based on a series of recharge (injection) wells along appropriate segments of the quarry perimeter. The groundwater recharge system is designed to generally maintain the natural groundwater levels in the vicinity of the wetlands and other water dependent features around the quarry and beyond. Quarry rehabilitation will involve the creation of three separate lakes created by extraction in three quarry cells. Once these lakes attain their designed water levels, they will serve to passively maintain surrounding groundwater levels and associated water resources. Some active management of water will continue post-rehabilitation, to ensure the lakes are maintained at appropriate levels, the on-Site wetlands are maintained, and may include some localized seasonal groundwater recharge along the eastern part of the quarry area.

The purpose of the adaptive management approach is to recognize the inherent variability in the natural environment and implement a flexible system of mitigation and monitoring to ensure the mitigation measures provide ongoing protection of water resources. The AMP is based on the planned implementation of proven mitigation measures and an organized process of design, implementation, monitoring, evaluation, and optimization for the active quarry operation and rehabilitation periods.

The AMP establishes the water resources monitoring program for the Extension. The key performance monitoring aspect for the mitigation measures for the Extension is to maintain groundwater levels at defined trigger monitoring wells that ensure protection of the adjacent water resources and associated features.

The AMP includes measures to ensure the proactive construction, demonstration, and verification of the WMS. A response action framework is defined to provide a structured response to any conditions where the target levels are not being suitably maintained, including Agency notification.

Target water levels are required for trigger wells to regulate the performance of the mitigation measures. The AMP establishes the protocol for defining appropriate target levels, as well as the methodology for adapting them in the future in response to changes in any relevant factors, including climate change.

The approach using groundwater recharge wells operated to maintain target water levels in trigger wells is consistent with the North Quarry Recharge Well System requirements although the AMP includes further details for monitoring and mitigation operations for the Phase 2 and Phase 3 Extension Quarry.

It is also necessary to ensure that the quality of recharged water is acceptable for the protection of adjacent water resources. Water quality monitoring and other supplemental monitoring programs are defined in the AMP to provide a comprehensive monitoring and evaluation program.

The AMP focuses on the protection of ecological water resources as they are more sensitive to water level variations than water supply wells; therefore, the protection of ecological features generally provides protection of water supply wells. Dufferin is fully committed to protecting the water supplies (both quantity and quality) for neighbours as is currently done under the existing domestic well program for the Site, and detailed requirements are included in the AMP.

In addition to this annual report, the AMP requires a comprehensive 5-year review commencing with the start of extraction below the water table in the West Cell (Phase 2). The first 5-year review covered the period from June 2013 to December 2018 and was submitted under separate cover (GHD, 2020). The second 5-year review covering the 2019-2023 period was submitted in 2025. It is anticipated that the next review covering the 2024-2028 period will be submitted in 2030.

## 2.4 Additional Monitoring

In addition to the monitoring required by the above approvals, additional monitoring is conducted for a number of purposes, including to ensure that the WMS is operated appropriately and to provide additional characterization of conditions. The additional monitoring beyond the requirements of the Site approvals that was conducted in 2025 includes the following:

- Water level monitoring at trigger wells and recharge monitoring wells associated with operating portions of the recharge well system at more frequent intervals than required (e.g., North Quarry trigger wells typically monitored once or twice per week rather than twice per month as required by the PTTW).
- Annual water level monitoring at all available Main Quarry monitoring wells not required by the Site approvals.
- Water quality monitoring at WMS locations required in the future under long-term conditions but not currently required under interim conditions (including North Quarry and Central Sump discharges to the Reservoir).
- Expanded monthly list of water quality monitoring parameters (i.e., same list as required by ECA for recharge water) for WMS water quality sampling locations.
- Monthly surface water elevation monitoring at all staff gauges and other surface water level monitoring stations associated with Sixth Line Tributary and Extension wetlands, subject to access.
- Monthly photos at staff gauges to further document the conditions of the various surface water features.
- Additional temperature monitoring at the culvert where the Main Quarry discharge to the HFRT crosses under Sixth Line (SG50).

The types of additional monitoring activities will vary over time based on the conditions that are encountered.

## 3. Quarrying and WMS Construction/Operation

This section presents information related to quarrying and WMS construction/operation activities conducted at the Site in 2025.

This section is organized as follows:

Section 3.1 Quarrying Activities in 2025

Section 3.2 WMS Construction Activities in 2025

Section 3.3 WMS Operation in 2025

## 3.1 Quarrying Activities in 2025

In 2025, bedrock production extraction occurred in the East Cell and North Quarry with minor extraction also occurring in the Main Quarry. Figure 2.7 presents the 2025 limits of extraction, as well as the 2024 limits of extraction and the licensed extraction limits for comparative reference.

### Main Quarry

Main Quarry extraction was limited to the removal of minor remaining reserves west of the main quarry entrance. Ongoing cleanup of remaining reserves will continue until rehabilitation is complete within the processing area.

### North Quarry

In 2025, minor remaining reserves on the floor (floor bench) were removed and extraction was advanced to the final extraction limit in the southwest and south corners of the North Quarry.

### East Cell

In 2025, the floor bench was advanced centrally, adjoining the East and West final extraction limits of the East Cell. Additionally, a section of floor bench was advanced adjacent to the Townline Pillar.

## 3.2 WMS Construction Activities In 2025

In the Extension, there were no recharge well or diffuse discharge additions to the WMS; however, recharge optimization will be ongoing for the near future. Despite no additions in 2025, future additions may be considered and will be documented here as they occur.

In the North Quarry there were no changes or additions to the WMS. The North Quarry recharge system is presented on Figure 2.3.

In the West Cell, the recharge connection was utilized at MWX1-15 in 2025. The West Cell recharge system is presented on Figure 2.4.

## 3.3 WMS Operation In 2025

This section presents information related to operation of the WMS in 2025.

### 3.3.1 Main Quarry/North Quarry/Extension Water Handling

In order to maintain dry working conditions in the Main Quarry, North Quarry, and Extension, the WMS dewatering components collect surface water and groundwater inflow from the quarry areas and convey it to the Reservoir where it is stored and/or discharged from the Site. Some of the water collected from the North Quarry and Extension is diverted for quarry operations, as needed. The water in the Reservoir can be retained to increase storage or can be discharged (to the HFRT to provide the required baseflow), pumped to the Main Quarry Lake/Wetland Complex (to maintain a lake level of approximately 302.5 to 303.5 m above mean sea level [AMSL]), pumped to the recharge well system, or used in the Main Quarry operations area.

Lake Filling commenced in the West Cell in mid-2021 and continued through 2025. At the end of 2025, the water level in the West Cell was approximately 319.06 m AMSL (final lake level of 326 m AMSL) and total water in storage is currently 2,300,000 m<sup>3</sup>. It is anticipated that during the lake filling period some water may be returned to the Reservoir

via the North Quarry Sump periodically so the rate of filling does not exceed the water surplus for the Site. Sufficient water will remain in storage in the Reservoir to meet both mitigation and off-Site discharge (HFRT) requirements.

Dufferin met the minimum required annual discharge to the HFRT of 700,000 cubic metres (m<sup>3</sup>) in 2025 (see Section 6.2.3). As presented in the 2024 Annual Water Monitoring Report (GHD, 2025), no Excess Water was anticipated to be available for discharge in 2025 to the HFRT; a condition that is anticipated during active lake filling periods such as is currently underway in the West Cell. No excess water from 2024 was discharged to the HFRT in 2025 as it was utilized to continue filling West Cell; however, the required 700,000 m<sup>3</sup> discharge was completed in cooperation with Conservation Halton.

During 2025, water was discharged to the HFRT from both the West Sump and the Reservoir outfall to an on-Site wetland located immediately east of Sixth Line. Flow from the wetland via the HFRT is in a westerly direction through a culvert beneath Sixth Line. The HFRT downstream (west) of Sixth Line is also a component of the wetland in this area. Water discharges from the HFRT flow into the Hilton Falls Reservoir. Water discharged from the Hilton Falls Reservoir is subsequently discharged to the Kelso Lake Reservoir. Conservation Halton owns and manages both of these reservoirs.

### 3.3.2 Recharge Well System

Dufferin continued to operate the North Quarry and Extension portions of the recharge well system throughout 2025 in accordance with the related approvals. Short-term power outages occasionally occurred at the Site. Generally, these outages are not a concern because water levels are typically restored to above target within a matter of a few hours or days.

Operating and monitoring information related to the recharge well system is presented in the following sections:

Section 5	Hydrologic/Hydrogeologic Monitoring
Section 6	Water Taking and Discharge
Section 7	Water Quality Monitoring

## 4. Hydrometeorologic Monitoring

In the fall of 1990, a hydrometeorologic station with computerized data logging equipment was established by Dufferin in the Main Quarry. Data collection first began in October 1990. The station was moved from the west central area to the recharge pumping station in 2008. The following data were collected in 2025:

Air Temperature	Hourly average of readings taken every 5 seconds.
Precipitation	Total accumulation recorded every 15 minutes by a tipping bucket rain gauge.
Evaporation	Total evaporation manually recorded twice per week using a Class "A" evaporation pan.

Hydrometeorologic data for precipitation, evaporation, and air temperature from 1991 to 2025 are presented graphically in Appendix E.

This section is organized as follows:

Section 4.1	Air Temperature
Section 4.2	Precipitation
Section 4.3	Evaporation
Section 4.4	Summary

## 4.1 Air Temperature

The Site weather station measures air temperature every 5 seconds and records hourly average temperatures. When air temperature measurements are not available from the Site weather station, the data has been previously supplemented with temperature data from the Acton Wastewater Treatment Plant (WWTP) located approximately 9 kilometres (km) from the Site and Georgetown WWTP. During 2024, air temperature (and precipitation) data from Scotch Block Dam were obtained from Conservation Halton and used as the supplemental source of data. Scotch Block Dam is substantially closer to the Site than Acton WWTP and is located approximately 3.2 km to the east. As a result of the improved accuracy of data supplementation in 2024, the Scotch Block Dam weather data was the primary data source for supplementing missing/winter weather conditions at Milton quarry in 2025.

At the beginning of the year and again in late December 2025, extreme cold temperatures at Milton Quarry caused battery voltage drops on three days, resulting in data loss. These days are therefore identified as partial days in Appendix E, Table E.1.

Average monthly air temperatures for 2025 are presented in Table 4.1, and graphically on Figure 4.1, along with the long-term monthly average temperatures for comparative reference. Average daily air temperatures from 2025 are presented in Appendix E Table E.1.

Monthly temperature fluctuations were evident in 2025 when compared to historical monthly averages for Milton Quarry. Cold conditions were observed at the start of winter 2025 during January and February with monthly average temperatures 1.1°C and 0.9°C cooler than the long-term average, respectively. Air temperature was above the long-term monthly averages by 1.4°C and 0.4°C for March and April. The start of spring was cool, resulting in May dipping below the long-term average by 0.9°C. This was followed by a warmer than average June and July, with air temperatures being above long-term averages by 1.1°C and 1.6°C, respectively. The summer ended with temperatures slightly below the seasonal average. The early fall months were above long-term averages for temperature by 0.6°C in September and 1.0°C in October. The year ended with seasonally colder temperatures, with November being 0.7°C cooler and December being well below the long-term average by 2.5°C. The hottest average daily temperature of the year was recorded on June 23, 2025 at 28.6°C, which is 2.4°C warmer than the hottest day recorded in 2024. The coldest day of the year occurred on January 22, 2025, with an average daily temperature of -16.2°C which is 1.6°C cooler than the coldest day recorded in 2024. The highest and lowest monthly average temperatures in 2025 were in July at 22.4°C and in January at -6.6°C, respectively. While more variability was observed in individual months in 2025, the overall average air temperature for 2025 was 7.9°C, which is equal to the long-term average of 7.9°C for the Milton Quarry.

## 4.2 Precipitation

During 2025, the Milton Quarry rain gauge was operational between April 7 and November 10. The rain gauge only collects rainfall data and therefore is typically operated during non-freezing conditions (i.e., typically April to November).

In previous assessments, when data was not available from the Site weather station it was first supplemented using precipitation data from the Acton Wastewater Treatment Plant (WWTP) located approximately 9 km from the Site, and then with data from the Georgetown WWTP. From 2024 and onward, a closer station (Scotch Block Dam operated by Conservation Halton) has been used to supplement missing data prior to Acton WWTP and Georgetown WWTP as it is located approximately 3.2 km from the Site. The supplemented precipitation data is presented on Figure 4.2. Historical yearly precipitation data is presented in Appendix E Figure E.1.

GHD obtained 2025 rainfall and air temperature data collected at the Scotch Block Dam and Plaikner Resource Management Area weather stations from Conservation Halton and the Acton WWTP weather station from the Credit Valley Conservation Authority (CVC). All three sites operate a heated tipping bucket rain gauge year-round. Scotch Block Dam also operates a Geonor weighing gauge. GHD only utilized the precipitation data for the winter period (November to March) when air temperatures for the month were consistently above -5°C, as there are some concerns with the accuracy of precipitation generated by heated tipping buckets when air temperatures are below -5°C. When

daily air temperatures dipped below  $-5^{\circ}\text{C}$ , the precipitation data was supplemented with Scotch Block Dam Geonor weighing gauge for precipitation.

Precipitation data for 2025 were also obtained from Environment and Climate Change Canada (the Ontario Climate Centre) for the Georgetown WWTP station in Georgetown, Ontario (located approximately 13 km from the Milton Quarry). Precipitation data for the full year was qualified as preliminary (by Environment and Climate Change Canada) at the time of this report. Environment and Climate Change Canada has not conducted the full QA/QC process on the data; however, this data was reviewed and edited and is considered appropriate for this report. The Georgetown WWTP station precipitation dataset had 17 missing days of data; therefore, supplementation with Toronto International Airport data (also supplied by Environment and Climate Change Canada) was required in January, February, March, April, May, September and November 2025. The Georgetown WWTP station has a complete record of precipitation data between 1882 and 2025, including snowfall data during the winter months that have been converted to precipitation.

Monthly precipitation totals for 2025 are presented in Table 4.2. Daily precipitation totals are also provided in Appendix E Table E.2 for reference.

The 2025 total annual precipitation for the Milton Quarry was 825.5 millimetres (mm), which is approximately 39 mm less than the long-term average (1991 to 2024). The Georgetown WWTP total annual precipitation for 2025 (693.8 mm) was also less than its long-term average (1991 to 2024), by approximately 138 mm. A comparison of precipitation at Milton Quarry and the Georgetown WWTP is presented in Appendix E Table E.3. The difference in precipitation observed in 2025 is attributed to climatic variability between monitoring locations and is within the range of variability observed historically.

Seasonal precipitation conditions at Milton Quarry in 2025 varied relative to historical averages; however, overall, the year was slightly drier than typical. The onset of winter was characterized by irregular precipitation patterns. January experienced roughly half of the historical average, while February compensated with precipitation levels 24 mm above the norm. Spring was generally drier than typical, with both March and April receiving less precipitation than typical. During the summer, precipitation patterns varied notably, as June experienced exceptionally high rainfall totaling 146.6 mm, making a significant contribution to the year's overall precipitation. In contrast, July and August were comparatively drier, registering 27 mm and 17 mm less precipitation than the average for those months, respectively. Fall, like summer, saw fluctuating rainfall. September was wetter than usual, while October and November were 39 mm and 29 mm below average, respectively. The start of the winter season, concluded the year with a wet December, with precipitation well above the long-term historical average of 63.5 mm.

June was the wettest month of 2025, totaling 146.6 mm and is approaching double the long-term June average of 82.8 mm. In contrast the driest month of the year was in January, which recorded 38.2 mm below the mean, nearly half the typical amount.

Comparison of the Milton Quarry data to the 2025 Georgetown WWTP precipitation data reveal the impact that isolated storms can have on the area. During the months of January, February, May, June, September and December the Milton monthly data was above the precipitation observed at the Georgetown WWTP. A more in-depth comparison between 2025 Georgetown WWTP and the Milton Quarry precipitation can be seen on Figure 4.2.

A total of 825.5 mm of precipitation was recorded in Milton in 2025, classifying the year as below average and considerably drier than the previous two years, though not as dry as 2022, when approximately 595 mm was recorded. Winter exhibited irregular precipitation patterns, characterised by a particularly dry January and an above-average February. Spring conditions remained drier than normal, with the exception of May, which approached typical levels. Summer was marked by an unusually wet June, primarily attributable to a single intense rainfall event on June 18th, followed by notably dry conditions in July and August. Fall demonstrated a comparable trend, commencing with a substantially wetter-than-average September, then transitioning to below-average precipitation for the remainder of the season. The year concluded with December registering higher-than-normal precipitation at the onset of winter.

## 4.3 Climatic Evaporation

Pan evaporation is measured at the Site using a Class "A" evaporation pan. The evaporation pan is monitored at a minimum twice weekly by collecting manual water level measurements and making the required water level adjustments. Equivalent measured lake evaporation is calculated by multiplying the measured pan evaporation by the pan coefficient (0.70) after correcting for rainfall into the pan. The evaporation pan, similar to the rain gauge, is not operated during winter months. The measured lake evaporation data is presented graphically on Figure 4.3 for months with a complete monitoring record. The monthly measured lake evaporation on Figure 4.3 is presented with the long-term Milton Quarry (1991-2024) mean evaporation observed at the Site. Historical yearly lake evaporation data is presented in Appendix E Figure E.2.

Table 4.3 presents measured and supplemented lake evaporation on a monthly basis. The supplemented lake evaporation includes an over-winter evaporation estimate of 154 mm, as presented in the 5-Year AMP Review Report. The over-winter estimate represents evaporation occurring between November and April.

The total supplemented lake evaporation at the Milton Quarry in 2025 is estimated to be 571 mm. Recorded evaporation is 84 mm below the long-term average (1991 to 2024, excluding 1996 to 1999) of 655 mm. The annual lake water surplus/deficit, which is the difference between the precipitation and lake evaporation is 255 mm, indicating a water surplus over the lake area for the year. The surplus observed in 2025 is higher than the long-term average surplus of 214 mm. Historical annual precipitation surplus data is presented in Appendix E Table E.4.

## 4.4 Summary

The overall average air temperature for 2025 was 7.9°C, which is equal to the long-term average of 7.9°C for the Milton Quarry. The highest daily average temperature was recorded in June at 28.6°C and the lowest daily average temperature was recorded in January at -16.2°C. The highest and lowest monthly average temperatures in 2025 were in July at 22.4°C and in January at -6.6°C.

A total of 825.5 mm of rain was received in Milton, which is approximately 39 mm less than the long-term average (1991 to 2024). Overall, winter precipitation exhibited variability relative to long-term averages. Early spring conditions ranged from average precipitation values to drier than historical norms. This was followed by an exceptionally wet June, driven largely by a single intense precipitation event in mid-month. Both summer and fall exhibited comparable trends, beginning with precipitation levels above the seasonal average and transitioning to below-average conditions towards the end. The year concluded in December with precipitation exceeding normal levels.

The total supplemented lake evaporation at the Milton Quarry in 2025 is estimated to be 571 mm. Recorded evaporation is 84 mm below the long-term average (1991 to 2024, excluding 1996 to 1999) of 655 mm. The annual lake water surplus/deficit, which is the difference between the precipitation and lake evaporation is 255 mm, indicating a water surplus over the lake area for the year.

# 5. Hydrologic/Hydrogeologic Monitoring

This section presents the hydrologic/hydrogeologic monitoring data collected in 2025 for the Main Quarry, North Quarry, and Extension.

Monitoring locations are shown on Figures 2.1 (Main Quarry), 2.2 (North Quarry and Extension), 2.3 (North Quarry portion of the recharge well system), 2.4 (West Cell portion of the recharge well system), and 2.5 (East Cell portion of the recharge well system). Monitoring well installation details are presented in Appendix N (Table N.1). Water level and flow monitoring data are provided in Appendices G and H, in graphical and tabular form, respectively. Stratigraphic and instrumentation logs for monitoring wells are presented in Appendix F.

In 2025, water resources generally reflected precipitation patterns. The first indications of rebound occurred in December 2024, though consistently cold conditions in early 2025 caused recharge to cease. Water levels declined

from January 2025 through early March, when a spring melt event occurred. Late winter and spring precipitation maintained consistently elevated water levels from March through early-April. April received below average precipitation, though two thirds of the precipitation received occurred in the first three days of the month. The balance of April was exceedingly dry and caused a rapid loss of water availability in the environment, and a resulting rapid decline in regional water levels. While precipitation levels were typical between May and December, regional water levels continued to decline, as is traditionally the case through summer and fall. Water levels continued to decline through December 2025 and no rebound was apparent. These results are evident on background well hydrographs presented in Attachment 11 of Appendix G. Surface water availability and the Site water budget are discussed in detail in Section 6.

Further information is provided as organized below:

- Section 5.1 Main Quarry
- Section 5.2 North Quarry Recharge System
- Section 5.3 Extension Recharge Well Systems
- Section 5.4 Spring-Summer Target Transition
- Section 5.5 Target Level Adjustments for 2025
- Section 5.6 Other Hydrologic Monitoring

## 5.1 Main Quarry

Hydrologic/hydrogeologic monitoring in the Main Quarry includes measurement of surface water elevations (including the Reservoir and the Main Quarry Lake/Wetland Complex), and groundwater elevations at monitoring wells.

Monitoring of pumped flows is also conducted as reported in Section 6.

### 5.1.1 Surface Water Elevations

In 2025, the water level in the Reservoir ranged between 306.68 and 307.67 m AMSL, approaching the interim maximum Reservoir level of 308 m AMSL (see hydrograph in Appendix G, Attachment 1). The typical seasonal Reservoir level pattern is a sharp increase with the onset of the spring freshet followed by a decrease during the summer when discharge needs for mitigation and evaporation exceed inflows from dewatering and precipitation. Due to persistent dry conditions in the winter, the Reservoir level remained consistent until mid-March, when the Reservoir level started to increase. The water level started to rise in early March, continuing until mid-April. There was a first peak on April 11, 2025, of 307.65 m AMSL. The Reservoir water level was relatively consistent between April and July, with a slow decline occurring between mid-July and October. The Reservoir level was again stable around approximately elevation 307 m AMSL for the remainder of the year. In 2025, observed Reservoir water levels and overall surface water availability at the Site were generally consistent with precipitation patterns.

The surface water elevation in the Main Quarry Lake/Wetland Complex fluctuated within the normal range (see hydrograph in Appendix G, Attachment 1). The water level typically follows seasonal trends with a relatively highwater level in the spring and relatively low water level in the fall, though in 2025 the water level was consistently stable around elevation 303 m AMSL.

### 5.1.2 Groundwater Elevations

Five monitoring wells (MW1 to MW5) were previously installed near the licensed boundary of the Main Quarry to obtain groundwater level data at locations surrounding the quarry. The recorded groundwater levels are used to evaluate long-term changes in the water table that may be related to the effects of quarrying, including rehabilitation.

It is noted that these monitoring wells are now located at distances ranging from approximately 6 m (MW5) to 42 m (MW1) from the quarry face. As a result, the groundwater elevations reflect a dewatered condition and no significant

changes are anticipated in the future from Main Quarry activities other than at MW5, which is close to the Reservoir and may increase in the future with flooding of the North Quarry cell.

Hydrographs are presented in Appendix G, Attachment 2. A summary of groundwater elevation data is presented in Appendix H. The hydrographs allow comparison of seasonal trends and identification of any significant changes in the groundwater elevations through the years.

The hydrographs for monitoring wells MW1, MW2, MW3, and MW4/4A/4B/4C<sup>2</sup> generally show the effects of historical quarry dewatering and a similar trend of seasonal fluctuations between the years 1991 to 2025. In general, the increase in groundwater elevations each year correlates with the occurrence of the spring freshet, with surplus precipitation relative to potential evaporation. The decline in groundwater elevations each year is generally attributed to the normal seasonal water deficit from late spring to early fall. Since 2008, the groundwater elevation at MW5 has been influenced more by the water level in the Reservoir than by natural groundwater levels.

## 5.2 North Quarry Recharge System

The North Quarry groundwater recharge used the North Quarry recharge pond(s) from commencement of extraction in 2000 until 2007. In 2007, the North Quarry portion of the recharge well system was commissioned and the recharge ponds were subsequently removed from service and decommissioned. Additional recharge wells have been added to the North Quarry portion of the recharge well system since 2007 as needed.

Hydrologic/hydrogeologic water level monitoring associated with the North Quarry recharge system includes measurement of groundwater elevations at recharge monitoring wells, trigger wells, and background wells. North Quarry recharge system monitoring locations are presented on Figure 2.3.

### 5.2.1 North Quarry Trigger Wells

Two sets of Trigger Well hydrographs are presented in this report. Hydrographs for North Quarry trigger wells that present 2025 groundwater elevation data, the associated 2025 target levels, and a representation of the recharge rates for the recharge wells located in close proximity are presented on Figures 5.1 through 5.7. A second set of hydrographs for North Quarry trigger wells that present all available historical groundwater elevation data are presented in Appendix G, Attachment 4.

Groundwater elevations at North Quarry trigger wells were generally maintained at or above the target levels by the groundwater recharge well system throughout 2025. North Quarry extraction is nearly complete with remaining reserves predominantly located within a shallow floor bench. As a result, North Quarry trigger well water levels are less influenced by natural seasonal fluctuation and instead track the target levels more closely. This effect is the result of the reduction in the area of upgradient groundwater recharge catchment and the increased influence of the recharge well system on the trigger wells. In the area of BH37, careful WMS operation to limit springtime groundwater levels has resulted in greatly reduced spring peak groundwater levels relative to earlier recharge operations, conserving water and reducing the potential risk of water concerns at the adjacent property.

### 5.2.2 North Quarry Recharge Monitoring Wells

Water levels in the North Quarry recharge monitoring wells reflect water levels close to points of groundwater recharge (recharge wells). They are used for operational purposes through automated measurement and control by the Programmable Logic Controllers (PLCs) in the recharge control valve huts or manual measurements at some locations. The automated control system monitors groundwater levels at selected recharge monitoring wells and adjusts the recharge flowrates at associated recharge wells such that programmable groundwater elevation set points are maintained at the recharge monitoring wells. Hydrographs for North Quarry recharge monitoring wells are presented in Appendix G, Attachment 3.

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<sup>2</sup> MW4C replaced MW4B, which was destroyed in January 2007. MW4B replaced MW4A (blocked at depth) in July 2003. MW4A replaced MW4 (destroyed) in Fall 1998.

## 5.3 Extension Recharge System

Dufferin commenced operating the Extension recharge well system in May 2013 to satisfy the mitigation requirements of the AMP for the commencement of extraction below the water table in the West Cell. During 2025, the Extension recharge system was operated in accordance with the mitigation provisions of the AMP to maintain water levels at Extension trigger wells at or above the 2025 target levels.

Hydrologic/hydrogeologic water level monitoring associated with the Extension groundwater recharge well system includes water levels at trigger wells, recharge monitoring wells, and background wells. Extension recharge system monitoring locations are presented on Figures 2.4 and 2.5.

### 5.3.1 Extension Trigger Wells

Two sets of Trigger Well hydrographs are presented in this report (2025 hydrographs and long-term hydrographs). Hydrographs for Extension trigger wells that present 2025 groundwater elevation data, the associated 2025 target levels, and a representation of the 2025 recharge rates for the recharge wells located in close proximity are presented on Figures 5.8 through 5.31. A second set of hydrographs for Extension trigger wells that present all available historical groundwater elevation data at trigger wells are presented in Appendix G, Attachments 7 (West Cell) and 9 (East Cell).

An extended winter transition took place in Winter 2025. As stated in Pre-Extraction Extension Report (CRA, 2011a) section 6.2: “The target level methodology established in the AMP results in artificially high target levels in early winter (January/February) because of the averaging periods used to establish target levels. Natural groundwater levels are typically relatively low in January and February and then increase significantly in March (or April) with the onset of the spring freshet. The winter target levels, established by averaging background water levels over the period of January through March, are therefore typically significantly higher than natural water levels would be early in the winter period because March groundwater levels are included in the average.”

The use of an artificially high target level in early winter is recognized in the AMP as providing beneficial augmentation of low flow conditions to Sixth Line Tributary; however, our experience operating the North Quarry recharge system since 2007 is that this target level approach can require a significant water level increase during the fall/winter transition period at a time when there is no significant natural recharge contribution from precipitation or snowmelt. Because this transition may be difficult to achieve in a 2-week period, and because the artificially high target level is not a minimum or lower limit level needed to prevent an undesirable ecological effect, it is appropriate to lengthen this transition period to provide more time for the recharge system to more practicably achieve the higher winter target level.

Climatically cold conditions in early 2025 caused natural groundwater recharge and environmental support to cease, resulting in regional groundwater level declines between January and mid-March, consistent with conditions described above. This decline is highly visible on the Appendix G.11.5 hydrograph for background well OW68-07, with an observed water level decline of approximately 30 cm between January and March. The decrease in regional water availability from natural recharge, as observed in the background well, triggered a modified fall-winter transition period for Winter 2025.

The application of the extended transition period is implemented as documented in the Extension Pre-Extraction Report (CRA, 2011a) as follows:

- The transition period will begin approximately 2 weeks before the end of the fall period
- Recharge flows are substantially increased, suitable to achieve increasing trigger well groundwater levels during the following transition period - i.e., start appreciably raising groundwater levels in an effort to attain the higher target
- The transition period will continue until the actual groundwater level in the background well(s) is observed to increase to the equivalent target level for the background well (indicating a natural recharge event) and for 2 weeks thereafter

- The winter period minimum level will apply after January 1
- The minimum monitoring frequency for the corresponding trigger and background wells will be at least weekly, with an increase to semi-weekly following the second week of the winter period

In 2025, water levels rose about the equivalent target levels for associated background wells as follows:

- BH112 – water elevation 331.71 m AMSL on March 16, 2025
- OW39-04 – water elevation 324.22 m AMSL on March 10, 2025
- OW68-07 – water elevation 342.84 m AMSL on March 14, 2025

Groundwater elevations at Extension trigger wells are generally maintained at or above the target levels by the groundwater recharge well system. In some instances, additional recharge is provided where an opportunity for enhancement exists, as determined by Dufferin’s ecologist, Goodban Ecological Consulting (GEC). This is the case in the vicinity of Wetland W10 where adjacent trigger wells OW65-07 and OW66-07 have recently been operated above the target water levels for a period of the spring and summer.

During 2025, water levels were held above the target levels at OW65-07 and OW66-07 to provide additional support for Wetland W10, as was documented in the 2023 Annual Monitoring Report (GHD, 2025). It is anticipated that this approach will be maintained for the foreseeable future for continued enhancement of Wetland W10, as has been achieved at numerous other wetlands including Wetland W5, and Wetland V2 in the past.

While water levels are generally maintained at or above target levels, there are a limited number of exceptions when this is not the case. These exceptions are described in detail below:

- The water level at OW27-04 dropped below the target level on August 1, 2025. Recharge was increased and the water level recovered at or above the target level by August 8, 2025.
- The water level at OW31-04 dropped below the target level on August 8, 2025. Recharge was increased and the water level recovered at or above the target level by August 11, 2025.
- The water level at BH48 dropped below the target level on April 25, 2025. Recharge was increased and the water level recovered at or above the target level by April 28, 2025.

Several more minor dips in water levels below target levels were recorded in 2025. The following brief instances occurred where a water level was measured below the target level:

An additional category of below-target instances includes where transducer water level data show brief water level drops to slightly below target levels (many of which are related to short-term recharge shutdowns for routine maintenance or WMS additions); these are not cause for concern with respect to the water-dependent ecological features because of the protective nature of the target levels (i.e., corresponding to long-term average conditions in most cases).

No “Occurrence”, as defined by the AMP, was recorded in 2025.

In 2025, one modification of a trigger well was initiated. During routine monitoring, water was heard and observed flowing from shallow fractures, down the OW52-07 borehole to the static water surface. An investigation was undertaken to determine if, or where, a loss of water was occurring in the well. A packer was installed at a depth of approximately 18 m on April 3, 2025 and resulted in stabilization of the static water level. Further investigation confirmed that recharge water was entering at the top of the borehole, flowing down the borehole wall, and exiting through the bottom of the borehole. It was concluded that the flow was recirculating to the East Cell of the quarry through a local fracture opening. Therefore, the water level in the open borehole was no longer representative of the broader aquifer conditions. By installing a packer, this condition has been temporarily resolved. In 2026, the bottom of the borehole will be sealed, permanently resolving this issue. This measure will prevent the loss of shallower groundwater to recirculation back to the quarry. The modification will result in a relatively shallower trigger well comparable to that of adjacent trigger well OW5-80 (total depth of approximately 17 m). No further extraction is anticipated in the vicinity of OW52-07, and conditions are anticipated to remain stable once the repair is made. Monitoring results at recharge monitoring wells OW51-07, MW311A-10, and OW53-07 in the recharge alignment will continue to be evaluated on an ongoing basis to confirm continuity and consistency of recharge operations.

## 5.3.2 On-Site Wetlands

Hydrographs for on-Site wetlands V2, W7, and W8 are presented on Figures 5.32, 5.33, and 5.34, respectively.

During 2025, water levels in the on-Site wetlands were generally maintained at or above target levels through direct diffuse discharge from the water management system as required. In 2025 no instances occurred where a water level was recorded below the target level.

It is worth noting that supplemental monitoring locations in Wetland W7 (SG28, SG29), Wetland W8 (SG51, SG53), and Wetland V2 (SG31A) generally exhibit more movement and variability than the stilling wells used for compliance monitoring due to the conditions in the base of these wetlands (e.g., shallow bedrock and poor anchoring material). Best efforts are made to re-calibrate (survey) the gauges annually and improve the data quality prior to reporting in the AMR.

Wetland water levels are plotted with nearby groundwater monitors in Appendix G Attachment 15. As anticipated, a reduction in groundwater support for on-Site wetlands has been observed with the advancement of bedrock extraction in the East Cell. Changing conditions are summarized as follows:

- Groundwater levels adjacent Wetland W7 are consistently below the historically observed range as seen in Appendix G.15.1a and Appendix G.15.1b. The change in adjacent groundwater conditions is most apparent at BH47 where more than 10 m of drawdown is observed; however, at least 3 m of drawdown is also present in OW74-08 and BH44. As was previously reported, notable drawdown has been evident in the vicinity of W7 since fall 2019.
- Groundwater levels adjacent Wetland W8 exhibit approximately 3 m of drawdown at BH43-I, and more than 3 m at O73-08. Notable drawdown has been evident in the vicinity of W8 since 2020 (refer to Appendix G.15.4a and Appendix G.15.4.b).
- Groundwater levels adjacent Wetland V2 are consistently below the historically observed range as seen in Appendix G.15.14.a and Appendix G.15.14.b. The change in adjacent groundwater conditions is most apparent in monitoring well OW72-08, where approximately 20 m of drawdown is evident. Notable drawdown has been evident in the vicinity of V2 since spring 2017.

It is important to note that while groundwater conditions varied adjacent to the on-Site wetlands, the target levels were continuously maintained in an appropriate manner (as per the AMP, Appendix C "On-Site Wetlands") from an ecological perspective.

## 5.3.3 Extension Recharge Monitoring Wells

Water levels in the Extension recharge monitoring wells reflect water levels close to points of groundwater recharge (recharge wells). They are used for operational purposes, either through manual measurements or through automated measurement and control by the PLCs in the recharge control valve huts. The automated control system monitors groundwater levels at recharge monitoring wells and adjusts the recharge flowrates at associated recharge wells such that programmable groundwater elevation set points are maintained at the recharge monitoring wells. Hydrographs for Extension recharge monitoring wells are presented in Appendix G, Attachments 6 (West Cell) and 8 (East Cell).

## 5.4 Target Level Adjustments for 2026

Section 2.3 of the Establishment of Target Levels report for the North Quarry (CRA, April 2005) defines the requirements and protocol for adjusting North Quarry target levels annually (based on trends in the background well data) once recharge wells are operational and controlling the groundwater levels. These annual adjustments allow mitigation measures to reflect both short-term variations and long-term climatic trends. The initial North Quarry target levels were also presented in the Establishment of Target Levels Report (CRA, 2005).

Similarly, the AMP and the Pre-Extraction Report define the requirements and protocol for adjusting Extension target levels annually. The initial Extension target levels and minimum levels were presented in the Pre-Extraction Report (CRA, 2011a).

Appendix I includes a summary of the North Quarry and Extension target level adjustments and the Extension minimum level adjustments for 2026. Generally wet conditions in summer 2023 and 2024 have resulted in an increase in the average summer water level recorded at background wells used for setting targets. This increase has resulted in a proportional and corresponding increase to assigned summer targets for 2026. In many cases, the summer 2026 targets are the highest that have ever been assigned. Should climatic support falter, some operational challenges may be expected given these aspirational targets. A summary of the 2025 and 2026 target levels for the North Quarry and Extension trigger wells is presented in Tables 5.1a to 5.1e for comparative reference.

Section 6.1 of the AMP requires that Dufferin provide Extension target water levels for future operating seasons to the agencies at least three months prior to the start of the relevant operating season. Dufferin provided winter and spring 2026 Extension target level adjustments to the agencies in a GHD memorandum dated September 30, 2025. Adjustments to the winter and spring Extension minimum levels were also provided to the agencies in that memorandum.

As discussed in the 2017 Annual Water Monitoring Report (GHD, 2018), West Cell background wells OW40-04 and OW41-04 appear to have been influenced by nearby beaver activity in Sixth Line Tributary. Ongoing flooding and potential beaver activity has been observed in the area again since mid-2021 and is once again affecting water levels at OW40-04 and OW41-04. As has been the case since 2018, background well OW39-04 is used for the calculation of targets at associated trigger wells OW27-04, OW28-04, OW29-04, and OW30-04.

## 5.5 Other Hydrologic/Hydrogeologic Monitoring

Other hydrologic/hydrogeologic monitoring conducted at the Site includes groundwater elevations, surface water elevations, and surface water flow measurements at various locations in the North Quarry, Extension, and surrounding lands. This includes the supplementary monitoring program outlined in the AMP, monitoring required by the PTTW, and other monitoring.

Surface water flow gauging (monitoring) is conducted at SW4 (Pumphouse) and Sixth Line Tributary (SW20) throughout the year.

North Quarry and Extension monitoring well locations are presented on Figures 2.2, 2.3, 2.4, and 2.5. Hydrographs for all North Quarry and Extension monitoring wells that were included in the 2025 monitoring program are presented in Appendix G, Attachments 5 and 10, respectively. Hydrographs for all background monitoring wells and domestic wells are presented in Appendix G, Attachments 11 and 12, respectively. Groundwater and surface water elevation data are provided in Appendix H. Hydrographs for surface water monitoring locations along the 6<sup>th</sup> Line Tributary, the West Cell wetlands, and the East Cell wetlands, are presented in Appendix G, Attachments 13, 14, and 15, respectively.

An overall evaluation of the results of the groundwater elevation, surface water elevation, and flow monitoring results for the North Quarry and the Extension areas follows.

### 5.5.1 Groundwater Flow Patterns

Groundwater elevation contour plots for April 2025 and October 2025 are presented on Figures 5.35 and 5.36, respectively. These figures show groundwater elevations under high and low water level conditions in 2025. It is noted that the timing of maximum and minimum levels varies somewhat by location; however, the selected monitoring events are generally representative of high and low groundwater conditions for the year as influenced by the climatic conditions of 2025.

Dewatering for the extracted areas of the North Quarry and Extension has lowered nearby groundwater elevations in the surrounding area. The operation of the North Quarry recharge system maintained a positive gradient towards Sixth

Line Tributary to the west in 2025. In 2025, the operation of the Extension recharge system continued to maintain a positive gradient towards the Sixth Line Tributary to the north and towards the off-Site wetlands.

## 5.5.2 BH65, BH66, and OW69-08

Section 4.4 of the Pre-Extraction Report (CRA, November 2011a) outlines that historical monitoring "envelopes" will be established for BH65, BH66, and OW69-08 to facilitate data evaluation to ensure protection of water resources in this area. The Extension groundwater recharge well system is operational in accordance with the mitigation provisions of the AMP. The baseline data sets for BH65, BH66, and OW69-08 are complete and the water level "envelopes" have been established as shown on Figures 5.37 to 5.39, respectively. The key minimum levels for these envelopes are defined consistent with the trigger well approach as evident on the charts.

Water levels observed since commencement of below water extraction in the West Cell (Spring 2013), including the water levels measured in 2025, have generally remained above their historical minimum levels. Water levels at BH65, BH66, and OW69-08 remained within the historic range in 2025. No quarry influence is evident at BH65, BH66 or OW69-08.

## 5.5.3 BH113

Monitoring well BH113, located north of Sixth Line Tributary to the northeast of the Pumphouse Pond, continues to show behaviour that is influenced by local hydraulic connection to the recharge well system to the south (see Appendix G.10.18). GHD previously (CRA, November 2011a) identified this local condition. As a result, BH113 was removed from the proposed background monitoring well network and retained as a supplemental monitoring well. Monitoring has continued at this location as a component of the supplemental monitoring program and data is reviewed regularly and included in the annual report.

The monitoring data illustrates that groundwater levels at BH113 are highly correlated to groundwater levels, trends, and the overall behavior corresponds to trends in WMS operation as exhibited by recharge monitoring well OW77-11. The minimum seasonal groundwater levels at BH113 continue to remain well above (approximately 2 m) the adjacent surface water levels in Sixth Line Tributary and continue to support southwesterly flow and discharge to the creek. In 2022, further operational adjustments were made to the WMS that positively affected BH113. These adjustments continued in 2025, though some operational variability is evident late in the year.

On the north side of the East Cell, the final extraction limits have been reached, and no further changes are anticipated. Recharge operations will continue to support water levels at BH113 with minor adjustments being made in response to ongoing monitoring results.

## 5.5.4 SW4 Pumphouse Flow Monitoring

Surface water flow monitoring at SW4 (see Figure 2.5) is conducted weekly from July to September and monthly for the remainder of the year in accordance with the AMP. This is not a structure installed to facilitate monitoring, but rather a feature from previous land use activities. Flow is measured using a timed-volume method. Water flow has typically been measured at two ports on the SW4 pump house, the upper port and the lower port. In 2016 the lower port was re-plugged (historically the lower port was commonly plugged until regular maintenance was initiated) to conserve recharge water and support upgradient groundwater levels, as recommended in the 2015 annual monitoring report. The plug acts to raise water levels by approximately 10 cm at BH48, thus less recharge is required in this area. Air and water temperatures are also recorded concurrent with flow measurements. This monitoring was initiated in 2005, although some data are available prior to 2005. At SW4, flows generally vary with the groundwater level, with higher flows in spring and lower flows in summer and fall.

All SW4 flow monitoring results are presented in Appendix N (Table N.2) and the flows are shown on Figure 5.40. The 2025 flow data at SW4 are consistent with or above average historic flows. Periodically, reduced flow is observed as a result of a partial blockage; however, flow typically returns to normal when the blockage is removed. No significant blockages were reported in 2025, and no reduction in flow is currently identified as a result of quarrying activities. The

northern limits of the East Cell are at the final extraction limit so no further reduction in flow due to quarrying would be anticipated.

## 5.5.5 Streamflow Monitoring Station – Sixth Line Tributary

Stream flow monitoring station SW20 is located on Sixth Line Tributary west of the Reservoir and includes a triangular-notched weir installed in a box culvert with an automated level recorder (station SW20A). This location was established in August 1994 and monitoring commenced on June 6, 1995. A parallel 900-mm corrugated metal culvert located approximately 20 m east of the weir (station SW20B) functions as a by-pass during high flow conditions (or blockage of the weir).

A beaver dam upstream of SW20 has in the past raised water levels causing relatively constant flow through the overflow channel (SW20B). During 2022, beavers were observed to be active, and a dam was visible about 100 m upstream of the weir. By 2023, no beaver activity was suspected at SW20, and the dam built in the previous year remained as a vegetated mound. However, potential beaver activity (i.e., build-up of wooden material) within the culvert was noted between the field visits in October and November 2023 and was cleared after noting the observation. No further beaver activity was observed in 2024 and 2025.

The bypass channel at SW20B was active during March, April and May in 2025 (i.e., limited flow from snowmelt and spring rain and no flow in summer and fall as is typical). The highest measured flow occurred in April at SW20A, which is typical due to increased precipitation combined with regional recharge from spring freshet conditions. The hydrologic monitoring program includes collection of stream flow data at locations SW20A and SW20B, as shown on Figure 2.1 and Figure 5.41.

Collection of flow data at these monitoring stations continued in 2025 including the recording of continuous data with a pressure (level) transducer and monthly manual flow measurements. The Solinst Edge pressure (level) transducer and associated Solinst Edge barologger was replaced in May 2025 with an updated version (Solinst L5). A direct-read cable was attached to the transducer to allow for a direct download of the data, limiting the need to remove and replace the transducer during each site visit. Monitoring capabilities of the transducer, methodology and recording intervals remain the same. Refer to the 2024 Annual Water Monitoring Report (GHD, 2025) and prior reports for further details on historic monitoring activities.

Stream flows are calculated using the water level data (described above) and standard weir formula. The stream flow values are verified through field measurements of flow velocity and depth at locations immediately adjacent to the weir to confirm that the weir measurements are representative.

### 5.5.5.1 Results

The manually recorded and calculated continuous stream flow data for 2025 are shown on Figure 5.41, and are presented with supplemented precipitation data for 2025, for the Milton Quarry.

When compared to previous monitoring years, flows at SW20A in 2025 followed similar seasonal trends, though flow was slightly below average for all months. Flows through the spring were moderate to high following the freshet which occurred from mid-March to mid-April. A secondary peak is evident in early April following approximately 45 mm of precipitation over a two day period. A large precipitation event occurred on June 18, 2025 which correlates to an increase in flow rate at this time, though the peak is modest compared to spring freshet flows. Fall flows usually display responses to large precipitation events, however, October and November 2025 were significantly drier than average. Responses to precipitation events are evident throughout the monitoring period by observed flow peaks. The 2025 calculated peak flow of 1.415 m<sup>3</sup>/s occurred on April 4, 2025, following a large precipitation event. The average flow calculated for 2025 was 0.186 m<sup>3</sup>/s, which is slightly reduced relative to the 2019 to 2024 average flows of 0.204 m<sup>3</sup>/s.

Active flow at SW20B was observed from March to May as a result of the spring freshet and elevated water levels at SW20A which caused the bypass channel to flow. The highest measured flow in SW20B occurred on April 14, 2025.

During this site visit, a flow of 0.0052 m<sup>3</sup>/s was recorded. The next highest flow of 0.0035 m<sup>3</sup>/s was noted during the previous site visit on March 11, 2025.

## 6. Water Taking and Discharge

This section presents the 2025 water takings and discharges for the Site. The monitoring of these flows is conducted to fulfill the monitoring requirements of the PTTW that are related to individual water taking limits, to facilitate the calculation of the total water taking for the Site per the PTTW, and to facilitate the evaluation of the water budget for the Site that is required by the PTTW and the AMP.

This section is organized as follows:

- Section 6.1 Flowmeter Calibration Verification
- Section 6.2 PTTW Water Takings
- Section 6.3 PTTW Overall Water Taking
- Section 6.4 WMS Flows
- Section 6.5 Water Budget Evaluation
- Section 6.6 Excess Water Estimate

### 6.1 Flow Meter Calibration Verification

Calibration verification is conducted annually on flow meters and open channel flow measuring instrumentation used to monitor water flows in the WMS. In 2024, the calibration values indicated larger discrepancies than are typically observed, with similar results reported across a range of verifications. Additional flow verifications were taken in 2025, with calibration checks occurring on June 11 and October 16, 2025. This procedure was undertaken to validate the accuracy of the 2024 results and to identify any potential issues associated with the rented meter used during verification. The WMS flow meter calibration was conducted in 2025 as follows:

- Calibration verification of flow meters associated with the West Sump and Recharge Pumping Station was conducted using a top-mounted strap-on portable transit time flowmeter. The June 11, 2025, calibration verification deduced that the differences between the Site flow meter readings and the portable transit time flow meter readings to be 3.3% for the Pumping Station meters and 2.7% for the West Sump meter. This is deemed acceptable.
- Calibration verification of the flow meter associated with the North Quarry Sump was conducted using two top-mounted strap-on portable transit time flowmeters (a Rosemount and a Krohne). The June 11, 2025, calibration verification indicated a 1.3 % discrepancy between the Krohne strap on meter and a 8.6% discrepancy with the Rosemount meter (average of 4.95%). The October 16, 2025, calibration verification indicated a 2.1% discrepancy between the Krohne strap on meter and a 5.2% discrepancy with the Rosemount meter (average 3.65%). This is deemed acceptable.
- Calibration verification of the flow meter associated with the Central Sump was conducted using a top-mounted strap-on portable transit time flowmeter. The difference between the Sump flow meter and the portable transit time flow meter readings was 5.2% from the calibration checks on June 11, 2025. The difference between the Sump flow meter and the portable transit time flow meter readings was less than 1% from the calibration checks on October 16, 2025. This is deemed acceptable.
- Calibration verification of the open channel flow measurement instrumentation associated with the Reservoir outfalls P-01 and P-02 was conducted by gradually reducing the discharge flows and verifying the zero calibration. At P-01, typical flows range from 0 to 3,500 L/min, and zero calibration was confirmed at 0 L/min. At P-02, there was no flow for most of 2025, however overall flow ranged from 0 to 300 L/min, and zero calibration

was confirmed at 0 L/min. Both the June and October 2025 calibration checks confirmed this result. This is deemed to be acceptable.

- Calibration verification of the flowmeters associated with individual recharge wells was conducted by comparing the total flow at the recharge pumping station against the sum of the flows recorded for the individual recharge points (recharge wells and wetland surface water discharges; see Table 6.3). The variability in these readings is less than 5% and is deemed acceptable.

## 6.2 PTTW Water Takings

This section presents a summary of 2025 water takings that correspond to the water taking limits outlined in the PTTW for interim conditions.

### 6.2.1 North Quarry and Extension Dewatering

In 2025, West Cell Extension dewatering was accomplished by temporary dewatering equipment installed on the slope of the West Cell Buttress with flow conveyed across the East-West Pillar into the North Quarry Sump. East Cell Extension dewatering was similarly accomplished by conveying water overland from the East Cell Sump directly into the North Quarry. At the North Quarry Sump, water from North Quarry, West Cell, and East Cell dewatering was pumped to the Main Quarry.

A summary of North Quarry and Extension dewatering quantities for 2025 is presented in Table 6.1. Daily North Quarry and Extension dewatering quantities for 2025 are presented in Appendix N (Table N.10) and compared against the daily limit shown for Source 1 in Table A of the PTTW. There were no exceedances of the PTTW daily flow limit for North Quarry and Extension dewatering in 2025.

The calculated annual water taking from the environment for North Quarry and Extension dewatering is presented in Appendix N (Table N.3) based on updated water budget parameter values refined for the AMP 5-Year Review (GHD, 2025) as stated on the newly reinstated PTTW issued on July 31, 2025 (see condition 3.5). The calculated water taking is 795,657,885 liters per year or 2,179,885 liters per day.

A summary of North Quarry water handling over the period of 2001 through 2025 is presented in Table 6.2 includes the water-taking value.

### 6.2.2 Recharge System

The 2025 capacity of the recharge pumping station was approximately 18,000 litres per minute (L/min), well below the PTTW flow rate limit of 36,000 L/min (Source 2 in Table A of the PTTW).

A summary of recharge system water takings is presented in Table 6.3. Daily recharge system water takings are presented in Appendix N (Table N.11). Daily recharge system data for individual recharge wells are presented in Appendix K (Attachment 5). As presented in Table N.11, there were no exceedances of the PTTW daily water-taking limit in 2025. Note that the high PTTW limit is intended to allow for potential future increase in the rate of groundwater recharge pumping due to anticipated high rates of recirculation of recharge water back into the quarry. The high PTTW limits are not indicative of any high consumptive use of water now or in the future as the quarry consumes very little water.

There were no exceedances of the PTTW limits for recharge system flows in 2025.

### 6.2.3 Main Quarry Discharge

This PTTW limit includes discharge to the HFRT from the Main Quarry Lake/Wetland Complex and/or from the Reservoir.

A summary of Main Quarry discharge water takings is presented in Table 6.4. Daily Main Quarry discharge water takings are presented in Appendix N (Table N.12). As presented in Table N.12, there were no exceedances of the PTTW daily water-taking limit in 2025.

As discussed in Section 3.3.1, no Excess Water was allocated for discharge in 2025. The minimum HFRT discharge requirement (700,000 m<sup>3</sup>) was met and total discharge to the HFRT was 1,296,132 m<sup>3</sup>. Discharge was provided from both the Main Quarry Lake/Wetland Complex and the Main Quarry Reservoir. The target average daily flows of 0.058 m<sup>3</sup>/s (during July through September) and of 0.010 m<sup>3</sup>/s (during January through June and October through December) were met as an average over each period. This discharge occurred in accordance with the objectives of, and consultation with, Conservation Halton.

A summary of Main Quarry discharge water takings over the period of 1991 through 2025 is presented in Table 6.5.

## 6.3 PTTW Overall Water Taking

The PTTW requires the calculation of the overall water taking for the Site using the method presented in the PTTW.

Calculations related to the 2025 overall water-taking are presented in Table 6.6 (calculations to estimate the total volume of water used for operations in 2025 are presented in Appendix J). The overall water taking for 2025 was 2,091,881 m<sup>3</sup> (2,091,881,472 L), which is approximately 33% of the annual limit of 6,417,600 m<sup>3</sup> (6,417,600,000 L) established in the PTTW for interim operating conditions.

## 6.4 WMS Flows and Temperature

Water flows and temperature are measured at a number of points throughout the WMS. Some of these points correspond to water takings under the PTTW (as presented above in Section 6.1), some correspond to water handlings under the PTTW, and others are strictly for water balance or operational purposes.

WMS flow and temperature data are presented in charts and tables in Appendix K. Where applicable, PTTW limits are identified on the charts and tables.

## 6.5 Water Budget Evaluation

This section presents an evaluation of the 2025 water budget for the Site.

### 6.5.1 Background and Methodology

The water budget estimates the total volume of water entering the quarry, the total volume of water leaving the quarry, and the resulting change in water storage within the quarry on an annual basis. The water budget for the Site is discussed in the AMP (Section 4.4 and Appendix E).

The water budget is important to the overall operation, planning, and general management of water handling activities at the Site, and ensures that sufficient water is available for:

- Discharge to the HFRT as required by the LRIA permit and the CH Water Management Agreement
- Operation of the groundwater recharge system
- Quarry operations (dust control and aggregate washing)
- Quarry rehabilitation (including lake filling)

More specific objectives of the water budget evaluations identified in the AMP (both short and long term) include:

- Verify that the amount of water available/in storage is consistent with water budget forecasts to confirm the representativeness of the overall water budget calculations.
- Identify if more or less water is available than forecasted such that filling time and associated operational and cost aspects can be appropriately addressed.

- Establish the annual distribution of water from the Reservoir in accordance with an agreed water hierarchy.
- Establish the amount of "excess" water that may be available.
- Confirm the representativeness of key water budget parameter values that have the potential to significantly affect the reliability of the long-term water budget calculations in a negative manner (i.e., potentially less water available than forecast).
- Identify and adapt to any long-term trends in water budget availability that are evidenced by the monitoring data and/or recognized by the scientific community.

The AMP (Section 4.4 and Appendix E) presents the water budget verification program for the Site. The water budget verification program outlined in the AMP is summarized as follows:

1. Complete water budget analysis as described herein. This analysis occurs at different levels of detail at different frequencies:
  - Ongoing – assessment of flow and storage data relative to previous measurements, forecasted water budget conditions, and ongoing operations and climatic conditions.
  - Annual – review of data relevant to individual monitoring parameters and overall water budget.
  - 5-Year Review – analysis of overall water budget considerations and recalibration of water budget with updated forecast of future conditions.
2. Identification of whether actual water budget conditions are consistent with forecasted conditions, or whether more/less water is available.

Due to necessary assumptions for un-measurable or difficult-to-measure values, a water budget evaluation is subject to a degree of variability or uncertainty. Regardless, the water budget evaluations are effective tools to help assess conditions as they evolve and to understand trends and variability.

## 6.5.2 Water Budget Evaluation

This section presents the results of the ongoing and annual water budget evaluations conducted in 2025.

### Ongoing Water Budget Evaluation

The Reservoir currently provides the majority of the water storage at the Site and water budget evaluations are performed for it on an ongoing basis. Throughout 2025, ongoing water budget evaluations included monitoring water levels in the Reservoir (see hydrographs in Appendix G, Attachment 1) and comparison of the resulting actual water storage changes (using stage-storage information) relative to the calculated water storage changes (using flow data and stage-storage information).

A summary of ongoing Reservoir water budget evaluations for each month over the period of January 2025 through December 2025 is presented in Appendix N (Table N.4). The estimated change in storage within the Reservoir is 71,347 m<sup>3</sup>, whereas the water budget calculates a change of -103,537 m<sup>3</sup>. This indicates that less water (174,884 m<sup>3</sup>) was available than predicted by the water budget. This represents a discrepancy of 1.4% relative to the total water handled or transferred through the reservoir on an annual basis. This close correlation indicates the water budget parameters and calculations are appropriately representative.

### Annual Water Budget Evaluation

The water budget for the whole Milton Quarry Site was initially presented in the AMP (Appendix E, Table E.2), was updated in CRA's December 2003 Witness Statement in relation to Consolidated Board Hearings – Case No: 03-086 (Witness Statement), and was updated again in the Pre-Extraction Report (CRA, 2011). The Site water budget was further updated in the 5-Year AMP Review (2013-2018), and subsequently as a component of the Milton Quarry East Extension (MQEE) Geology and Water Resources Assessment report (GWRA). Additional groundwater flow modelling was undertaken for the GWRA and the relevant data incorporated into the water budget. Water budget parameters were recently updated for the 5-Year AMP Review (2019-2023) and have been employed for the water budget calculations herein and presented in Appendix N (Tables N.5 and N.6). The predictive water budget provided in

Table N.5 is applied for the 2025 annual water budget evaluation for estimation of components that are not directly measurable (e.g., groundwater inflow). The conditions presented in Table N.5 are predicted annual average and are provided for reference only. All water budget adjustments reflecting observed conditions are reflected in Table N.6.

Adjustments to the water budget and assessment of water budget accuracy are completed on an annual basis in Appendix N (Table N.6). Measurable parameters (e.g., precipitation and evaporation) are adjusted, and a comparison of observed and calculated conditions is made. If a discrepancy larger than the safety factor (in the negative) is observed, then sensitivity analysis may be completed to determine potential sources of error to the water budget.

In 2025, storage of water within the Reservoir decreased by 103,537 m<sup>3</sup>, the Lake/Wetland storage decreased by 30,151 m<sup>3</sup>, and West Cell Storage increased by 141,097 m<sup>3</sup>. The net change in storage at the Site in 2025 was 7,409 m<sup>3</sup>.

In 2025 the observed annual surplus for the Site was 603,541 m<sup>3</sup> and the calculated available surplus was 719,751 m<sup>3</sup>. The water budget overestimates available water by 116,210 m<sup>3</sup> for 2025 (i.e., less water is observed to be available at the Site than calculated by the water budget). This amount represents approximately 0.9% of the water handled by the Site. The water budget parameters and estimated available water remain conservative and fit for purpose (e.g., ongoing confirmation that sufficient water is available to meet the mitigation objectives).

### Summary

The ongoing and annual water budget evaluations demonstrate the variability inherent in water budget assessments; however, they also demonstrate the results are sufficiently accurate to serve their intended purpose of assessing shorter and longer-term conditions.

Overall, the annual water budget evaluation for 2025 and previous years indicates that there is sufficient water available for the successful performance of the Milton Quarry WMS and rehabilitation in the near-term and long-term.

## 6.6 Excess Water Estimate

Excess Water is defined in the October 2003 Water Management Agreement (Extension Quarry) as any water stored in the Reservoir at the end of the year above the elevation of 306 m AMSL that is not required to meet the needs outlined in paragraphs 1 to 8 of the Water Hierarchy (Schedule 6 of the Water Management Agreement [Extension Quarry]) in the following year. Section 3.5 of the Water Management Agreement (Extension Quarry) outlines that Excess Water is to be allocated during the following year in accordance with the Water Hierarchy, subject to reasonable interim adjustments agreed to by Dufferin and CH, as may be necessary to reflect actual versus estimated results.

Excess Water was available for the first time in 2008 when the water level in the Reservoir reached the normal operating range. Prior to 2008, any surplus water was used for filling the Reservoir. During 2025 there was no Excess Water required to be discharged to the HFRT, as presented in the March 2025 GHD memorandum entitled "Excess Water Determination for 2025".

The calculation for Excess Water that is available for discharge in 2026 is presented in Appendix N (Table N.8). Based on the planned quarry extraction and lake filling in the West Cell in 2026, it is calculated that no Excess Water will be available for discharge during 2026, beyond the planned minimum discharge of 700,000 m<sup>3</sup> (required discharge). If any Excess Water becomes available for discharge, to the extent practical the discharge will be coordinated with CH.

## 7. Water Quality Monitoring

This section presents a summary of 2025 water quality monitoring for the Site.

This section is organized as follows:

Section 7.1 Background

Section 7.2	Main Quarry Water Quality
Section 7.3	Recharge System Water Quality
Section 7.4	Other WMS Locations
Section 7.5	Temperature

## 7.1 Background

The ECA requires water quality sampling at the following locations under interim operating conditions:

1. Effluent (discharge) from the West Sump in the Main Quarry Lake and/or from the Reservoir to the HFRT (weekly and monthly sampling)
2. Effluent (discharge) from the Recharge System pumping station to the Recharge Well System (weekly and monthly sampling)
3. Effluent (discharge) from the North Quarry Sump to the North Quarry Recharge Well System (if any)

In addition, following startup of the recharge well system, three recharge wells (including the first and last wells along the distribution header and the closest recharge well to DW103) are required to be sampled monthly for benzene, toluene, ethylbenzene, xylenes (collectively referred to as BTEX), metals, and general chemistry parameters, as specified in the ECA.

Items 1 and 2 above are discussed in Sections 7.2 and 7.3, respectively. Item 3 above is not applicable for 2025 because there was no direct connection from the North Quarry Sump to the recharge well system.

Items 1, 2, and 3 constitute "effluent" from the works approved under the ECA and the effluent criteria listed in the ECA apply. Other water quality monitoring data are collected for analysis purposes and compared to Provincial Water Quality Objectives (PWQOs) and/or historical conditions, as appropriate.

The ECA establishes the following sampling schedule and Effluent Limits for the effluent water quality samples collected in accordance with items 1 through 3 above.

Parameter	Frequency	ECA Effluent Limit
Total Suspended Solids	Weekly	25 mg/L (monthly average)
Oil & Grease	Monthly	15 mg/L
Un-ionized Ammonia	Monthly	0.02 mg/L
pH (field)*	Monthly	Between 6.0 and 9.5
Temperature (field)*	Monthly	No objective

Note:

\* These parameters are collected in the field for calculation of the un-ionized ammonia concentration.

A non-compliance is deemed to have occurred if any single result for oil and grease or un-ionized ammonia is greater than the Effluent Limit. Similarly, a non-compliance for pH is deemed to have occurred if any single measurement is outside of the specified range. A non-compliance for TSS is deemed to have occurred if the arithmetic mean concentration of all samples taken in a calendar month is greater than the Effluent Limit.

The results of this water quality monitoring are discussed in the following sections.

## 7.2 Main Quarry Discharge Water Quality

This section presents a summary of 2025 water quality monitoring for the Main Quarry and associated discharge to the HFRT.

Water quality sampling of the discharge from the West Sump in the Main Quarry Lake/Wetland Complex to the HFRT was conducted in accordance with the ECA in 2025. The water quality results for the monthly and weekly sampling are

provided in Appendix L, with comparison to the ECA Effluent Limits. A summary of the 2025 analytical data is presented in Table 7.1. No exceedances of the Effluent Limits were observed.

Water quality sampling of the discharge from the Reservoir to the HFRT was also conducted. In 2025, discharge to the HFRT from the Reservoir occurred throughout the year. The water quality results for the monthly and weekly sampling are provided in Appendix L, with comparison to the ECA Effluent Limits. A summary is presented in Table 7.2. No exceedances of the Effluent Limits were observed.

In general, the discharge water quality is good, and similar to previous years. The comparison of all discharge water quality data for 2025 to the PWQOs does not indicate any adverse effects to the downstream system. No detections were reported within the recharge system at 3 different sampling points, nor were any detections reported at any other sampling location on-Site in 2025.

Occasionally there are detections of some metal parameters in the Main Quarry discharge above the PWQO concentrations; however, these are not considered indicative of adverse effects from the quarry as they have historically been present in background samples, they are infrequent and/or relatively low, and/or due to the nature of the receiving water.

No water quality concerns are evident in the Main Quarry discharge water quality.

## **7.3 Recharge System Water Quality**

This section presents a summary of 2025 water quality monitoring for the groundwater recharge system.

### **7.3.1 Recharge Pumping Station**

Water quality sampling of the discharge from the recharge pumping station to the recharge watermain was conducted in accordance with the ECA in 2025.

The water quality results for the monthly and weekly water samples in the watermain at the recharge pumping station are provided in Appendix L, with comparison to the ECA Effluent Limits. A summary is presented in Table 7.3. No exceedances of the Effluent Limits were observed.

No water quality concerns are evident in the Reservoir water quality.

### **7.3.2 Recharge Wells**

Water quality sampling of the recharge water at select recharge wells was conducted in 2025 in accordance with the ECA to monitor recharge water quality discharged upstream of Sixth Line Tributary with respect to the ambient surface water quality.

The water quality results for the monthly recharge well samples are provided in Appendix L, with comparisons to the ECA Effluent Limits and PWQOs. A summary is presented in Table 7.4. The comparison of recharge well sample results to ECA Effluent Limits and PWQOs is intended to provide a convenient basis for evaluation of the data; these criteria are not concentration limits under the ECA.

While some past results have had metals parameters detected above PWQO concentrations, none are reported in 2025. Detections above the PWQOs are not considered indicative of adverse effects from the quarry, have historically been present in background samples, are infrequent and/or relatively low, and/or due to the nature of the receiving water, as discussed in prior annual monitoring reports.

No water quality concerns are evident in the recharge wells.

## **7.4 Other WMS Locations**

While not required by the ECA, water quality sampling at the North Quarry Sump and the Central Sump was undertaken in 2025. This sampling was done to characterize water quality at these locations that will correspond to

discharge points (effluent) under the ECA once the WMS is operating under Long-Term Operating Conditions. As such, it is useful to monitor water quality at these locations to evaluate any potential future need for water quality improvements via changes to operating practices or water treatment; however, ECA Effluent Limits are not applicable under current Interim Operating Conditions.

The water quality results for the North Quarry Sump and Central Sump are presented in Appendix L and summarized in Tables 7.5 and 7.6, respectively, with comparisons to the (non-applicable) ECA Effluent Limits and the PWQOs.

In 2025, some metals parameters were detected above the PWQOs within the North Quarry Sump, though not consistently. Similar conditions are reported for the Central Sump where periodic detections above PWQOs occur. These results are generally consistent with long-term water quality monitoring results at these locations.

In general, the water at these locations is comparable to the water in the Reservoir (as determined through sampling of recharge and Main Quarry discharge water) and continues to exhibit good water quality.

## 7.5 Temperature

This section presents a summary of 2025 water temperature monitoring.

### 7.5.1 Surface Water Temperatures

#### HFRT Discharge Temperature Monitoring

The LRIA Permit requires hourly temperature recording of all discharges to the HFRT from June 1 to September 30. To meet this requirement, water temperature loggers are installed at the West Sump and the Reservoir outfall. An additional temperature logger is also voluntarily installed on a temporary basis where the HFRT crosses Sixth Line (from the wetland) to collect supplementary temperature data. In 2025, the supplemental temperature logger was operational. The temperature loggers at the west sump and wetland areas were relocated in 2024 after two thefts led to data loss from mid-June to November. HFRT discharge temperature monitoring results from these locations are presented on Figure 7.1 along with air temperature monitoring results from the on-Site hydrometeorological station for comparative reference. Air temperatures were below average from June to October, with some fluctuations at year's end.

Review of Figure 7.1 reveals that the water temperatures in the Reservoir, West Sump, and wetland are generally similar. Daily temperature fluctuations in the Reservoir and West Sump were muted in comparison to the wetland, where shallow water is more susceptible to ambient temperatures.

#### Sixth Line Tributary Temperature Monitoring

As required by the AMP, surface water temperature monitoring near four trigger well monitoring locations along the key cold-water fishery reaches north of the Extension was continued in 2025. This monitoring was first implemented in 2007. In consultation with Dufferin's fishery biologist (WSP), the four locations were selected based on their ecological and hydrogeological relevance. The locations selected for monitoring are shown on Figure 2.2, and include SG41, SG42, SG47, and SG48. There is a surface water logger installed at each location at/above the streambed and a second logger installed in a streambed piezometer at SG47.

In May 2024, significant beaver activity was observed approximately 20 m upstream of Townline Road. This activity raised the water level significantly at SG41 and SG42, and to a lesser extent at SG43, making access unsafe. The temperature loggers were retrieved with a dedicated team provisioned with water rescue gear; however, this level of effort is not practical on a monthly basis. In 2025, access to this reach worsened with increasing water depth and submerged deadfall. Access, and data logger retrieval, is now only possible via boat.

Temperature loggers were deployed with periodic downloads at SG41 and SG42, and temporary gauges were installed for water level monitoring in shallower (accessible) water closer to the bank (SG41R and SG42R). In 2025, damage occurred to the SG42 logger and data prior to January 12, 2025 was unretrievable. Best efforts are being made to restore monitoring instrumentation at SG41 and SG42; however, telemetry or alternative data collection

methods may need to be considered. It is recommended that instrumentation and access improvements be pursued in 2026, to the extent practical.

Surface water temperatures in the Sixth Line Tributary generally vary diurnally from the spring to the fall, while the temperature remains relatively constant during the winter months while under ice. This phenomena is observed in all surface water locations, except those most heavily moderated by groundwater discharge.

Temperature monitoring results are presented in Appendix M. Based on review of the 2025 temperature monitoring results for Sixth Line Tributary monitoring locations, the following observations are made:

- Temperatures at SG41 were generally consistent with previous years. Temperatures in the summer were average in relation to temperatures since the start of recharge mitigation. Peak temperatures were comparable to temperatures prior to commencement of groundwater recharge under the provisions of the AMP in May 2013. Beaver activity was noted in the area of SG41.
- Temperatures at SG42 could not be retrieved from the logger and data is only available through January 12, 2025. Replacement of the logger and instrumentation is planned for spring 2026, as noted above.
- Temperatures at SG47 were generally consistent with previous years. Temperatures were consistent with temperatures prior to commencement of groundwater recharge under the provisions of the AMP in May 2013. SG47 has a streambed logger (installed in a streambed piezometer) to assist with discerning temperature data that may be biased high by the water level dropping below the logger in the summer. Moderation of temperatures is evident. Relatively cooler groundwater discharge moderates or reduces temperatures through the warmer summer months. In addition, diurnal variability is muted relative to fluctuations observed in the open channel.
- At SG48, 2025 temperature data continue to indicate significant moderation by groundwater discharge. Increased temperature moderation from increased groundwater seepage became evident with the startup of Extension recharge in May 2013, and the pattern has continued to be observed since that time. Overall, the temperatures remain within pre-recharge levels. The temperatures have less diurnal variation through the year in comparison to pre-recharge (2013) years, indicating that the data logger is still situated over the groundwater seep.

Further discussion of 2025 and historical Sixth Line Tributary temperatures in the context of Brook Trout habitat conditions is presented in Appendix O.

## 7.5.2 Groundwater Temperatures

### Sixth Line Tributary Temperature Monitoring

As required by the AMP, groundwater temperature monitoring is conducted at four Extension trigger wells near the Sixth Line Tributary surface water temperature monitoring locations discussed above (including OW37-04, OW38-04, OW60-07, and OW63-07). Groundwater temperature monitoring is also conducted at various additional locations in the North Quarry and Extension in conjunction with automated water level monitoring, including background wells (OW39-04, OW40-04, OW41-04, OW68-07, and BH112) and selected additional wells. Groundwater temperature monitoring locations are identified on Figure 2.2.

Temperature monitoring results are presented in Appendix M. Groundwater temperatures are generally relatively stable within the range of 6°C to 9°C, though well OW5-80, located in close proximity to the recharge alignment, does exhibit slightly elevated temperatures ranging from 7°C to 12°C. Where elevated, the temperature increases generally occurred in the latter portion of the year and could potentially be attributed to higher than typical summer recharge following significant precipitation events.

Milton Quarry wells typically fluctuate seasonally from as little as 0.5°C to approximately 5°C. These minor temperature fluctuations are caused by transient heat conduction from the surface, and may be out of phase and attenuated in comparison to the temperature of the ground surface because of the time lag for heat to be conducted to the depths of the temperature loggers in the wells. Recharge water also affects some locations depending upon their proximity to recharge wells, recharge flow rates, and recharge water temperature. Consistent with previous years, varying responses to snowmelt and precipitation were also apparent in 2025.

At OW60-14, increased seasonal temperature fluctuations are apparent from groundwater recharge, however no adverse influences on creek temperature are indicated in the monitoring results.

## **8. Residential Well Monitoring**

Dufferin has historically monitored the residential domestic wells at selected properties near the Site as part of their neighbour relations program. This residential well monitoring was subsequently formalized and refined for inclusion in the Extension AMP requirements.

The residential well monitoring program currently consists of quarterly water level monitoring and annual water quality monitoring at up to 15 residences (18 locations) in the vicinity of the Milton Quarry, subject to access from the property owners, which meets or exceeds the requirements of the AMP. All current and historical residential well locations included in the Extension AMP requirements (including 3 additional residential wells included in Dufferin's neighbour relations program but outside of the AMP baseline survey zone) are presented on Figure 8.1.

Appendix N (Table N.9) presents a summary of residential well monitoring conducted in 2025, including a summary of monitoring activities conducted and explanations for instances where monitoring was not conducted.

Hydrographs for residential wells at which water level monitoring was conducted in 2025 are presented in Appendix G, Attachment 12. A summary of 2025 residential well groundwater elevation data and water quality data are presented in Tables 8.1 and 8.2, respectively.

Based on the results of the residential well monitoring program, there is no indication that Dufferin operations have had any adverse water quantity or quality effects on the residential wells in the vicinity of the quarry.

## **9. Ecological Monitoring**

A variety of ecological monitoring studies are completed in association with the Milton Quarry as described below.

Ecological monitoring of Sixth Line Tributary is undertaken to satisfy the requirements of the ECA, PTTW, and the AMP. The Sixth Line Tributary ecological monitoring includes monitoring Brook Trout spawning west of the North Quarry and monitoring Brook Trout spawning and macrobenthic invertebrate communities to the north of the Extension. The Sixth Line Tributary Brook Trout spawning was conducted in 2025, while the other scopes are completed biennially and will next occur in 2026. The findings of the ecological monitoring for Brook Trout are discussed in Section 9.1.

Ecological monitoring of terrestrial and wetland features is conducted pursuant to the AMP for the Extension. This monitoring is currently conducted annually and was conducted in 2025. The findings of the ecological monitoring of the wetlands are discussed in Section 9.2.

### **9.1 Sixth Line Tributary**

#### **9.1.1 Brook Trout Survey**

The results of the 2024 Brook Trout survey are provided in the WSP report entitled, "2025 Brook Trout Spawning Survey Along Sixth Line Tributary of Sixteen Mile Creek in the Vicinity of Dufferin Aggregates Milton Quarry Site" (WSP, 2025b), a copy of which is presented in Appendix O.

The overall findings of the 2025 Brook Trout survey are summarized as follows:

**Sixth Line Reaches:**

- The 2025 spawning surveys marked the fifth year of confirmed spawning since 2020 within the Sixth Line reaches with the observation of a total of six Brook Trout in the attendance of two separate redds. The absence of confirmed spawning activity from 2018 to 2020 was concerning. However, the observation of the two confirmed redds with four and eight adult Brook trout in attendance during the 2021 and 2022 surveys respectively, and the three confirmed redds with eight and six adult Brook Trout observed in 2023 and 2024 respectively, along with an increase in spawning evidence or sign (e.g., probable redds, scrapes) from 2019 through 2024, confirms that Brook trout are still present and actively spawning in the Sixth Line reaches and that a recovery from the 2018 to 2020 spawning activity is well underway.
- It was not clear why confirmation of use by adult Brook Trout was not being documented during the 2018 to 2020 spawning surveys, however angling pressure on the population is suspected. It is possible the spawning activity at the particular sites was brief due to smaller numbers of fish using each site, so that the survey windows did not capture their presence.
- The level of spawning activity varies naturally year-to-year based on a wide variety of factors (e.g., surface flow levels and other climatic factors, groundwater flow levels, beaver dams and associated accessibility, varying year class(es) of Brook Trout due to varying incubation success in previous year(s), food availability, competition, angling activity, and other stress factors), as demonstrated in the findings over the years. However, in years previous to 2018 as noted, there had been an increase in spawning activity, confirmed redds and adult observations, making the absence in 2018 all the more obvious and suggestive of an event occurrence (e.g., angling pressure) rather than any decline in habitat quality (or associated water quality or groundwater discharge)
- Some variation in spawning can also be expected to occur depending on the specific timing of the surveys year to year in relation to the height of the spawning season. However, similar to 2018, the timing of the 2019 and 2020 surveys (when spawning was not confirmed), appeared to correspond generally with peak activity of all of the previous years when spawning was confirmed. As noted, no direct cause has been identified however it is speculated that angling pressure might have caused the sudden change noted in 2018. There were no other habitat factors evident during the survey and the thermal monitoring, groundwater indicators and groundwater movement patterns to the creek remain unchanged.
- The water temperature/thermal data within the main 'historical' redd could not be obtained in 2025 due to frozen conditions at the sampling site on December 5. However, the results of the 2024 thermal data indicate that groundwater discharge continues to occur into the redd site within the stream bed during the spawning period and is moderating the local environment. The 2025 results of the temperature survey within the permanent spring also indicates that groundwater discharge continues to occur along this area of the Sixth Line reaches during the spawning season. GHD reported that the SG42 temperature logger was unable to be retrieved in 2025 and as a result the temperature data for 2025 could not be obtained. However, previous SG42 patterns of groundwater temperature moderation has been evident in previous years and the stream temperature monitoring will resume at this site in 2026 and beyond. This information is consistent with GHD's monitoring of groundwater flow patterns toward the stream reaches. Therefore, despite the lack of confirmed redds or Brook Trout observations along the Sixth Line reaches during the 2018 to 2020 period, the key element that supports habitat conditions suitable for Brook Trout, that is groundwater discharge, persisted during that time and continued from 2021 to 2025 when confirmation of Brook Trout spawning returned.

**Townline reaches:**

- The AMP (GHD 2019) recommended transitioning the aquatic monitoring (i.e., spawning surveys) for the Townline reaches from the annual frequency to a biennial frequency for the 10-year period following the 5-Year Review, assuming the monitoring findings had remained stable. In 2021, a full set of spawning surveys (four) were completed in the Townline reaches and as noted these surveys continued in 2023 and again in 2024. In 2020, 2022, and 2025, the spawning surveys were not completed along the Townline reaches. The Townline spawning surveys will again be completed in 2026, along with continuation of annual thermal temperature

monitoring, which is recommended as an indication of the groundwater discharge and maintenance of the coldwater habitat conditions.

- Consistent with the previous 20 years, no spawning activity was observed along the Townline reaches in 2024. The most recent evidence of Brook Trout along these reaches was the observation of one scrape and three adult Brook Trout (in different locations to the scrape) in 2004. The initiation of the lack of observations and apparent change in spawning activity coincided with the construction of a beaver dam in 2003, and two smaller dams in 2004, upstream of Townline, which appeared to have had an effect on the local habitat conditions and Brook Trout population.
- It appears that the local Brook Trout population along the Townline reaches has been extirpated. While the spawning surveys are continuing on a biennial basis in order to assess the potential recovery of the local population, such a recovery appears unlikely.
- The water temperature/ thermal data within the main historical redd (where historical spawning activity occurred) could not be obtained in 2025, due to frozen conditions at the sampling site on December 5. However, the 2024 thermal data collected by WSP in the main 'historical' redd along the Townline reaches, indicate that groundwater discharge continues to occur into the redd site within the stream bed during the spawning period. This thermal monitoring of the 'historical redd' will continue in 2026 along with a supporting assessment of the habitat conditions during the survey to look for any evidence of habitat change that might be occurring (e.g., new beaver dams).

## 9.1.2 Macroinvertebrate Community Survey

This section has been preserved for consistency with previous (and future) biennial reporting of macroinvertebrate monitoring results.

## 9.2 Extension Wetlands

The results of the 2025 Extension wetland ecology monitoring are provided in the Goodban Ecological Consulting Inc. (GEC) report entitled, "2025 Wetland Ecology Monitoring" (GEC, 2026), a copy of which is provided in Appendix P.

The overall findings of the 2025 Extension wetland ecology monitoring are summarized as follows:

- Based on the available wetland ecology monitoring data, in 2025, off-Site wetlands W21 and W41, and on-Site wetlands W7 and W8 appear to be functioning within the normal ranges of variation for these types of wetland features, in terms of spring high water levels, hydroperiod, amphibian breeding activity and vegetation composition and structure. Some natural changes to vegetation structure and composition are occurring as a result of the December 2013 ice storm and infestations of ash trees by the Emerald Ash Borer. Wetland W9 was added to the wetland monitoring network in 2013 and it appears to be functioning within the normal ranges of variation for this type of wetland.
- Off-Site Wetland W5 appears to have experienced reduced hydroperiod, reduced amphibian breeding activity and changes to vegetation composition and structure during the period from 2002-2012. Between 2013 and 2025, with the operation of the groundwater recharge well system under the mitigation provisions of the AMP, Wetland W5 was wetter than in the recent past. As a result, the cover/height of Reed Canary Grass was considerably reduced and the cover of some other native wetland plant species has increased. Amphibian breeding activity in W5 increased during the period 2013 through 2025, relative to 2012. The mitigation measures implemented in 2013 through 2025 appear to have had a positive effect on Wetland W5 (e.g., increased amphibian activity, reduction of Reed Canary Grass and increase in native wetland plant species).
- Off-Site Wetland W10 had an extended hydroperiod in 2025 due to shallow groundwater recharge support via the WMS, and wetter-than-normal conditions in the summer, with standing water being observed into late August. This created optimal conditions for salamander larvae in W10 from a hydroperiod perspective, with the hydroperiod being long enough to allow for the metamorphosis of salamander larvae into terrestrial juveniles. As noted above, the use of a WMS was identified by Linton et al. (2018) as a means to manage hydroperiods in salamander breeding pools and potentially offset the effects of climate change.

- On-Site Wetland V2 appeared to have experienced reduced spring high water levels, reduced hydroperiod, reduced amphibian breeding activity and changes to vegetation composition and structure until 2008. The mitigation measures implemented in 2009 through 2025 appear to have had a positive effect on Wetland V2 (e.g., increased amphibian activity; positive changes in vegetation composition and structure such as control of encroaching woody vegetation, etc).

## 10. Annual AMP Reporting Summary

Section 6.1 of the AMP identifies specific components to be included in the Annual Water Monitoring Report. The following summarizes the reporting for the noted components for ease of reference with the noted components shown in bold text:

- Status and summary of quarry operations (e.g., development, extraction, and rehabilitation).
  - Refer to Section 3.1.
- Status and summary of mitigation system development and implementation.
  - Refer to Sections 3.2 and 3.3.
- Complete presentation of monitoring results, including summary of any notifications provided under the response action framework (Section 1.3).
  - Refer to Sections 4 through 9 for the various components of the monitoring program. Monitoring data is provided within the tables and appendices associated with this annual report.
  - No "occurrence" was recorded as defined by the AMP, and no associated notifications were made.
- Summary of response actions taken to maintain target levels (and effectiveness of actions).
  - Refer to Section 5.3.1 regarding Extension trigger well water levels.
- Explanation and assessment of potential for impacts resulting from any period or area in which water level or water quality targets were not continuously maintained.
  - As described in Sections 5.3.1 and 5.3.2, there were a limited number of brief periods in 2025 during which target levels were not continuously maintained. In all instances water levels were restored as intended by the AMP. No impacts to the environment were observed or indicated. It is important to recall that the targets were established at conservatively high levels such that "Small, short-term fluctuations in trigger well water levels below the target levels (i.e., days to weeks) will not create any noticeable adverse ecological effects..." (AMP, Section 3.1.3.1).
  - As described in Section 7, during 2025 water quality targets for all effluent from the WMS were maintained and no exceedances of the Effluent Limits were observed.
- Target levels and minimum water levels (once initial levels are set and then adjusted levels for following years).
  - Refer to Section 5.4 and Table 5.1.
- Assessment of supplemental monitoring program findings, including ecological aspects.
  - Refer to Sections 4 through 8 regarding supplemental "water" monitoring and Section 9 regarding supplemental ecological monitoring.
- Evaluation of overall water budget and determination of "excess water" for the subsequent year.
  - Refer to Section 6.6 and Appendix N (Tables N.6 and N.8).
- Discussing groundwater mitigation system requirements for the subsequent year as the quarry develops.
  - The overall WMS, including reservoir, pumping stations, recharge wells, and wetland diffuse discharges continue to perform as expected. Final extraction limits have been approached in the North Quarry and Extension, and further demand on the recharge system is generally not anticipated in these areas. Additional recharge wells may be added to bolster capacity; however, no additions are planned in the short-term.

- Documentation of any anomalies/glitches that occurred and/or any minor variations that were implemented throughout the year (refer to Section 5).
  - No significant glitches or minor variations occurred in 2025. Removal and correction of data anomalies (data errors) is part of an overall data collection and reporting process. Sometimes anomalous data may be saved in the database or uploaded to webDT as a result of the requirement for promptly providing agency access to collected data. Some anomalies only become apparent over time or through detailed comparison of one location to another. As data undergoes further review and evaluation, in 2025 as in all years, we identified and corrected/removed anomalies (data errors) from the database and webDT, as warranted.
  - The winter target level for on-Site wetland W7 was maintained in 2025 (to support turtle use) instead of allowing the feature to go dry every 2 to 3 years.
- Review appropriateness of response/notification timelines identified in AMP Section 1.3 and Appendix F as well as the reset period for the operating response period described in Appendix F.
  - The mitigation system operated effectively during 2025, and no changes are recommended to the timelines or the reset period.
- Evaluation of the suitability of the interim extraction area and any continued/future interim extraction.
  - Extraction is largely complete in the East Cell and no further interim extraction is anticipated in the future.
- Summary of any amendments/updates to the AMP which were agreed to throughout the year.
  - No amendments or updates to the AMP were implemented in 2025.
- Conclusions.
  - Refer to Section 11.
- Recommendations, including any proposed amendments to the AMP reflecting knowledge gained from actual operating conditions and monitoring results (e.g., reduction in minimum monitoring frequency).
  - Refer to Section 12.
- No amendments to the AMP are recommended as a result of this report.

In addition, the AMP identifies that the following two questions should be considered as part of the Annual Water Monitoring Report. The following provides a response, summarizing the evaluation included in this 2025 Annual Water Monitoring Report.

***Are the operating practices consistent with the mitigation performance objectives?***

Yes. Overall, target levels have been maintained at the trigger wells in a manner that is protective of water resources. The ecological features (wetlands W7, W8, and V2) were provided with sufficient water to function within the normal range for these types of wetlands. Drops below target levels are not repeatedly occurring.

***Are the mitigation measures protective of the groundwater dependent ecological features?***

Yes. Overall the ecological features and functions are being maintained and protected. In some instances, enhancement relative to historic conditions are noted such as at Wetland V2, Wetland W5, and Wetland W10. Refer to Section 9 for further discussion.

## 11. Conclusions

Based on the results of the 2025 monitoring program, the following conclusions are provided:

1. Monitoring was completed for the Milton Quarry to satisfy the required objectives of the related Permits, Approvals, and Agreements.
2. Water-related mitigation measures implemented at the Milton Quarry include operation of the WMS. The WMS generally consists of quarry dewatering, water storage in the Reservoir, and drawing water from the Reservoir for

discharge to the HFRT and the recharge well system, as well as maintaining the Main Quarry lake level and providing water for operations use. The quarry is currently operating under interim conditions as specified in the PTTW and ECA and will continue to do so in the near term.

3. A total of 825.5 mm of precipitation was recorded in Milton in 2025, classifying the year as below average and considerably drier than the previous two years, though not as dry as 2022, when approximately 595 mm was recorded. Winter exhibited irregular precipitation patterns, characterised by a particularly dry January and an above-average February. Spring conditions remained drier than normal, with the exception of May, which approached typical levels. Summer was marked by an unusually wet June, primarily attributable to a single intense rainfall event on June 18th, followed by notably dry conditions in July and August. Fall demonstrated a comparable trend, commencing with a substantially wetter-than-average September, then transitioning to below-average precipitation for the remainder of the season. The year concluded with December registering higher-than-normal precipitation at the onset of winter.
4. The surface water elevation in the Main Quarry Lake/Wetland Complex fluctuated within the normal range of 302.5 to 303.5 m AMSL.
5. Groundwater levels at monitoring wells MW1 through MW5 in the Main Quarry in 2025 reflected seasonal trends as influenced by climatic conditions, with the exception of MW4 (relatively close to the quarry face) and MW5 (relatively close to the quarry face and influenced by the Reservoir).
6. Groundwater levels to the west of the North Quarry were maintained by the recharge well system at elevations at or above the 2025 target levels.
7. The operation of the Extension groundwater recharge well system generally maintained water levels at trigger wells and the on-Site wetlands at or above the 2025 target levels, except for some minor short-term variations.
8. The North Quarry and Extension target levels were adjusted for 2026 to account for variations in natural climatic and groundwater conditions. The approved protocol per the AMP was used. Generally wet conditions in summer 2023, exceedingly wet conditions in summer 2024, and typical conditions in 2025 have resulted in a significant increase in the average summer water level recorded at background wells used for setting targets. This increase has resulted in a proportional and corresponding increase to assigned summer targets for 2026. In many cases, the summer 2026 targets are the highest that have ever been assigned. Should climatic support falter, some operational challenges may be expected given these aspirational targets.
9. In 2025, all water takings were in compliance with PTTW limits.
10. In 2025, water discharge from the Main Quarry to the HFRT met and exceeded the flow requirements set out in the CH Agreement.
11. An overall evaluation of the water budget for the quarry was conducted. The overall conclusion of this evaluation is that there is sufficient water available for the successful performance of the Milton Quarry WMS and rehabilitation in the near term and the long term. There is no Excess Water identified for 2026 in addition to the minimum required discharge as lake filling is underway in the West Cell.
12. The quality of the water discharged from the West Sump in the Lake/Wetland Complex and from the Reservoir to the HFRT was good and generally similar to historic conditions.
13. The water quality in the Reservoir, recharge watermain, and the recharge wells associated with the recharge well system is suitable for groundwater recharge.
14. There is no indication that Dufferin's operations have had any adverse water quantity or quality effects on the residential wells in the vicinity of the quarry.
15. The 2025 spawning surveys marked the fifth year of confirmed spawning since 2020 within the Sixth Line reaches with the observation of a total of six Brook Trout in the attendance of two separate redds.
16. The level of spawning activity varies naturally year-to-year based on a wide variety of factors (e.g., surface flow levels and other climatic factors, groundwater flow levels, beaver dams and associated accessibility, varying year class(es) of Brook Trout due to varying incubation success in previous year(s), food availability, competition, angling activity, and other stress factors), as demonstrated in the findings over the years. However, in years previous to 2018 as noted, there had been an increase in spawning activity, confirmed redds and adult

observations, making the absence in 2018 all the more obvious and suggestive of an event occurrence (e.g., angling pressure) rather than any decline in habitat quality (or associated water quality or groundwater discharge).

17. The results of the 2025 thermal data collected in the main 'historical' redd indicate that groundwater discharge continues to occur into the redd site within the stream bed during the spawning period and is moderating the local environment. The 2025 results of the temperature survey within the permanent spring further indicate that groundwater discharge continues to occur along this area of the Sixth Line reaches during the spawning season. GHD reported the temperature logger was lost at SG42 in 2025, but the historical data at this location shows evident patterns of groundwater temperature moderation. Stream temperature monitoring will resume at this site in 2026. This information is consistent with GHD's monitoring of groundwater flow patterns toward the stream reaches. Therefore, despite the lack of confirmed redds or Brook Trout observations along the Sixth Line reaches during the 2018 to 2020 period, the key element that supports habitat conditions suitable for Brook Trout, that is groundwater discharge, persisted during that time and continued from 2021 to 2025 when confirmation of Brook Trout spawning returned.
18. Based on the available wetland ecology monitoring data, off-Site wetlands W21 and W41, and on-Site wetlands W7 and W8 appear to be functioning within the normal ranges of variation for these types of wetland features, in terms of spring high water levels, hydroperiod, amphibian breeding activity and vegetation composition and structure. Some natural changes to vegetation structure and composition are occurring as a result of the December 2013 ice storm and infestations of ash trees by the Emerald Ash Borer. Wetland W9 was added to the wetland monitoring network in 2013 and it appears to be functioning within the normal ranges of variation for this type of wetland.
19. Off-Site Wetland W5 was wetter from 2013 to 2025, compared to 2002 to 2012, following the operation of the groundwater recharge well system under the mitigation provisions of the AMP. The mitigation measures implemented in 2013 through 2025 appear to have had a positive effect on Wetland W5 (e.g., increased amphibian activity, reduction of Reed Canary Grass and increase in native wetland plant species).
20. Off-site Wetland W10 had an extended hydroperiod in 2025 due to shallow groundwater recharge support via the WMS and wetter-than-normal conditions in the summer. This created optimal conditions for salamander larvae in W10 from a hydroperiod perspective; the period was long enough to allow for the metamorphosis of salamander larvae into terrestrial juveniles. The use of a WMS is a means to manage hydroperiods in salamander breeding pools and potentially offset the effects of climate change.
21. On-Site Wetland V2 appeared to have experienced reduced spring high water levels, reduced hydroperiod, reduced amphibian breeding activity and changes to vegetation composition and structure until 2008. The mitigation measures implemented in 2009 through 2025 appear to have had a positive effect on Wetland V2 (e.g., increased amphibian activity; positive changes in vegetation composition and structure such as control of encroaching woody vegetation, etc.).

Overall, in 2025 the water management system continued to be successfully implemented. Operation of the system demonstrated the ability to maintain target levels on a sustained basis. The water budget was in line with the climatic conditions in 2025. No significant negative impacts to the off-Site ecological features were evident.

## 12. Recommendations

Based on the conclusions of the 2025 water and ecology monitoring program and the status of the equipment at the Site, the following recommendations are provided:

1. The monitoring program, as presented herein and summarized in Tables 2.1 and 2.2, should be continued to satisfy the objectives of the related Permits/Approvals.
2. Continue North Quarry and Extension mitigation measures pursuant to the Site Permits/Approvals and the AMP.

3. Continue to monitor water budget and refine the recharge system operation to continue to maintain targets while maximizing available water surplus or water available for lake-filling.
4. A second flow meter verification event was undertaken in 2025 that produced repeatable results, confirming flow meter accuracy. It is recommended that a second event be undertaken again in 2026.
5. In 2026, it is recommended that the bottom of the OW52-07 borehole be sealed to prevent recirculation to the East Cell. It is further recommended that monitoring results at recharge monitoring wells OW51-07, MW311A-10, and OW53-07 in the recharge alignment continue to be evaluated on an ongoing basis to confirm continuity and consistency of recharge operations in the vicinity of OW52-07.
6. Due to new beaver activity commencing in May 2024, access to SG41 and SG42 has become progressively more challenging. To address this in 2025, monitoring continued at SG41 and SG42 with temperature loggers and periodic downloads when safe to do so. New temporary gauges were installed in shallower (accessible) water closer to the bank for water level monitoring. Water levels have increased, access has worsened in 2025, and damage has occurred to the SG41 and SG42 installations. It is recommended that practical efforts be made to restore monitoring instrumentation when safe to do so in the spring.

## 13. References

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- WSP, March 2026b. 2025 Brook Trout Spawning Survey Along Sixth Line Tributary of Sixteen Mile Creek in the Vicinity of Dufferin Aggregates Milton Quarry Site. Prepared for Dufferin Aggregates.

All of Which is Respectfully Submitted,

GHD

Prepared By:



Kyle Fritz, P. Eng.



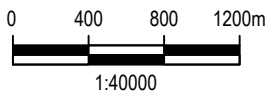
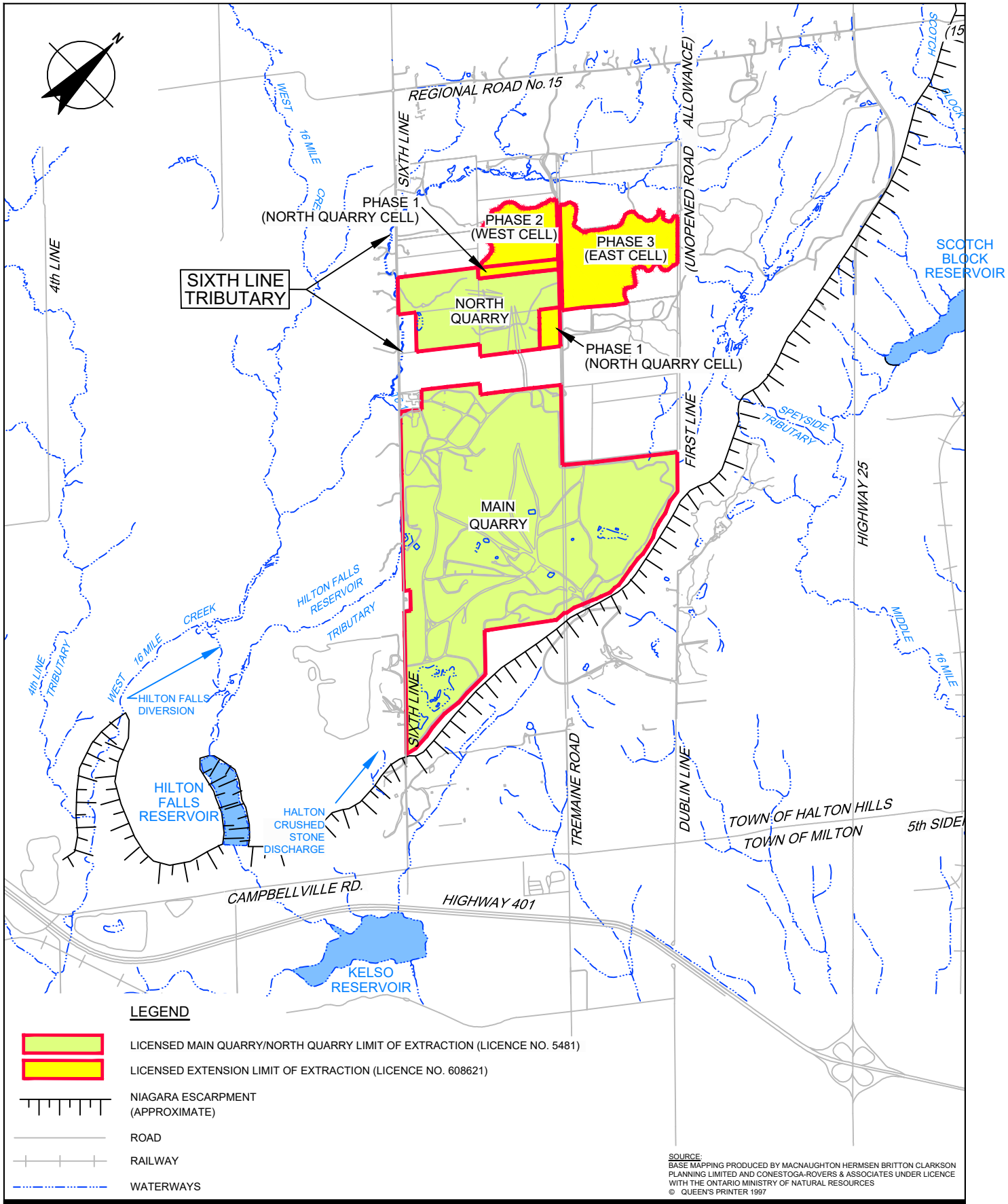
William Armes, P. Eng.

Reviewed By:

A handwritten signature in blue ink, appearing to read "J. Richard Murphy".

J. Richard Murphy, P. Eng.

# Figures

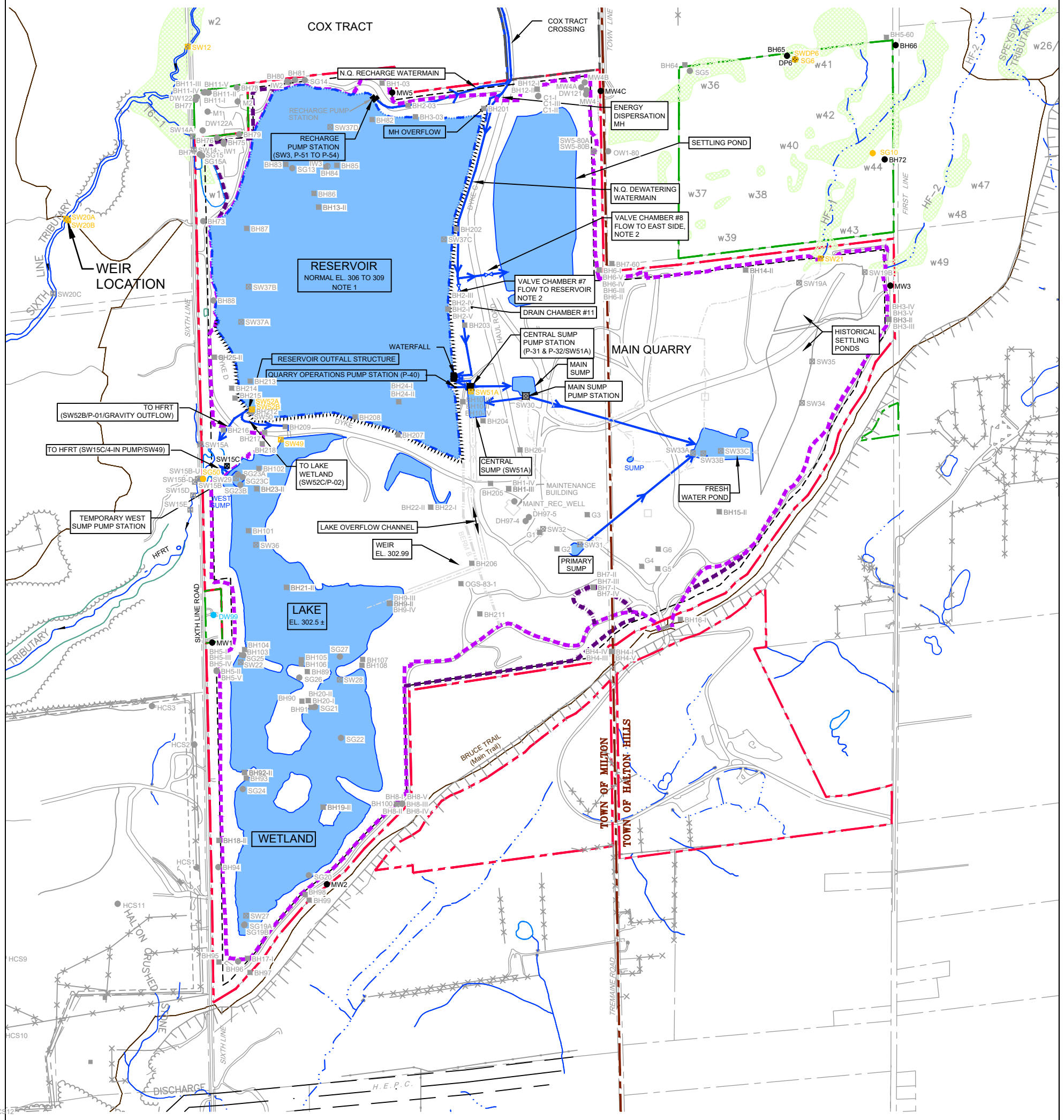


MILTON QUARRY  
 REGION OF HALTON, ONTARIO

Project No. 10978  
 Date February 2026

SITE LOCATION MAP

FIGURE 1.1



**LEGEND**

- |          |  |     |                              |     |  |
|----------|--|-----|------------------------------|-----|--|
| ● DW103  | MONITORING WELL LOCATION   | --- | PROPERTY LINE                | --- | MAIN QUARRY LIMITS DECEMBER 2008               |
| ● DW103  | RESIDENTIAL WELL IN USE  | --- | LICENSED LIMIT OF EXTRACTION | --- | MAIN QUARRY LIMITS DECEMBER 2025               |
| ● MP1    | MINI PIEZOMETER LOCATION   | --- | MUNICIPAL BOUNDARY           | --- | EXTRACTION LIMITS - FLOOR BENCH DECEMBER 2025  |
| ● SW10   | SURFACE WATER MEASUREMENT LOCATION   | --- | DUFFERIN OWNED BUFFER        | --- | WETLAND IDENTIFIED AS PROVINCIALLY SIGNIFICANT |
| ● IN1-07 | BOREHOLE INCLINOMETER LOCATION   | --- | DUFFERIN OWNED LICENSED      | --- | NIAGARA ESCARPMENT                             |
| ● (Grey) | MONITORING LOCATIONS SHOWN IN GREY ARE NOT INCLUDED IN CURRENT MONITORING PROGRAM EITHER BECAUSE THEY ARE INACCESSIBLE OR BECAUSE THEY NO LONGER EXIST | --- | DUFFERIN OWNED LEASED        | --- | WATERMAIN (AS-BUILT/EXISTING)                  |
| ● SG8    | STAFF GAUGE LOCATION   | --- |                              | --- | OVERLAND FLOW                                  |

SOURCE:  
BASE MAPPING PRODUCED BY MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED AND CONESTOGA-ROVERS & ASSOCIATES UNDER LICENCE WITH THE ONTARIO MINISTRY OF NATURAL RESOURCES  
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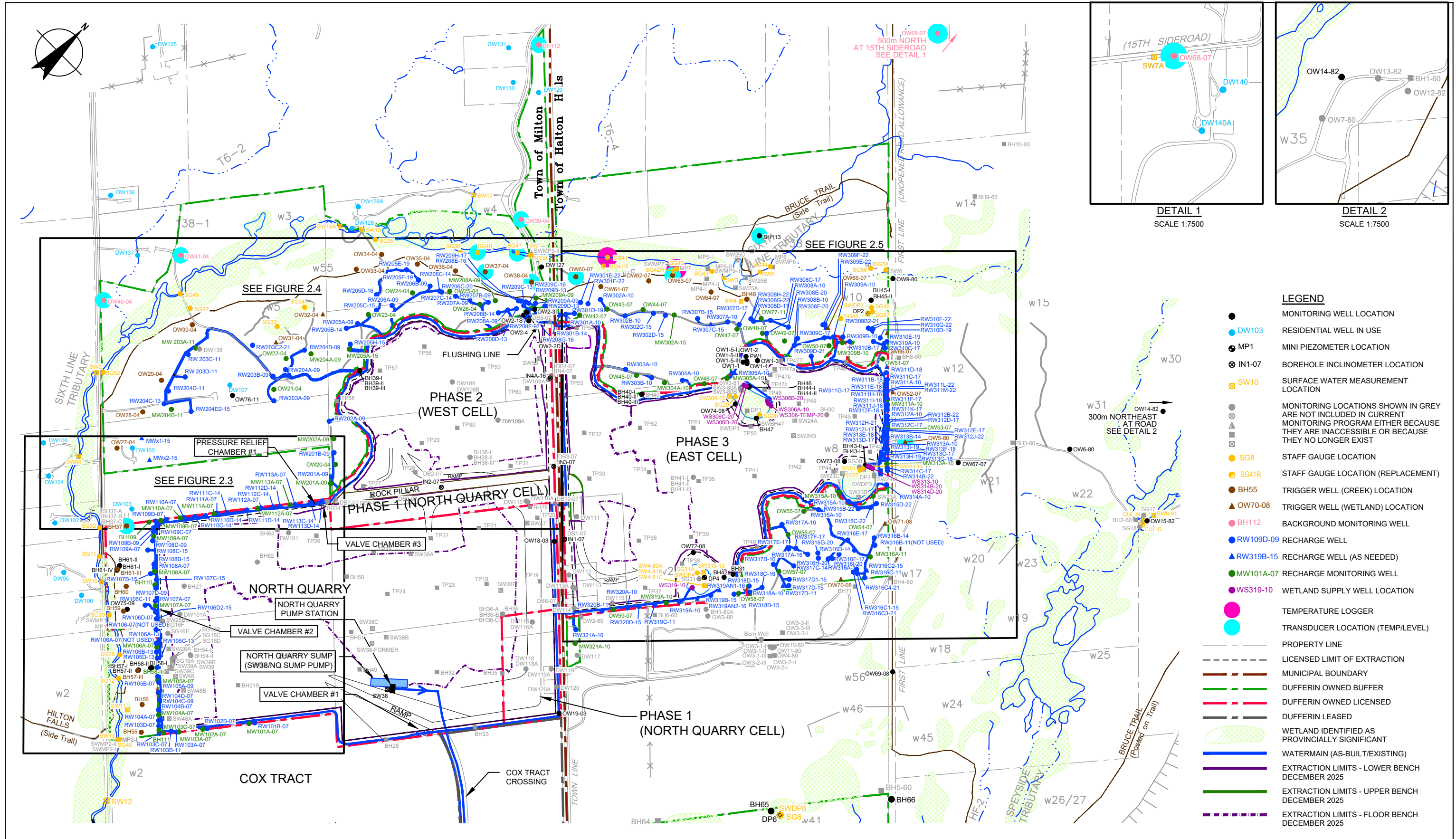


MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 10978  
Date February 2026

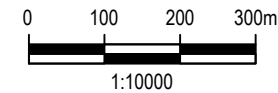
MONITORING LOCATIONS  
MAIN QUARRY

FIGURE 2.1



SOURCE:  
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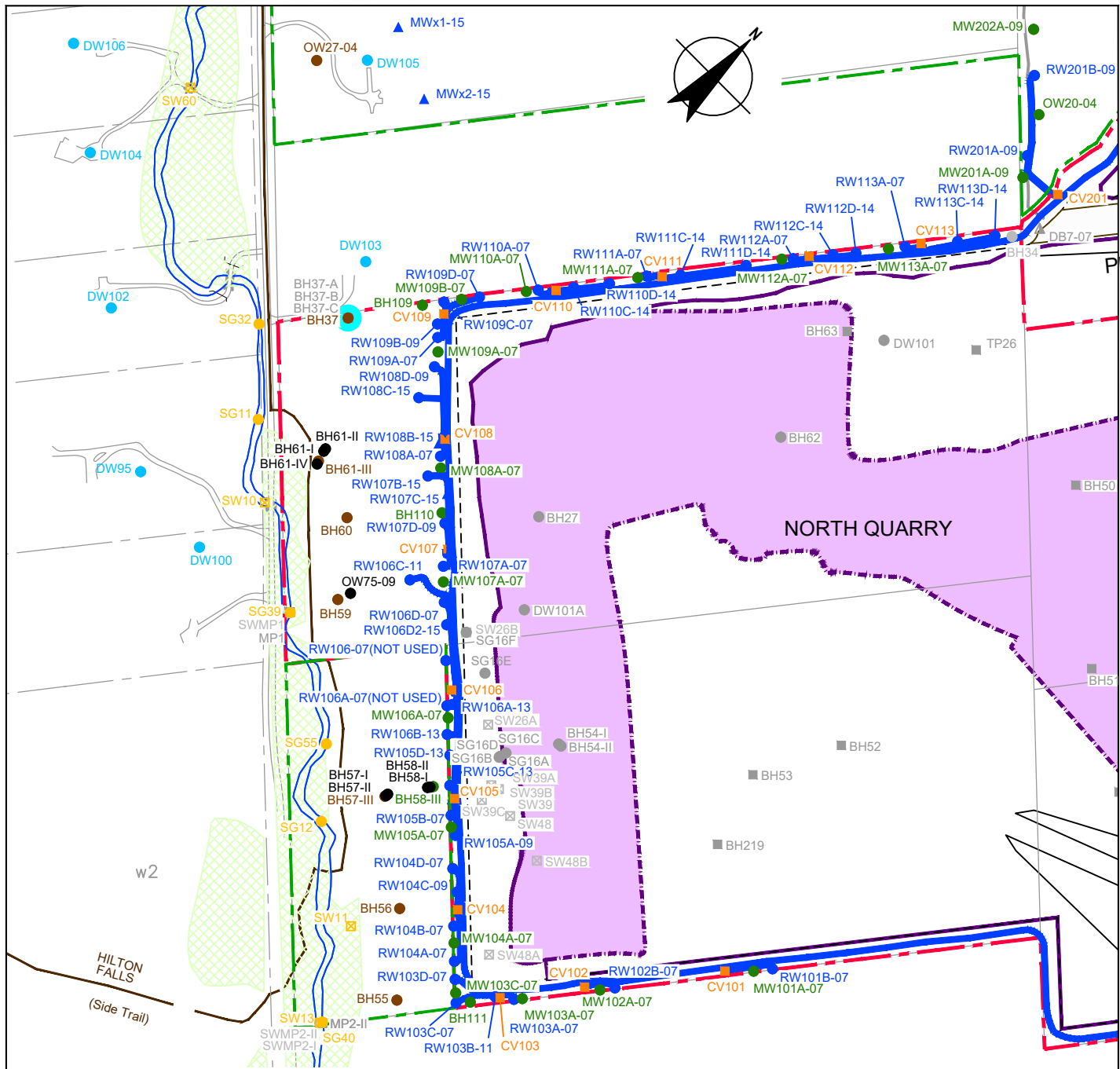
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MILTON QUARRY  
 REGION OF HALTON, ONTARIO  
  
 MONITORING LOCATIONS  
 NORTH QUARRY AND EXTENSION

Project No. 10978  
 Date March 2026

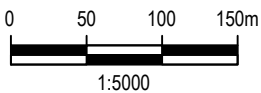
FIGURE 2.2



**LEGEND**

- MONITORING WELL LOCATION
- DW103 RESIDENTIAL WELL IN USE
- ⊠ SW10 SURFACE WATER MEASUREMENT LOCATION
- MONITORING LOCATIONS SHOWN IN GREY ARE NOT INCLUDED IN CURRENT MONITORING PROGRAM EITHER BECAUSE THEY ARE INACCESSIBLE OR BECAUSE THEY NO LONGER EXIST
- CV103 CONTROL VALVE HUT
- TEMPERATURE LOGGER
- TRANSDUCER LOCATION (TEMP/LEVEL)
- SG8 STAFF GAUGE LOCATION
- BH55 TRIGGER WELL LOCATION
- RW109D-09 RECHARGE WELL
- ▲ MWx1-15 RECHARGE WELL (AS NEEDED)
- MW101A-07 RECHARGE MONITORING WELL
- PROPERTY LINE
- - - LICENSED LIMIT OF EXTRACTION
- DUFFERIN OWNED BUFFER
- - - DUFFERIN OWNED LICENSED
- ▨ WETLAND IDENTIFIED AS PROVINCIALLY SIGNIFICANT
- WATERMAIN (AS-BUILT/EXISTING)
- EXTRACTION LIMITS - LOWER BENCH DECEMBER 2025
- - - EXTRACTION LIMITS - FLOOR BENCH DECEMBER 2025
- ▨ EXTRACTION AREA - FLOOR BENCH DECEMBER 2025

SOURCE:  
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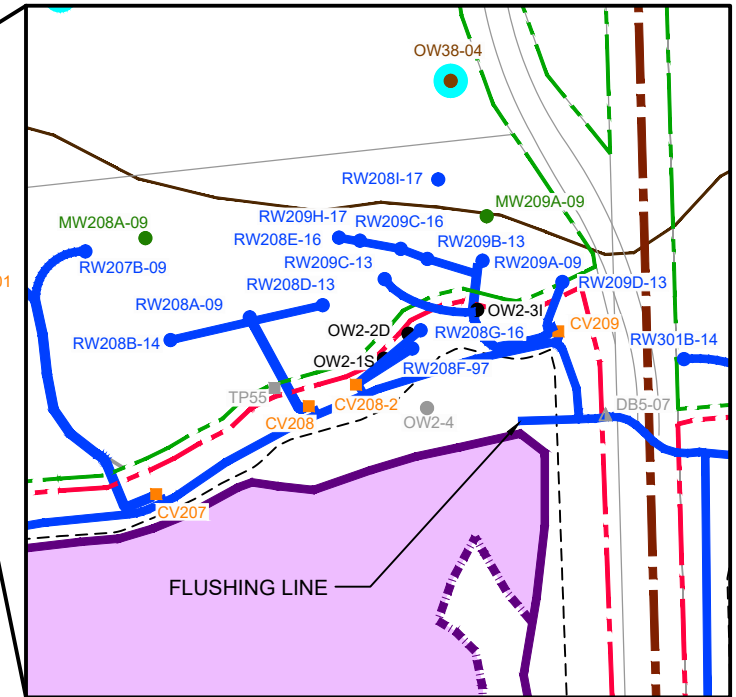
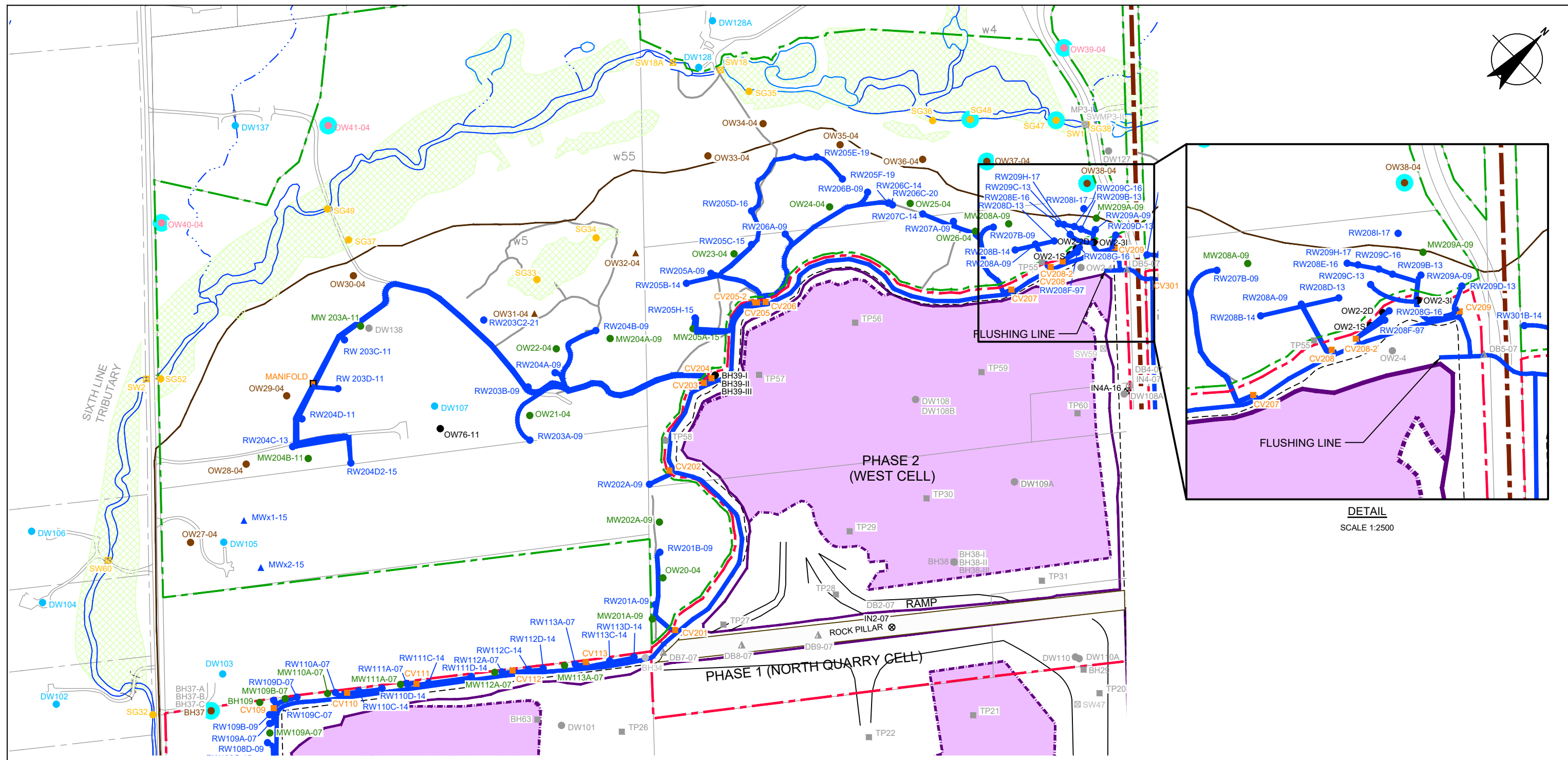


MILTON QUARRY  
 REGION OF HALTON, ONTARIO

Project No. 10978  
 Date February 2026

**MONITORING LOCATIONS  
 NORTH RECHARGE SYSTEM**

**FIGURE 2.3**

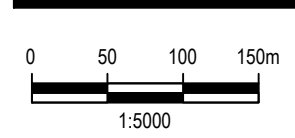


**DETAIL**  
SCALE 1:2500

**LEGEND**

- |          |  |             |                                  |       |  |
|----------|--|-------------|----------------------------------|-------|--|
| ●        | MONITORING WELL LOCATION   | ● SG8       | STAFF GAUGE LOCATION             | ---   | PROPERTY LINE                                  |
| ● DW103  | RESIDENTIAL WELL IN USE  | ● BH55      | TRIGGER WELL LOCATION            | - - - | LICENSED LIMIT OF EXTRACTION                   |
| ● DW113A | DUFFERIN OWNED FORMER DOMESTIC WELL USED AS MONITORING WELL  | ▲ OW70-08   | TRIGGER WELL (WETLAND) LOCATION  | ---   | DUFFERIN OWNED BUFFER                          |
| ⊗ IN1-07 | BOREHOLE INCLINOMETER LOCATION   | ● BH112     | BACKGROUND MONITORING WELL       | ---   | DUFFERIN OWNED LICENSED                        |
| ⊠ SW10   | SURFACE WATER MEASUREMENT LOCATION   | ● RW109D-09 | RECHARGE WELL                    | ---   | WETLAND IDENTIFIED AS PROVINCIALLY SIGNIFICANT |
| ●        | MONITORING LOCATIONS SHOWN IN GREY ARE NOT INCLUDED IN CURRENT MONITORING PROGRAM EITHER BECAUSE THEY ARE INACCESSIBLE OR BECAUSE THEY NO LONGER EXIST | ▲ MWx1-15   | RECHARGE WELL (AS NEEDED)        | ---   | WATERMAIN (AS-BUILT/EXISTING)                  |
| ▲        |  | ● MW101A-07 | RECHARGE MONITORING WELL         | ---   | EXTRACTION LIMITS - LOWER BENCH DECEMBER 2025  |
| ▲        |  | ●           | TEMPERATURE LOGGER               | ---   | EXTRACTION LIMITS - FLOOR BENCH DECEMBER 2025  |
| ■        |  | ●           | TRANSDUCER LOCATION (TEMP/LEVEL) | ---   | EXTRACTION AREA - FLOOR BENCH DECEMBER 2025    |
|          |  | ■ CV103     | CONTROL VALVE HUT                | ---   |  |
|          |  | ■           | MANIFOLD                         | ---   |  |

SOURCE:  
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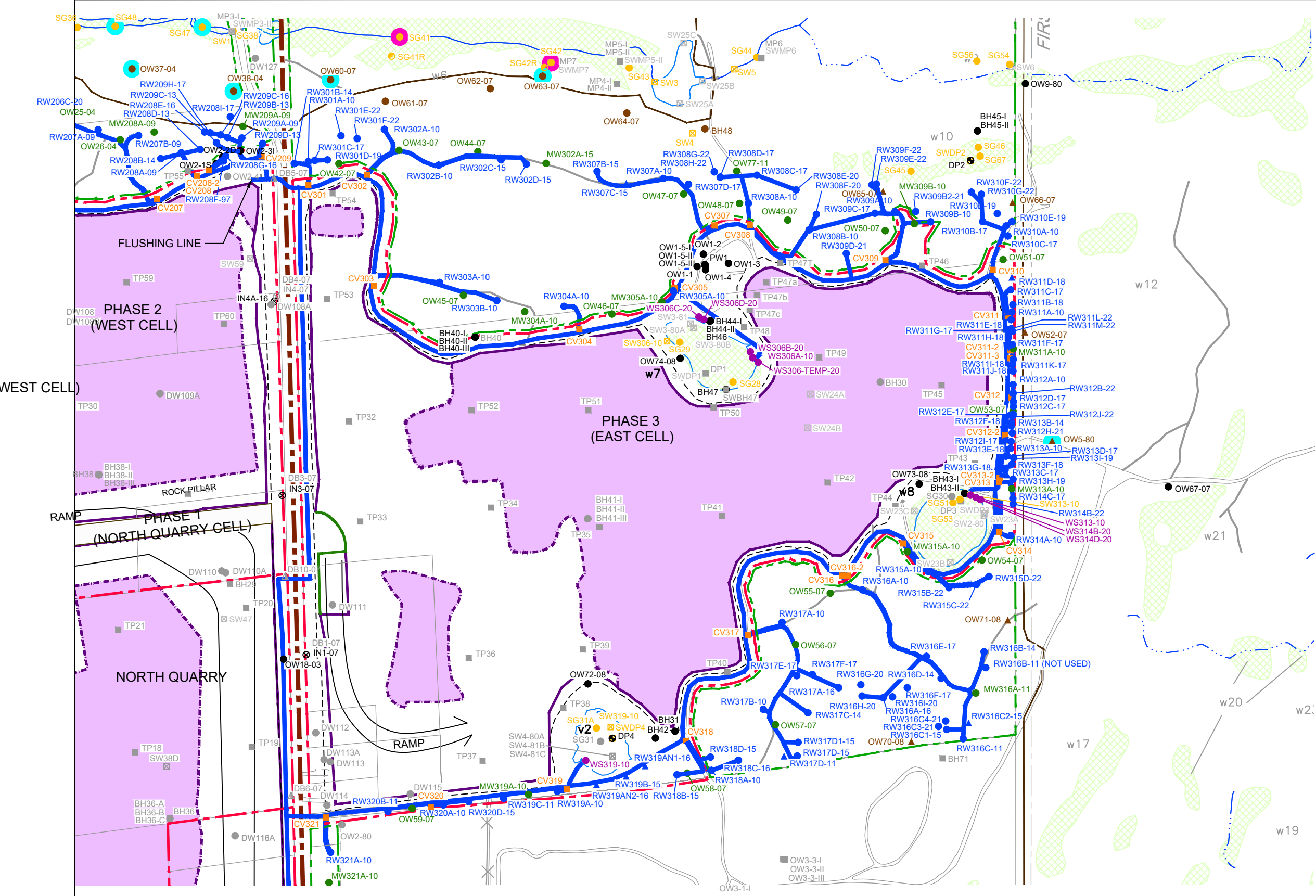


**MILTON QUARRY**  
REGION OF HALTON, ONTARIO

**WEST CELL RECHARGE SYSTEM**

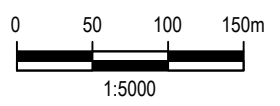
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Date February 2026

**FIGURE 2.4**



- LEGEND**
- MONITORING WELL LOCATION
  - RESIDENTIAL WELL IN USE
  - DUFFERIN OWNED FORMER DOMESTIC WELL USED AS MONITORING WELL
  - ⊗ BOREHOLE INCLINOMETER LOCATION
  - ⊗ SURFACE WATER MEASUREMENT LOCATION
  - MONITORING LOCATIONS SHOWN IN GREY ARE NOT INCLUDED IN CURRENT MONITORING PROGRAM EITHER BECAUSE THEY ARE INACCESSIBLE OR BECAUSE THEY NO LONGER EXIST
  - SG8 STAFF GAUGE LOCATION
  - SG41R STAFF GAUGE LOCATION (REPLACEMENT)
  - BH55 TRIGGER WELL LOCATION
  - ▲ OW70-08 TRIGGER WELL (WETLAND) LOCATION
  - RW109D-09 RECHARGE WELL
  - ▲ RW316C-15 RECHARGE WELL (AS NEEDED)
  - MW101A-07 RECHARGE MONITORING WELL
  - TEMPERATURE LOGGER
  - TRANSDUCER LOCATION (TEMP/LEVEL)
  - CV103 CONTROL VALVE HUT
  - WS319-10 WETLAND SUPPLY WELL LOCATION
  - PROPERTY LINE
  - LICENSED LIMIT OF EXTRACTION
  - DUFFERIN OWNED BUFFER
  - DUFFERIN OWNED LICENSED
  - WETLAND IDENTIFIED AS PROVINCIALLY SIGNIFICANT
  - WATERMAIN (AS-BUILT/EXISTING)
  - EXTRACTION LIMITS - LOWER BENCH DECEMBER 2025
  - EXTRACTION LIMITS - UPPER BENCH DECEMBER 2025
  - EXTRACTION LIMITS - FLOOR BENCH DECEMBER 2025
  - EXTRACTION AREA - FLOOR BENCH DECEMBER 2025

**SOURCE**  
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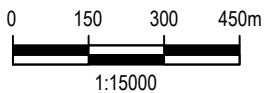
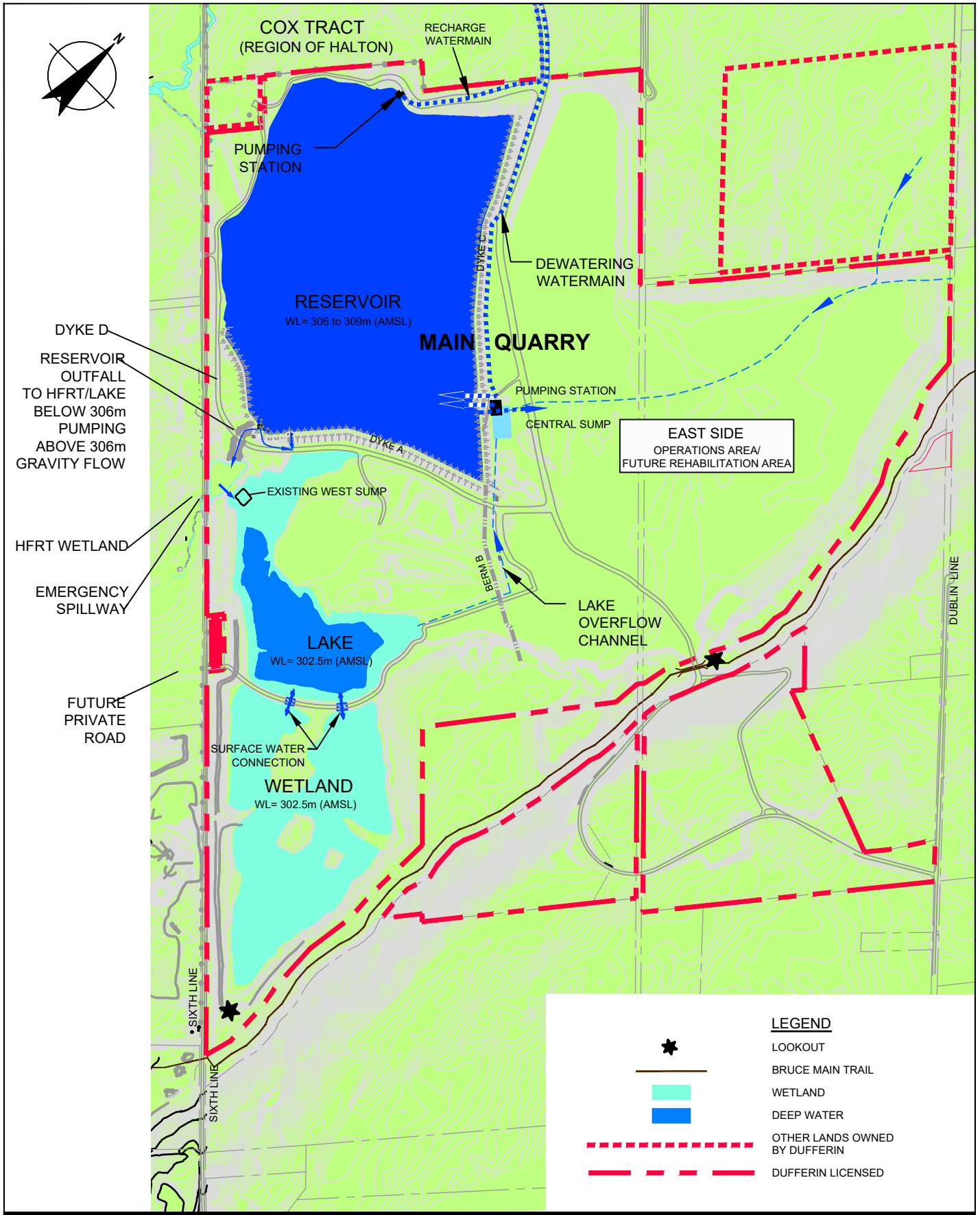


MILTON QUARRY  
 REGION OF HALTON, ONTARIO

Project No. 10978  
 Date March 2026

EAST RECHARGE SYSTEM

FIGURE 2.5

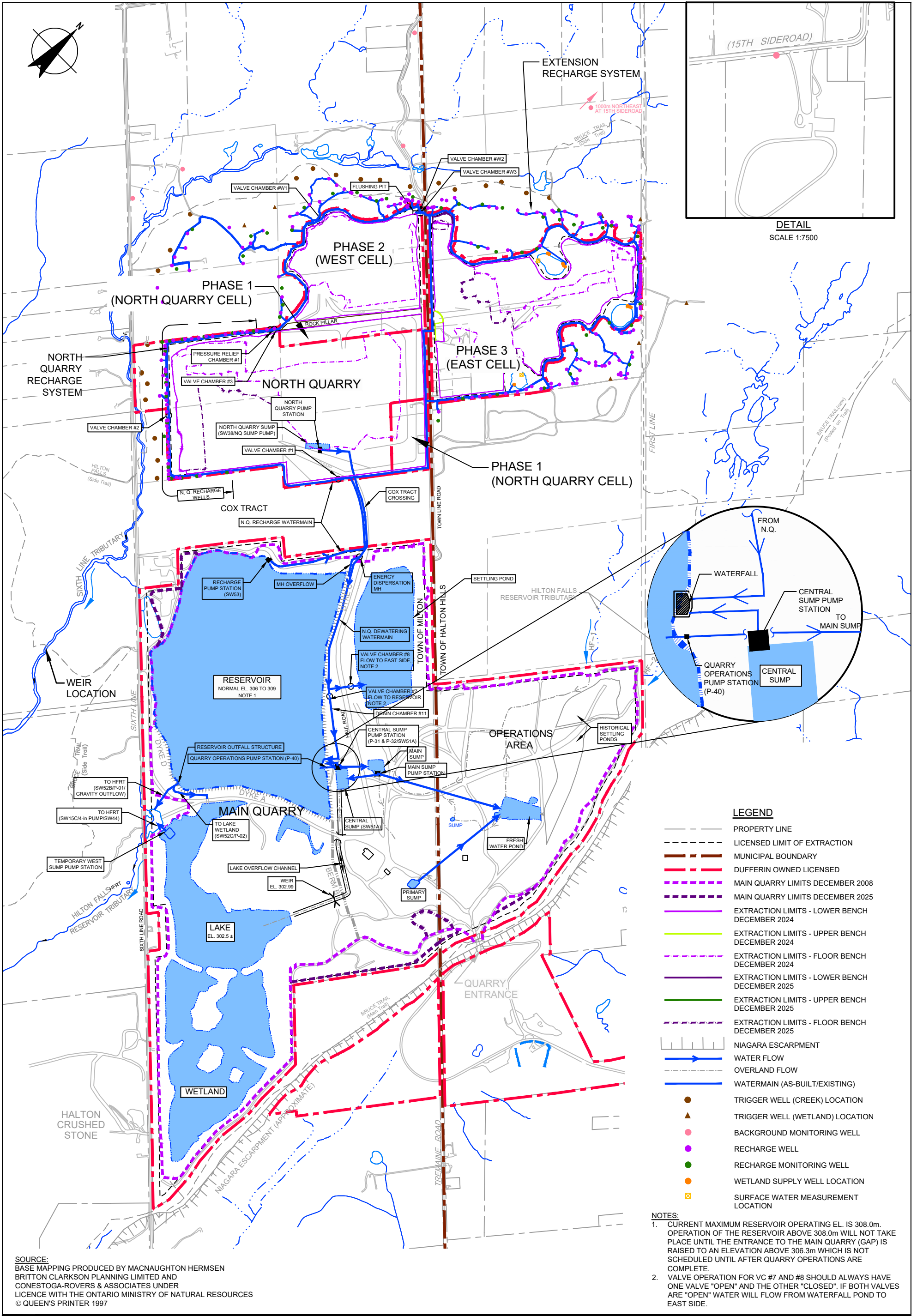


MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 10978  
Date February 2026

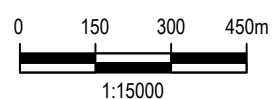
**MAIN QUARRY  
REHABILITATION PLAN CONCEPT**

**FIGURE 2.6**



**SOURCE:**  
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 BRITTON CLARKSON PLANNING LIMITED AND  
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**NOTES:**  
 1. CURRENT MAXIMUM RESERVOIR OPERATING EL. IS 308.0m. OPERATION OF THE RESERVOIR ABOVE 308.0m WILL NOT TAKE PLACE UNTIL THE ENTRANCE TO THE MAIN QUARRY (GAP) IS RAISED TO AN ELEVATION ABOVE 306.3m WHICH IS NOT SCHEDULED UNTIL AFTER QUARRY OPERATIONS ARE COMPLETE.  
 2. VALVE OPERATION FOR VC #7 AND #8 SHOULD ALWAYS HAVE ONE VALVE "OPEN" AND THE OTHER "CLOSED". IF BOTH VALVES ARE "OPEN" WATER WILL FLOW FROM WATERFALL POND TO EAST SIDE.

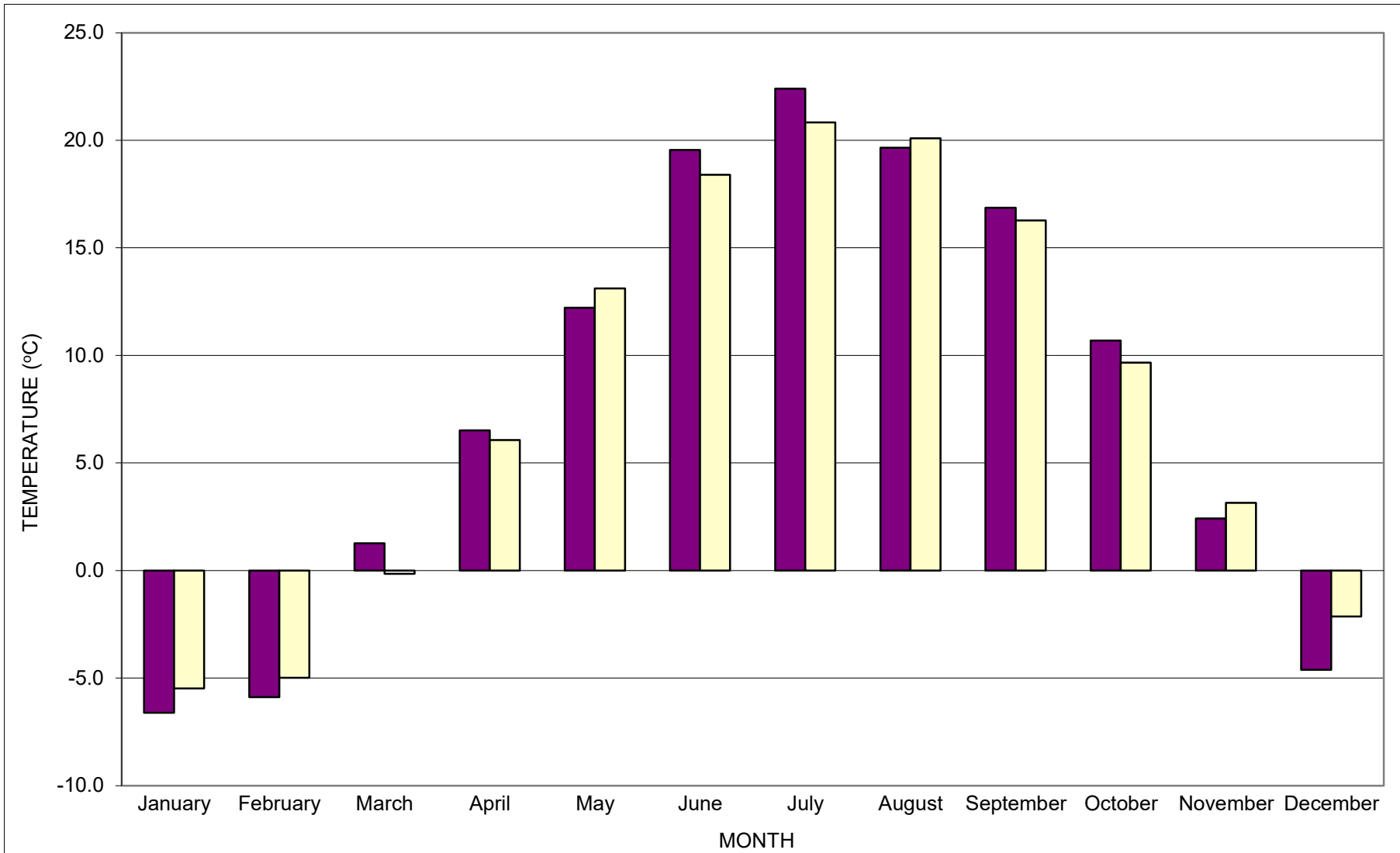


**MILTON QUARRY**  
 REGION OF HALTON, ONTARIO

**EXISTING CONDITIONS AND WATER MANAGEMENT SYSTEM OVERVIEW**

Project No. 10978  
 Date February 2026

**FIGURE 2.7**



■ Measured Milton Quarry 2025 (2025 Average = 7.87°C)

□ Measured Milton Quarry 29-year Mean (7.90°C)

**Note:**  
Air temperature data was collected at the quarry from 1995 to 1998 and then from 2000 to present.

figure 4.1  
2025 MONTHLY MEASURED AIR TEMPERATURE AVERAGES  
DUFFERIN MILTON QUARRY  
Region of Halton, Ontario

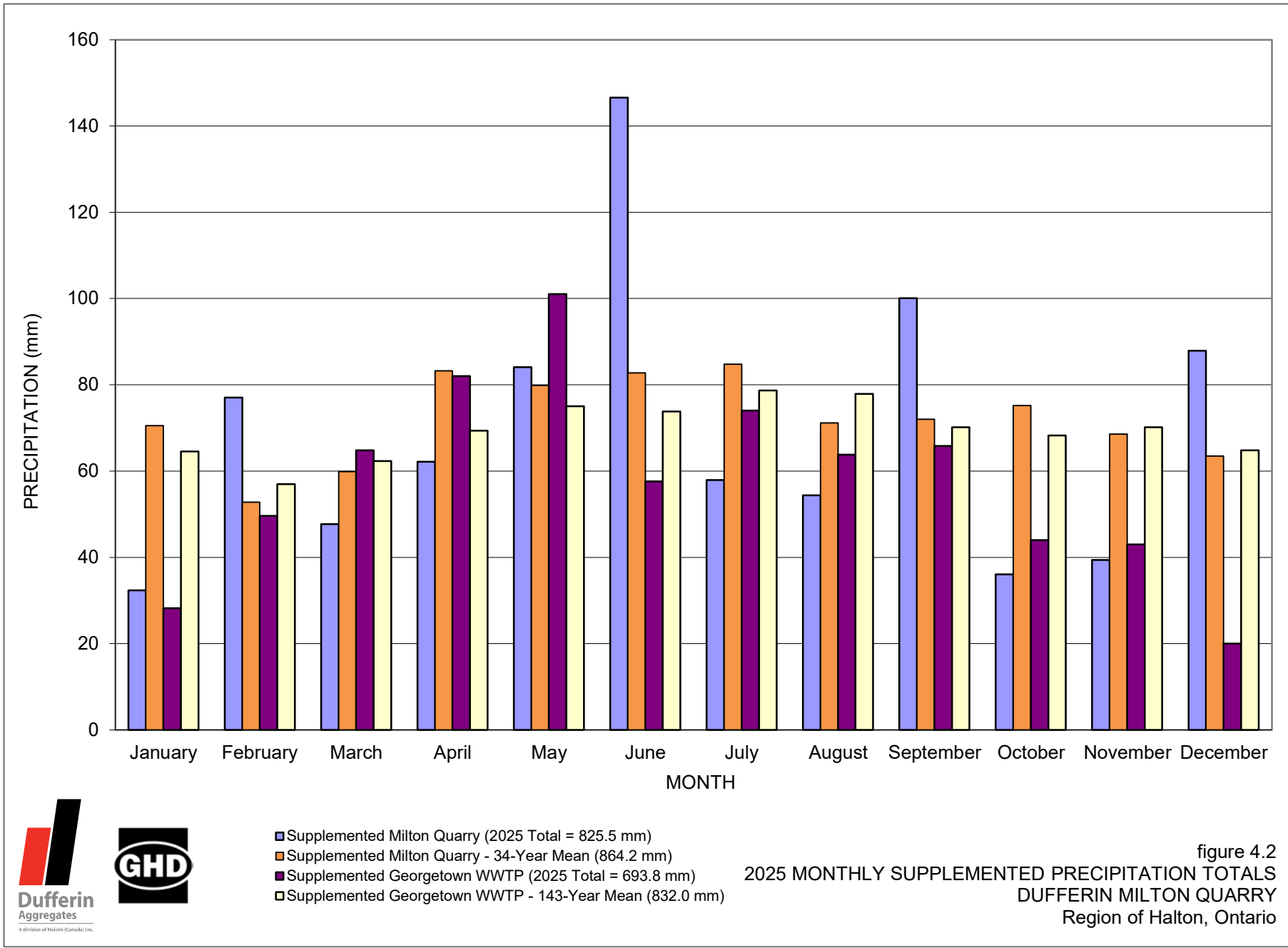


figure 4.2

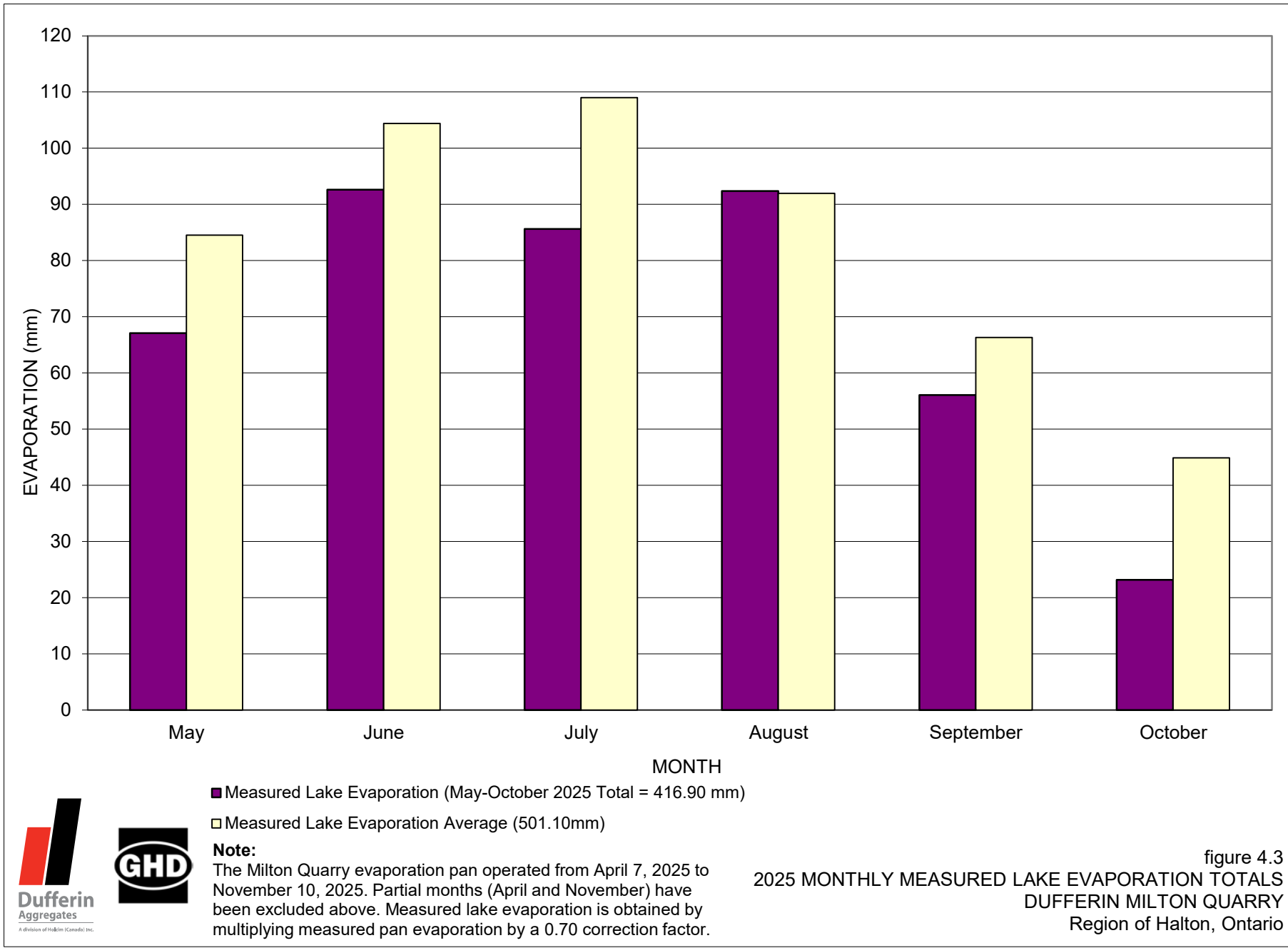
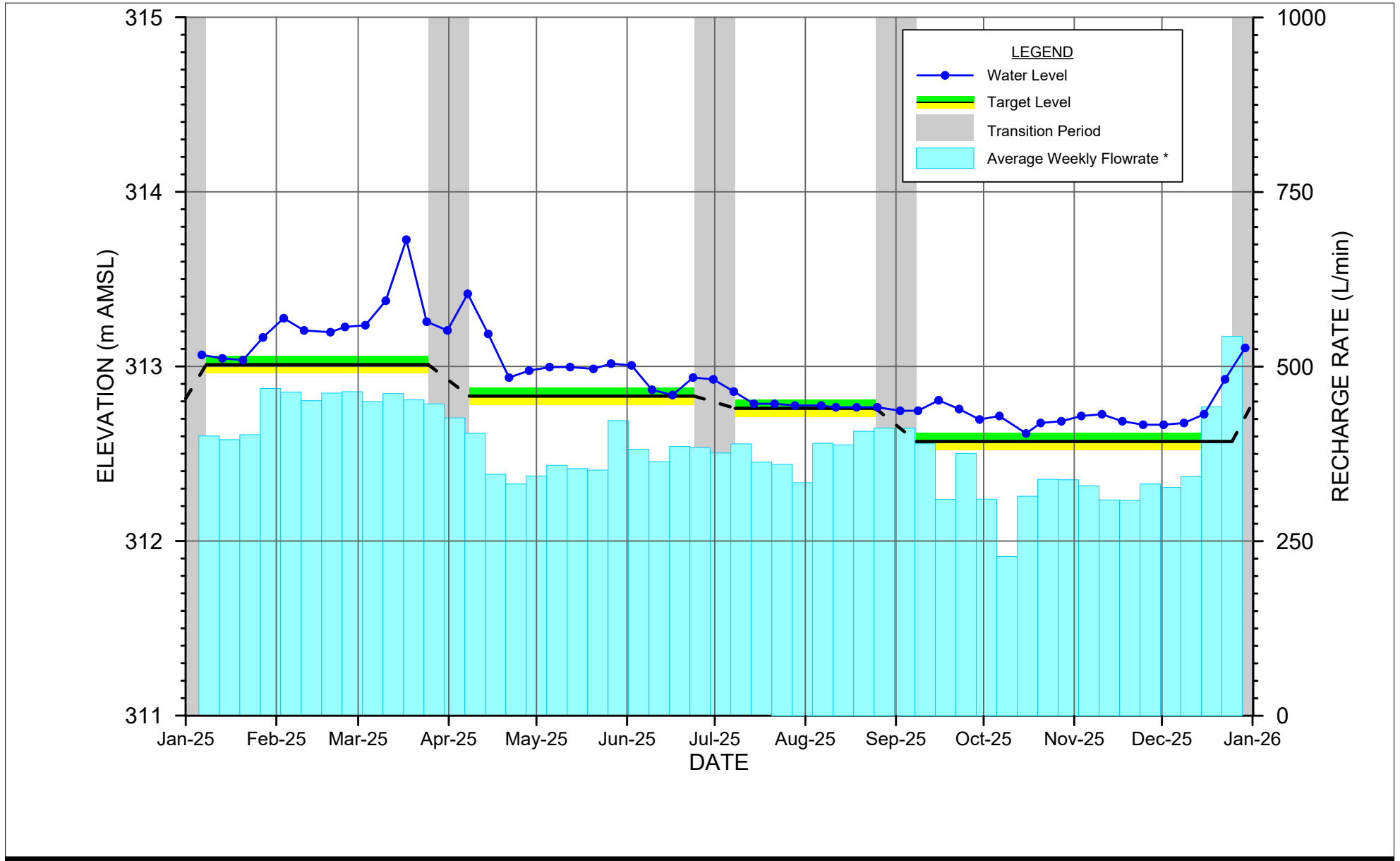


figure 4.3  
 2025 MONTHLY MEASURED LAKE EVAPORATION TOTALS  
 DUFFERIN MILTON QUARRY  
 Region of Halton, Ontario



\* Includes flow from RW103A-07, RW103B-11, RW103C-07, RW103D-07, RW104A-07, RW104B-07, RW104C-09, and RW104D-07

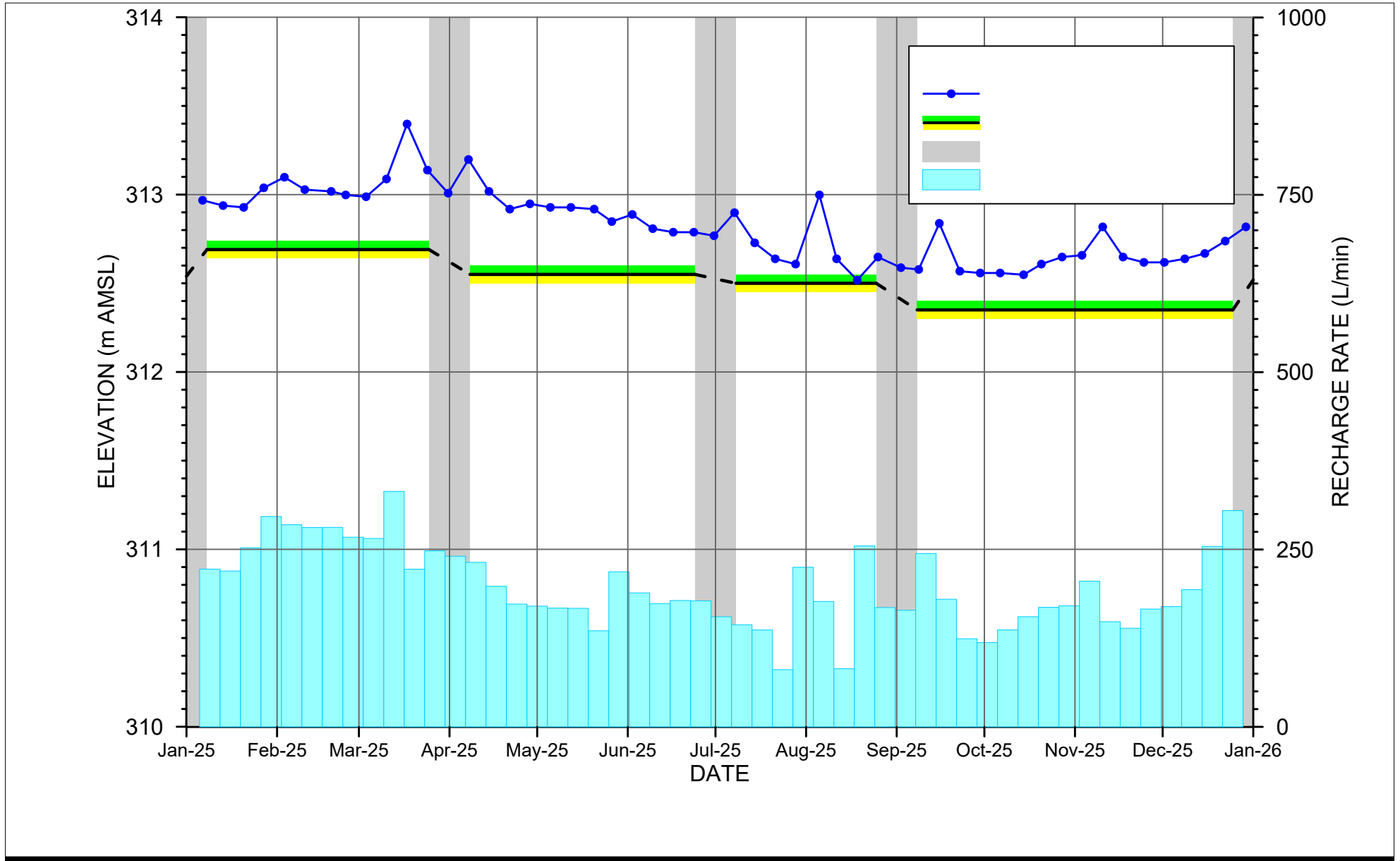


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

TRIGGER WELL - BH55  
NORTH QUARRY

Project No. 010978  
Date March 03, 2026

FIGURE 5.1



\* Includes flow from RW104A-07, RW104B-07, RW104C-09, and RW104D-07

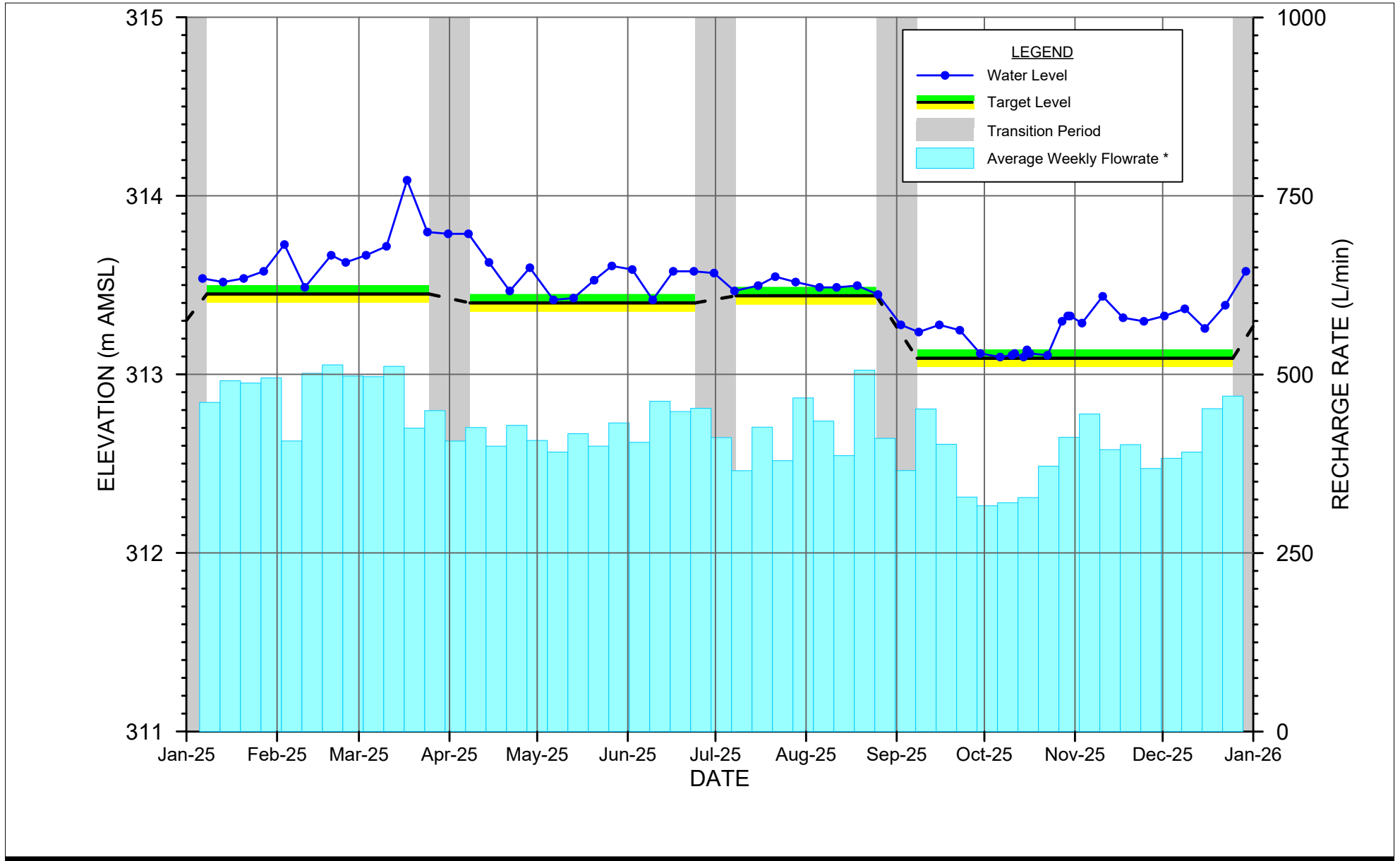


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date March 03, 2026

TRIGGER WELL - BH56  
NORTH QUARRY

FIGURE 5.2



\* Includes flow from RW104C-09, RW104D-07, RW105A-09, RW105B-07, RW105C-13, RW105D-13, RW106A-07, RW106A-13, and RW106B-13

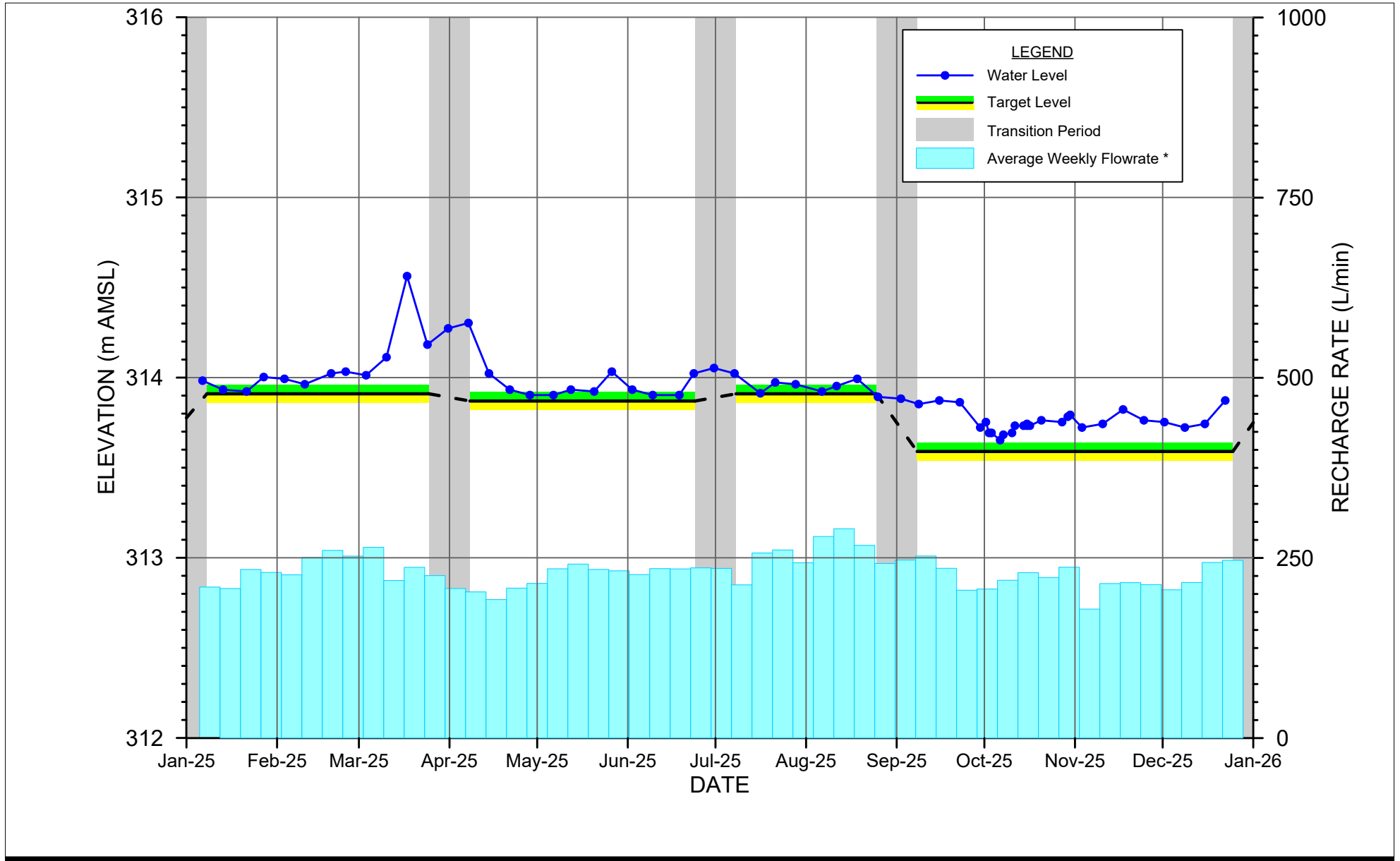


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

TRIGGER WELL - BH57-III  
NORTH QUARRY

Project No. 010978  
Date March 03, 2026

FIGURE 5.3



\* Includes flow from RW105A-09, RW106A-13, RW106B-13, RW106C-11, RW106D-07, RW106D2-15, RW107A-07, and RW107D-09

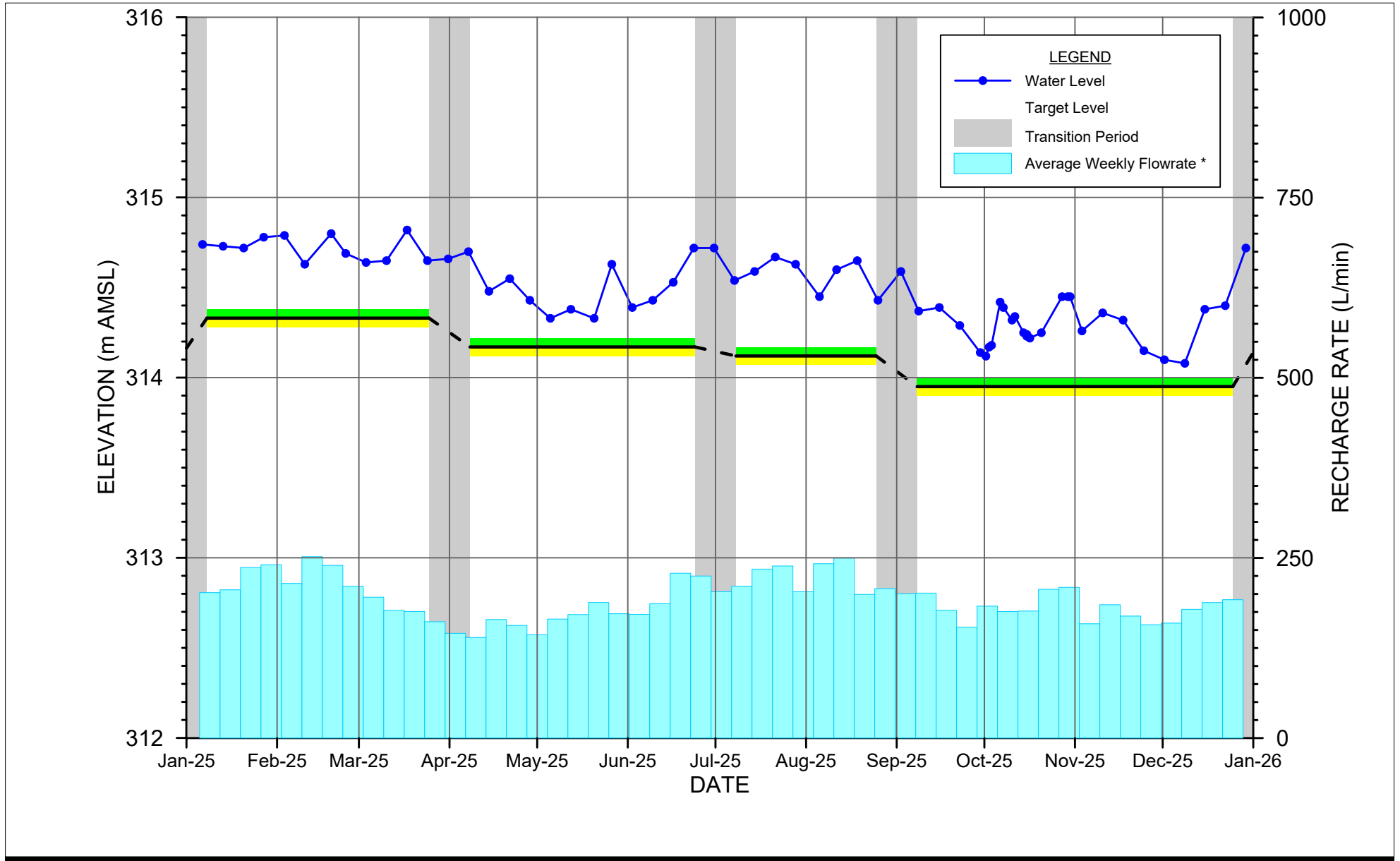


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date March 03, 2026

TRIGGER WELL - BH59  
NORTH QUARRY

FIGURE 5.4



\* Includes flow from RW106C-11, RW107B-15, RW107D-09, RW108A-07, and RW108D-09

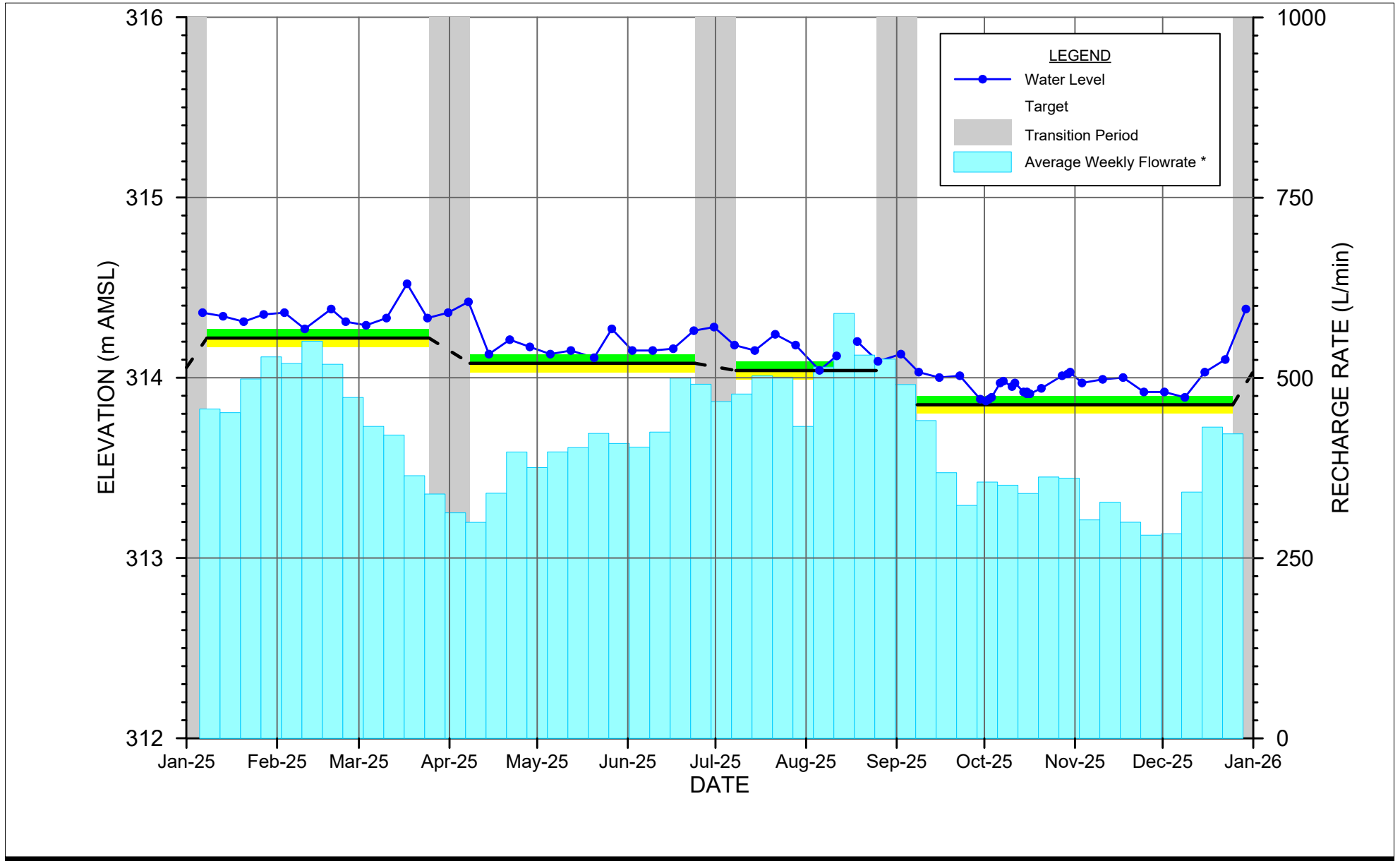


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date March 03, 2026

TRIGGER WELL - BH60  
NORTH QUARRY

FIGURE 5.5



\* Includes flow from RW106C-11, RW107B-15, RW107C-15, RW107D-09, RW108A-07, RW108B-15, RW108C-15, and RW108D-09.

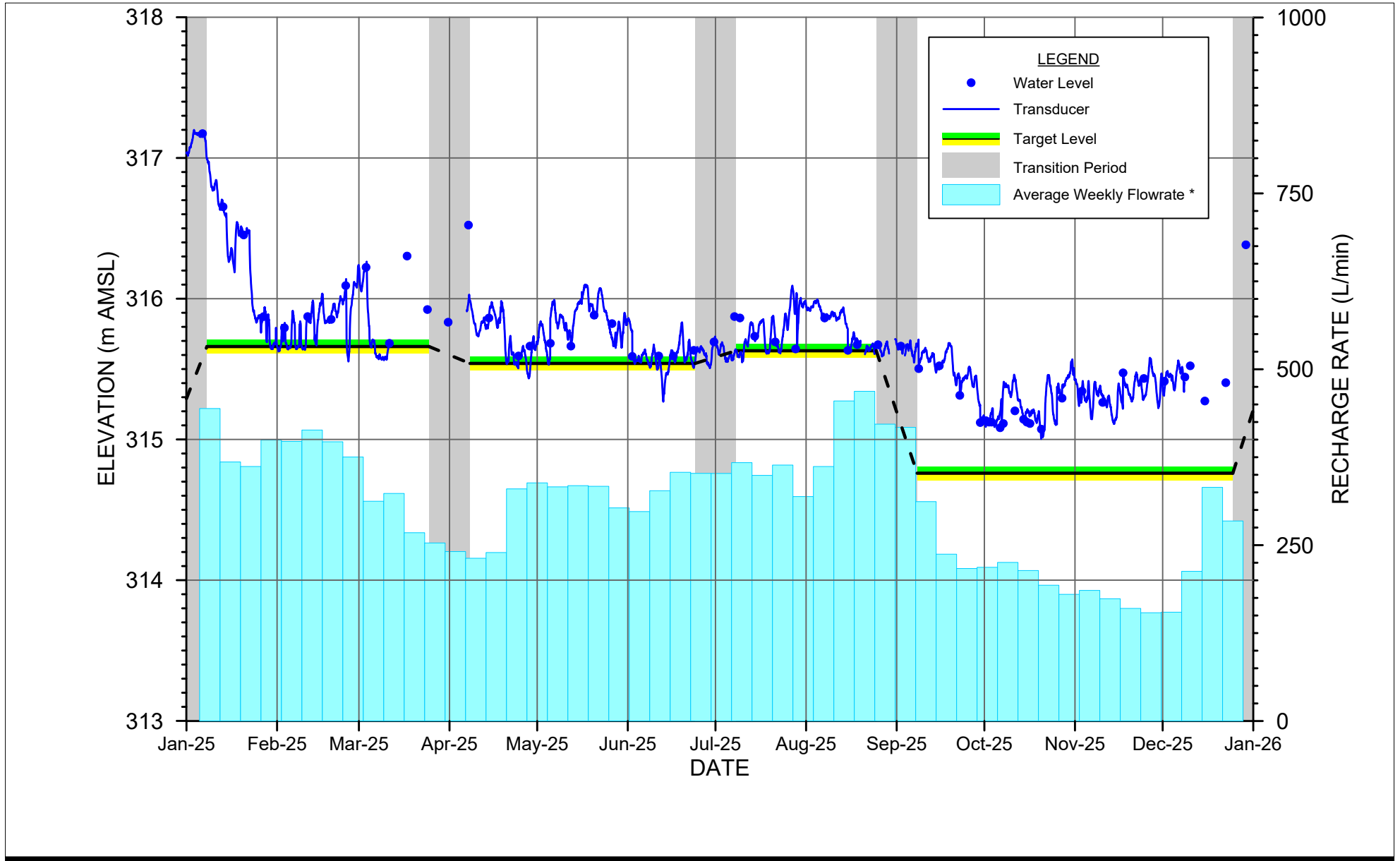


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date March 03, 2026

TRIGGER WELL - BH61-III  
NORTH QUARRY

FIGURE 5.6



\* Includes flow from RW108A-07, RW108C-15, RW108D-09, RW109A-07, RW109B-09, RW109C-07, and RW109D-07.

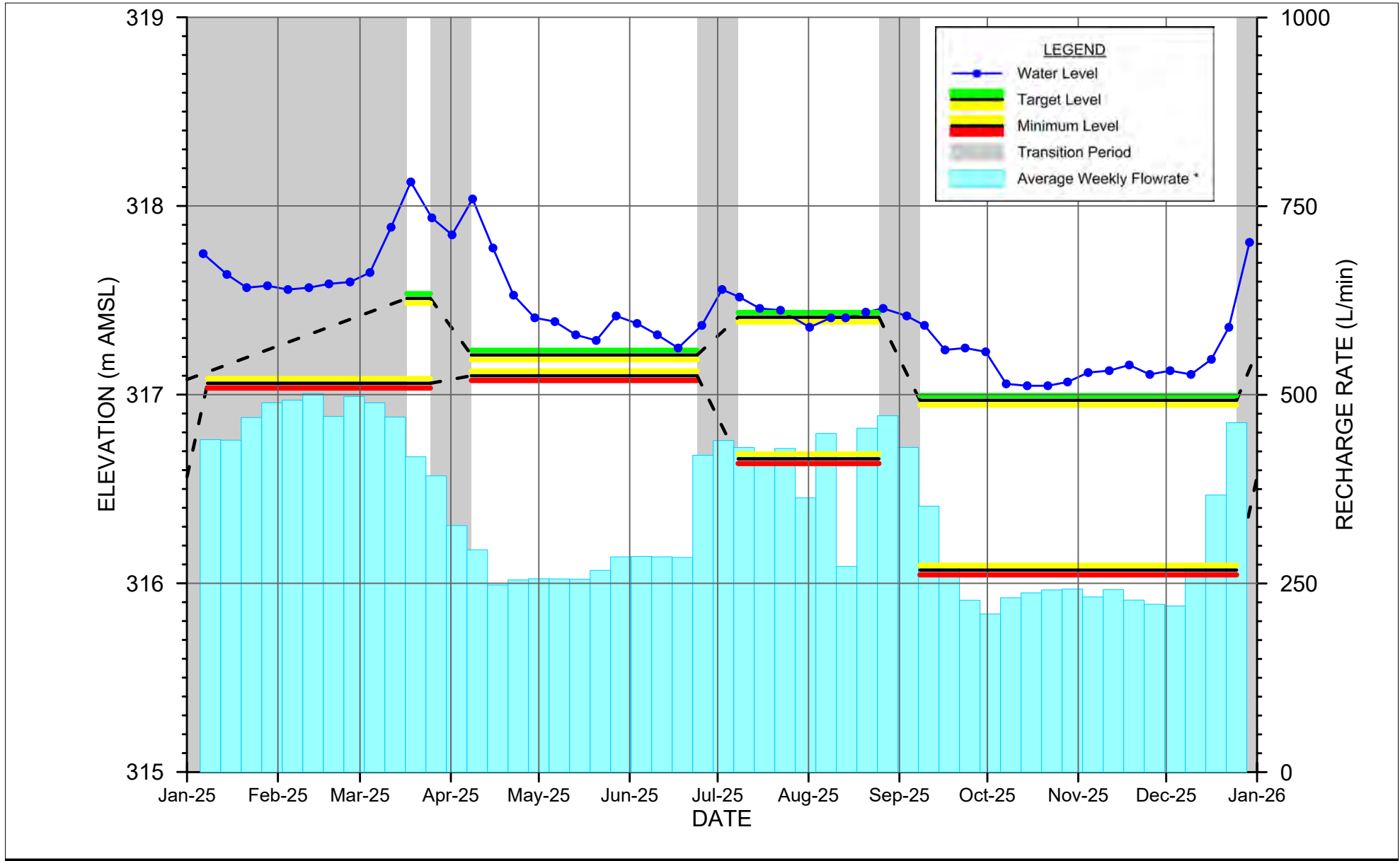


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date March 03, 2026

TRIGGER WELL - BH37  
NORTH QUARRY

FIGURE 5.7



\* Includes flow from MWx1-15, RW201A-09, RW201B-09, RW202A-09, RW203C-11, RW203D-11, RW204C-13, RW204D-11, and RW204D2-15.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

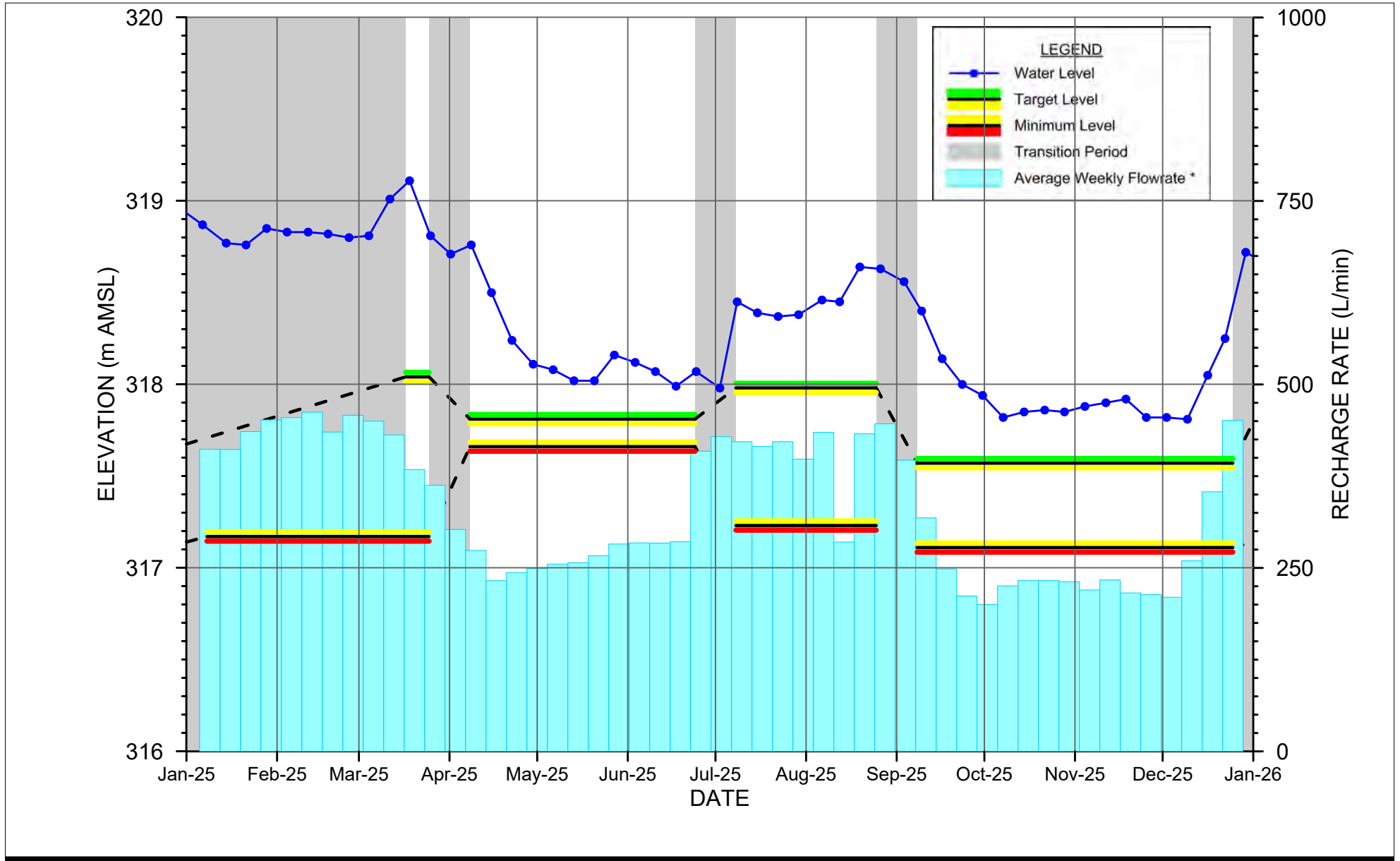
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW27-04  
WEST CELL EXTENSION

FIGURE 5.8

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW27-04.grf  
Plot Date: March 27 2026 10:03 AM



\* Includes flow from RW201B-09, RW202A-09, RW203A-09, RW203C-11, RW203D-11, RW204C-13, RW204D-11, and RW204D2-15.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

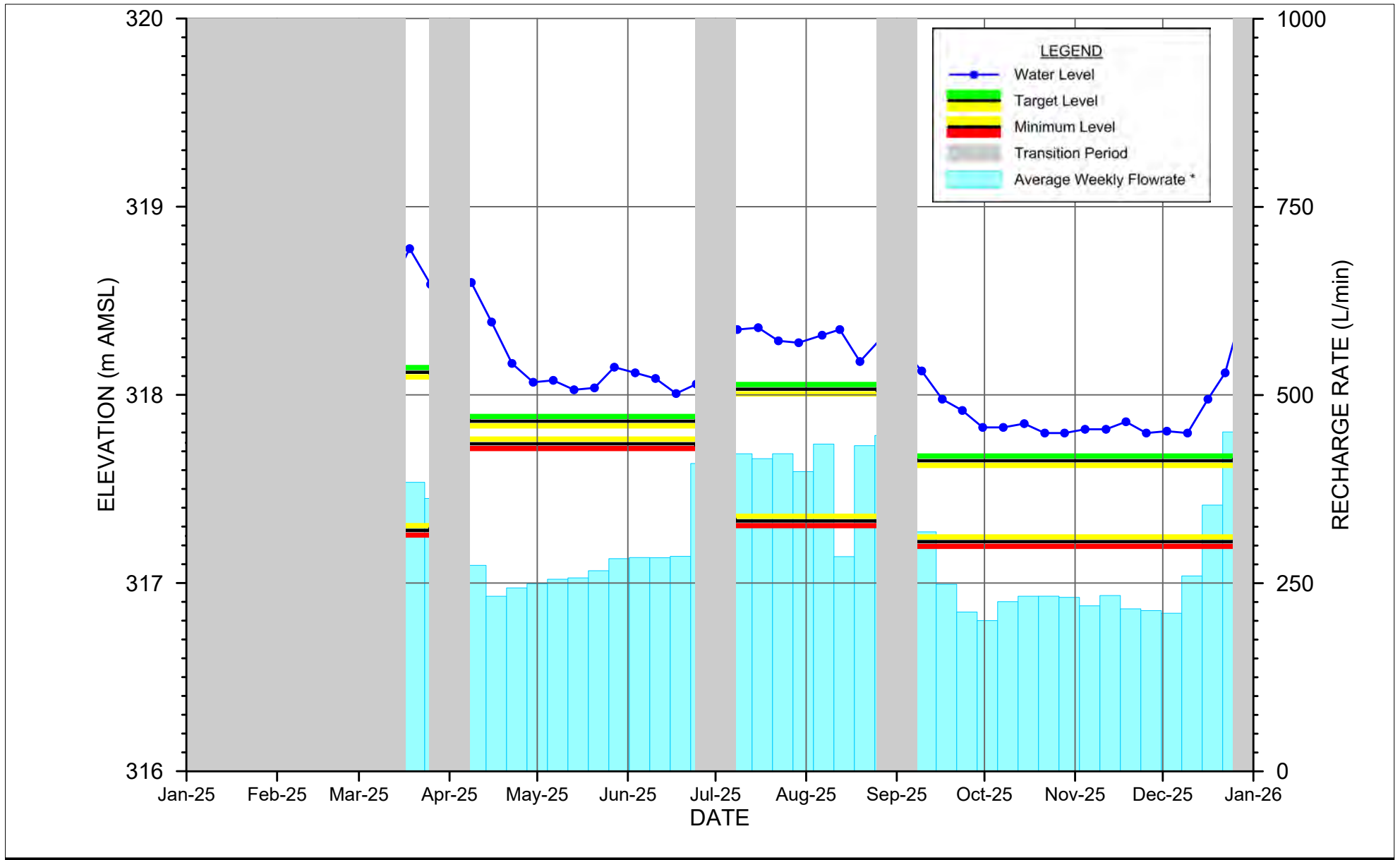
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW28-04  
WEST CELL EXTENSION

**FIGURE 5.9**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW28-04.grf  
Plot Date: March 27 2026 10:03 AM



\* Includes flow from RW202A-09, RW203A-09, RW203B-09, RW203C-11, RW203D-11, RW204C-13, RW204D-11, and RW204D2-15.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

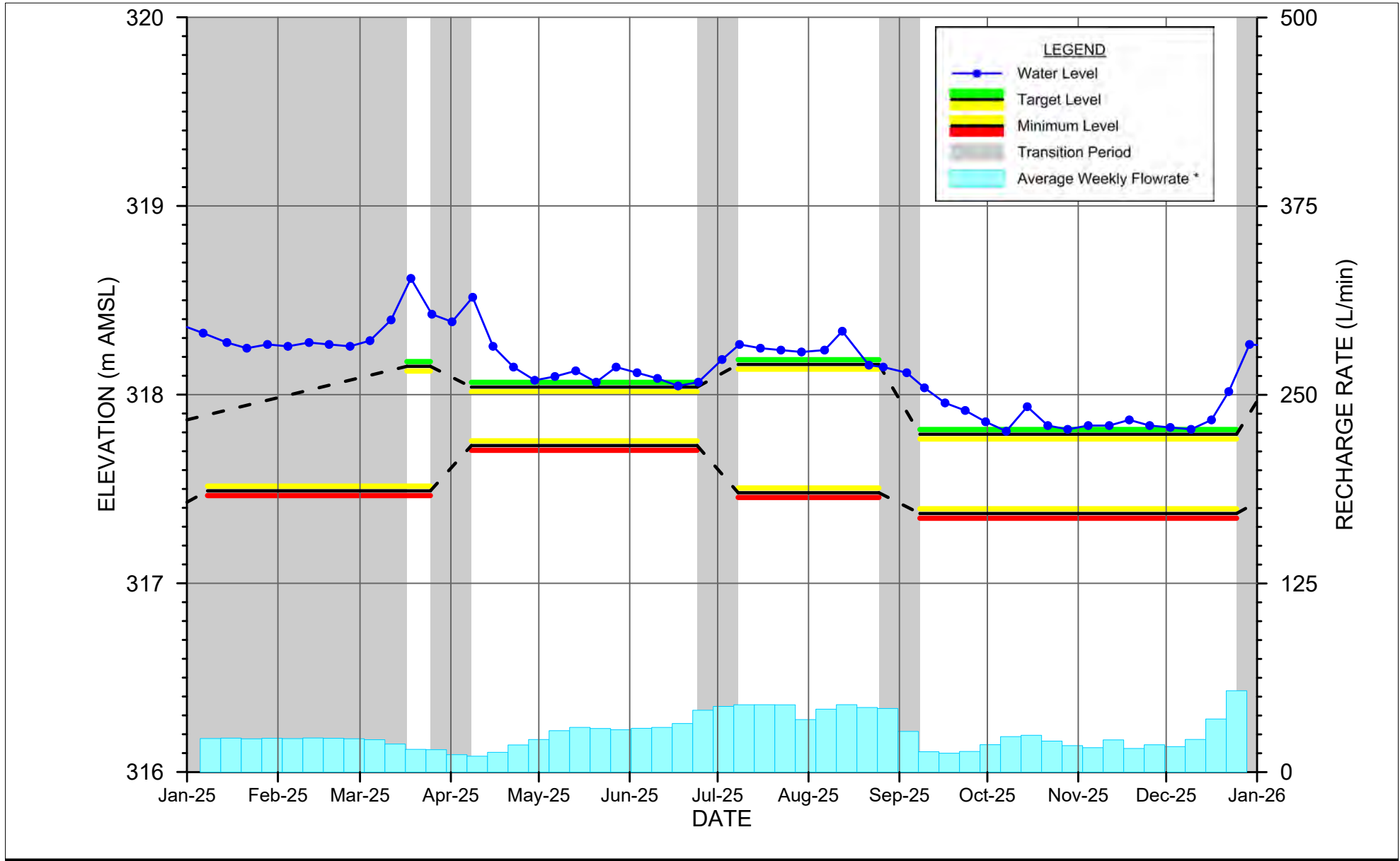
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW29-04  
WEST CELL EXTENSION

**FIGURE 5.10**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW29-04.grf  
Plot Date: March 27 2026 10:03 AM



\* Includes flow from RW203B-09, RW203C-11, RW204A-09, and RW204B-09.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

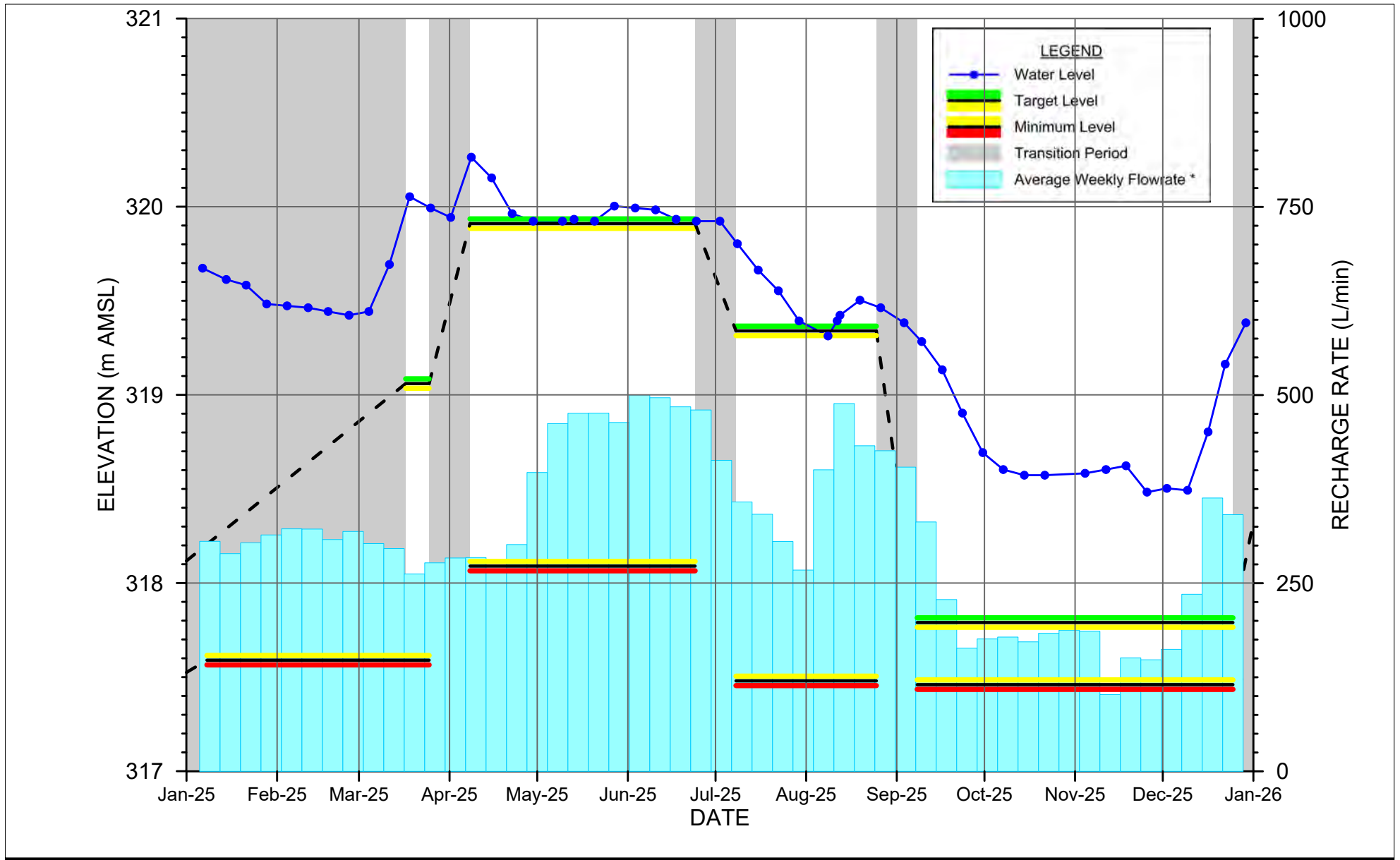
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW30-04  
WEST CELL EXTENSION

**FIGURE 5.11**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW30-04.grf  
Plot Date: March 27 2026 10:03 AM



\* Includes flow from RW203B-09, RW204A-09, RW204B-09, and RW205H-15.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

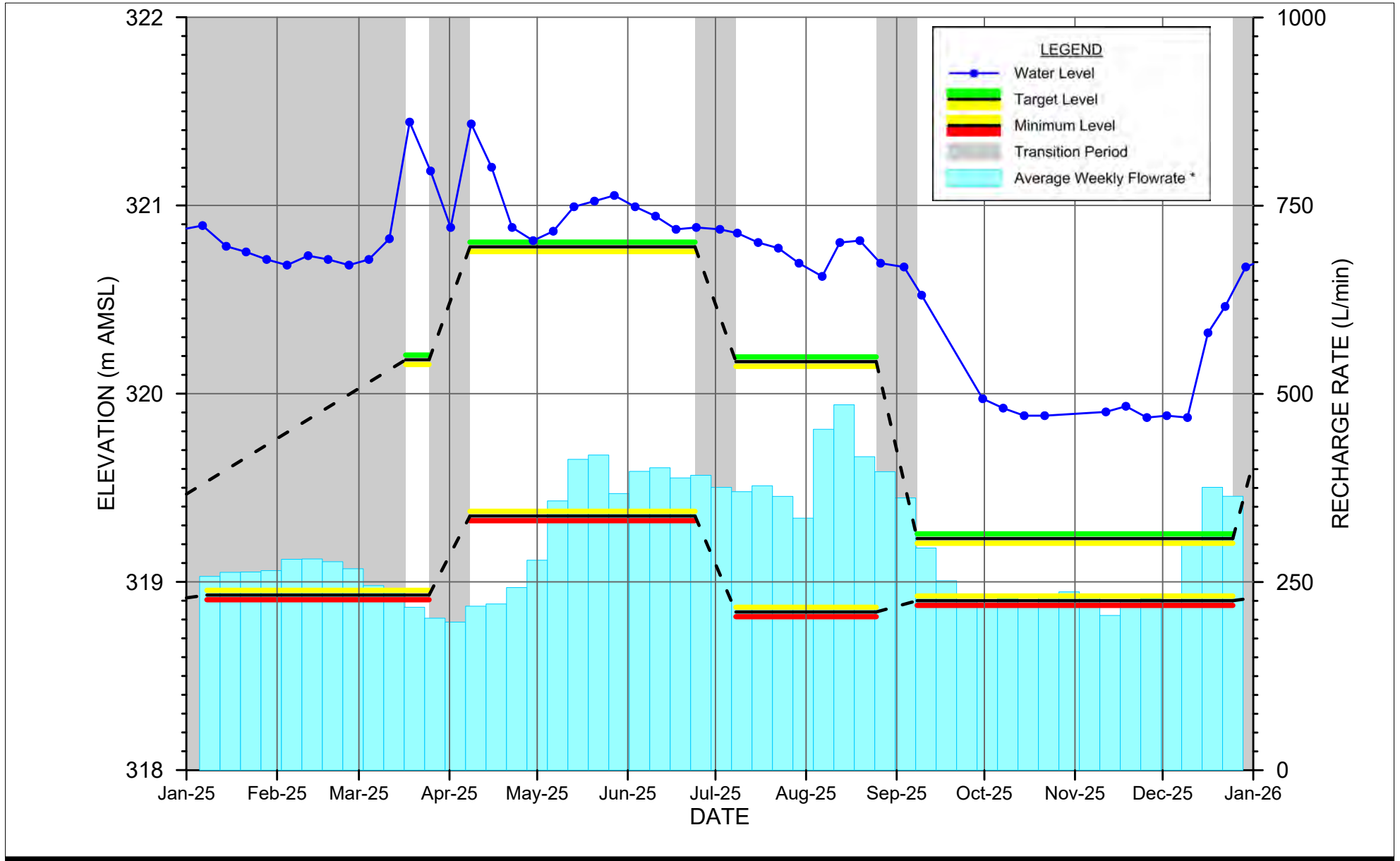
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW31-04  
WEST CELL EXTENSION

**FIGURE 5.12**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW31-04.grf  
Plot Date: March 27 2026 10:03 AM



\* Includes flow from RW204B-09, RW205A-09, RW205B-14, RW205C-15, RW205H-15, and RW206A-09.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

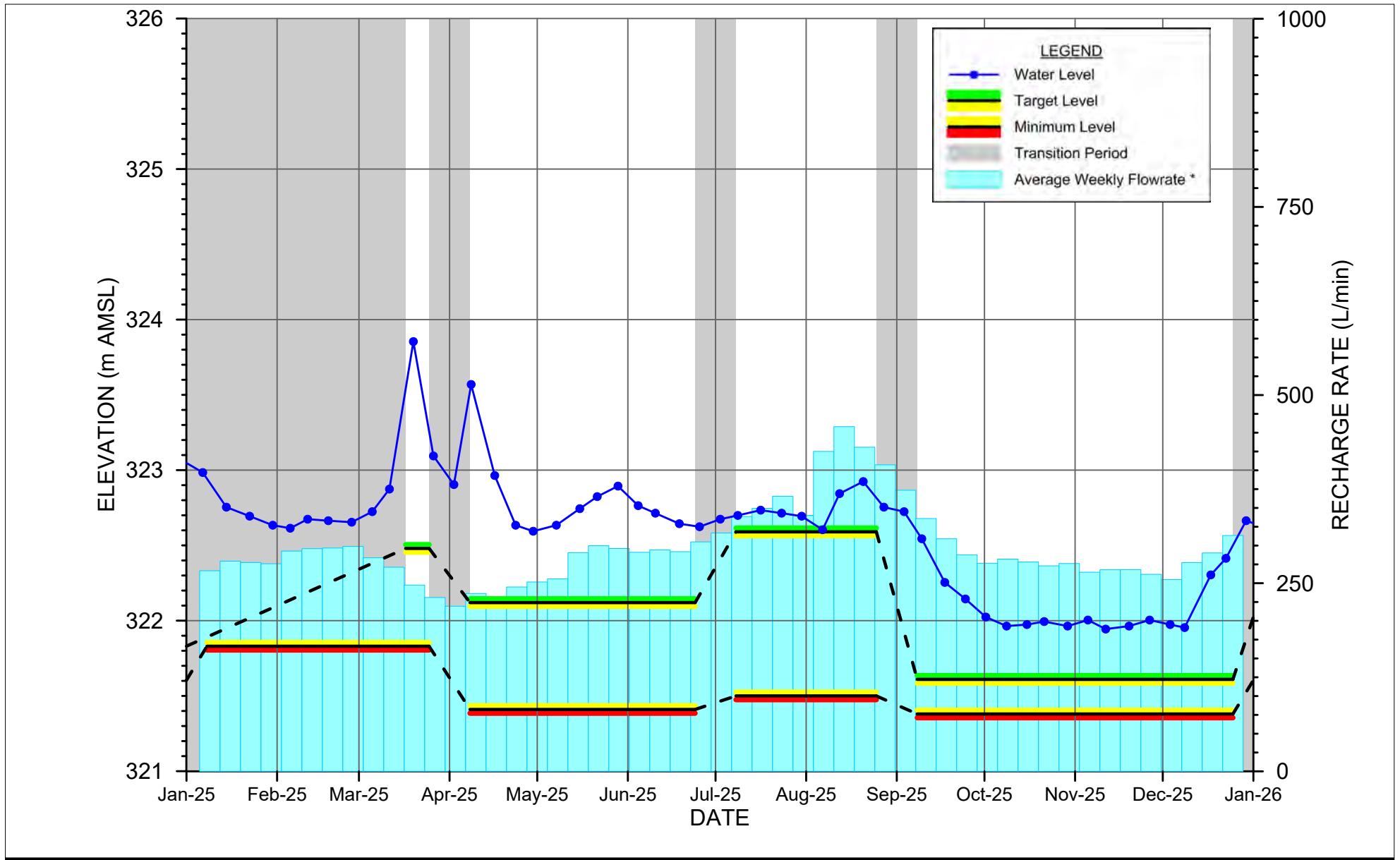
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW32-04  
WEST CELL EXTENSION

FIGURE 5.13

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW32-04.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW205A-09, RW205C-15, RW206A-09, RW206B-09.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

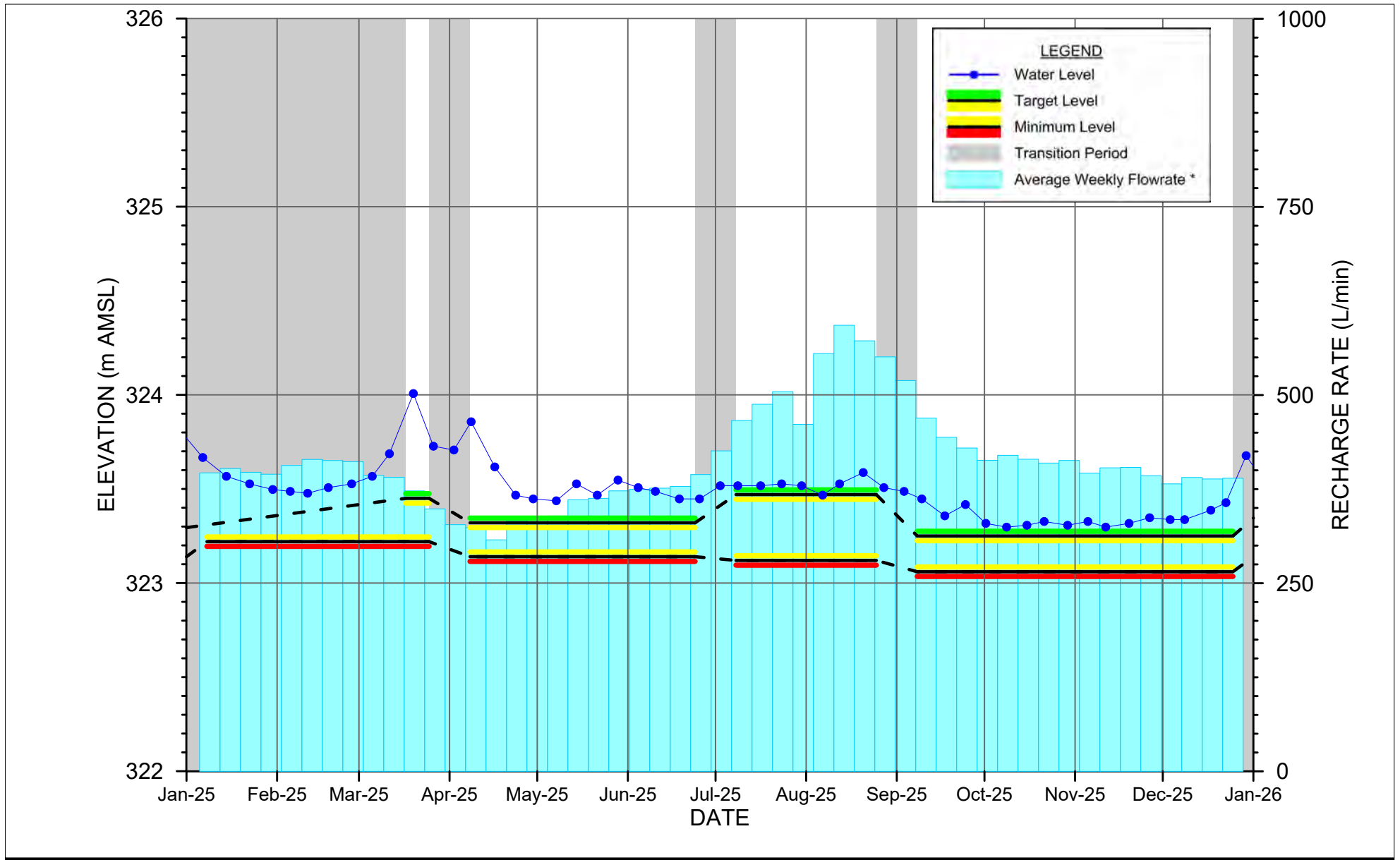
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW33-04  
WEST CELL EXTENSION

**FIGURE 5.14**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW33-04.grf  
Plot Date: March 27 2026 10:03 AM



\* Includes flow from RW205D-16, RW206A-09, and RW206B-09.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

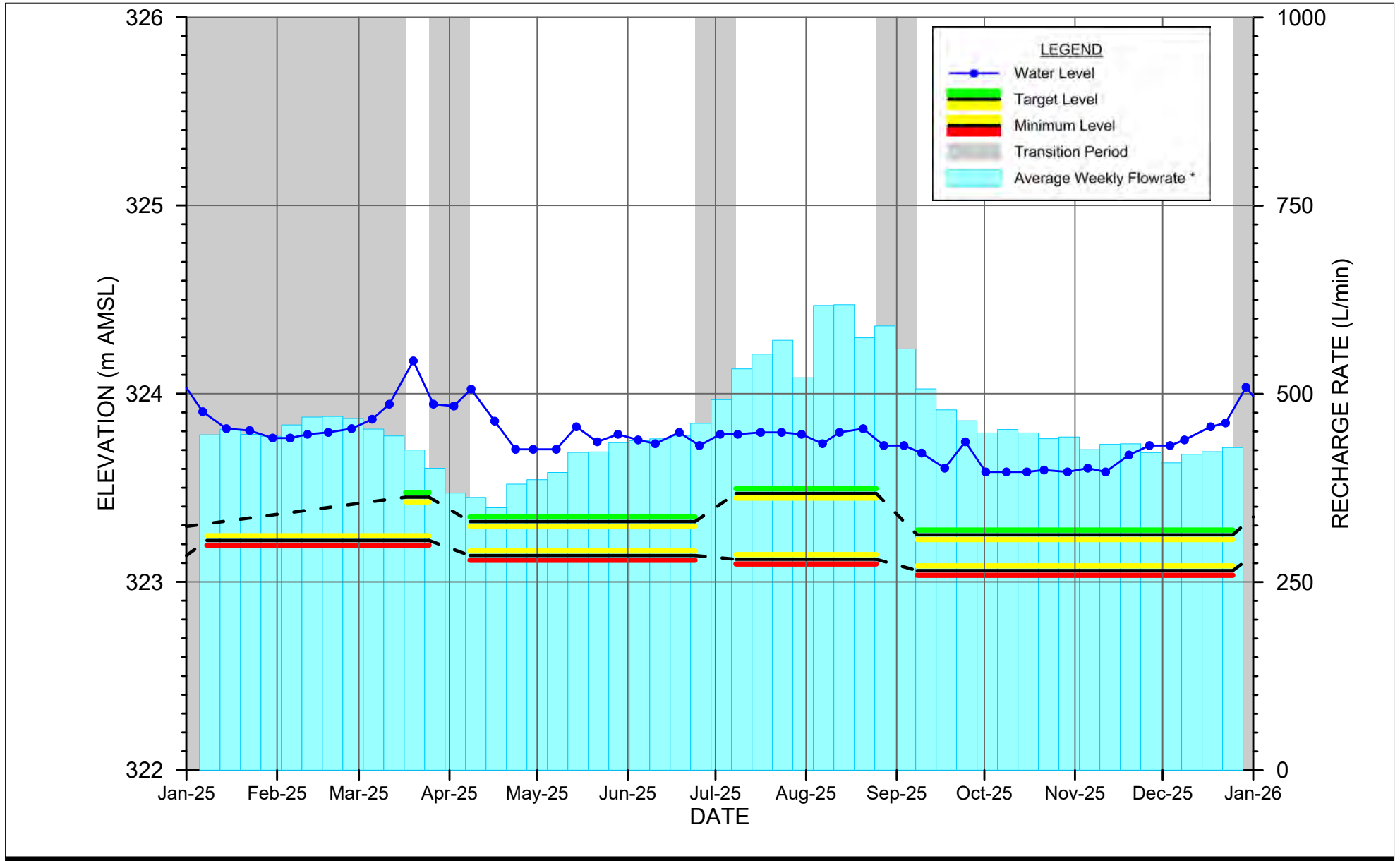
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW34-04  
WEST CELL EXTENSION

**FIGURE 5.15**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW34-04.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW205F-19, RW206A-09, RW206B-09, and RW206C-20.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

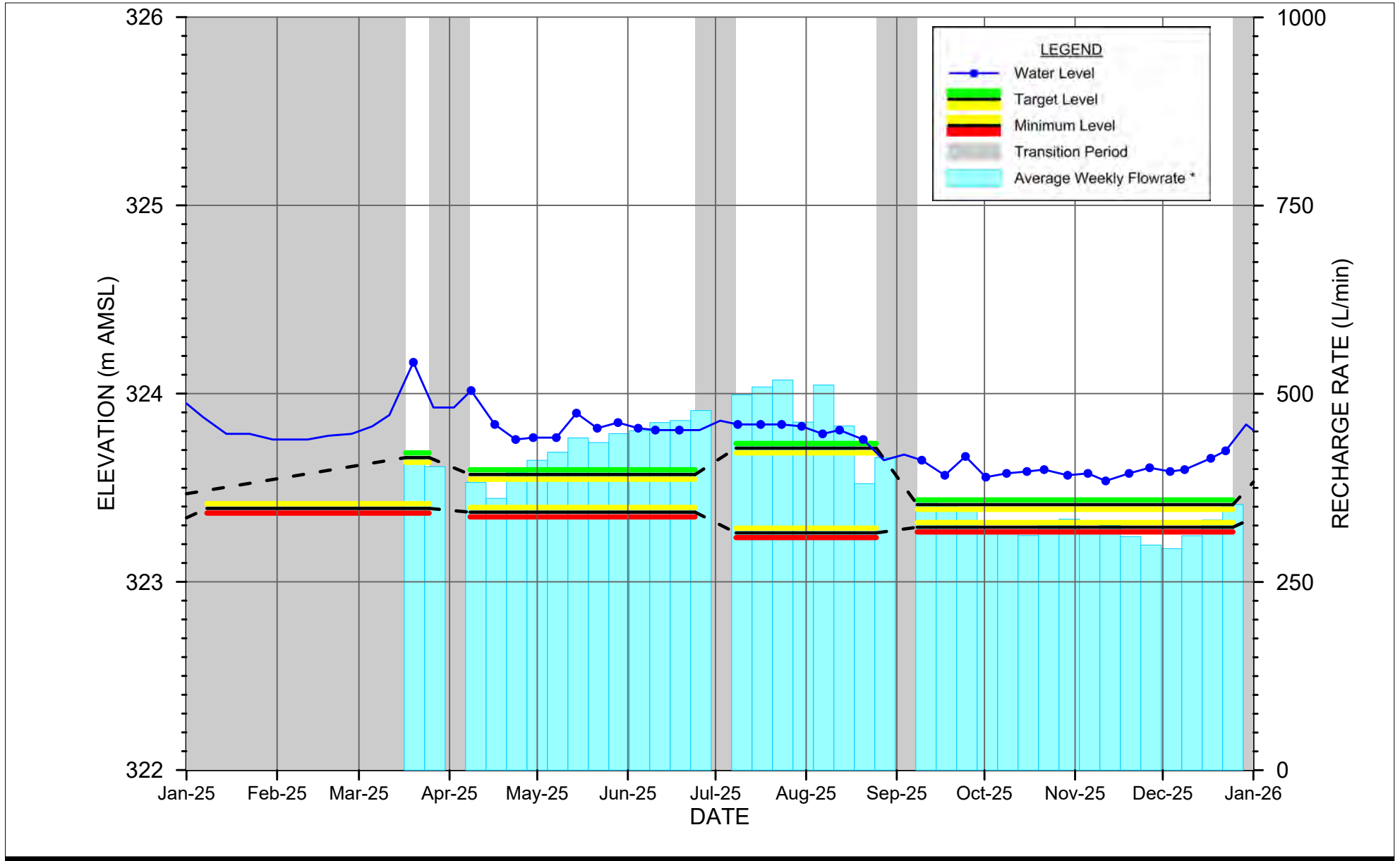
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW35-04  
WEST CELL EXTENSION

**FIGURE 5.16**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW35-04.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW206B-09, RW206C-14, RW206C-20, RW207A-09, RW207C-14, and RW208B-14.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

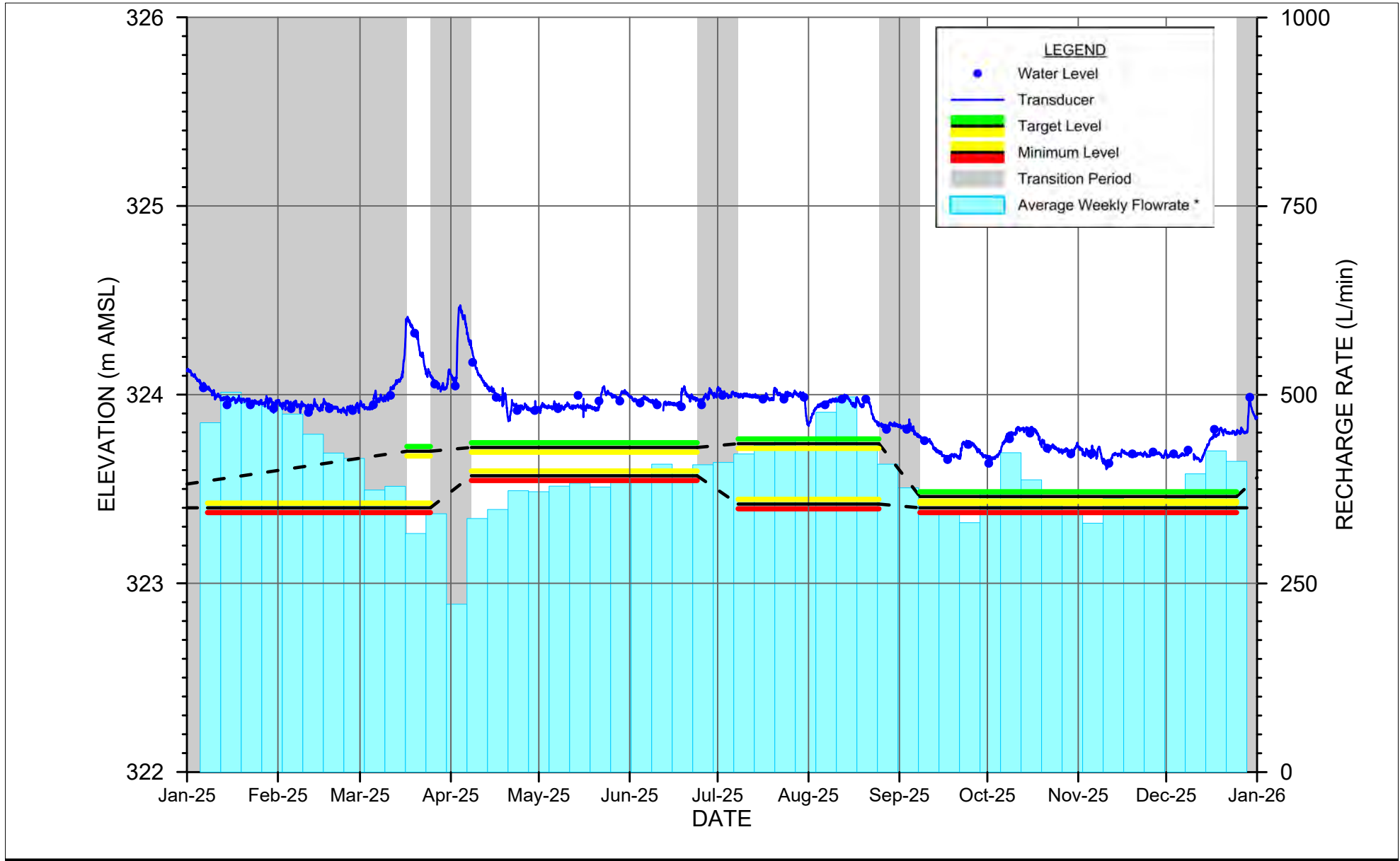
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW36-04  
WEST CELL EXTENSION

**FIGURE 5.17**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW36-04.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW207A-09, RW207B-09, RW208A-09, RW208B-14, RW208D-13, RW208F-97, RW209B-13, RW209C-13, and RW209C-16.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

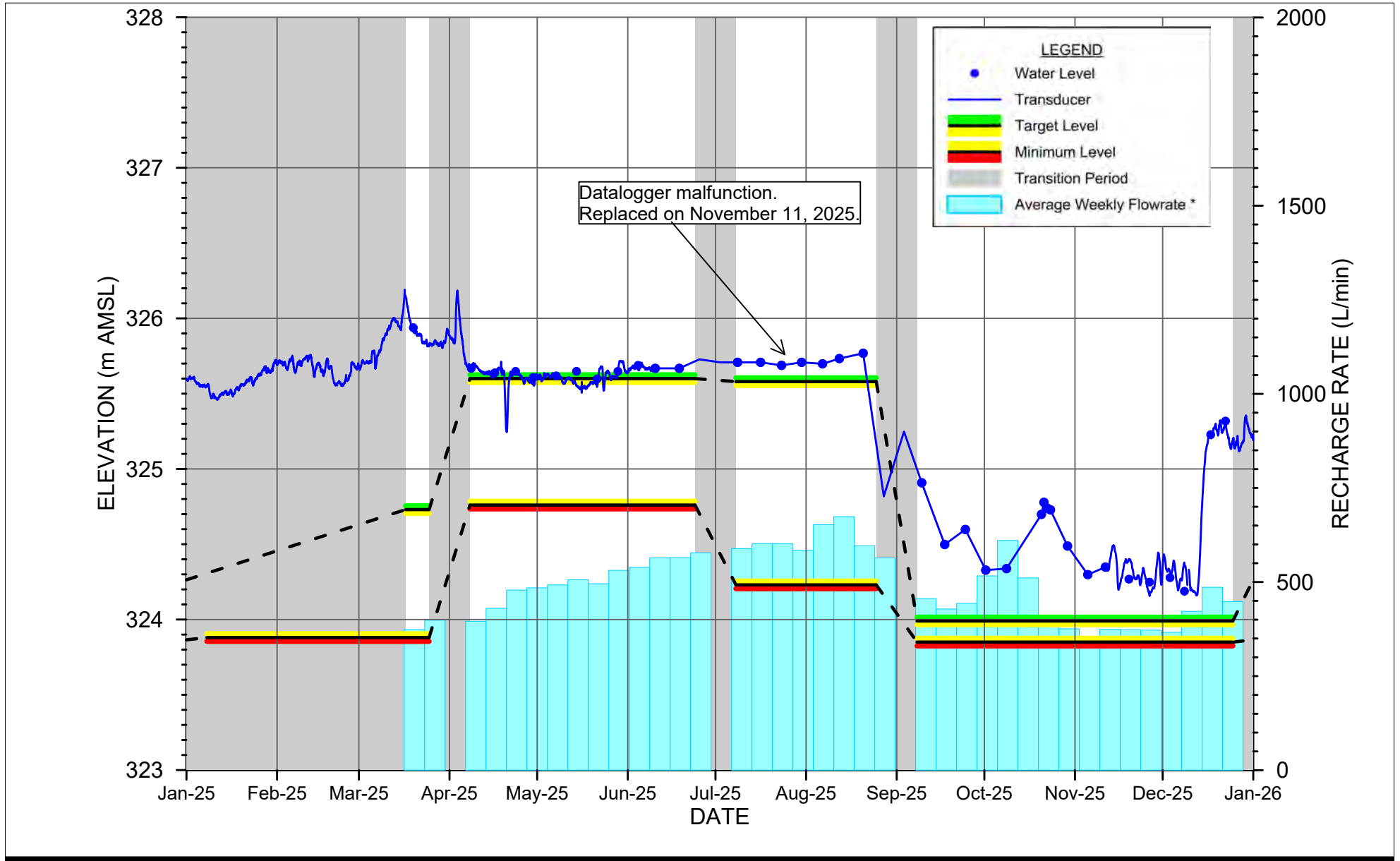
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW37-04  
WEST CELL EXTENSION

**FIGURE 5.18**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW37-04.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW208A-09, RW208B-14, RW208D-13, RW208F-97, RW208G-16, RW209A-09, RW209B-13, RW209C-13, RW209C-16, RW209D-13, and RW301B-14.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

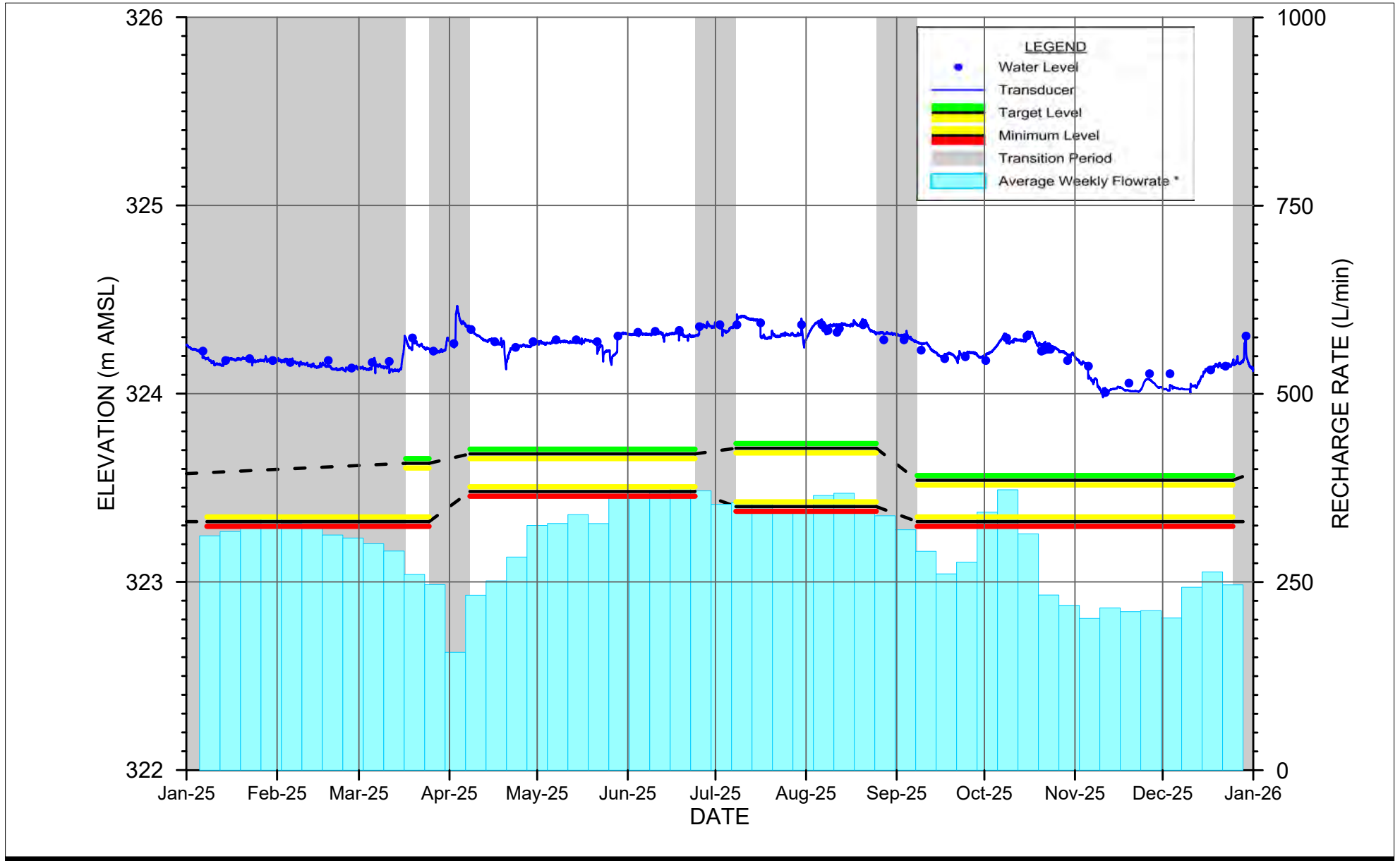
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW38-04  
WEST CELL EXTENSION

FIGURE 5.19

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\2 WC Triggers (5.8-5.19)\OW38-04.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW209A-09, RW209B-13, RW209D-13, RW301A-10, RW301B-14, and RW302A-10.



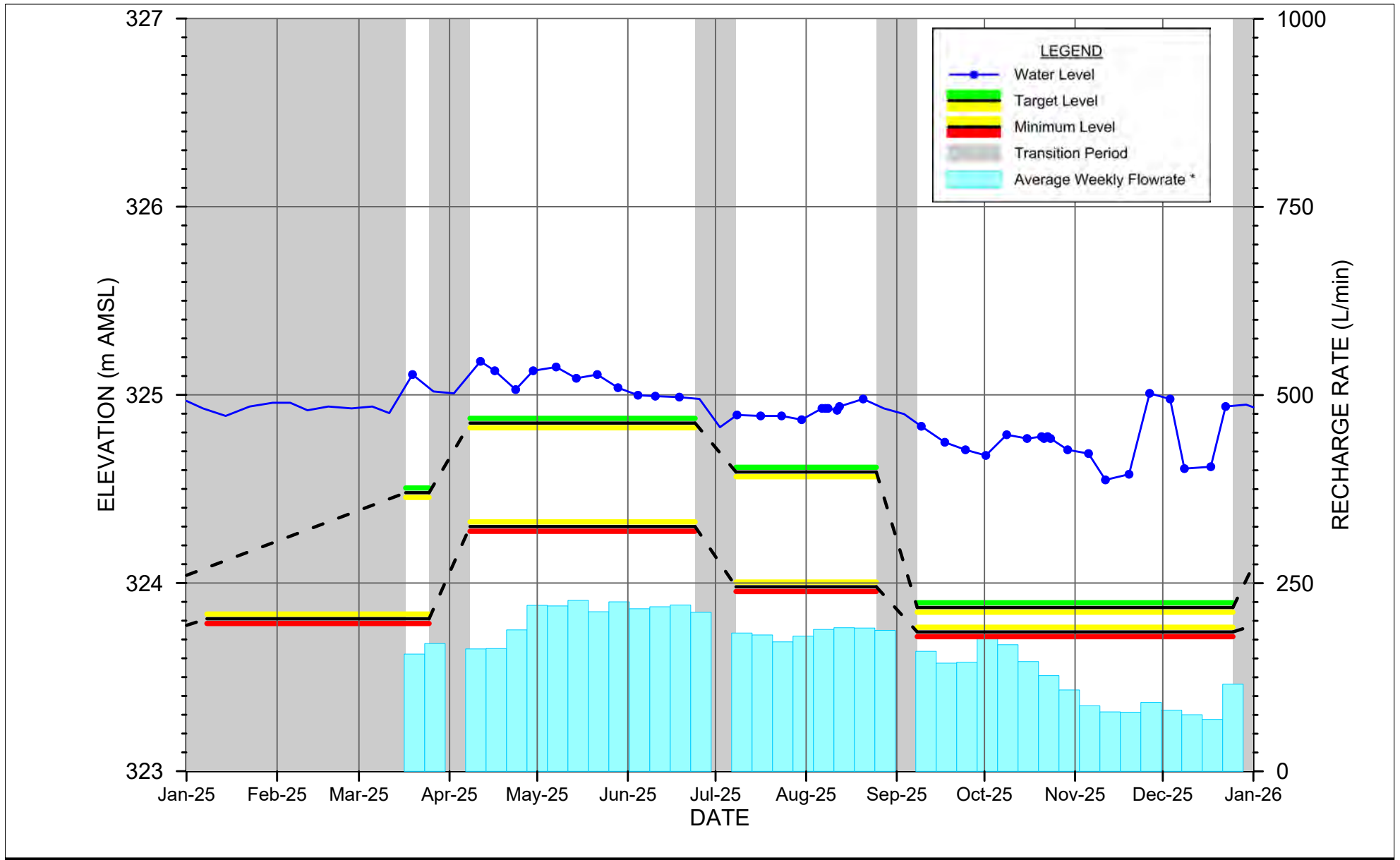
DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW60-07  
EAST CELL EXTENSION

FIGURE 5.20

NOTE: Extended winter transition until March 17, 2025.



\* Includes flow from RW301A-10, RW301B-14, RW302A-10, and RW302B-10.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

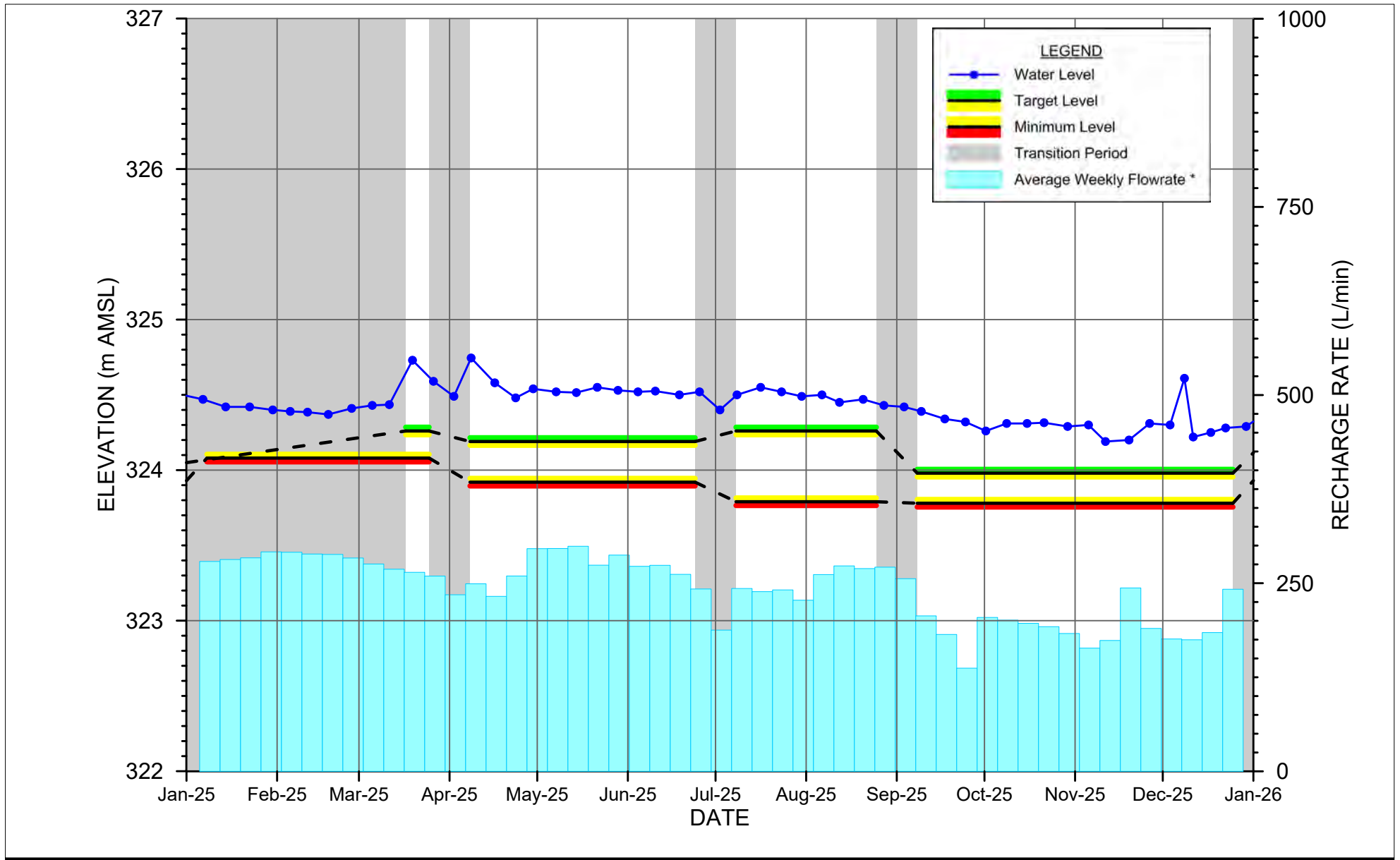
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW61-07  
EAST CELL EXTENSION

**FIGURE 5.21**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW61-07.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW302A-10, RW302B-10, RW302C-15, RW302D-15, RW303A-10, RW303B-10, RW304A-10, RW305A-10, and RW307A-10.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

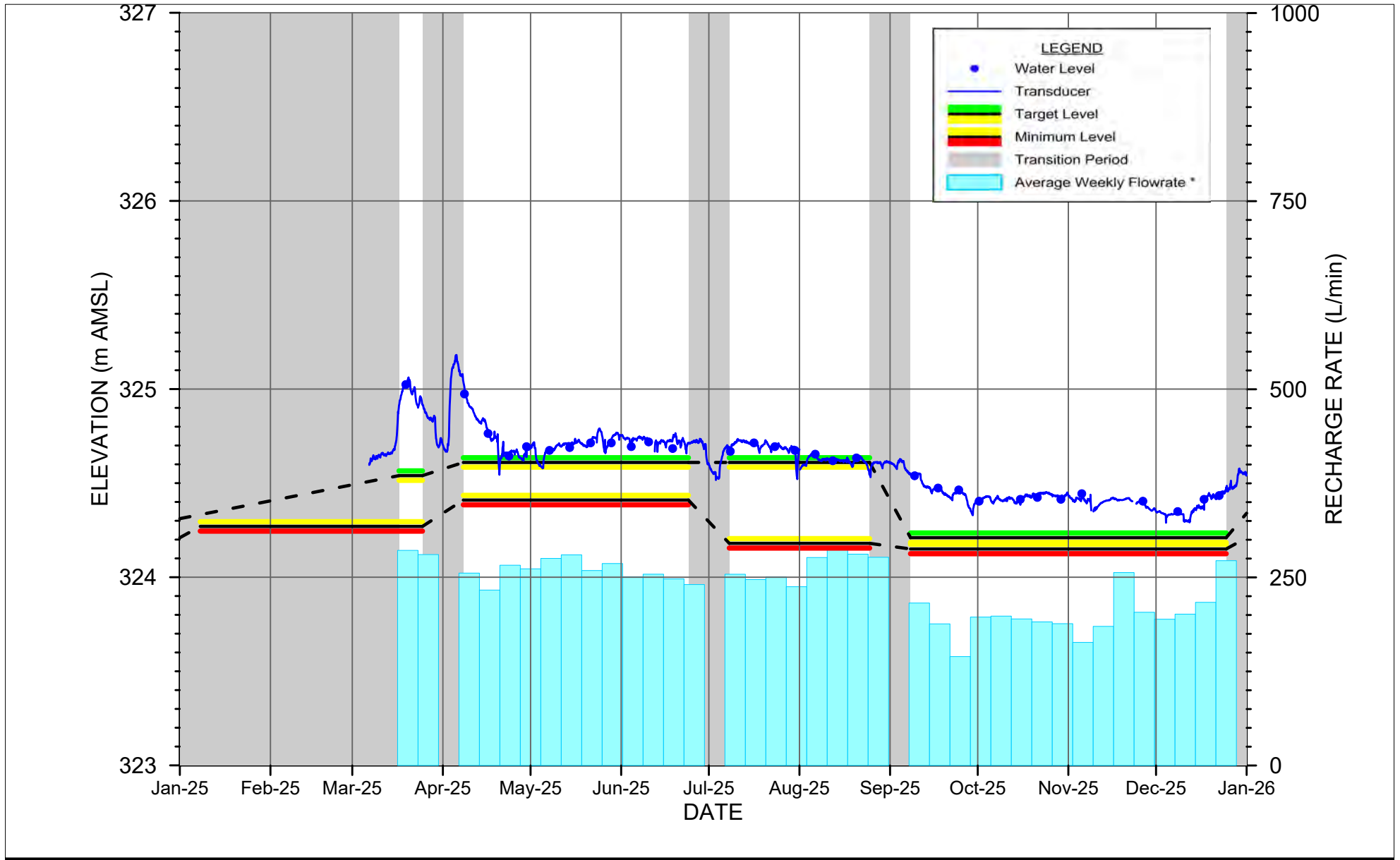
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW62-07  
EAST CELL EXTENSION

FIGURE 5.22

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW62-07.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW302B-10, RW302C-15, RW302D-15, RW303A-10, RW303B-10, RW304A-10, RW305A-10, RW307A-10, and RW307B-15.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

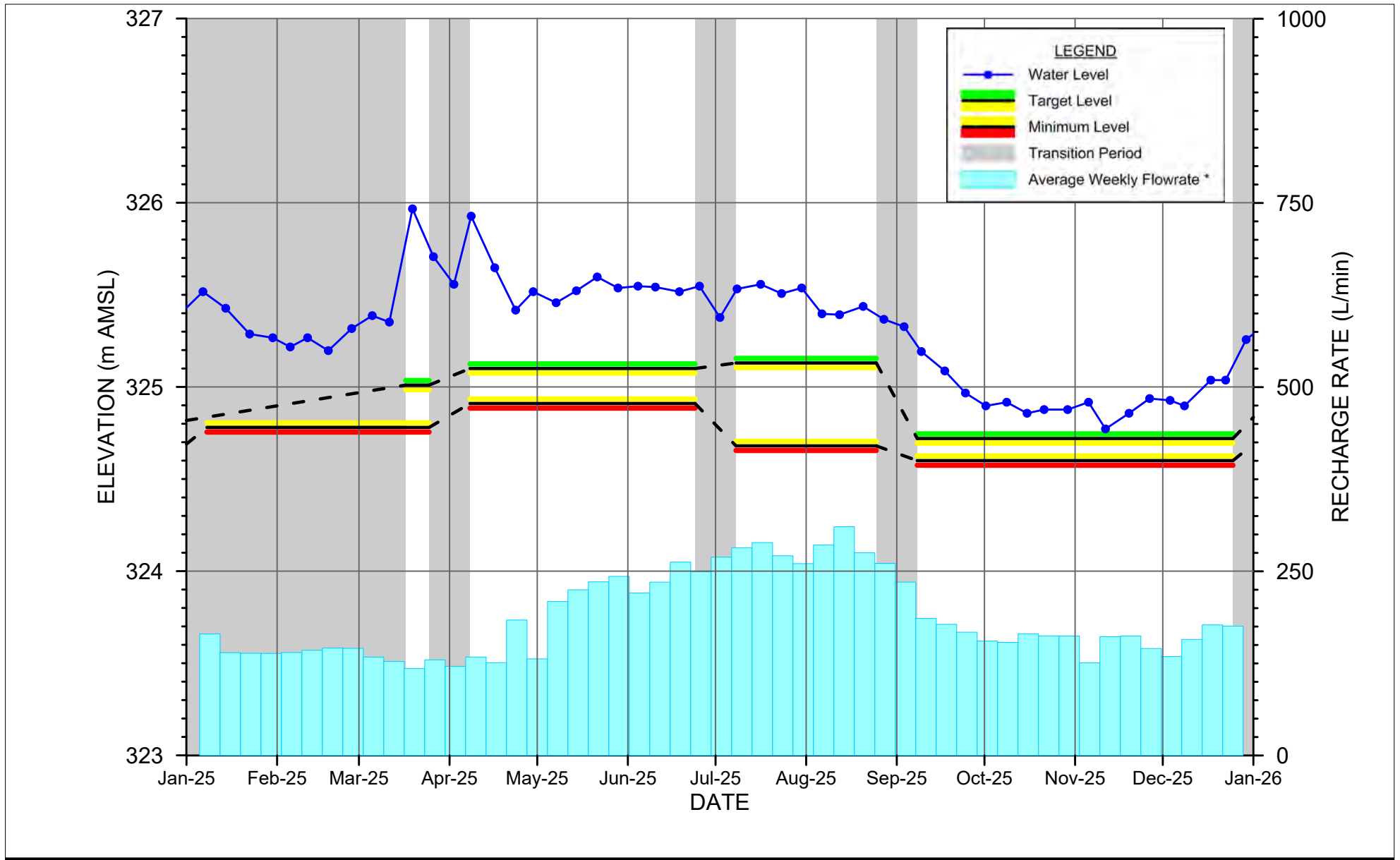
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW63-07  
EAST CELL EXTENSION

FIGURE 5.23

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW63-07.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW304A-10, RW305A-10, RW307A-10, RW307B-15, and RW307D-17.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

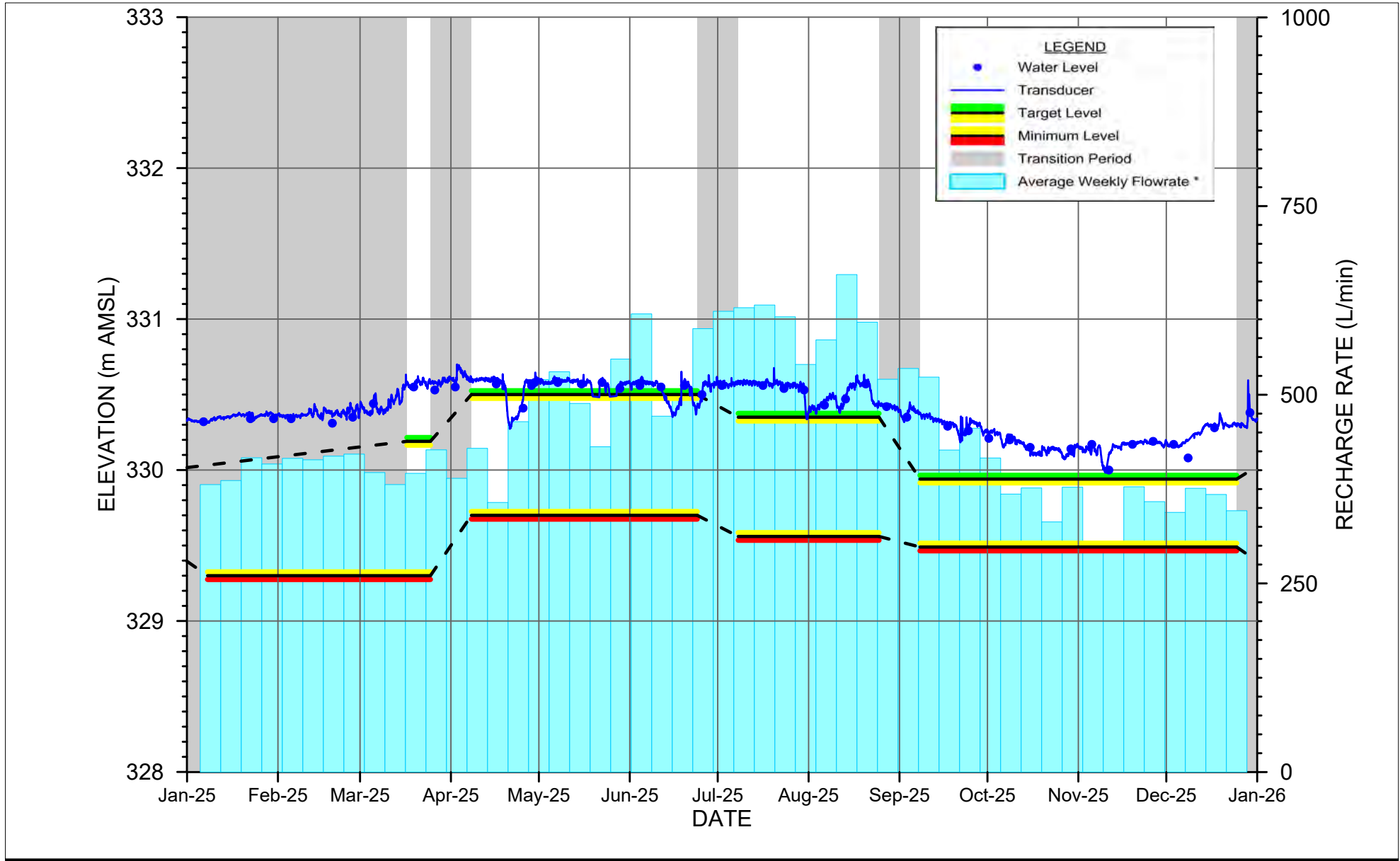
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW64-07  
EAST CELL EXTENSION

**FIGURE 5.24**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW64-07.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW305A-10, RW307A-10, RW308A-10, and RW308B-10.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

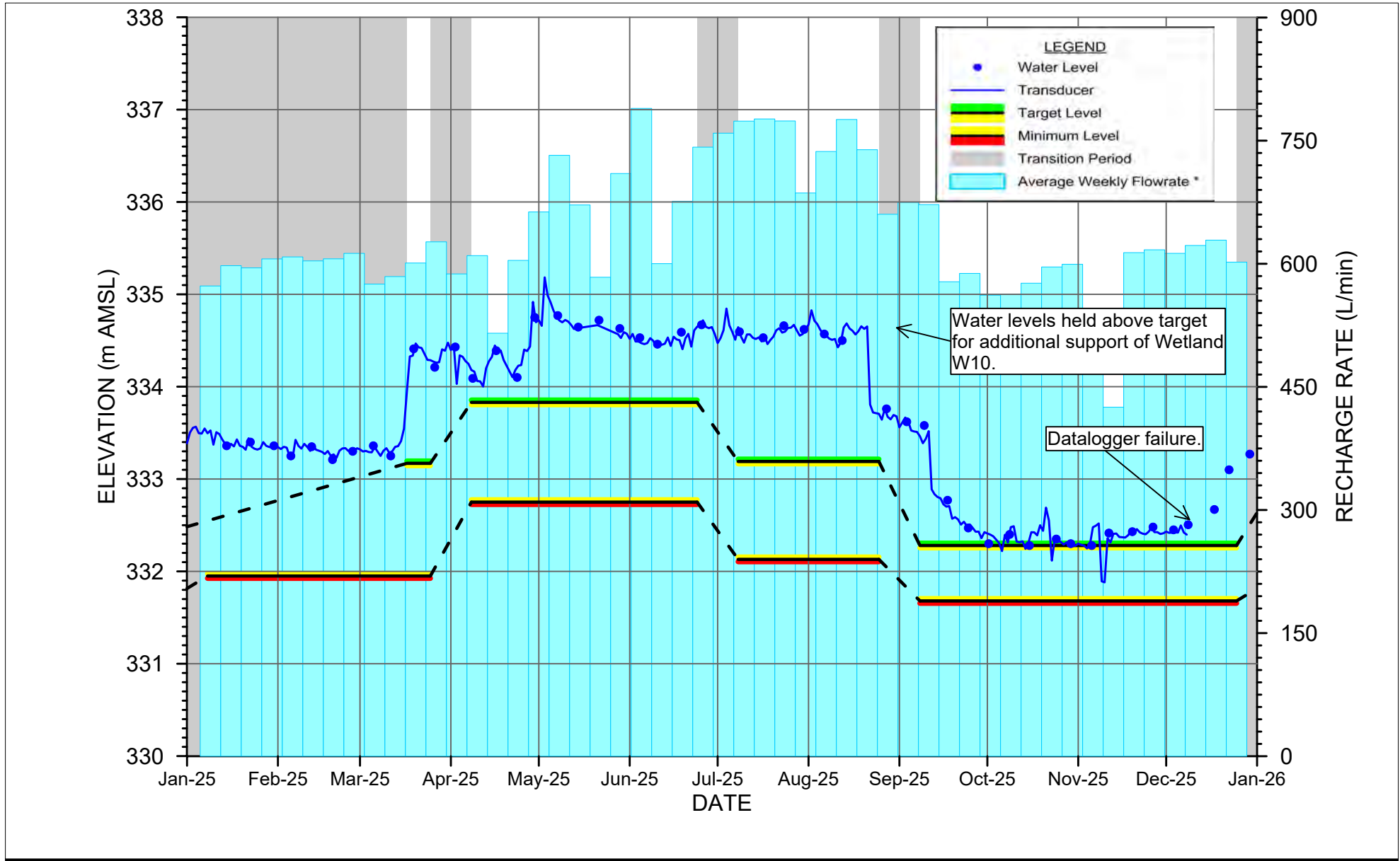
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - BH48  
EAST CELL EXTENSION

FIGURE 5.25

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\BH48.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW308B-10, RW308E-20, RW308F-20, RW309A-10, RW309B-10, and RW309C-17.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

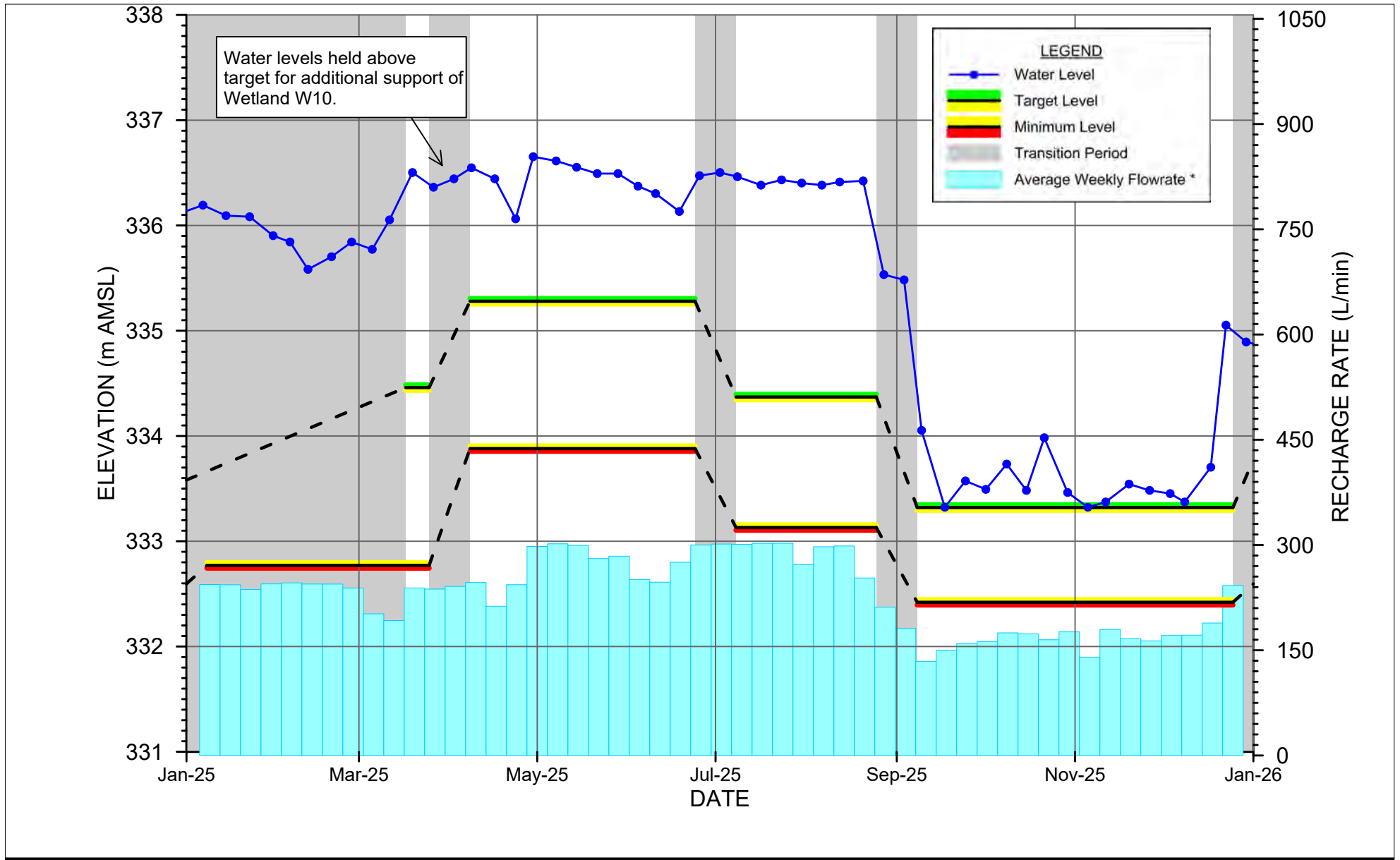
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW65-07  
EAST CELL EXTENSION

FIGURE 5.26

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW65-07.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW309B-10, RW310A-10, RW310B-17, and RW310C-17.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

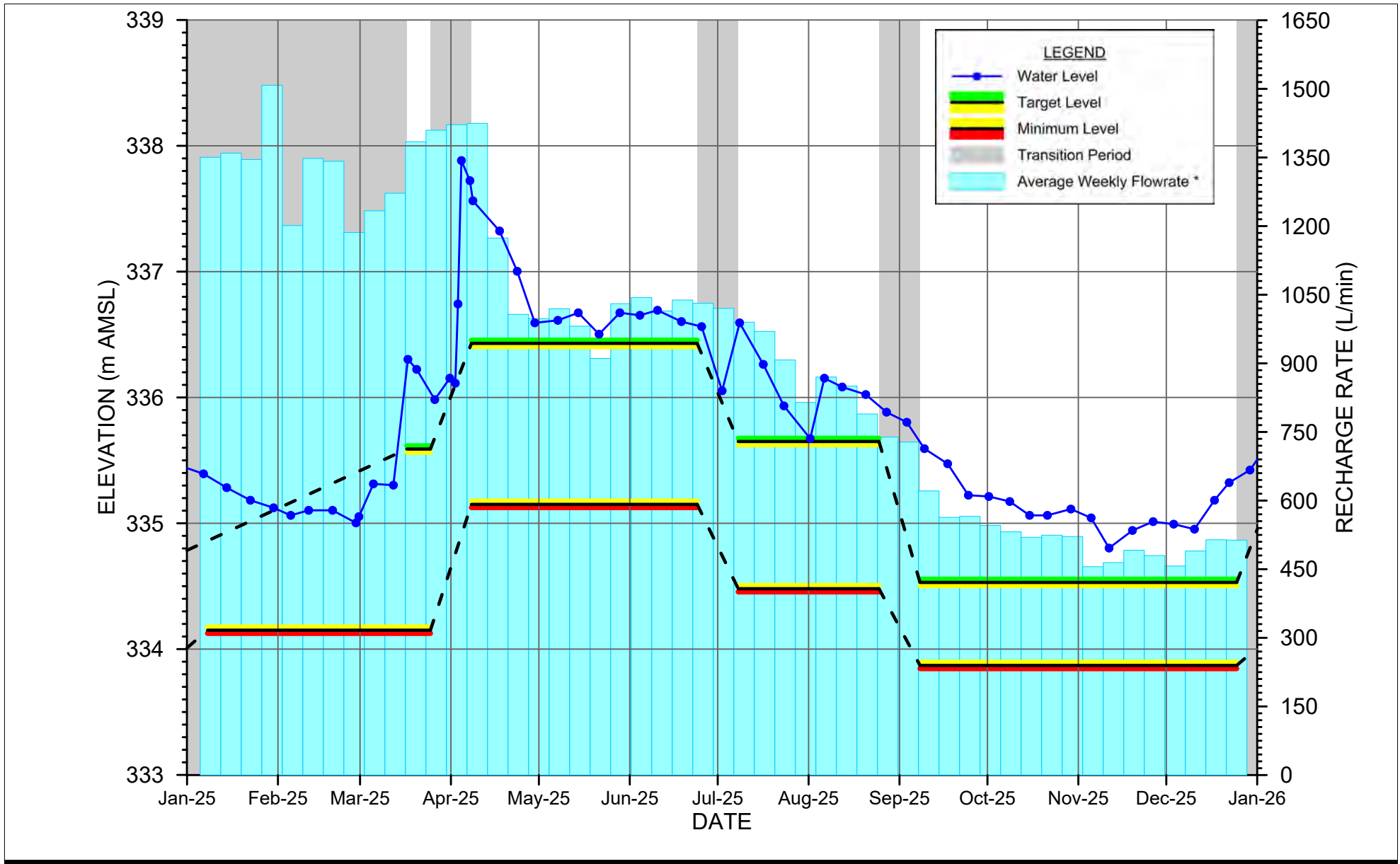
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW66-07  
EAST CELL EXTENSION

FIGURE 5.27

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW66-07.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW311A-10, RW311B-18, RW311C-17, RW311D-18, RW311F-17, RW311G-17, RW311K-17, and RW312A-10.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

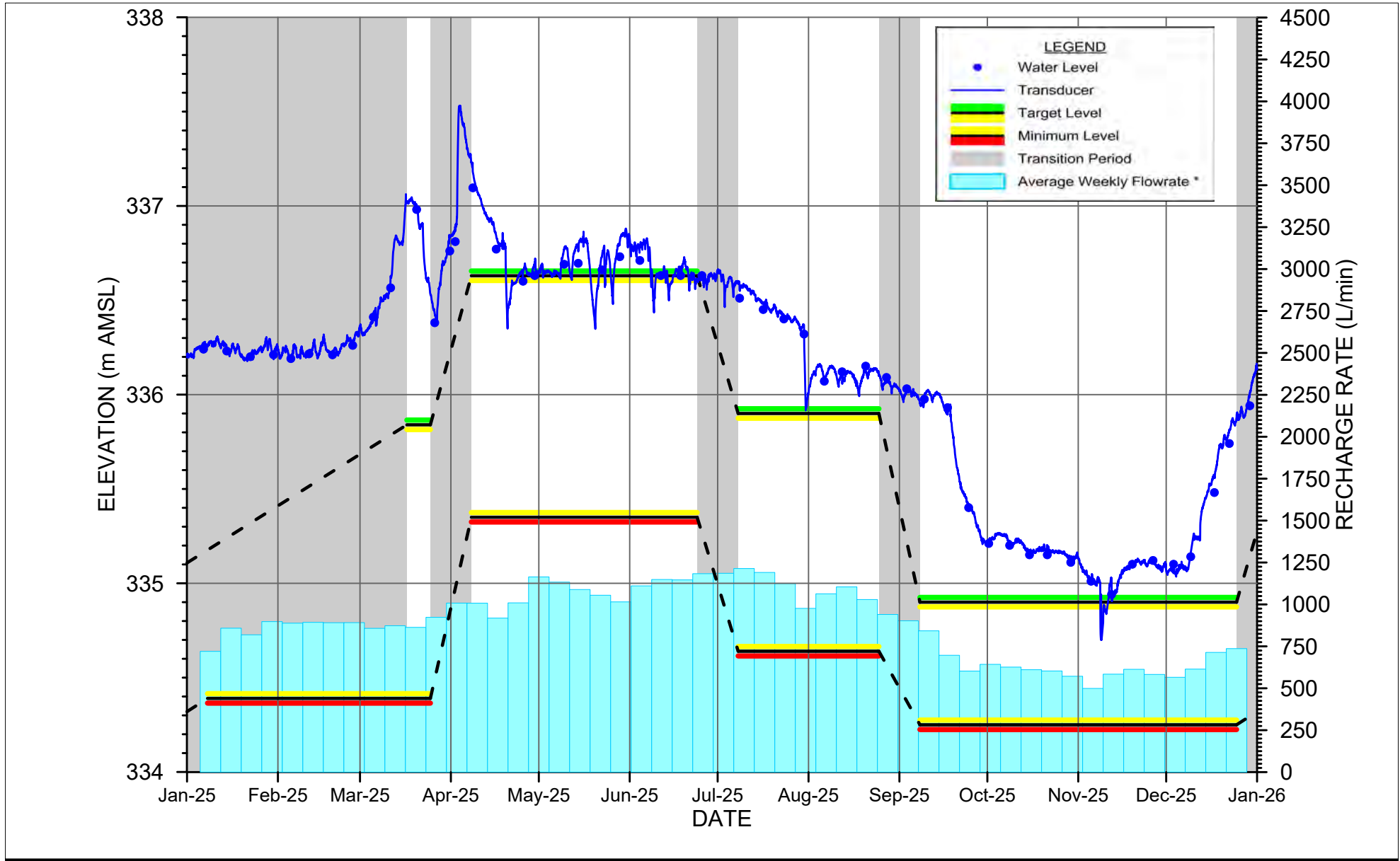
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW52-07  
EAST CELL EXTENSION

FIGURE 5.28

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW52-07.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW312A-10, RW312C-17, RW312D-17, RW312E-17, RW312F-18, RW312I-17, RW313A-10, RW313B-14, RW313C-17, RW313D-17, RW313F-18, RW313G-18, RW313H-19, RW313I-19, and RW314C-17.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

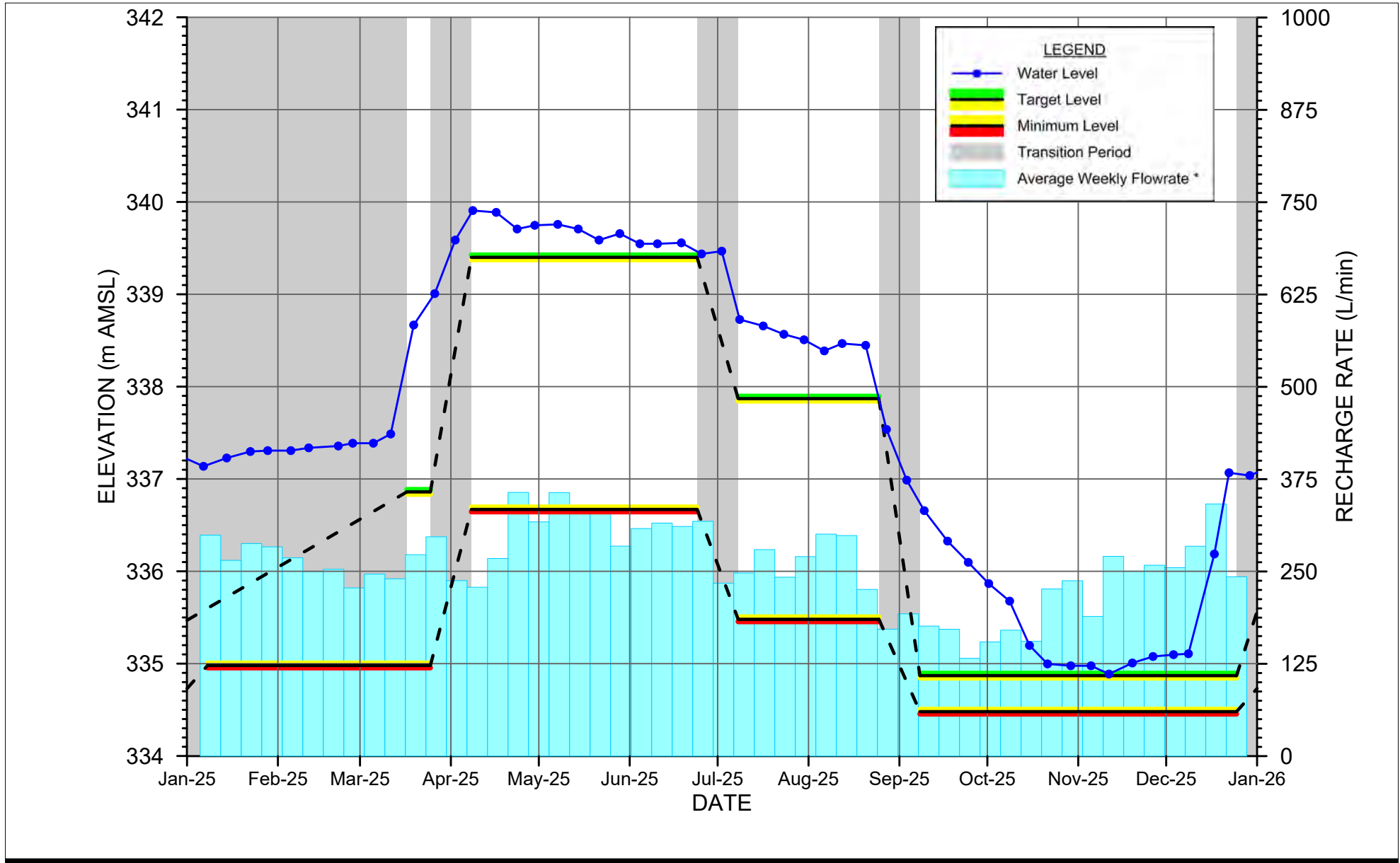
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW5-80  
EAST CELL EXTENSION

**FIGURE 5.29**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW5-80.grf  
Plot Date: March 27 2026 11:03 AM



\* Includes flow from RW316A-16, RW316C-11, RW316C1-15, RW316H-20, RW316I-20, RW317A-16, RW317C-14, RW317D-15, RW317D1-15, and RW318C-16.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

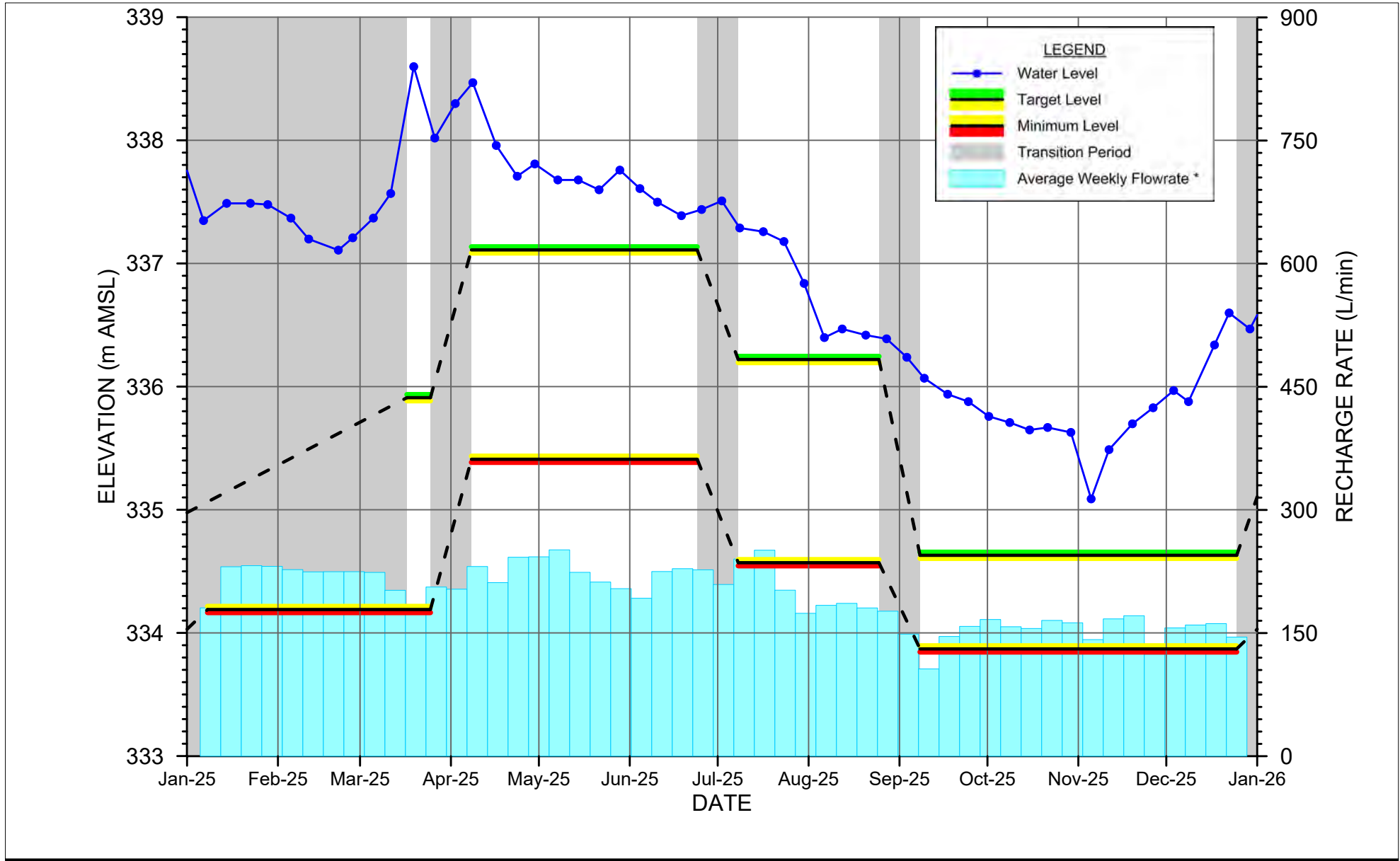
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW70-08  
EAST CELL EXTENSION

FIGURE 5.30

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW70-08.grf  
Plot Date: March 27 2026 12:03 PM



\* Includes flow from RW314A-10, RW315A-10, RW316B-11, RW316B-14, and RW316D-14.



DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

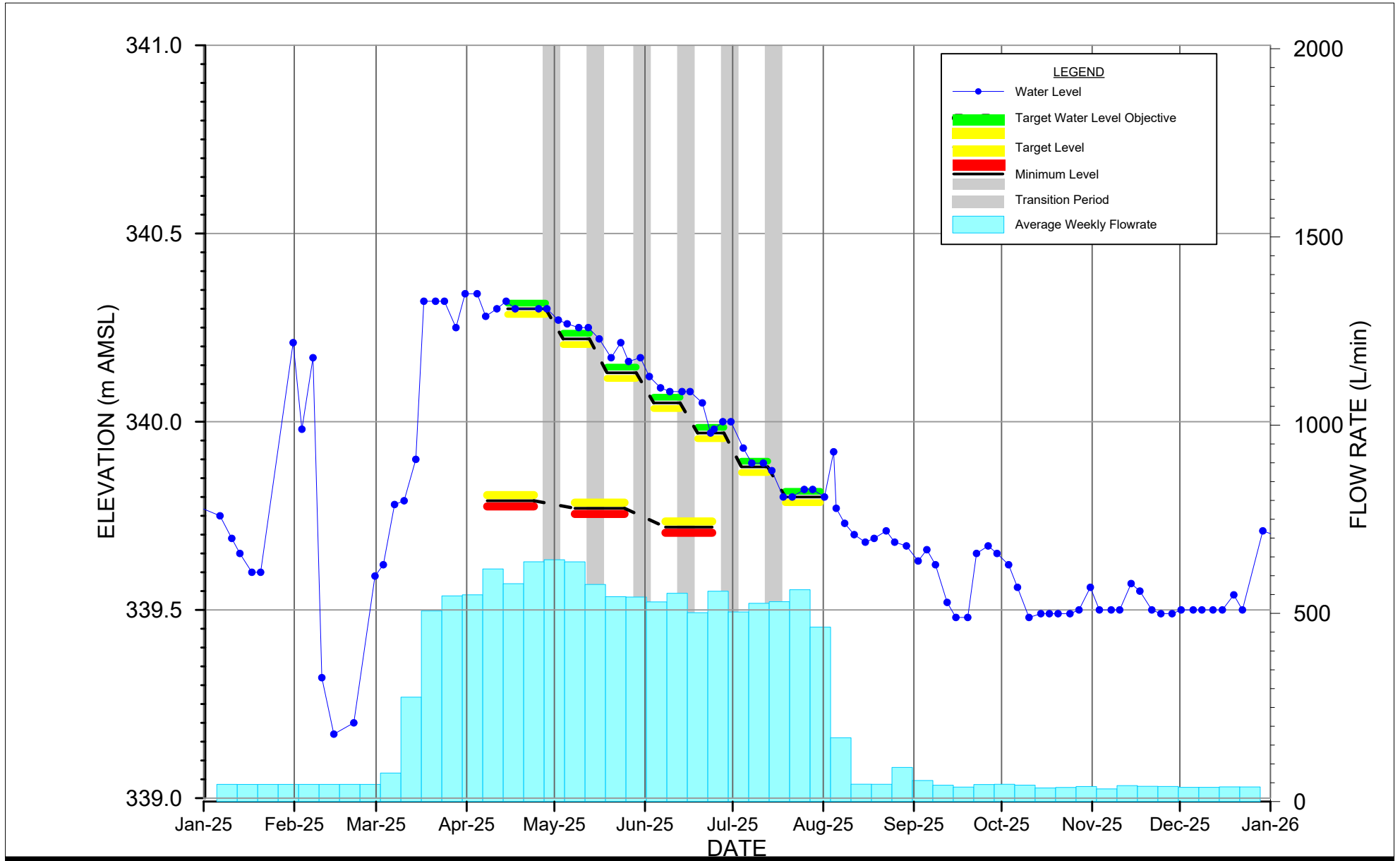
Project No. 010978  
Date March 27, 2026

TRIGGER WELL - OW71-08  
EAST CELL EXTENSION

**FIGURE 5.31**

NOTE: Extended winter transition until March 17, 2025.

HEG file: \\ghdnet\ghd\CA\Waterloo\Projects\662\010978\Grapher\AMR\2025\Main RPT\3 EC Triggers (5.20-5.31)\OW71-08.grf  
Plot Date: March 27 2026 11:03 AM

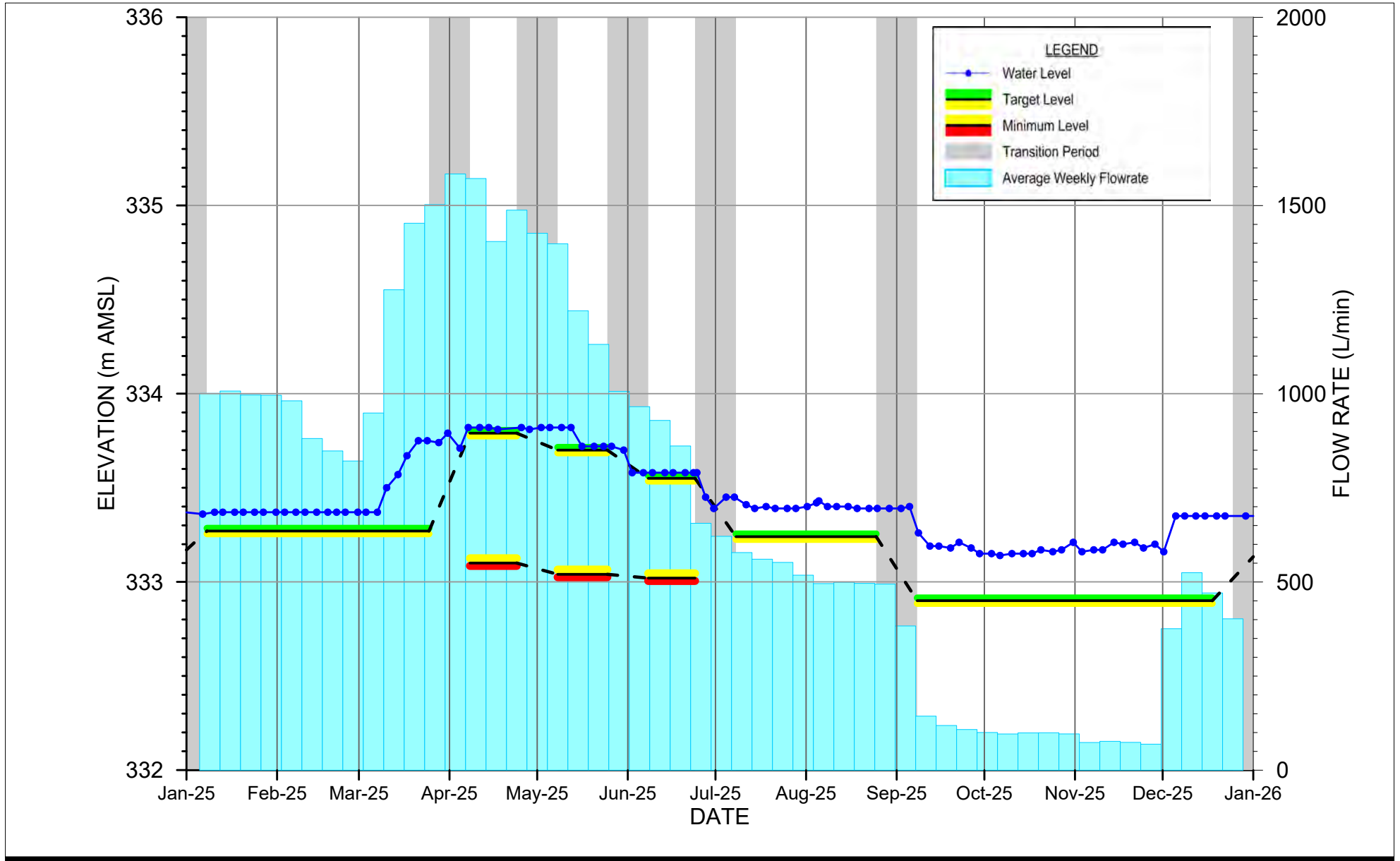


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 26, 2026

V2 WETLAND  
EAST CELL EXTENSION

FIGURE 5.32

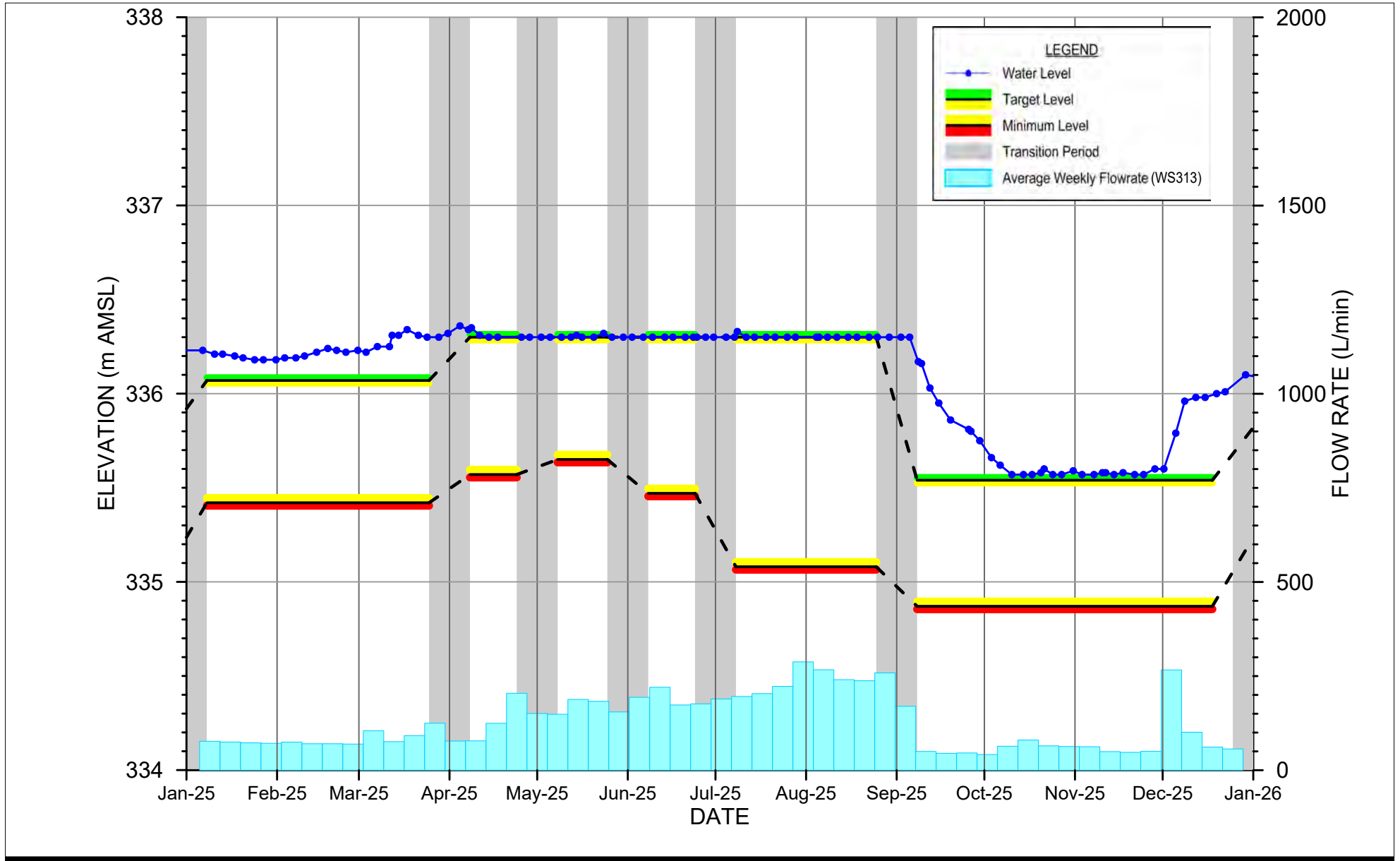


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 02, 2026

W7 WETLAND  
EAST CELL EXTENSION

FIGURE 5.33

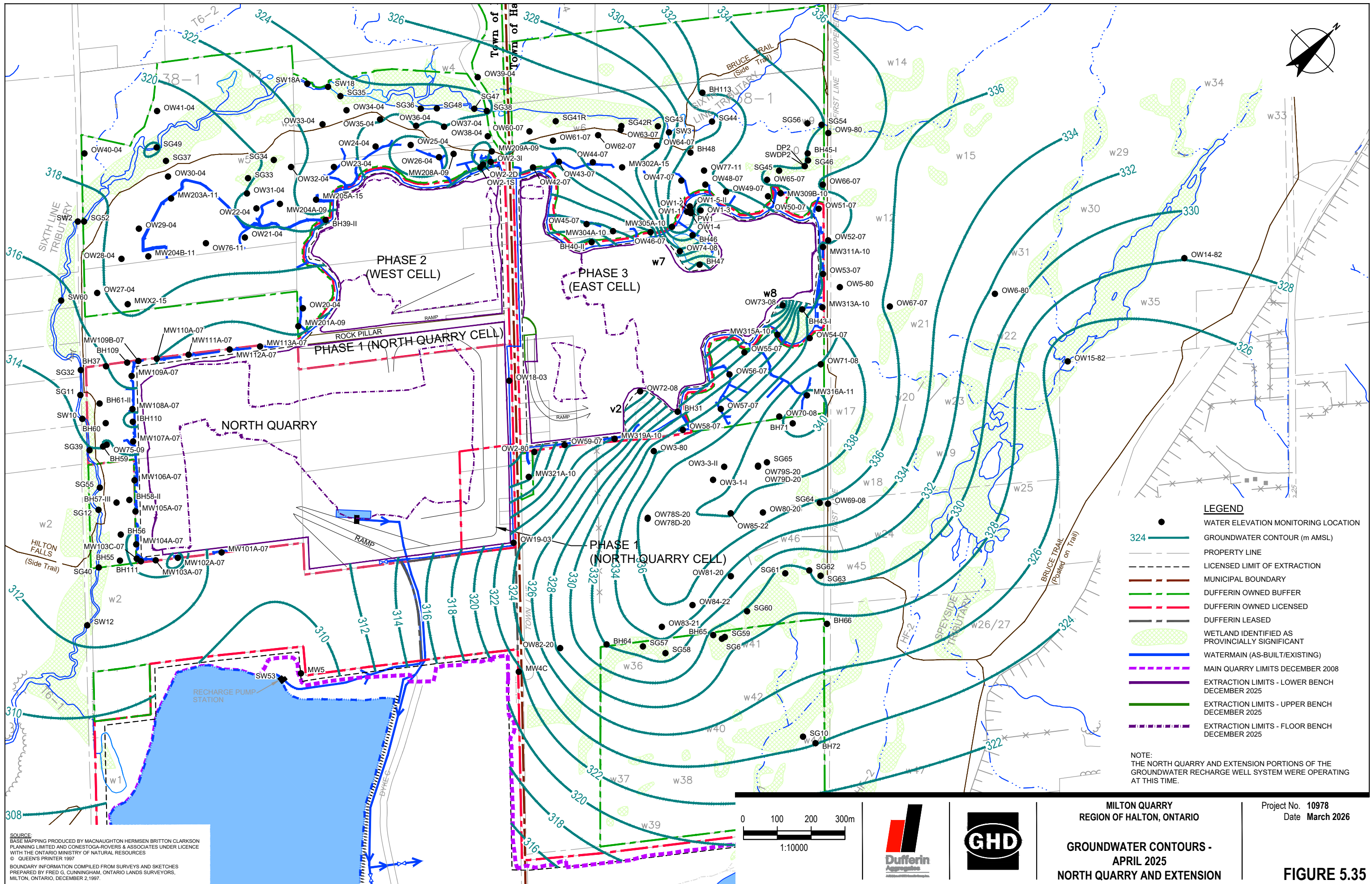


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 26, 2026

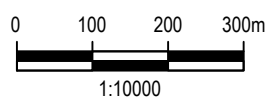
W8 WETLAND  
EAST CELL EXTENSION

FIGURE 5.34



- LEGEND**
- WATER ELEVATION MONITORING LOCATION
  - 324 GROUNDWATER CONTOUR (m AMSL)
  - PROPERTY LINE
  - - - LICENSED LIMIT OF EXTRACTION
  - MUNICIPAL BOUNDARY
  - DUFFERIN OWNED BUFFER
  - DUFFERIN OWNED LICENSED
  - DUFFERIN LEASED
  - WETLAND IDENTIFIED AS PROVINCIALLY SIGNIFICANT
  - WATERMAIN (AS-BUILT/EXISTING)
  - MAIN QUARRY LIMITS DECEMBER 2008
  - EXTRACTION LIMITS - LOWER BENCH DECEMBER 2025
  - EXTRACTION LIMITS - UPPER BENCH DECEMBER 2025
  - EXTRACTION LIMITS - FLOOR BENCH DECEMBER 2025

NOTE:  
THE NORTH QUARRY AND EXTENSION PORTIONS OF THE GROUNDWATER RECHARGE WELL SYSTEM WERE OPERATING AT THIS TIME.



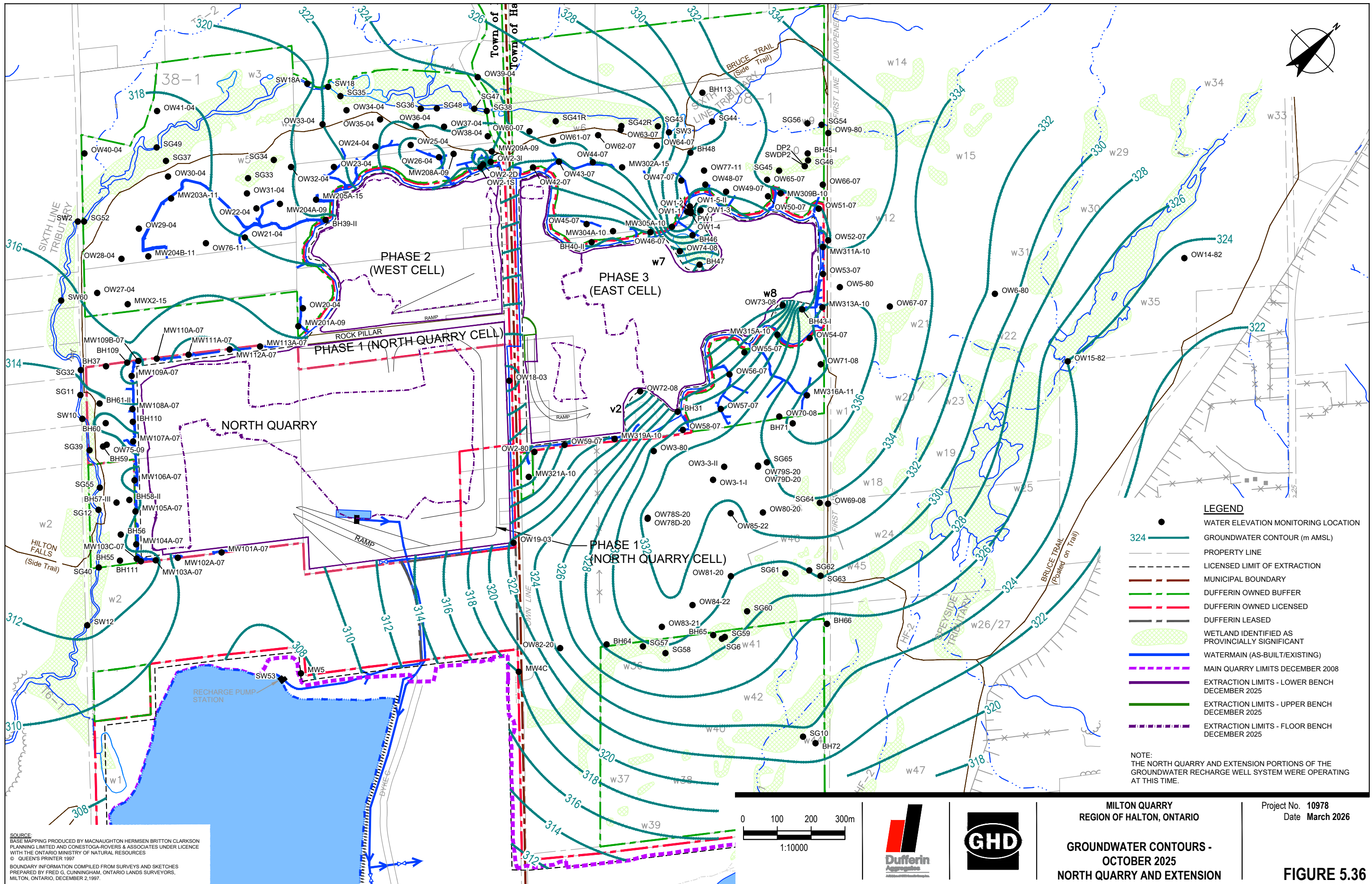
MILTON QUARRY  
REGION OF HALTON, ONTARIO

**GROUNDWATER CONTOURS -  
APRIL 2025  
NORTH QUARRY AND EXTENSION**

Project No. 10978  
Date March 2026

**FIGURE 5.35**

SOURCE:  
BASE MAPPING PRODUCED BY MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED AND CONESTOGA-ROVERS & ASSOCIATES UNDER LICENCE WITH THE ONTARIO MINISTRY OF NATURAL RESOURCES  
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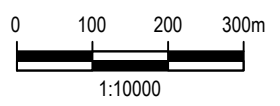


SOURCE:  
 BASE MAPPING PRODUCED BY MACNAUGHTON HERMSEN BRITTON CLARKSON  
 PLANNING LIMITED AND CONESTOGA-ROVERS & ASSOCIATES UNDER LICENCE  
 WITH THE ONTARIO MINISTRY OF NATURAL RESOURCES  
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 PREPARED BY FRED G. CLUNINGHAM, ONTARIO LANDS SURVEYORS,  
 MILTON, ONTARIO, DECEMBER 2, 1997.

Filename: C:\ADSK\ACCDocs\GHD Services Pty Ltd\11230862-Enviro Projs\Project Files\010978\01 WIP\Env\Figures\RPT183\10978-GHD-00-00-RPT-EN-D108\_WA-183.dwg  
 Plot Date: 16 March 2026 11:36 AM

- LEGEND**
- WATER ELEVATION MONITORING LOCATION
  - 324 GROUNDWATER CONTOUR (m AMSL)
  - PROPERTY LINE
  - - - LICENSED LIMIT OF EXTRACTION
  - MUNICIPAL BOUNDARY
  - DUFFERIN OWNED BUFFER
  - DUFFERIN OWNED LICENSED
  - DUFFERIN LEASED
  - WETLAND IDENTIFIED AS PROVINCIALLY SIGNIFICANT
  - WATERMAIN (AS-BUILT/EXISTING)
  - MAIN QUARRY LIMITS DECEMBER 2008
  - EXTRACTION LIMITS - LOWER BENCH DECEMBER 2025
  - EXTRACTION LIMITS - UPPER BENCH DECEMBER 2025
  - EXTRACTION LIMITS - FLOOR BENCH DECEMBER 2025

NOTE:  
 THE NORTH QUARRY AND EXTENSION PORTIONS OF THE  
 GROUNDWATER RECHARGE WELL SYSTEM WERE OPERATING  
 AT THIS TIME.



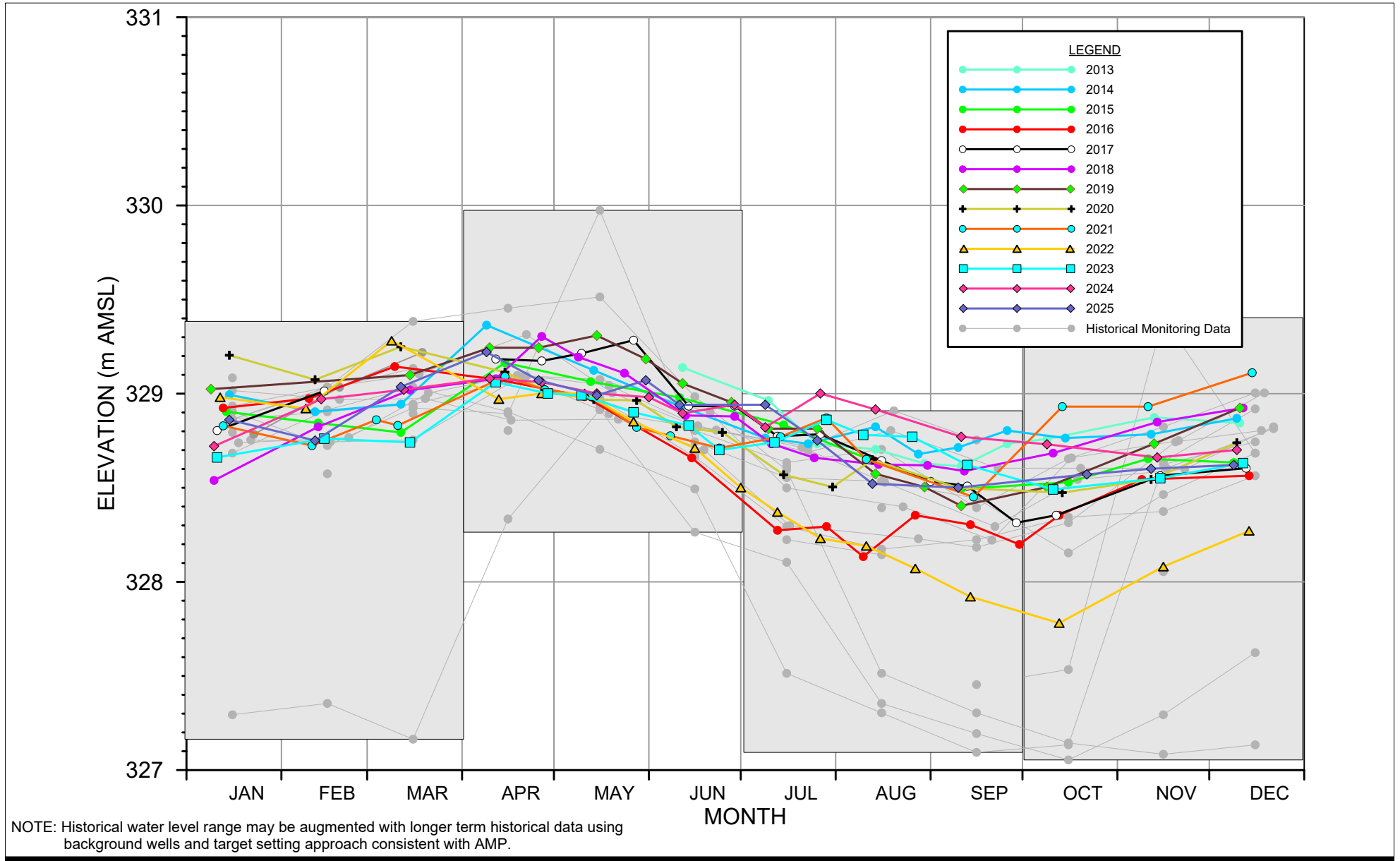
MILTON QUARRY  
 REGION OF HALTON, ONTARIO

**GROUNDWATER CONTOURS -  
 OCTOBER 2025**

**NORTH QUARRY AND EXTENSION**

Project No. 10978  
 Date March 2026

**FIGURE 5.36**

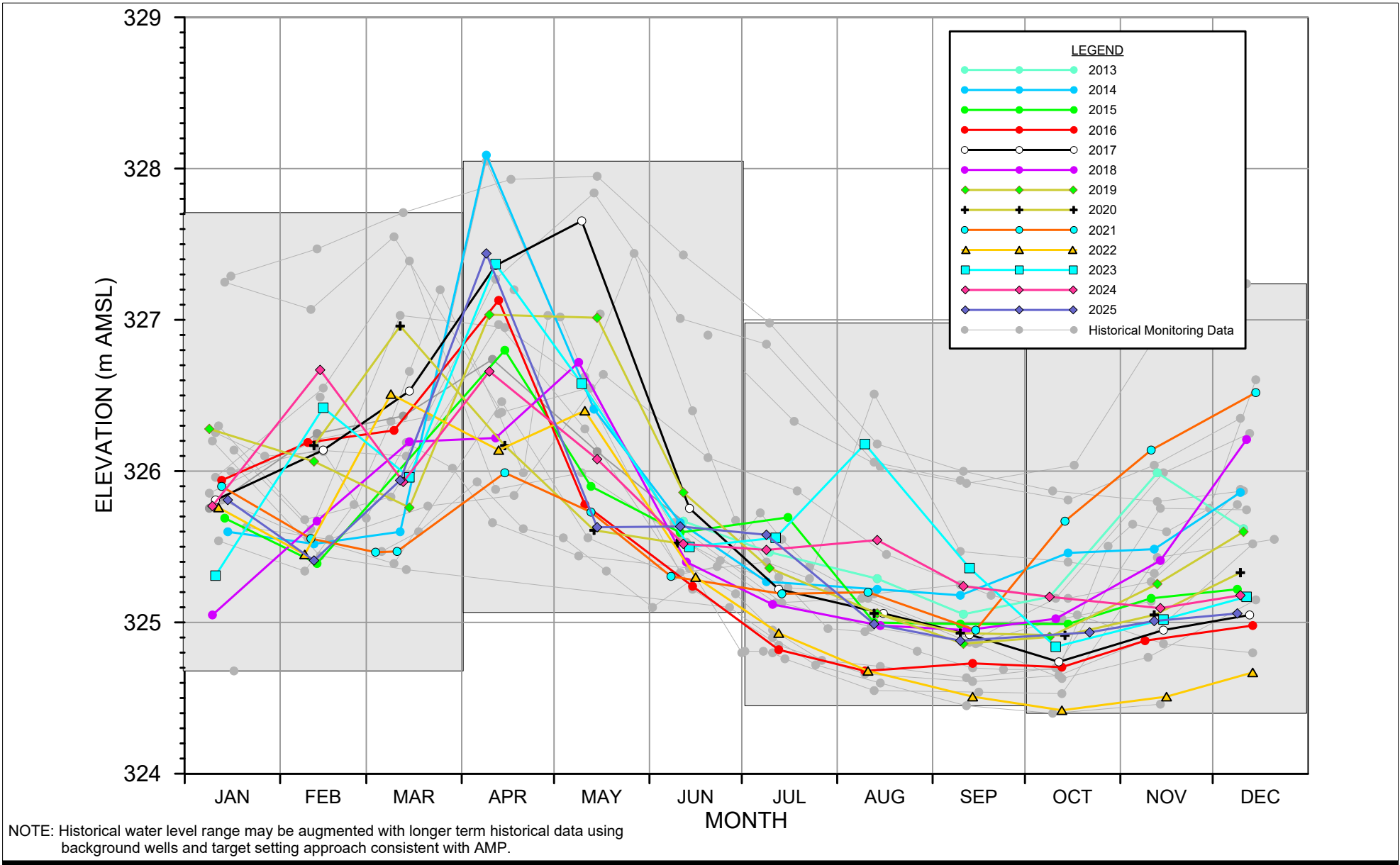


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 03, 2026

SUPPLEMENTAL MONITORING  
WELL GRAPH - BH65

**FIGURE 5.37**

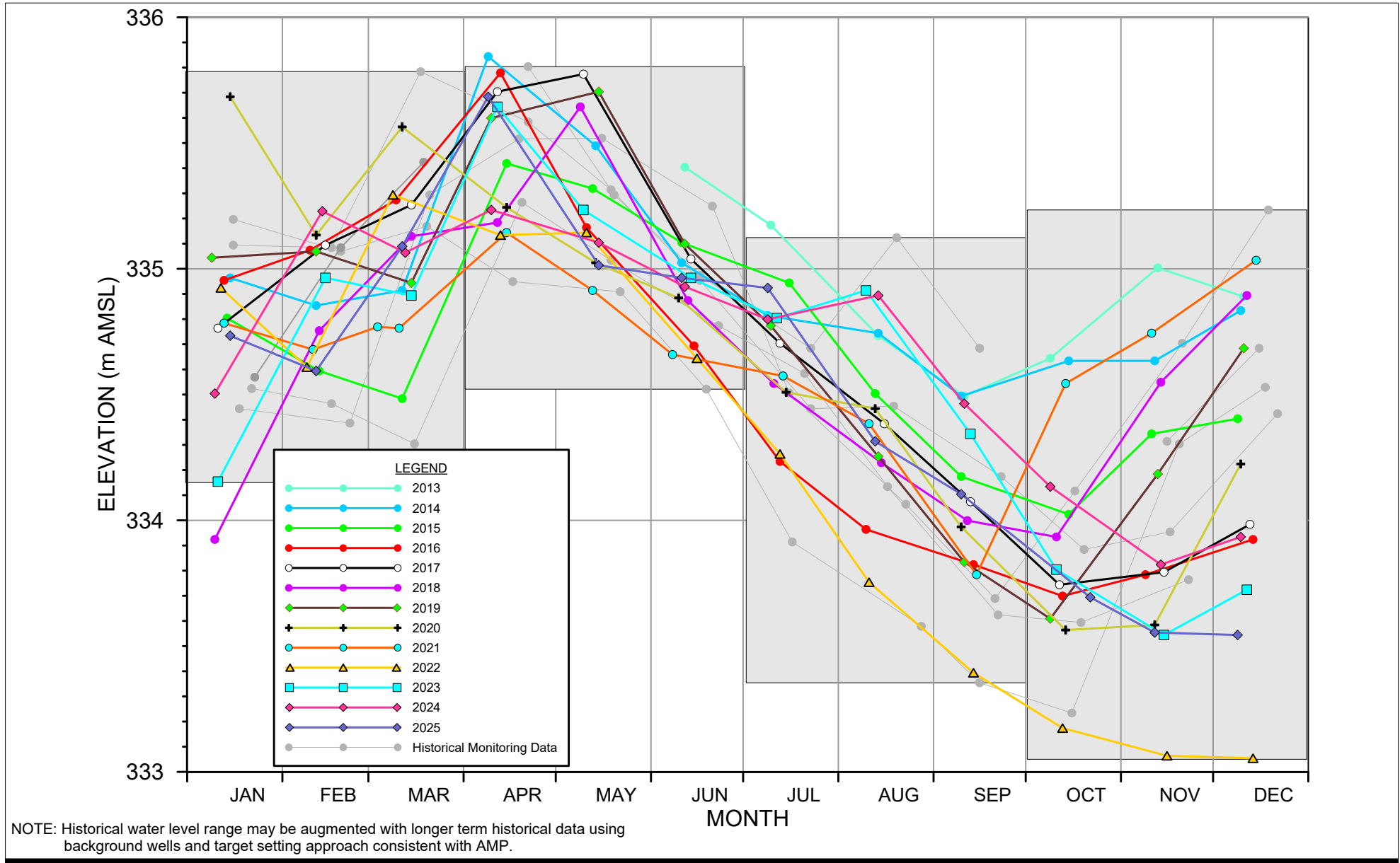


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 03, 2026

SUPPLEMENTAL MONITORING  
WELL GRAPH - BH66

**FIGURE 5.38**

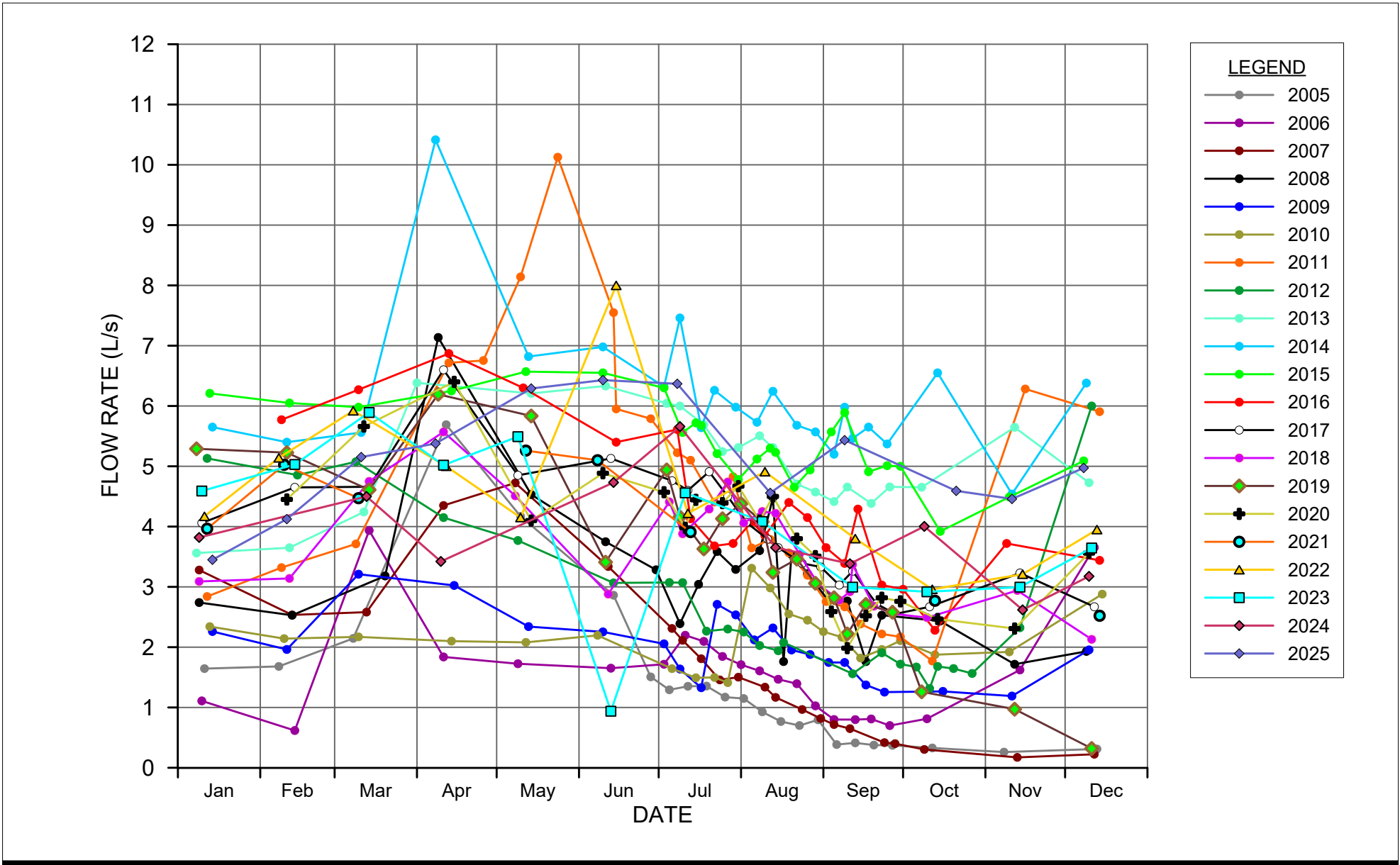


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 03, 2026

SUPPLEMENTAL MONITORING  
WELL GRAPH - OW69-08

**FIGURE 5.39**

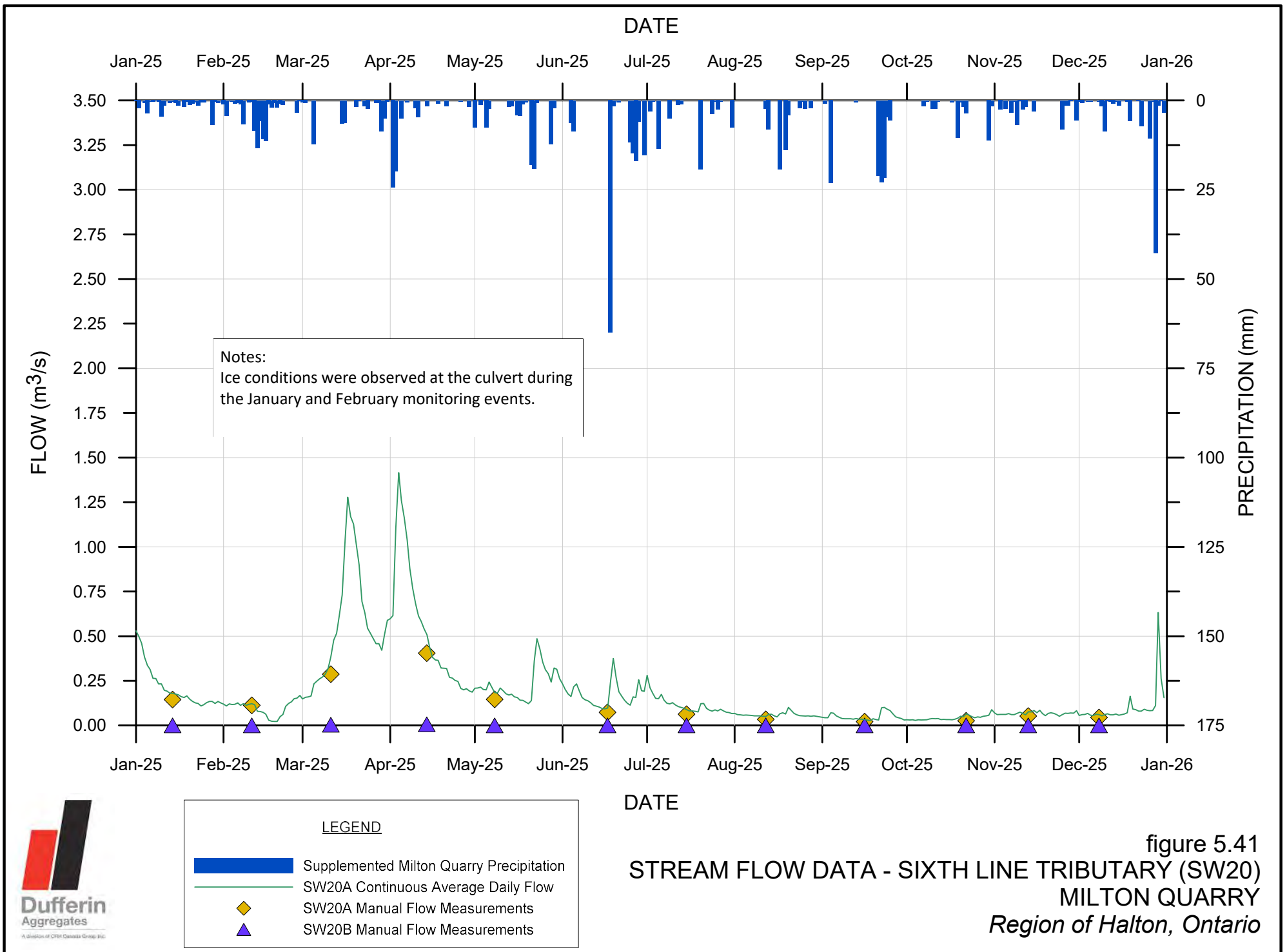


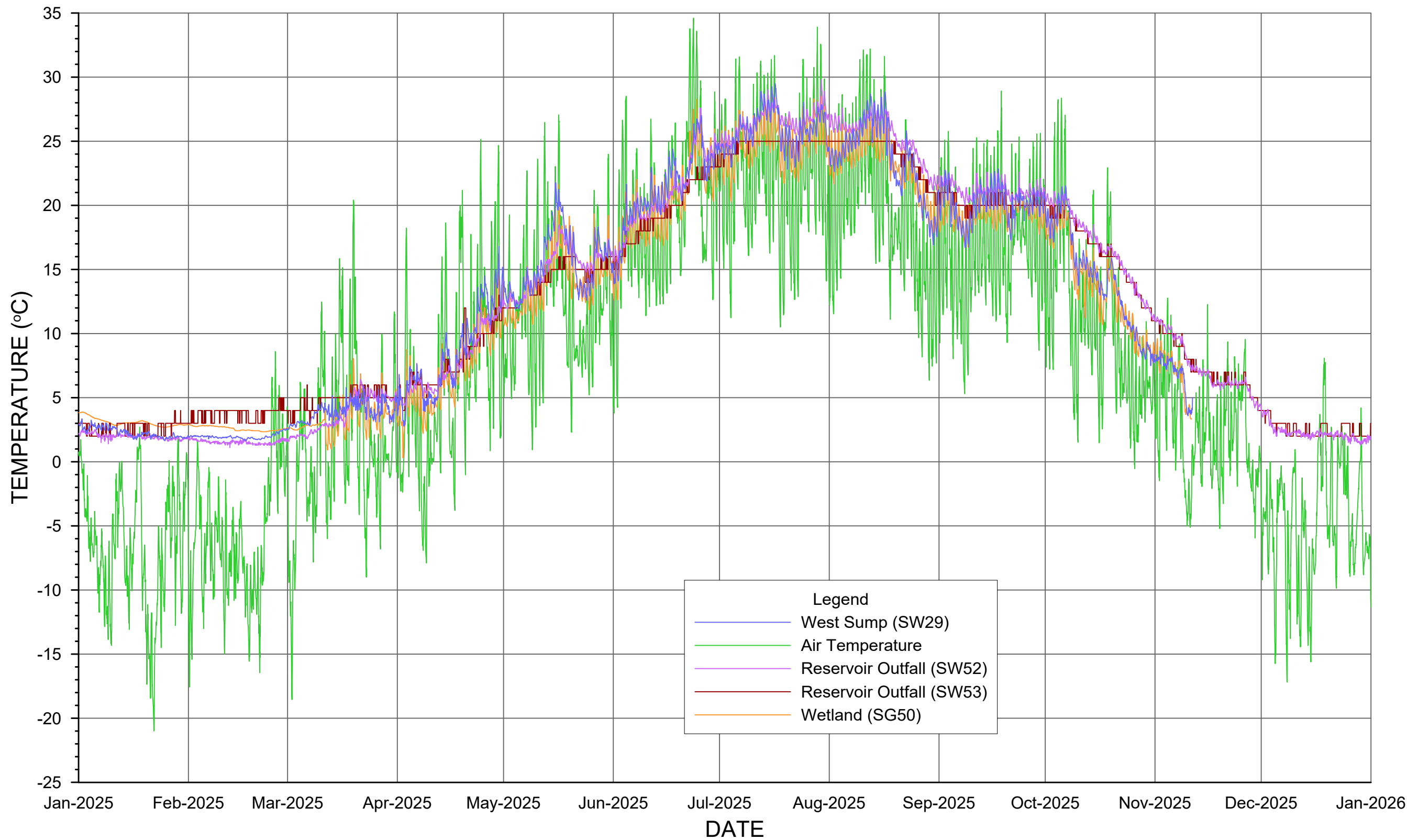
DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 03, 2026

FLOW DATA - SW4

FIGURE 5.40



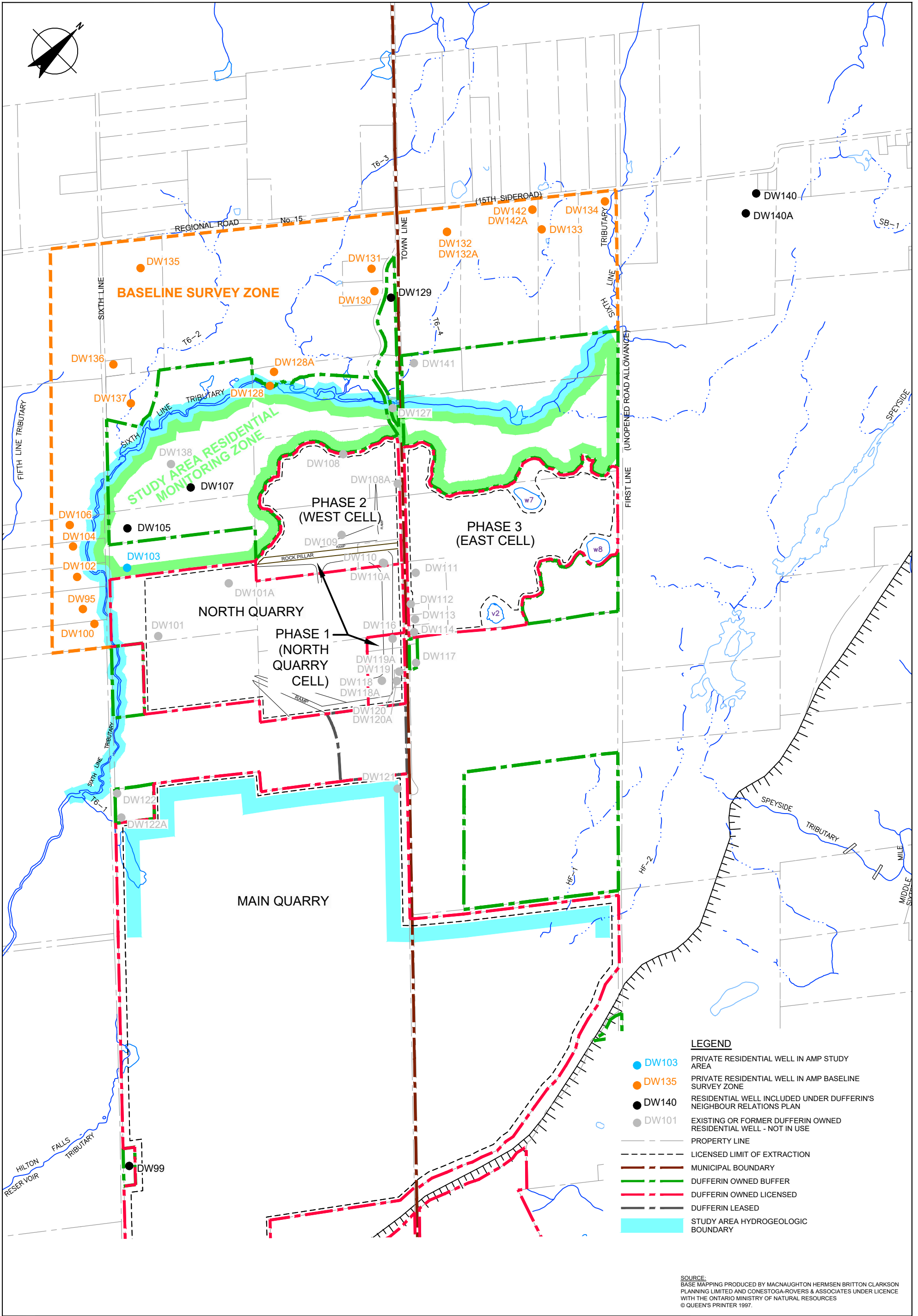


DUFFERIN AGGREGATES - MILTON QUARRY  
REGION OF HALTON, ONTARIO

Project No. 010978  
Date February 26, 2026

WATER TEMPERATURE  
QUARRY DISCHARGE

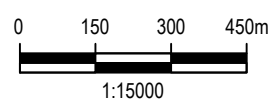
FIGURE 7.1



**LEGEND**

- DW103 PRIVATE RESIDENTIAL WELL IN AMP STUDY AREA
- DW135 PRIVATE RESIDENTIAL WELL IN AMP BASELINE SURVEY ZONE
- DW140 RESIDENTIAL WELL INCLUDED UNDER DUFFERIN'S NEIGHBOUR RELATIONS PLAN
- DW101 EXISTING OR FORMER DUFFERIN OWNED RESIDENTIAL WELL - NOT IN USE
- PROPERTY LINE
- LICENSED LIMIT OF EXTRACTION
- MUNICIPAL BOUNDARY
- DUFFERIN OWNED BUFFER
- DUFFERIN OWNED LICENSED
- DUFFERIN LEASED
- STUDY AREA HYDROGEOLOGIC BOUNDARY

SOURCE:  
BASE MAPPING PRODUCED BY MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED AND CONESTOGA-ROVERS & ASSOCIATES UNDER LICENCE WITH THE ONTARIO MINISTRY OF NATURAL RESOURCES  
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MILTON QUARRY  
REGION OF HALTON, ONTARIO

**RESIDENTIAL WELL MONITORING  
LOCATIONS FOR  
MONITORING/BASELINE SURVEY**

Project No. 10978  
Date February 2026

**FIGURE 8.1**

# Tables

Table 2.1

**Summary of AMP Monitoring Program  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

AMP Section Reference	Description of Requirement	Minimum Frequency	Annual Monitoring Report Reference
<b>Performance Monitoring/Response Program</b>			
3.1	Water level monitoring at trigger wells	Monthly - Manual Measurements Daily - Automated Water Level Recorders at 5 wells	5.2, 5.3
3.1	Water level monitoring at trigger wells - After extraction proceeds below water table in adjacent phase	Bi-weekly - Manual Measurements	5.2, 5.3
3.1	Water level monitoring at trigger wells - When dewatering influence is observed at recharge alignment wells	Weekly - Manual Measurements	5.2, 5.3
3.1	Water level monitoring at select trigger wells - Recharge initiation/modification, response to extraction, extraction within 100m of recharge alignment	Day following extraction plus subsequent three business days (formerly daily for 2 weeks - Manual Measurements)	5.3.1
3.2	Water Quality monitoring of reservoir	Monthly	7.2
3.2	Water Quality monitoring of recharge pumping station	Monthly	7.3.1
3.2	Water Quality monitoring of remote location on recharge system	Monthly	7.3.2
3.2	Water Quality monitoring of inflows to reservoir	Monthly	7.4
<b>Supplemental Monitoring Program</b>			
4.1	Groundwater levels at selected/new groundwater monitoring well locations	Monthly	5.5
4.2	Groundwater levels at minimum of four background monitoring locations beyond the study area in the general vicinity of the Milton Quarry	Monthly - Manual Measurements Daily - Automated water level recorders	5, 5.5
4.3	Meteorological data	Milton Quarry Station - 6 Automated Readings per Day Georgetown Station - As Available Scotch Block Dam - As Available	4.0
4.4	Water levels in the reservoir at the pumping station	"Continuous" - With Automated Water Level Recorder	5.1.1
4.4	Water levels in the lake/wetland	Weekly	5.1.1
4.4	Totalized water flow at inflow/transfer/outflow points	Weekly	6.0

Table 2.1

**Summary of AMP Monitoring Program  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

<b>AMP Section Reference</b>	<b>Description of Requirement</b>	<b>Minimum Frequency</b>	<b>Annual Monitoring Report Reference</b>
4.5	Surface water and groundwater levels at 5 wetland stations (W10, W15, W17, W21, and W41) plus new station at western wetland (W5)	Monthly (biweekly for April-July)	5.5
4.5	Photos at photographic stations in minimum of 6 wetlands (as above)	Seasonally (see Section 4.5 of AMP)	9.2
4.5	Jefferson Salamander egg mass and frog calling surveys in minimum of 6 wetlands (as above)	Seasonally (see Section 4.5 of AMP)	9.2
4.5	Wetland vegetation monitoring in 6 wetlands (as above)	Seasonally (see Section 4.5 of AMP)	9.2
4.5	Brook Trout redd survey in Sixth Line Tributary north of Extension Lands	Seasonally (see Section 4.5 of AMP)	9.1.1
4.5	Benthic monitoring at two stations upstream of Townline Road	Seasonally (see Section 4.5 of AMP)	9.1.2
4.5	Groundwater temperature monitoring at four trigger wells and associated creek locations and recharge system locations	Monthly - Mar, Apr, May, Jun, Oct, Nov, Dec Weekly - Jan, Feb, Jul, Aug, and Sep	7.5
4.5	Water discharge from former pumphouse (SW4)	Monthly - Jan, Feb, Mar, Apr, May, Jun, Oct, Nov, Dec Weekly - Jul, Aug, Sep	5.5.4
4.6	Residential wells in monitoring zone (Figure 4.1 of AMP)	Quarterly	8.0
<b>On-Site Wetlands Monitoring Program</b>			
3.1 and Appendix C	Surface water level monitoring at on-Site wetlands	Monthly	5.3.2
Appendix C	Surface water level monitoring at on-Site wetlands - Extraction proceeds below water table	Bi-weekly	5.3.2
Appendix C	Surface water level monitoring at on-Site wetlands - Water Levels below target level	Twice Weekly	5.3.2

**Notes:**

This monitoring program includes the monitoring required by the AMP for the pre-extraction and extraction period as extraction began in the Extension in May 2013. There are no criteria/limits for the monitoring results during the pre-extraction period. See Table 2.2 for monitoring requirements associated with the West Cell portion of the groundwater recharge well system.

Table 2.2

**Summary of Non-AMP Monitoring Requirements  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Reference to Permit or Agreement				Description of Requirement	Criterion/Limit	Annual Monitoring Report Reference
ECA A-500-9336689907 (Formerly 3406-8U6RQ5; 6124-C42GL4)	PTTW P-300-1533635456 (Formerly 5256-BUUP62)	LRIA AUR-45-03/04	CH Extension Quarry Agreement			
7.4.1	NA	NA	2.14.2	Water quality monitoring of the Recharge Pond overflow effluent	TSS = 25 mg/L (arithmetic mean for month) Oil and Grease = 15 mg/L Un-ionized Ammonia = 0.02 mg/L pH = 6.0 to 9.5	NA
7.4.2	NA	NA	2.14.2	Water quality monitoring at upstream (SW10) and downstream (SW13) locations in the Sixth Line Tributary	Same as above	NA
7.4.4	NA	NA	2.14.2	Water quality monitoring of the discharge from the Recharge Pumping Station to the North Quarry Recharge System	Same as above	7.3.1
7.4.5	NA	F.4, F.5, F.6, F.7, and F.8	2.14.1(d)	Water quality monitoring from Main Quarry West Sump and/or Reservoir to the HFRT	Same as above	7.2
7.5	NA	NA	2.14.2	North Quarry Recharge Pond Overflow (flowrate and totalized flow)	NA	NA
NA	3.2	NA	2.14.2	North Quarry and Extension Dewatering (flowrate and totalized flow)	45,000 L/min; 64,800,000 L/day; 1,359,000,000 L/year <sup>(1)</sup>	6.2.1
9.4	3.2	NA	2.14.2	Recharge Pumping Station (flowrate and totalized flow)	36,000 L/min; 51,840,000 L/day; 18,921,600,000 L/year	6.2.2
7.5	3.7	NA	2.14.1(d)	Main Quarry Discharge, Interim Conditions (flowrate and totalized flow)	12,000 L/min; 17,280,000 L/Day; 4,464,000,000 L/year <sup>(2)</sup>	6.2.3
9.4	NA	NA	2.14.2	Individual Recharge Wells (flowrate and totalized flow)	NA	6.2.2
NA	4.3	NA	NA	Calculation of the overall Water Taking for the Milton Quarry	NA	6.3
NA	4.4	NA	2.14.1(b) and (c)	Water level monitoring at MW1, MW2, MW3, MW4, MW5, OW18-03, and OW19-03	NA	5.1.2, 5.5
NA	4.4	NA	2.14.2	Water level monitoring at BH37 and DW113A	NA	5.2.1, 5.5
8.1	4.4	NA	2.14.2	Water levels at Trigger Wells	NA	5.2.1, 5.3.1
8.1	4.4	NA	2.14.2	Water levels at Recharge Monitoring Wells	NA	5.2.2, 5.3.3
NA	4.4	NA	2.14.1(e)	Water levels at Background Monitoring Wells	NA	5, 5.5

**Summary of Non-AMP Monitoring Requirements  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Reference to Permit or Agreement				Description of Requirement	Criterion/Limit	Annual Monitoring Report Reference
ECA A-500-9336689907 (Formerly 3406-8U6RQ5; 6124-C42GL4)	PTTW P-300-1533635456 (Formerly 5256-BUUP62)	LRIA AUR-45-03/04	CH Extension Quarry Agreement			
NA	4.4	NA	2.14.1(b)	Water levels at W7, W8, and V2	NA	5.3.2
NA	4.4	NA	2.14.2	Water levels at wetlands W5, W10, W15, W17, W21, and W41	NA	5.5
NA	4.4	NA	2.14.1(e)	Water level monitoring at domestic wells DW108A, DW111, and DW116A	NA	NA (abandoned)
NA	4.4	NA	2.14.1(b)	Surface water level and flow at the weir on the Sixth Line Tributary (SW20)	NA	5.5.5
NA	4.4	NA	2.14.1(a)	Meteorological data, including air temperature, precipitation, and evaporation	NA	4.0
9.1, 9.2, and 9.3	NA	NA	2.14.2	Water quality monitoring at three Recharge Monitoring Wells (including the first and last recharge wells along the distribution header and the closest recharge well to DW103)	NA	7.1, 7.3.2
10.0	NA	NA	2.14.2	Ecological monitoring of Brook Trout spawning Sixth Line Tributary near the North Quarry	NA	9.1.1
NA	NA	NA	2.14.1(f)	Main Quarry Ecological Monitoring	NA	9.0
11.0	4.5	NA	2.14.1	Performance reporting	NA	entire Annual Water Monitoring Report

## Note:

NA Not Applicable

(1) Annual limit is estimated from 2006 flow plus increased taking due to reduced evapotranspiration and capture runoff over additional extracted area of the North Quarry and Extension.

(2) The annual limit is less than expected given the relatively higher limits on the instantaneous and daily flows. The relatively lower annual limit has been found to be sufficient over many years of operation; therefore, Dufferin has not applied for a higher limit.

**2025 Monthly Air Temperature  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

<b>Month</b>	<b>2025 Measured Average Monthly Air Temperature Milton Quarry <sup>(1)</sup> (° C)</b>	<b>Historical Measured Average Monthly Air Temperature Milton Quarry <sup>(2)</sup> (° C)</b>	<b>2025 Average Air Temperature Difference from Historical Average (° C)</b>
January	-6.6	-5.5	-1.1
February	-5.9	-5.0	-0.9
March	1.3	-0.2	1.4
April	6.5	6.1	0.4
May	12.2	13.1	-0.9
June	19.5	18.4	1.1
July	22.4	20.8	1.6
August	19.7	20.1	-0.4
September	16.9	16.3	0.6
October	10.7	9.7	1.0
November	2.4	3.1	-0.7
December	-4.6	-2.1	-2.5
<b>Average</b>	<b>7.87</b>	<b>7.90</b>	<b>-0.03</b>

**Notes:**

- (1) The Site weather station measures air temperature every 5 seconds and records hourly average temperatures. Previously, when air temperature measurements were not available for the Site the data was supplemented with temperature data from Acton Wastewater Treatment Plant (WWTP) located approximately 9 km from the Site. During 2024 and onward, missing air temperature data was supplemented with newly acquired Scotch Block Dam (Conservation Halton) data located approximately 3 km from the Site.
- (2) Air temperature data was collected at the quarry from 1995 to 1998 and then from 2000 to present.

**Monthly Precipitation Data  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

<b>Month</b>	<b>Measured Milton Quarry Precipitation from Weather Station <sup>(1)</sup> (mm)</b>	<b>Supplemented Milton Quarry Precipitation <sup>(2)</sup> (mm)</b>	<b>Mean Milton Quarry Precipitation <sup>(3)</sup> (mm)</b>	<b>Supplemented Georgetown WWTP Precipitation <sup>(4)</sup> (mm)</b>	<b>Mean Georgetown WWTP Precipitation <sup>(5)</sup> (mm)</b>
January	-	32.3	70.5	28.2	64.5
February	-	77.0	52.8	49.6	56.9
March	-	47.7	59.9	64.8	62.3
April	13.0	62.2	83.2	82	69.4
May	84.1	84.1	79.9	101	75.0
June	146.6	146.6	82.8	57.6	73.8
July	57.9	57.9	84.8	74	78.7
August	54.4	54.4	71.1	63.8	77.9
September	100.1	100.1	72.0	65.8	70.2
October	36.1	36.1	75.2	44	68.3
November	8.4	39.4	68.6	43	70.2
December	-	87.9	63.5	20	64.8
<b>Total:</b>	500.4	825.5	864.2	693.8	832.0

## Notes:

- (1) The Milton Quarry weather station was fitted for rainfall data collection (tipping bucket) from April 7, 2025 to November 10, 2025. The partial data collected in April and November are presented for completeness, but should not be compared to average values.
- (2) Previously, Georgetown WWTP and Acton WWTP precipitation data were used to fill in data for the missing periods. From 2024 onward, newly acquired Scotch Block Dam tipping bucket and Geonor weighing gauge (Conservation Halton) data was used to supplement missing data. Data for Scotch Block Dam (Conservation Halton) and Acton WWTP (Credit Valley Conservation Authority) has only undergone preliminary quality checking
- (3) The mean is calculated for the period from 1991 onward and excluding the present year.
- (4) Precipitation data was obtained for the Georgetown Wastewater Treatment Plant (WWTP). Data was ordered from the Ontario Climate Centre in January 2026. Toronto International Airport data was utilized to supplement missing Georgetown WWTP data. Data for Georgetown WWTP has only undergone preliminary quality checking by the OCC for January through December 2025.
- (5) The mean is calculated for the period from 1882 to 2024 (143 year record).

Table 4.3

**Monthly Evaporation  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

<b>Month</b>	<b>Measured Lake Evaporation <sup>(1)</sup> (mm)</b>	<b>Supplemented Lake Evaporation <sup>(2)</sup> (mm)</b>	<b>Average Lake Evaporation <sup>(3)</sup> (mm)</b>	<b>Supplemented and Average Evaporation (mm)</b>
January	-	25.7	25.7	0.0
February	-	25.7	25.7	0.0
March	-	25.7	25.7	0.0
April	49.2	25.7	25.7	0.0
May	95.9	67.1	84.5	-17.4
June	132.3	92.6	104.4	-11.8
July	122.3	85.6	109.0	-23.4
August	132.0	92.4	92.0	0.4
September	80.1	56.1	66.3	-10.3
October	33.1	23.1	44.9	-21.7
November	15.4	25.7	25.7	0.0
December	-	25.7	25.7	0.0
<b>Total:</b>	660.1	570.9	655.3	-84.4

## Notes:

- (1) Measured lake evaporation is obtained by multiplying measured pan evaporation by a 0.70 correction factor.
- (2) Over-winter total evaporation is estimated to be 154 mm and is added to measured lake evaporation data from May to October as per the analysis presented in the 5-Year AMP review.
- (3) Lake Evaporation average does not include 1996 to 2000 (inclusive) and 2004. Average not inclusive of present year.

Table 5.1a

**Summary of 2026 Target Levels - Winter  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Location	Trigger Well	2025 Target (m AMSL)	2026 Target (m AMSL)	Difference
North Quarry	BH37	315.66	315.52	-0.14
North Quarry	BH55	313.01	312.96	-0.05
North Quarry	BH56	312.69	312.65	-0.04
North Quarry	BH57-III	313.45	313.39	-0.06
North Quarry	BH59	313.91	313.86	-0.05
North Quarry	BH60	314.33	314.29	-0.04
North Quarry	BH61-III	314.22	314.18	-0.04
West Cell	OW27-04	317.51	317.49	-0.02
West Cell	OW28-04	318.04	318.02	-0.02
West Cell	OW29-04	318.12	318.10	-0.02
West Cell	OW30-04	318.15	318.14	-0.01
West Cell	OW31-04	319.06	318.86	-0.20
West Cell	OW32-04	320.18	320.04	-0.14
West Cell	OW33-04	322.48	322.44	-0.04
West Cell	OW34-04	323.45	323.44	-0.01
West Cell	OW35-04	323.66	323.65	-0.01
West Cell	OW36-04	323.70	323.66	-0.04
West Cell	OW37-04	323.78	323.77	-0.01
West Cell	OW38-04	324.73	324.54	-0.19
East Cell	BH48	330.19	330.11	-0.08
East Cell	OW52-07	335.59	335.37	-0.22
East Cell	OW5-80	335.84	335.65	-0.19
East Cell	OW60-07	323.63	323.62	-0.01
East Cell	OW61-07	324.48	324.32	-0.16
East Cell	OW62-07	324.26	324.25	-0.01
East Cell	OW63-07	324.54	324.47	-0.07
East Cell	OW64-07	325.01	324.95	-0.06
East Cell	OW65-07	333.17	332.99	-0.18
East Cell	OW66-07	334.46	334.23	-0.23
East Cell	OW70-08	336.86	336.26	-0.60
East Cell	OW71-08	335.91	335.58	-0.33
On-Site Wetlands	W7	333.27	333.25	-0.02
On-Site Wetlands	W8	336.07	335.96	-0.11
On-Site Wetlands	V2	-- <sup>(1)</sup> /340.30 <sup>(2)</sup>	-- <sup>(1)</sup> /340.30 <sup>(2)</sup>	0.00 <sup>(3)</sup>

Table 5.1b

**Summary of 2026 Target Levels - Spring  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Location	Trigger Well	2025 Target (m AMSL)	2026 Target (m AMSL)	Difference
North Quarry	BH37	315.54	315.56	0.02
North Quarry	BH55	312.83	312.84	0.01
North Quarry	BH56	312.55	312.55	0.00
North Quarry	BH57-III	313.40	313.41	0.01
North Quarry	BH59	313.87	313.87	0.00
North Quarry	BH60	314.17	314.18	0.01
North Quarry	BH61-III	314.08	314.08	0.00
West Cell	OW27-04	317.21	317.25	0.04
West Cell	OW28-04	317.81	317.85	0.04
West Cell	OW29-04	317.86	317.90	0.04
West Cell	OW30-04	318.04	318.07	0.03
West Cell	OW31-04	319.91	319.94	0.03
West Cell	OW32-04	320.78	320.80	0.02
West Cell	OW33-04	322.12	322.22	0.10
West Cell	OW34-04	323.32	323.34	0.02
West Cell	OW35-04	323.57	323.60	0.03
West Cell	OW36-04	323.72	323.72	0.00
West Cell	OW37-04	323.76	323.79	0.03
West Cell	OW38-04	325.60	325.63	0.03
East Cell	BH48	330.50	330.51	0.01
East Cell	OW52-07	336.43	336.45	0.02
East Cell	OW5-80	336.63	336.65	0.02
East Cell	OW60-07	323.68	323.70	0.02
East Cell	OW61-07	324.85	324.87	0.02
East Cell	OW62-07	324.19	324.23	0.04
East Cell	OW63-07	324.61	324.62	0.01
East Cell	OW64-07	325.10	325.11	0.01
East Cell	OW65-07	333.83	333.86	0.03
East Cell	OW66-07	335.28	335.30	0.02
East Cell	OW70-08	339.40	339.47	0.07
East Cell	OW71-08	337.11	337.15	0.04
On-Site Wetlands	W7	333.79 (April)	333.87 (April)	0.08
On-Site Wetlands	W7	333.70 (May)	333.68 (May)	-0.02
On-Site Wetlands	W7	333.55 (June)	333.63 (June)	0.08
On-Site Wetlands	W8	336.30 <sup>(7)</sup> (April)	336.30 <sup>(7)</sup> (April)	0.00
On-Site Wetlands	W8	336.30 <sup>(7)</sup> (May)	336.30 <sup>(7)</sup> (May)	0.00
On-Site Wetlands	W8	336.30 <sup>(7)</sup> (June)	336.30 <sup>(7)</sup> (June)	0.00
On-Site Wetlands	V2	340.30 <sup>(3)</sup> (April)	340.30 <sup>(3)</sup> (April)	0.00
On-Site Wetlands	V2	340.22 <sup>(4)</sup> /340.13 <sup>(5)</sup> (May)	340.22 <sup>(4)</sup> /340.13 <sup>(5)</sup> (May)	0.00 <sup>(3)</sup>
On-Site Wetlands	V2	340.05 <sup>(4)</sup> /339.97 <sup>(5)</sup> (June)	340.05 <sup>(4)</sup> /339.97 <sup>(5)</sup> (June)	0.00 <sup>(3)</sup>

Table 5.1c

**Summary of 2026 Target Levels - Summer  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Location	Trigger Well	2025 Target (m AMSL)	2026 Target (m AMSL)	Difference
North Quarry	BH37	315.63	315.75	0.00
North Quarry	BH55	312.76	312.80	0.04
North Quarry	BH56	312.50	312.53	0.03
North Quarry	BH57-III	313.44	313.49	0.05
North Quarry	BH59	313.91	313.95	0.04
North Quarry	BH60	314.12	314.16	0.04
North Quarry	BH61-III	314.04	314.07	0.03
West Cell	OW27-04	317.41	317.55	0.14
West Cell	OW28-04	317.98	318.12	0.14
West Cell	OW29-04	318.03	318.15	0.12
West Cell	OW30-04	318.16	318.27	0.11
West Cell	OW31-04	319.34	319.50	0.16
West Cell	OW32-04	320.17	320.29	0.12
West Cell	OW33-04	322.59	322.94	0.35
West Cell	OW34-04	323.47	323.54	0.07
West Cell	OW35-04	323.71	323.80	0.09
West Cell	OW36-04	323.74	323.77	0.03
West Cell	OW37-04	323.89	323.98	0.09
West Cell	OW38-04	325.58	325.75	0.17
East Cell	BH48	330.35	330.40	0.05
East Cell	OW52-07	335.65	335.78	0.13
East Cell	OW5-80	335.90	336.01	0.11
East Cell	OW60-07	323.71	323.78	0.07
East Cell	OW61-07	324.59	324.68	0.09
East Cell	OW62-07	324.26	324.38	0.12
East Cell	OW63-07	324.61	324.67	0.06
East Cell	OW64-07	325.13	325.19	0.06
East Cell	OW65-07	333.19	333.30	0.11
East Cell	OW66-07	334.37	334.51	0.14
East Cell	OW70-08	337.87	338.22	0.35
East Cell	OW71-08	336.22	336.41	0.19
On-Site Wetlands	W7	333.24	333.40	0.16
On-Site Wetlands	W8	336.30	336.36	0.06
On-Site Wetlands	V2	339.88 <sup>(4)</sup> /339.80 <sup>(5)</sup> (July)	339.88 <sup>(4)</sup> /339.80 <sup>(5)</sup> (July)	0.00 <sup>(3)</sup>
On-Site Wetlands	V2	-- <sup>(1)</sup> (August)	-- <sup>(1)</sup> (August)	0.00 <sup>(3)</sup>

Table 5.1d

**Summary of 2026 Target Levels - Fall  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Location	Trigger Well	2025 Target (m AMSL)	2026 Target (m AMSL)	Difference
North Quarry	BH37	314.76	314.81	0.05
North Quarry	BH55	312.57	312.59	0.02
North Quarry	BH56	312.35	312.36	0.01
North Quarry	BH57-III	313.09	313.11	0.02
North Quarry	BH59	313.59	313.60	0.01
North Quarry	BH60	313.95	313.96	0.01
North Quarry	BH61-III	313.85	313.86	0.01
West Cell	OW27-04	316.97	317.06	0.09
West Cell	OW28-04	317.57	317.66	0.09
West Cell	OW29-04	317.65	317.73	0.08
West Cell	OW30-04	317.79	317.86	0.07
West Cell	OW31-04	317.79	317.87	0.08
West Cell	OW32-04	319.23	319.29	0.06
West Cell	OW33-04	321.61	321.82	0.21
West Cell	OW34-04	323.25	323.30	0.05
West Cell	OW35-04	323.41	323.47	0.06
West Cell	OW36-04	323.46	323.48	0.02
West Cell	OW37-04	323.58	323.64	0.06
West Cell	OW38-04	323.99	324.07	0.08
East Cell	BH48	329.94	329.97	0.03
East Cell	OW52-07	334.53	334.64	0.11
East Cell	OW5-80	334.90	334.98	0.08
East Cell	OW60-07	323.54	323.58	0.04
East Cell	OW61-07	323.87	323.95	0.08
East Cell	OW62-07	323.98	324.05	0.07
East Cell	OW63-07	324.21	324.24	0.03
East Cell	OW64-07	324.72	324.75	0.03
East Cell	OW65-07	332.28	332.36	0.08
East Cell	OW66-07	333.32	333.43	0.11
East Cell	OW70-08	334.87	335.15	0.28
East Cell	OW71-08	334.63	334.78	0.15
On-Site Wetlands	W7	332.90 <sup>(6)</sup>	333.00 <sup>(6)</sup>	0.10
On-Site Wetlands	W8	335.54	335.59	0.05
On-Site Wetlands	V2	-- <sup>(1)</sup>	-- <sup>(1)</sup>	0.00 <sup>(3)</sup>

Table 5.1e

**Summary of 2026 Target Levels - Notes**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

## Notes:

NA Not applicable.

- (1) No target level to be implemented during this period.
- (2) Target level to be implemented in anticipation of spring freshet based on short-term weather forecast (typically occurs in mid to late March).
- (3) V2 target levels do not change as per Section 6.0 of The Establishment of Extension Target Levels and Minimum Levels (CRA, 2011b).
- (4) Target level for first half of month.
- (5) Target level for second half of month.
- (6) Feature to be allowed to go dry for 1 to 2 months every 2 to 3 years [refer to "Establishment of Target Levels and Minimum Levels" (CRA, 2011b)], however, due to the presence of a snapping turtle discovered in September 2014, it is recommended by GEC to maintain water levels year round to support turtle use.
- (7) The Target level cannot be higher than the maximum elevation of the edge/embankment surrounding the wetland (with an allowance for freeboard); therefore, calculated Target is replaced to match the maximum elevation.

Table 6.1

2025 North Quarry and Extension Dewatering  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario

Daily Flow Totals <sup>(1)</sup>				Daily Flow Totals <sup>(1)</sup>				Daily Flow Totals <sup>(1)</sup>				Daily Flow Totals <sup>(1)</sup>				Daily Flow Totals <sup>(1)</sup>			
Date	To Reservoir m <sup>3</sup>	To Operations m <sup>3</sup>	Total (PTTW Limit = 64,800) m <sup>3</sup>	Date	To Reservoir m <sup>3</sup>	To Operations m <sup>3</sup>	Total (PTTW Limit = 64,800) m <sup>3</sup>	Date	To Reservoir m <sup>3</sup>	To Operations m <sup>3</sup>	Total (PTTW Limit = 64,800) m <sup>3</sup>	Date	To Reservoir m <sup>3</sup>	To Operations m <sup>3</sup>	Total (PTTW Limit = 64,800) m <sup>3</sup>	Date	To Reservoir m <sup>3</sup>	To Operations m <sup>3</sup>	Total (PTTW Limit = 64,800) m <sup>3</sup>
1/1/2025	10,159	0	10,159	3/13/2025	22,130	0	22,130	5/23/2025	18,191	0	18,191	8/2/2025	10,761	0	10,761	10/12/2024	7,523	0	7,523
1/2/2025	10,159	0	10,159	3/14/2025	9,719	0	9,719	5/24/2025	17,594	0	17,594	8/3/2025	10,761	0	10,761	10/13/2024	9,567	0	9,567
1/3/2025	10,159	0	10,159	3/15/2025	9,719	0	9,719	5/25/2025	17,594	0	17,594	8/4/2025	10,761	0	10,761	10/14/2024	8,184	0	8,184
1/4/2025	10,159	0	10,159	3/16/2025	9,719	0	9,719	5/26/2025	18,715	0	18,715	8/5/2025	10,761	0	10,761	10/15/2024	5,709	0	5,709
1/5/2025	10,159	0	10,159	3/17/2025	9,719	0	9,719	5/27/2025	19,357	0	19,357	8/6/2025	10,761	0	10,761	10/16/2024	9,523	0	9,523
1/6/2025	10,159	0	10,159	3/18/2025	9,719	0	9,719	5/28/2025	19,273	0	19,273	8/7/2025	13,576	0	13,576	10/17/2024	9,361	0	9,361
1/7/2025	16,401	0	16,401	3/19/2025	9,719	0	9,719	5/29/2025	14,991	0	14,991	8/8/2025	15,446	0	15,446	10/18/2024	7,931	0	7,931
1/8/2025	23,370	0	23,370	3/20/2025	11,491	0	11,491	5/30/2025	12,734	0	12,734	8/9/2025	9,467	0	9,467	10/19/2024	7,931	0	7,931
1/9/2025	22,674	0	22,674	3/21/2025	13,935	0	13,935	5/31/2025	12,734	0	12,734	8/10/2025	9,081	0	9,081	10/20/2024	7,931	0	7,931
1/10/2025	22,261	0	22,261	3/22/2025	28,650	0	28,650	6/1/2025	12,734	0	12,734	8/11/2025	15,951	0	15,951	10/21/2024	12,041	0	12,041
1/11/2025	22,261	0	22,261	3/23/2025	33,936	0	33,936	6/2/2025	24,998	0	24,998	8/12/2025	8,672	0	8,672	10/22/2024	7,258	0	7,258
1/12/2025	22,261	0	22,261	3/24/2025	26,660	0	26,660	6/3/2025	13,806	0	13,806	8/13/2025	5,221	0	5,221	10/23/2024	6,818	0	6,818
1/13/2025	22,261	0	22,261	3/25/2025	22,804	0	22,804	6/4/2025	13,806	0	13,806	8/14/2025	10,436	0	10,436	10/24/2024	6,733	0	6,733
1/14/2025	22,261	0	22,261	3/26/2025	22,830	0	22,830	6/5/2025	14,080	0	14,080	8/15/2025	4,893	0	4,893	10/25/2024	6,733	0	6,733
1/15/2025	22,261	0	22,261	3/27/2025	19,057	0	19,057	6/6/2025	14,249	0	14,249	8/16/2025	2,574	0	2,574	10/26/2024	6,733	0	6,733
1/16/2025	13,650	0	13,650	3/28/2025	12,315	0	12,315	6/7/2025	14,249	0	14,249	8/17/2025	2,574	0	2,574	10/27/2024	6,733	0	6,733
1/17/2025	8,171	0	8,171	3/29/2025	8,380	0	8,380	6/8/2025	14,249	0	14,249	8/18/2025	22,518	0	22,518	10/28/2024	6,733	0	6,733
1/18/2025	8,171	0	8,171	3/30/2025	8,380	0	8,380	6/9/2025	15,003	0	15,003	8/19/2025	21,275	0	21,275	10/29/2024	6,733	0	6,733
1/19/2025	8,171	0	8,171	3/31/2025	8,470	0	8,470	6/10/2025	11,909	0	11,909	8/20/2025	18,861	0	18,861	10/30/2024	14,216	0	14,216
1/20/2025	8,171	0	8,171	4/1/2025	12,497	0	12,497	6/11/2025	9,372	0	9,372	8/21/2025	11,296	0	11,296	10/31/2024	13,541	0	13,541
1/21/2025	8,171	0	8,171	4/2/2025	16,069	0	16,069	6/12/2025	5,451	0	5,451	8/22/2025	16,380	0	16,380	11/1/2025	13,202	0	13,202
1/22/2025	8,171	0	8,171	4/3/2025	23,857	0	23,857	6/13/2025	2,473	0	2,473	8/23/2025	18,786	0	18,786	11/2/2025	13,202	0	13,202
1/23/2025	8,171	0	8,171	4/4/2025	28,080	0	28,080	6/14/2025	2,473	0	2,473	8/24/2025	18,786	0	18,786	11/3/2025	13,202	0	13,202
1/24/2025	10,287	0	10,287	4/5/2025	27,576	0	27,576	6/15/2025	2,473	0	2,473	8/25/2025	16,534	0	16,534	11/4/2025	8,952	0	8,952
1/25/2025	11,541	0	11,541	4/6/2025	27,576	0	27,576	6/16/2025	2,473	0	2,473	8/26/2025	15,397	0	15,397	11/5/2025	7,630	0	7,630
1/26/2025	11,541	0	11,541	4/7/2025	29,622	0	29,622	6/17/2025	4,377	0	4,377	8/27/2025	14,949	0	14,949	11/6/2025	9,803	0	9,803
1/27/2025	11,541	0	11,541	4/8/2025	28,975	0	28,975	6/18/2025	5,866	0	5,866	8/28/2025	13,126	0	13,126	11/7/2025	8,316	0	8,316
1/28/2025	11,541	0	11,541	4/9/2025	19,884	0	19,884	6/19/2025	8,447	0	8,447	8/29/2025	10,638	0	10,638	11/8/2025	8,129	0	8,129
1/29/2025	11,541	0	11,541	4/10/2025	11,094	0	11,094	6/20/2025	10,471	0	10,471	8/30/2025	10,065	0	10,065	11/9/2025	8,129	0	8,129
1/30/2025	10,931	0	10,931	4/11/2025	9,467	0	9,467	6/21/2025	12,858	0	12,858	8/31/2025	10,065	0	10,065	11/10/2025	8,129	0	8,129
1/31/2025	10,600	0	10,600	4/12/2025	9,509	0	9,509	6/22/2025	13,628	0	13,628	9/1/2025	10,065	0	10,065	11/11/2025	8,129	0	8,129
2/1/2025	10,600	0	10,600	4/13/2025	9,509	0	9,509	6/23/2025	1,145	0	1,145	9/2/2025	10,435	0	10,435	11/12/2025	8,129	0	8,129
2/2/2025	10,600	0	10,600	4/14/2025	9,512	0	9,512	6/24/2025	16,965	0	16,965	9/3/2025	10,549	0	10,549	11/13/2025	7,900	0	7,900
2/3/2025	10,600	0	10,600	4/15/2025	11,025	0	11,025	6/25/2025	8,808	0	8,808	9/4/2025	10,485	0	10,485	11/14/2025	9,476	0	9,476
2/4/2025	7,855	0	7,855	4/16/2025	18,820	0	18,820	6/26/2025	10,581	0	10,581	9/5/2025	11,303	0	11,303	11/15/2025	9,591	0	9,591
2/5/2025	6,335	0	6,335	4/17/2025	19,332	0	19,332	6/27/2025	23,044	0	23,044	9/6/2025	13,703	0	13,703	11/16/2025	9,591	0	9,591
2/6/2025	6,356	0	6,356	4/18/2025	13,116	0	13,116	6/28/2025	22,979	0	22,979	9/7/2025	13,703	0	13,703	11/17/2025	9,591	0	9,591
2/7/2025	6,377	0	6,377	4/19/2025	5,855	0	5,855	6/29/2025	22,979	0	22,979	9/8/2025	6,364	0	6,364	11/18/2025	13,450	0	13,450
2/8/2025	6,384	0	6,384	4/20/2025	5,855	0	5,855	6/30/2025	22,950	0	22,950	9/9/2025	2,082	0	2,082	11/19/2025	7,382	0	7,382
2/9/2025	6,384	0	6,384	4/21/2025	6,244	0	6,244	7/1/2025	22,866	0	22,866	9/10/2025	24,162	0	24,162	11/20/2025	9,960	0	9,960
2/10/2025	14,994	0	14,994	4/22/2025	6,561	0	6,561	7/2/2025	22,866	0	22,866	9/11/2025	23,238	0	23,238	11/21/2025	8,180	0	8,180
2/11/2025	19,890	0	19,890	4/23/2025	4,215	0	4,215	7/3/2025	22,842	0	22,842	9/12/2025	12,963	0	12,963	11/22/2025	7,573	0	7,573
2/12/2025	19,890	0	19,890	4/24/2025	10,069	0	10,069	7/4/2025	22,785	0	22,785	9/13/2025	11,030	0	11,030	11/23/2025	7,573	0	7,573
2/13/2025	19,890	0	19,890	4/25/2025	13,498	0	13,498	7/5/2025	22,634	0	22,634	9/14/2025	11,030	0	11,030	11/24/2025	7,573	0	7,573
2/14/2025	17,905	0	17,905	4/26/2025	13,498	0	13,498	7/6/2025	22,634	0	22,634	9/15/2025	16,085	0	16,085	11/25/2025	11,323	0	11,323
2/15/2025	15,585	0	15,585	4/27/2025	13,498	0	13,498	7/7/2025	22,592	0	22,592	9/16/2025	14,406	0	14,406	11/26/2025	9,881	0	9,881
2/16/2025	15,585	0	15,585	4/28/2025	15,161	0	15,161	7/8/2025	22,443	0	22,443	9/17/2025	12,610	0	12,610	11/27/2025	8,395	0	8,395
2/17/2025	15,585	0	15,585	4/29/2025	16,776	0	16,776	7/9/2025	22,318	0	22,318	9/18/2025	6,971	0	6,971	11/28/2025	8,064	0	8,064
2/18/2025	15,585	0	15,585	4/30/2025	18,338	0	18,338	7/10/2025	22,240	0	22,240	9/19/2025	6,219	0	6,219	11/29/2025	8,054	0	8,054
2/19/2025	11,026	0	11,026	5/1/2025	19,397	0	19,397	7/11/2025	22,101	0	22,101	9/20/2025	7,065	0	7,065	11/30/2025	8,054	0	8,054
2/20/2025	6,668	0	6,668	5/2/2025	18,261	0	18,261	7/12/2025	21,795	0	21,795	9/21/2025	7,065	0	7,065	12/1/2025	8,054	0	8,054
2/21/2025	6,867	0	6,867	5/3/2025	17,647	0	17,647	7/13/2025	21,795	0	21,795	9/22/2025	7,065	0	7,065	12/2/2025	6,746	0	6,746
2/22/2025	6,806	0	6,806	5/4/2025	17,647	0	17,647	7/14/2025	21,795	0	21,795	9/23/2025	15,092	0	15,092	12/3/2025	6,691	0	6,691
2/23/2025	6,806	0	6,806	5/5/2025	18,755	0	18,755	7/15/2025	21,795	0	21,795	9/24/2025	24,466	0	24,466	12/4/2025	6,691	0	6,691
2/24/2025	7,088	0	7,088	5/6/2025	19,339	0	19,339	7/16/2025	21,795	0	21,795	9/25/2025	25,479	0	25,479	12/5/2025	6,879	0	6,879
2/25/2025	15,459	0	15,459	5/7/2025	19,281	0	19,281	7/17/2025	21,300	0	21,300	9/26/2025	16,						

**Comparison of North Quarry and Extension Discharge Quantities (2001 to 2025)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

<b>Year</b>	<b>Water Taking (L)<sup>(1)</sup></b>	<b>Water Handling (L)<sup>(3)</sup></b>
2001	--	160,324,000
2002	--	441,447,000
2003	--	503,697,473
2004	--	623,782,118
2005	--	718,895,348
2006	--	735,459,903
2007	751,411,935	450,934,401
2008	756,406,935	840,326,000
2009	774,907,749	1,253,041,000
2010	785,096,750	1,018,752,000
2011	793,129,909	1,368,801,000
2012	825,828,144	1,352,396,562
2013	848,527,089	2,067,246,824
2014	863,111,157	2,274,525,873
2015	877,254,333	2,861,391,838
2016	912,347,538	2,548,292,791
2017	925,485,054	2,909,817,514
2018	932,057,808	2,729,876,399
2019	949,501,647	3,389,753,863
2020	976,146,975	3,862,217,944
2021	990,645,129	4,250,870,986
2022	990,645,129	4,229,100,264
2023	990,645,129	3,849,489,274
2024	992,458,980	4,252,704,318
2025 <sup>(2)</sup>	795,657,885	4,642,997,899
<b>PTTW<sup>(4)</sup></b>	<b>1,359,000,000</b>	<b>23,652,000,000</b>

## Notes:

- (1) The water taking is calculated on an annual basis starting in 2007 because the North Quarry Recharge System became operational in 2007, at which time water taking and water handling are no longer the same because of the recirculation of water from the groundwater recharge well system. Prior to 2007 the water taking is based on a 1999 pump calibration by CRA.
- (2) Updates completed for the 5-Year AMP Review have resulted in revised estimates for long-term average precipitation, evapotranspiration, dry quarry evaporation, infiltration, and runoff. Annual water taking has been revised using the same methodology presented in item 2 of Schedule A to the PTTW 5256-BUUP62, which as replaced by P-300-1533635456 on July 31, 2025 (PTTW Report).
- (3) Limits of annual water taking and water handling allowed by  
- PTTW No. P-300-1533635456 effective July 31, 2025.
- (4) Limits of annual water taking and water handling allowed by  
- PTTW No. 0117-8BHQPL effective December 16, 2010  
- PTTW No. 8575-A3BKYB effective November 23, 2015  
- PTTW No. 5256-BUUP62 effective November 2, 2020  
- PTTW No. 300-1533635456 effective July 31, 2025

**2025 Recharge System Flows  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

<b>Month</b>	<b>Monthly Flow Totals at Recharge Pump Station (m<sup>3</sup>)</b>	<b>Monthly Sum of Recharge Well and Wetland Flow Totals (m<sup>3</sup>)</b>
January	458,962	393,789
February	412,544	388,796
March	457,302	501,871
April	444,221	407,232
May	487,366	428,016
June	469,153	532,899
July	473,251	425,866
August	463,539	400,597
September	324,856	341,617
October	293,433	254,019
November	275,067	240,925
December	345,962	375,885
TOTAL:	4,905,656	4,691,513
PTTW Limit:	18,921,600	--

**Main Quarry Discharge Summary (2025)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

Month	Lake Discharge 4' Pump (m <sup>3</sup> )	Reservoir Discharge (m <sup>3</sup> )	Total (m <sup>3</sup> )	Actual Average Flow <sup>(1)</sup> (m <sup>3</sup> /s)
January	23,410	51,930	75,340	0.028
February	25,262	56,709	81,971	0.034
March	36,486	97,672	134,158	0.050
April	26,835	106,982	133,817	0.052
May	39,794	100,250	140,044	0.052
June	35,732	74,502	110,234	0.043
July	30,323	113,779	144,102	0.054
August	36,247	124,164	160,411	0.060
September	39,388	147,689	187,077	0.072
October	16,793	42,930	59,723	0.022
November	22,013	10,670	32,683	0.013
December	25,853	10,720	36,573	0.014
<b>TOTAL:</b>	<b>358,135</b>	<b>937,997</b>	<b>1,296,132</b>	--

## Notes:

- (1) Minimum annual discharge of 700,000 m<sup>3</sup> (per the October 2003 Main Quarry Water Management Agreement); Minimum 464,000 m<sup>3</sup> uniformly distributed between July 1 and September 30 (i.e., approximately 0.058 m<sup>3</sup>/s average daily flows; per the April 2005 Storage and Operations Optimization Study by Philips Engineering Ltd.); Minimum 236,000 m<sup>3</sup> uniformly distributed between October 1 and June 30 (i.e., approximately 0.010 m<sup>3</sup>/s average daily flows; per the April 2005 Storage and Operations Optimization Study by Philips Engineering Ltd.); Not-to-exceed discharge rate of 12,000 L/min (0.2 m<sup>3</sup>/s; per Certificate of Approval No. 9119-7TSGXH and Permit to Take Water No. 0117-8BHQPL, 6445-GQZMES, 8575-A3BKYB and 5256-BUUP62).

Table 6.5

**Comparison of Main Quarry Discharge Quantities (1991 to 2025)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

<b>Month</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
January	284,292,000	97,864,500	345,666,000	66,144,000	313,852,750	246,171,750	257,659,500	320,597,000	139,284,000	105,122,780	34,988,610	317,925,251
February	202,658,750	69,324,000	93,969,000	76,320,000	210,489,500	153,673,500	272,049,000	265,106,000	237,645,900	120,730,455	234,412,200	250,571,120
March	317,311,000	146,598,000	139,694,750	205,198,333	146,240,250	169,838,500	473,184,000	282,596,000	144,644,400	217,760,000	315,862,630	223,426,590
April	405,927,000	252,306,500	339,769,750	238,924,000	194,006,500	404,933,250	442,020,000	370,894,000	180,324,900	234,693,600	225,026,680	226,518,650
May	193,079,000	209,681,250	163,452,000	285,603,750	235,094,750	435,554,000	181,074,500	64,395,000	134,119,200	295,458,700	219,863,940	164,961,800
June	131,837,500	87,238,000	230,709,000	119,647,500	105,562,750	194,377,500	27,599,750	203,149,000	112,897,500	338,757,300	111,169,430	112,964,940
July	101,004,750	237,864,000	149,062,500	95,691,500	48,044,500	131,161,750	80,136,000	122,218,000	46,350,000	141,425,200	70,322,710	70,893,000
August	62,049,750	249,047,000	61,201,750	60,552,500	60,658,500	69,204,750	155,078,000	27,030,000	21,801,600	217,525,900	86,470,260	156,273,800
September	46,467,750	333,264,000	78,387,000	43,208,250	51,555,750	239,825,000	99,189,500	102,290,000	109,076,130	199,620,380	80,469,500	118,369,050
October	45,725,750	231,875,000	98,553,500	75,843,000	155,886,250	206,753,000	85,934,200	149,725,000	124,748,700	88,253,700	12,908,000	71,687,320
November	67,985,750	459,801,500	100,488,000	130,552,250	235,386,250	152,560,500	139,819,300	43,513,000	111,363,640	83,422,170	55,071,470	48,097,190
December	157,449,750	304,591,000	155,051,500	99,799,000	126,193,000	166,340,500	183,364,100	195,093,000	176,643,740	42,174,240	378,883,288	49,654,280
<b>Total (L)</b>	<b>2,015,788,750</b>	<b>2,679,454,750</b>	<b>1,956,004,750</b>	<b>1,497,484,083</b>	<b>1,882,970,750</b>	<b>2,570,394,000</b>	<b>2,397,107,850</b>	<b>2,146,606,000</b>	<b>1,538,899,710</b>	<b>2,084,944,425</b>	<b>1,825,448,718</b>	<b>1,811,342,991</b>

Table 6.5

**Comparison of Main Quarry Discharge Quantities (1991 to 2025)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

<b>Month</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
January	64,239,400	217,825,500	128,987,370	38,266,350	14,346,000	47,546,000	366,850,654	26,638,000	43,204,000	311,865,000	64,219,571	107,936,253
February	61,125,600	221,380,500	26,877,000	33,111,180	7,709,000	18,131,000	366,081,034	25,148,000	34,269,000	196,619,068	236,524,425	96,052,352
March	125,526,310	373,956,900	21,726,000	19,836,090	6,972,000	28,374,000	446,768,000	228,249,000	316,223,000	101,448,652	333,767,724	145,468,691
April	227,154,800	358,357,800	69,204,990	52,002,000	10,547,000	24,587,816	425,298,000	275,476,000	366,292,000	131,075,148	203,077,936	80,836,957
May	216,571,000	433,116,000	79,021,890	150,270,460	57,375,000	29,020,377	371,337,000	32,091,000	447,546,000	99,278,985	118,624,401	290,640,727
June	219,146,500	302,220,600	21,921,200	143,594,240	37,920,000	24,871,373	49,161,000	51,017,000	465,104,000	44,635,492	71,003,343	91,655,703
July	219,216,400	77,334,000	72,760,000	62,041,000	81,265,000	120,670,552	147,548,000	159,706,000	364,827,000	129,648,566	188,391,102	192,276,505
August	48,751,900	70,319,100	102,080,500	92,949,000	131,565,000	188,255,496	156,152,000	152,345,000	146,771,000	171,263,371	198,845,318	168,172,663
September	194,385,200	22,827,300	143,058,730	123,422,000	176,423,000	174,145,000	138,366,000	149,670,000	138,648,000	208,081,437	177,282,512	182,734,110
October	235,523,500	0	171,914,600	138,923,600	119,461,000	32,686,000	36,363,000	36,801,000	160,946,000	40,247,790	71,180,400	71,755,316
November	151,477,600	90,775,800	87,839,200	214,885,701	64,070,000	35,226,865	25,896,000	29,128,000	266,943,000	31,815,373	142,127,398	51,119,676
December	180,956,400	0	1,537,000	277,212,000	69,996,000	159,780,000	22,090,000	28,875,000	284,039,000	36,161,265	123,570,286	44,037,580
<b>Total (L)</b>	<b>1,944,074,610</b>	<b>2,168,113,500</b>	<b>926,928,480</b>	<b>1,346,513,621</b>	<b>777,649,000</b>	<b>883,294,479</b>	<b>2,551,910,687</b>	<b>1,195,144,000</b>	<b>3,034,812,000</b>	<b>1,502,140,146</b>	<b>1,928,614,418</b>	<b>1,522,686,532</b>

Table 6.5

**Comparison of Main Quarry Discharge Quantities (1991 to 2025)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

<b>Month</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Average (1991 - 2025)</b>
January	39,338,542	30,665,766	34,654,285	39,156,619	91,408,970	274,885,317	31,961,282	24,364,641	31,035,000	37,471,000	75,340,000	133,479,247
February	42,639,269	26,196,000	30,044,926	83,605,911	130,195,452	438,910,899	33,333,323	31,083,664	28,940,000	29,545,000	81,971,000	127,612,658
March	45,156,880	31,069,765	31,301,134	197,609,853	224,325,604	319,152,605	31,290,573	37,147,871	29,811,000	34,583,000	134,158,000	172,750,774
April	32,367,553	41,096,460	97,854,839	58,366,779	326,399,884	206,249,299	34,340,894	36,038,563	31,465,783	28,416,000	133,817,000	193,304,809
May	32,702,918	30,335,594	434,930,642	220,019,230	510,303,271	65,516,367	35,245,431	43,571,180	38,171,733	28,888,000	140,044,000	185,341,688
June	22,387,864	33,672,181	295,243,811	207,786,565	331,159,762	43,363,244	35,306,708	40,180,435	35,086,626	82,126,000	110,234,000	129,563,080
July	125,854,205	154,826,181	212,282,638	186,233,911	202,499,213	165,036,191	158,032,752	135,431,910	128,798,686	313,476,000	144,102,000	143,898,049
August	143,611,461	158,030,533	165,029,387	188,588,463	172,846,236	168,208,690	156,831,521	147,085,824	149,359,953	398,774,000	160,411,000	138,946,892
September	147,839,211	150,915,827	164,104,077	177,653,247	162,923,506	160,795,397	144,700,940	145,680,877	187,860,693	134,480,000	187,077,000	145,565,611
October	30,742,677	39,449,756	39,999,539	146,046,688	32,347,962	35,927,422	34,047,408	41,261,283	37,953,389	109,707,000	59,723,000	87,740,050
November	28,884,000	35,483,273	32,681,700	41,900,146	30,608,411	31,567,868	25,265,027	29,096,919	30,293,666	59,610,000	32,683,000	91,355,418
December	28,175,929	35,560,971	36,691,182	44,380,249	79,069,085	35,034,005	18,941,649	25,080,000	29,595,463	77,778,000	36,573,000	106,010,613
<b>Total (L)</b>	<b>719,700,510</b>	<b>767,302,307</b>	<b>1,574,818,161</b>	<b>1,591,347,660</b>	<b>2,294,087,356</b>	<b>1,944,647,305</b>	<b>739,297,507</b>	<b>736,023,167</b>	<b>758,371,992</b>	<b>1,334,854,000</b>	<b>1,296,133,000</b>	<b>1,655,568,892</b>

Table 6.6

**2025 Overall Water Taking  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Month	Main Quarry <sup>(1)</sup>	North Quarry <sup>(3)</sup>	Operations <sup>(4)</sup>	Total Water Taking
	Total (L)	and Extension Total (L)	Total (L)	
January	75,340,000	NA	NA	NA
February	81,971,000	NA	NA	NA
March	134,158,000	NA	NA	NA
April	133,817,000	NA	NA	NA
May	140,044,000	NA	NA	NA
June	110,234,000	NA	NA	NA
July	144,102,000	NA	NA	NA
August	160,411,000	NA	NA	NA
September	187,077,000	NA	NA	NA
October	59,723,000	NA	NA	NA
November	32,683,000	NA	NA	NA
December	36,573,000	NA	NA	NA
<b>Total</b>	<b>1,296,133,000</b>	<b>795,657,885</b>	<b>90,587</b>	<b>2,091,881,472</b>
<b>PTTW <sup>(2)</sup></b>	<b>4,464,000,000</b>	<b>1,359,000,000</b>	<b>--</b>	<b>6,417,600,000</b>

## Notes:

NA Not applicable.

(1) Includes discharge to the HFRT from the West Sump and the Reservoir.

(2) Limit of annual water taking allowed by the PTTW No. 8575-A3BKYB and 5256-BUUP62.

(3) This water taking is calculated on an annual basis starting in 2007 because the Groundwater Recharge Well System became operational in 2007. Monthly water takings are not available subsequent to 2006.

(4) Per Appendix J.

Table 7.1

**2025 Water Quality Results - Reservoir Outfall to HFRT (SW15C)  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
General Chemistry	Oil and Grease	mg/L	15 <sup>(1)</sup>	n/a	12	0	0	--	--
General Chemistry	pH (lab)	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	12	12	0	8.51 <sup>(4)</sup>	8.3458
General Chemistry	pH Field	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	50	50	0	8.46 <sup>(5)</sup>	8.1878
General Chemistry	Total Suspended Solids (TSS)	mg/L	25 <sup>(1)</sup>	n/a	52	2	0	5.0000	4.1500
General Chemistry	Un-ionized Ammonia	mg/L	0.02 <sup>(1)(2)</sup>	n/a	12	11	0	0.0038	0.0020
General Chemistry	Alkalinity, Bicarbonate	mg/L	n/a	-	12	12	0	192.0000	165.3333
General Chemistry	Alkalinity, Carbonate	mg/L	n/a	-	12	8	0	8.5000	5.1750
General Chemistry	Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	n/a	-	12	12	0	192.0000	168.7500
General Chemistry	Ammonia-N	mg/L	n/a	-	12	12	0	0.1530	0.0710
General Chemistry	Bromide	mg/L	n/a	-	12	10	0	0.3300	0.2298
General Chemistry	Chloride	mg/L	n/a	-	12	12	0	80.5000	73.2250
General Chemistry	Conductivity	uS/cm	n/a	-	12	12	0	751.0000	684.7500
General Chemistry	Fluoride	mg/L	n/a	-	12	12	0	0.1520	0.1370
General Chemistry	Hardness	mg/L	n/a	-	12	12	0	307.0000	269.1667
General Chemistry	Nitrate (as N)	mg/L	n/a	-	12	5	0	0.0540	0.0354
General Chemistry	Nitrite (as N)	mg/L	n/a	-	12	0	0	--	--
General Chemistry	Orthophosphate (dissolved)	mg/L	n/a	-	12	6	0	0.0028	0.0017
General Chemistry	Phosphorous	mg/L	n/a	0.03 <sup>(2)</sup>	12	12	0	0.0116	0.0091
General Chemistry	Sulphate	mg/L	n/a	-	12	12	0	93.7000	78.6500
General Chemistry	Temperature, Field	Deg C	n/a	-	50	50	0	26.9000	12.2700
General Chemistry	Total Dissolved Solids (TDS)	mg/L	n/a	-	12	12	0	428.0000	394.3333
General Chemistry	Total Kjeldahl Nitrogen (TKN)	mg/L	n/a	-	12	12	0	1.0900	0.7958
General Chemistry	Total Organic Carbon (TOC)	mg/L	n/a	-	12	12	0	11.4000	8.9883
General Chemistry	Turbidity	NTU	n/a	-	12	12	0	1.0400	0.7592
Biological	Escherichia coli	MPN/100mL	n/a	100 <sup>(2)</sup>	12	6	0	10.0000	3.8333
Biological	Total Coliform Bacteria	MPN/100mL	n/a	100 <sup>(2)</sup>	12	6	3	6870.0000	1610.1667
Metals	Aluminum	mg/L	n/a	0.075 <sup>(2)</sup>	12	6	0	0.0102	0.0051
Metals	Antimony	mg/L	n/a	0.02 <sup>(2)</sup>	12	0	0	--	--
Metals	Arsenic	mg/L	n/a	0.1 <sup>(2)</sup> /0.005 <sup>(3)</sup>	12	12	0	0.0038	0.0026
Metals	Barium	mg/L	n/a	-	12	12	0	0.0261	0.0220
Metals	Beryllium	mg/L	n/a	1.1 <sup>(2)</sup>	12	0	0	--	--
Metals	Bismuth	mg/L	n/a	-	12	0	0	--	--
Metals	Boron	mg/L	n/a	0.2 <sup>(2)</sup>	12	12	0	0.0810	0.0681
Metals	Cadmium	mg/L	n/a	0.0002 <sup>(2)</sup> /0.0005 <sup>(3)</sup>	12	0	0	--	--
Metals	Calcium	mg/L	n/a	-	12	12	0	51.7000	41.0667
Metals	Chromium Total	mg/L	n/a	-	12	0	0	--	--
Metals	Cobalt	mg/L	n/a	0.0009 <sup>(2)</sup>	12	7	0	0.0002	0.0001
Metals	Copper	mg/L	n/a	0.005 <sup>(2)</sup>	12	4	0	0.0009	0.0008
Metals	Iron	mg/L	n/a	0.3 <sup>(2)</sup>	12	12	0	0.1290	0.0598
Metals	Lead	mg/L	n/a	0.025 <sup>(2)</sup> /0.005 <sup>(3)</sup>	12	1	0	0.0001	0.0001

Table 7.1

**2025 Water Quality Results - Reservoir Outfall to HFRT (SW15C)  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
Metals	Magnesium	mg/L	n/a	-	12	12	0	44.1000	40.4417
Metals	Manganese	mg/L	n/a	-	12	12	0	0.0564	0.0286
Metals	Molybdenum	mg/L	n/a	0.04 <sup>(2)</sup>	12	12	0	0.0011	0.0008
Metals	Nickel	mg/L	n/a	0.025 <sup>(2)</sup>	12	9	0	0.0009	0.0007
Metals	Potassium	mg/L	n/a	-	12	12	0	7.3600	6.6592
Metals	Selenium	mg/L	n/a	0.1 <sup>(2)</sup>	12	4	0	0.0001	0.0001
Metals	Silicon	mg/L	n/a	-	12	11	0	1.1600	0.4409
Metals	Silver	mg/L	n/a	0.0001 <sup>(2)</sup>	12	0	0	--	--
Metals	Sodium	mg/L	n/a	-	12	12	0	45.6000	41.7750
Metals	Strontium	mg/L	n/a	-	12	12	0	0.7250	0.6306
Metals	Thallium	mg/L	n/a	0.0003 <sup>(2)</sup>	12	0	0	--	--
Metals	Tin	mg/L	n/a	-	12	0	0	--	--
Metals	Titanium	mg/L	n/a	-	12	0	0	--	--
Metals	Vanadium	mg/L	n/a	0.006 <sup>(2)</sup>	12	0	0	--	--
Metals	Zinc	mg/L	n/a	0.03 <sup>(2)</sup> /0.02 <sup>(3)</sup>	12	7	0	0.0116	0.0091
Volatiles	Benzene	ug/L	n/a	100 <sup>(2)</sup>	12	0	0	--	--
Volatiles	Ethylbenzene	ug/L	n/a	8 <sup>(2)</sup>	12	0	0	--	--
Volatiles	m&p-Xylenes	ug/L	n/a	-	12	0	0	--	--
Volatiles	o-Xylene	ug/L	n/a	40 <sup>(2)</sup>	12	0	0	--	--
Volatiles	Toluene	ug/L	n/a	0.8 <sup>(2)</sup>	12	0	0	--	--
Volatiles	Xylenes (total)	ug/L	n/a	-	12	0	0	--	--

## Notes:

Screening against Effluent Limits as per ECA requirements.

Screening against PWQOs for comparison purposes only. The ECA does not require this discharge to meet PWQOs.

n/a - Not Applicable

(1) - ECA Effluent Limit.

(2) - PWQO.

(3) - PWQO/Interim PWQO.

(4) - Minimum pH measured was 8.12.

(5) - Minimum pH measured was 7.82.

Table 7.2

**2025 Water Quality Results - Reservoir Outfall to HFRT (SW52B)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
General Chemistry	Oil and Grease	mg/L	15 <sup>(1)</sup>	n/a	12	0	0	--	--
General Chemistry	pH (lab)	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	12	12	0	8.45 <sup>(4)</sup>	8.3033
General Chemistry	pH Field	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	50	50	0	8.34 <sup>(5)</sup>	8.1510
General Chemistry	Total Suspended Solids (TSS)	mg/L	25 <sup>(1)</sup>	n/a	52	1	0	24.6000	24.6000
General Chemistry	Un-ionized Ammonia	mg/L	0.02 <sup>(1)(2)</sup>	n/a	12	12	0	0.0058	0.0029
General Chemistry	Alkalinity, Bicarbonate	mg/L	n/a	-	12	12	0	151.0000	133.0833
General Chemistry	Alkalinity, Carbonate	mg/L	n/a	-	12	4	0	6.1000	4.5750
General Chemistry	Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	n/a	-	12	12	0	151.0000	135.1667
General Chemistry	Ammonia-N	mg/L	n/a	-	12	12	0	0.1810	0.1106
General Chemistry	Bromide	mg/L	n/a	-	12	7	0	0.8200	0.6286
General Chemistry	Chloride	mg/L	n/a	-	12	12	0	112.0000	97.9250
General Chemistry	Conductivity	uS/cm	n/a	-	12	12	0	1090.0000	1019.4167
General Chemistry	Fluoride	mg/L	n/a	-	12	12	0	0.2680	0.2337
General Chemistry	Hardness	mg/L	n/a	-	12	12	0	517.0000	463.2500
General Chemistry	Nitrate (as N)	mg/L	n/a	-	12	10	0	0.1830	0.1163
General Chemistry	Nitrite (as N)	mg/L	n/a	-	12	0	0	--	--
General Chemistry	Orthophosphate (dissolved)	mg/L	n/a	-	12	7	0	0.0038	0.0017
General Chemistry	Phosphorous	mg/L	n/a	0.03 <sup>(2)</sup>	12	11	0	0.0061	0.0035
General Chemistry	Sulphate	mg/L	n/a	-	12	12	0	283.0000	257.5833
General Chemistry	Temperature, Field	Deg C	n/a	-	50	50	0	25.4000	11.7140
General Chemistry	Total Dissolved Solids (TDS)	mg/L	n/a	-	12	12	0	709.0000	672.8333
General Chemistry	Total Kjeldahl Nitrogen (TKN)	mg/L	n/a	-	12	12	0	0.4910	0.3863
General Chemistry	Total Organic Carbon (TOC)	mg/L	n/a	-	12	12	0	4.9100	3.1108
General Chemistry	Turbidity	NTU	n/a	-	12	12	0	1.3800	0.5717
Biological	Escherichia coli	MPN/100mL	n/a	100 <sup>(2)</sup>	12	1	0	2.0000	2.0000
Biological	Total Coliform Bacteria	MPN/100mL	n/a	100 <sup>(2)</sup>	12	8	3	2360.0000	365.5000
Metals	Aluminum	mg/L	n/a	0.075 <sup>(2)</sup>	12	12	0	0.0323	0.0111
Metals	Antimony	mg/L	n/a	0.02 <sup>(2)</sup>	12	12	0	0.0003	0.0003
Metals	Arsenic	mg/L	n/a	0.1 <sup>(2)</sup> /0.005 <sup>(3)</sup>	12	12	0	0.0024	0.0018
Metals	Barium	mg/L	n/a	-	12	12	0	0.0519	0.0342
Metals	Beryllium	mg/L	n/a	1.1 <sup>(2)</sup>	12	0	0	--	--
Metals	Bismuth	mg/L	n/a	-	12	0	0	--	--
Metals	Boron	mg/L	n/a	0.2 <sup>(2)</sup>	12	12	0	0.1870	0.1609
Metals	Cadmium	mg/L	n/a	0.0002 <sup>(2)</sup> /0.0005 <sup>(3)</sup>	12	7	0	0.0000	0.0000
Metals	Calcium	mg/L	n/a	-	12	12	0	98.7000	84.6750
Metals	Chromium Total	mg/L	n/a	-	12	0	0	--	--
Metals	Cobalt	mg/L	n/a	0.0009 <sup>(2)</sup>	12	12	0	0.0008	0.0004
Metals	Copper	mg/L	n/a	0.005 <sup>(2)</sup>	12	1	0	0.0006	0.0006
Metals	Iron	mg/L	n/a	0.3 <sup>(2)</sup>	12	12	0	0.0380	0.0181
Metals	Lead	mg/L	n/a	0.025 <sup>(2)</sup> /0.005 <sup>(3)</sup>	12	4	0	0.0001	0.0001

Table 7.2

**2025 Water Quality Results - Reservoir Outfall to HFRT (SW52B)  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
Metals	Magnesium	mg/L	n/a	-	12	12	0	65.7000	61.1833
Metals	Manganese	mg/L	n/a	-	12	12	0	0.0047	0.0033
Metals	Molybdenum	mg/L	n/a	0.04 <sup>(2)</sup>	12	12	0	0.0107	0.0093
Metals	Nickel	mg/L	n/a	0.025 <sup>(2)</sup>	12	12	0	0.0049	0.0039
Metals	Potassium	mg/L	n/a	-	12	12	0	7.6000	6.8475
Metals	Selenium	mg/L	n/a	0.1 <sup>(2)</sup>	12	12	0	0.0001	0.0001
Metals	Silicon	mg/L	n/a	-	12	12	0	1.3300	0.9725
Metals	Silver	mg/L	n/a	0.0001 <sup>(2)</sup>	12	0	0	--	--
Metals	Sodium	mg/L	n/a	-	12	12	0	41.5000	38.8167
Metals	Strontium	mg/L	n/a	-	12	12	0	3.2000	2.8583
Metals	Thallium	mg/L	n/a	0.0003 <sup>(2)</sup>	12	12	0	0.0001	0.0001
Metals	Tin	mg/L	n/a	-	12	0	0	--	--
Metals	Titanium	mg/L	n/a	-	12	0	0	--	--
Metals	Vanadium	mg/L	n/a	0.006 <sup>(2)</sup>	12	0	0	--	--
Metals	Zinc	mg/L	n/a	0.03 <sup>(2)</sup> /0.02 <sup>(3)</sup>	12	6	0	0.0066	0.0057
Volatiles	Benzene	ug/L	n/a	100 <sup>(2)</sup>	12	0	0	--	--
Volatiles	Ethylbenzene	ug/L	n/a	8 <sup>(2)</sup>	12	0	0	--	--
Volatiles	m&p-Xylenes	ug/L	n/a	-	12	0	0	--	--
Volatiles	o-Xylene	ug/L	n/a	40 <sup>(2)</sup>	12	0	0	--	--
Volatiles	Toluene	ug/L	n/a	0.8 <sup>(2)</sup>	12	0	0	--	--
Volatiles	Xylenes (total)	ug/L	n/a	-	12	0	0	--	--

## Notes:

Screening against Effluent Limits as per ECA requirements.

Screening against PWQOs for comparison purposes only. The ECA does not require this discharge to meet PWQOs.

n/a - Not Applicable

(1) - ECA Effluent Limit.

(2) - PWQO.

(3) - PWQO/Interim PWQO.

(4) - Minimum pH measured was 8.07.

(5) - Minimum pH measured was 8.00.

Table 7.3

**2025 Water Quality Results - Recharge System Pumping Station (SW53)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

<b>Analyses</b>	<b>Parameters</b>	<b>Units</b>	<b>ECA Criteria</b>	<b>Number of Samples</b>	<b>Number of Detections</b>	<b>Number of Detections Above Effluent Limit or PWQO</b>	<b>Maximum Detected Concentration</b>	<b>Average of Detected Concentrations</b>
General Chemistry	Oil and Grease	mg/L	15 <sup>(1)</sup>	12	0	0	--	--
General Chemistry	pH (lab)	s.u.	6.0-9.5 <sup>(1)</sup>	12	12	0	8.46 <sup>(4)</sup>	8.2942
General Chemistry	pH Field	s.u.	6.0-9.5 <sup>(1)</sup>	50	50	0	8.29 <sup>(5)</sup>	8.0878
General Chemistry	Total Suspended Solids (TSS)	mg/L	25 <sup>(1)</sup>	52	3	0	4.2000	4.0333
General Chemistry	Un-ionized Ammonia	mg/L	0.02 <sup>(1)(2)</sup>	12	12	0	0.0047	0.0029
General Chemistry	Ammonia-N	mg/L	-	12	12	0	0.2150	0.1125
General Chemistry	Temperature, Field	Deg C	-	50	50	0	24.9000	13.8100

## Notes:

Screening against Effluent Limits as per ECA requirements.

- (1) - ECA Effluent Limit.
- (2) - PWQO.
- (3) - Minimum pH measured was 8.14.
- (4) - Minimum pH measured was 7.92.

Table 7.4

**2025 Water Quality Results - North Quarry Recharge System Wells  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
General Chemistry	Oil and Grease	mg/L	15 <sup>(1)</sup>	n/a	36	0	0	--	--
General Chemistry	pH (lab)	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	36	36	0	8.41 <sup>(4)</sup>	8.2747
General Chemistry	pH Field	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	36	36	0	8.23 <sup>(5)</sup>	8.1056
General Chemistry	Total Suspended Solids (TSS)	mg/L	25 <sup>(1)</sup>	n/a	36	0	0	--	--
General Chemistry	Un-ionized Ammonia	mg/L	0.02 <sup>(1)(2)</sup>	n/a	36	36	0	0.0053	0.0027
General Chemistry	Alkalinity, Bicarbonate	mg/L	n/a	-	36	36	0	156.0000	134.3333
General Chemistry	Alkalinity, Carbonate	mg/L	n/a	-	36	15	0	5.0000	3.2667
General Chemistry	Alkalinity, Total (As CaCO3)	mg/L	n/a	-	36	36	0	156.0000	135.9167
General Chemistry	Ammonia-N	mg/L	n/a	-	36	36	0	0.2180	0.1155
General Chemistry	Bromide	mg/L	n/a	-	36	30	0	2.8500	0.8566
General Chemistry	Chloride	mg/L	n/a	-	36	36	0	116.0000	97.5194
General Chemistry	Conductivity	uS/cm	n/a	-	36	36	0	1070.0000	1014.0000
General Chemistry	Fluoride	mg/L	n/a	-	36	36	0	0.2680	0.2293
General Chemistry	Hardness	mg/L	n/a	-	36	36	0	515.0000	460.8889
General Chemistry	Nitrate (as N)	mg/L	n/a	-	36	30	0	0.2040	0.1190
General Chemistry	Nitrite (as N)	mg/L	n/a	-	36	0	0	--	--
General Chemistry	Orthophosphate (dissolved)	mg/L	n/a	-	36	7	0	0.0015	0.0013
General Chemistry	Phosphorous	mg/L	n/a	0.03 <sup>(2)</sup>	36	29	0	0.0118	0.0035
General Chemistry	Sulphate	mg/L	n/a	-	36	36	0	289.0000	255.8056
General Chemistry	Temperature, Field	Deg C	n/a	-	36	36	0	25.4000	12.1944
General Chemistry	Total Dissolved Solids (TDS)	mg/L	n/a	-	36	36	0	721.0000	676.0278
General Chemistry	Total Kjeldahl Nitrogen (TKN)	mg/L	n/a	-	36	36	0	0.5460	0.3710
General Chemistry	Total Organic Carbon (TOC)	mg/L	n/a	-	36	36	0	4.4600	3.0306
General Chemistry	Turbidity	NTU	n/a	-	36	36	0	1.4400	0.5103
Biological	Escherichia coli	MPN/100mL	n/a	100 <sup>(2)</sup>	36	10	0	31.0000	5.8000
Biological	Total Coliform Bacteria	MPN/100mL	n/a	100 <sup>(2)</sup>	36	23	6	4350.0000	610.9565
Metals	Aluminum	mg/L	n/a	0.075 <sup>(2)</sup>	36	33	0	0.0306	0.0097
Metals	Antimony	mg/L	n/a	0.02 <sup>(2)</sup>	36	36	0	0.0003	0.0003
Metals	Arsenic	mg/L	n/a	0.1 <sup>(2)</sup> /0.005 <sup>(3)</sup>	36	36	0	0.0024	0.0017
Metals	Barium	mg/L	n/a	-	36	36	0	0.0540	0.0354
Metals	Beryllium	mg/L	n/a	1.1 <sup>(2)</sup>	36	0	0	--	--
Metals	Bismuth	mg/L	n/a	-	36	0	0	--	--
Metals	Boron	mg/L	n/a	0.2 <sup>(2)</sup>	36	36	0	0.1840	0.1616
Metals	Cadmium	mg/L	n/a	0002 <sup>(2)</sup> /0.0005	36	20	0	0.0000	0.0000
Metals	Calcium	mg/L	n/a	-	36	36	0	97.2000	84.1833
Metals	Chromium Total	mg/L	n/a	-	36	1	0	0.0006	0.0006
Metals	Cobalt	mg/L	n/a	0.0009 <sup>(2)</sup>	36	36	0	0.0005	0.0003
Metals	Copper	mg/L	n/a	0.005 <sup>(2)</sup>	36	5	0	0.0015	0.0008
Metals	Iron	mg/L	n/a	0.3 <sup>(2)</sup>	36	29	0	0.0350	0.0183

Table 7.4

**2025 Water Quality Results - North Quarry Recharge System Wells  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
Metals	Lead	mg/L	n/a	0.025 <sup>(2)</sup> /0.005 <sup>(c)</sup>	36	13	0	0.0001	0.0001
Metals	Magnesium	mg/L	n/a	-	36	36	0	66.3000	60.8639
Metals	Manganese	mg/L	n/a	-	36	36	0	0.0049	0.0027
Metals	Molybdenum	mg/L	n/a	0.04 <sup>(2)</sup>	36	36	0	0.0106	0.0093
Metals	Nickel	mg/L	n/a	0.025 <sup>(2)</sup>	36	36	0	0.0057	0.0040
Metals	Potassium	mg/L	n/a	-	36	36	0	7.7500	6.7814
Metals	Selenium	mg/L	n/a	0.1 <sup>(2)</sup>	36	36	0	0.0001	0.0001
Metals	Silicon	mg/L	n/a	-	36	36	0	1.3900	0.9681
Metals	Silver	mg/L	n/a	0.0001 <sup>(2)</sup>	36	0	0	--	--
Metals	Sodium	mg/L	n/a	-	36	36	0	41.3000	38.5944
Metals	Strontium	mg/L	n/a	-	36	36	0	3.4100	2.8547
Metals	Thallium	mg/L	n/a	0.0003 <sup>(2)</sup>	36	36	0	0.0001	0.0001
Metals	Tin	mg/L	n/a	-	36	0	0	--	--
Metals	Titanium	mg/L	n/a	-	36	2	0	0.0005	0.0004
Metals	Vanadium	mg/L	n/a	0.006 <sup>(2)</sup>	36	0	0	--	--
Metals	Zinc	mg/L	n/a	0.03 <sup>(2)</sup> /0.02 <sup>(3)</sup>	36	19	0	0.0065	0.0049
Volatiles	Benzene	ug/L	n/a	100 <sup>(2)</sup>	36	0	0	--	--
Volatiles	Ethylbenzene	ug/L	n/a	8 <sup>(2)</sup>	36	0	0	--	--
Volatiles	m&p-Xylenes	ug/L	n/a	-	36	0	0	--	--
Volatiles	o-Xylene	ug/L	n/a	40 <sup>(2)</sup>	36	0	0	--	--
Volatiles	Toluene	ug/L	n/a	0.8 <sup>(2)</sup>	36	0	0	--	--
Volatiles	Xylenes (total)	ug/L	n/a	-	36	0	0	--	--

## Notes:

Screening against Effluent Limits for comparison purposes only. The ECA does not require this discharge to meet Effluent Limits.

Screening against PWQOs for comparison purposes only. The ECA does not require this discharge to meet PWQOs.

n/a - Not Applicable

(1) - ECA Effluent Limit.

(2) - PWQO.

(3) - PWQO/Interim PWQO.

(4) - Minimum pH measured was 8.06.

(5) - Minimum pH measured was 7.92.

Table 7.5

**2025 Water Quality Results - North Quarry Sump (SW38)  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
General Chemistry	Oil and Grease	mg/L	15 <sup>(1)</sup>	n/a	13	0	0	--	--
General Chemistry	pH (lab)	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	13	13	0	8.4 <sup>(4)</sup>	8.2138
General Chemistry	pH Field	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	13	13	0	8.19 <sup>(5)</sup>	7.8954
General Chemistry	Total Suspended Solids (TSS)	mg/L	25 <sup>(1)</sup>	n/a	13	2	0	3.9000	3.4500
General Chemistry	Un-ionized Ammonia	mg/L	0.02 <sup>(1)(2)</sup>	n/a	13	4	0	0.0015	0.0013
General Chemistry	Alkalinity, Bicarbonate	mg/L	n/a	-	13	13	0	174.0000	153.6154
General Chemistry	Alkalinity, Carbonate	mg/L	n/a	-	13	3	0	4.5000	3.3333
General Chemistry	Alkalinity, Total (As CaCO3)	mg/L	n/a	-	13	13	0	174.0000	154.3077
General Chemistry	Ammonia-N	mg/L	n/a	-	13	13	0	0.1630	0.0470
General Chemistry	Bromide	mg/L	n/a	-	13	9	0	2.4900	0.9722
General Chemistry	Chloride	mg/L	n/a	-	13	13	0	103.0000	89.1154
General Chemistry	Conductivity	uS/cm	n/a	-	13	13	0	1140.0000	1058.5385
General Chemistry	Fluoride	mg/L	n/a	-	13	13	0	0.3200	0.2584
General Chemistry	Hardness	mg/L	n/a	-	13	13	0	540.0000	505.6154
General Chemistry	Nitrate (as N)	mg/L	n/a	-	13	11	0	0.2980	0.1783
General Chemistry	Nitrite (as N)	mg/L	n/a	-	13	1	0	0.0180	0.0180
General Chemistry	Orthophosphate (dissolved)	mg/L	n/a	-	13	1	0	0.0016	0.0016
General Chemistry	Phosphorous	mg/L	n/a	0.03 <sup>(2)</sup>	13	11	0	0.0061	0.0040
General Chemistry	Sulphate	mg/L	n/a	-	13	13	0	333.0000	281.9231
General Chemistry	Temperature, Field	Deg C	n/a	-	13	13	0	23.9000	11.8923
General Chemistry	Total Dissolved Solids (TDS)	mg/L	n/a	-	13	13	0	790.0000	707.1538
General Chemistry	Total Kjeldahl Nitrogen (TKN)	mg/L	n/a	-	13	13	0	0.3220	0.1935
General Chemistry	Total Organic Carbon (TOC)	mg/L	n/a	-	13	13	0	2.6200	1.7331
General Chemistry	Turbidity	NTU	n/a	-	13	13	0	5.3700	2.3931
Biological	Escherichia coli	MPN/100mL	n/a	100 <sup>(2)</sup>	13	10	1	125.0000	32.6000
Biological	Total Coliform Bacteria	MPN/100mL	n/a	100 <sup>(2)</sup>	13	12	8	1860.0000	560.7500
Metals	Aluminum	mg/L	n/a	0.075 <sup>(2)</sup>	13	13	3	0.1100	0.0521
Metals	Antimony	mg/L	n/a	0.02 <sup>(2)</sup>	13	13	0	0.0004	0.0003
Metals	Arsenic	mg/L	n/a	0.1 <sup>(2)</sup> /0.005 <sup>(3)</sup>	13	13	0	0.0026	0.0016
Metals	Barium	mg/L	n/a	-	13	13	0	0.0387	0.0360
Metals	Beryllium	mg/L	n/a	1.1 <sup>(2)</sup>	13	0	0	--	--
Metals	Bismuth	mg/L	n/a	-	13	0	0	--	--
Metals	Boron	mg/L	n/a	0.2 <sup>(2)</sup>	13	13	5	0.2640	0.1883
Metals	Cadmium	mg/L	n/a	0.0002 <sup>(2)</sup> /0.0005 <sup>(3)</sup>	13	13	0	0.0000	0.0000
Metals	Calcium	mg/L	n/a	-	13	13	0	114.0000	101.3923
Metals	Chromium Total	mg/L	n/a	-	13	0	0	--	--
Metals	Cobalt	mg/L	n/a	0.0009 <sup>(2)</sup>	13	13	11	0.0041	0.0022
Metals	Copper	mg/L	n/a	0.005 <sup>(2)</sup>	13	13	0	0.0012	0.0008
Metals	Iron	mg/L	n/a	0.3 <sup>(2)</sup>	13	13	0	0.1330	0.0798
Metals	Lead	mg/L	n/a	0.025 <sup>(2)</sup> /0.005 <sup>(3)</sup>	13	13	0	0.0004	0.0002
Metals	Magnesium	mg/L	n/a	-	13	13	0	65.9000	61.3077
Metals	Manganese	mg/L	n/a	-	13	13	0	0.0495	0.0160

Table 7.5

**2025 Water Quality Results - North Quarry Sump (SW38)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
Metals	Molybdenum	mg/L	n/a	0.04 <sup>(2)</sup>	13	13	0	0.0105	0.0089
Metals	Nickel	mg/L	n/a	0.025 <sup>(2)</sup>	13	13	0	0.0097	0.0074
Metals	Potassium	mg/L	n/a	-	13	13	0	8.6400	7.0838
Metals	Selenium	mg/L	n/a	0.1 <sup>(2)</sup>	13	13	0	0.0002	0.0001
Metals	Silicon	mg/L	n/a	-	13	13	0	1.5600	1.2062
Metals	Silver	mg/L	n/a	0.0001 <sup>(2)</sup>	13	0	0	--	--
Metals	Sodium	mg/L	n/a	-	13	13	0	40.5000	36.2769
Metals	Strontium	mg/L	n/a	-	13	13	0	5.1900	3.7777
Metals	Thallium	mg/L	n/a	0.0003 <sup>(2)</sup>	13	13	0	0.0001	0.0001
Metals	Tin	mg/L	n/a	-	13	1	0	0.0002	0.0002
Metals	Titanium	mg/L	n/a	-	13	5	0	0.0026	0.0018
Metals	Vanadium	mg/L	n/a	0.006 <sup>(2)</sup>	13	0	0	--	--
Metals	Zinc	mg/L	n/a	0.03 <sup>(2)</sup> /0.02 <sup>(3)</sup>	13	13	2	0.0454	0.0151
Volatiles	Benzene	ug/L	n/a	100 <sup>(2)</sup>	13	0	0	--	--
Volatiles	Ethylbenzene	ug/L	n/a	8 <sup>(2)</sup>	13	1	0	1.6500	1.6500
Volatiles	m&p-Xylenes	ug/L	n/a	-	13	1	0	3.0400	3.0400
Volatiles	o-Xylene	ug/L	n/a	40 <sup>(2)</sup>	13	1	0	1.6600	1.6600
Volatiles	Toluene	ug/L	n/a	0.8 <sup>(2)</sup>	13	0	0	--	--
Volatiles	Xylenes (total)	ug/L	n/a	-	13	1	0	4.7000	4.7000

## Notes:

Screening against Effluent Limits for comparison purposes only. The ECA does not require this discharge to meet Effluent Limits.

Screening against PWQOs for comparison purposes only. The ECA does not require this discharge to meet PWQOs.

n/a - Not Applicable

(1) - ECA Effluent Limit.

(2) - PWQO.

(3) - PWQO/Interim PWQO.

(4) - Minimum pH measured was 8.05.

(5) - Minimum pH measured was 7.49.

Table 7.6

**2025 Water Quality Results - Central Sump (SW51A)**  
**2025 Annual Monitoring Report**  
**Dufferin Milton Quarry**  
**Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
General Chemistry	Oil and Grease	mg/L	15 <sup>(1)</sup>	n/a	13	0	0	--	--
General Chemistry	pH (lab)	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	13	13	0	8.42 <sup>(4)</sup>	8.2646
General Chemistry	pH Field	s.u.	6.0-9.5 <sup>(1)</sup>	n/a	13	13	0	8.06 <sup>(5)</sup>	7.9177
General Chemistry	Total Suspended Solids (TSS)	mg/L	25 <sup>(1)</sup>	n/a	13	3	0	6.7000	5.3667
General Chemistry	Un-ionized Ammonia	mg/L	0.02 <sup>(1)(2)</sup>	n/a	13	2	0	0.0020	0.0017
General Chemistry	Alkalinity, Bicarbonate	mg/L	n/a	-	13	13	0	240.0000	184.0615
General Chemistry	Alkalinity, Carbonate	mg/L	n/a	-	13	6	0	7.8000	4.3833
General Chemistry	Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	n/a	-	13	13	0	240.0000	186.0154
General Chemistry	Ammonia-N	mg/L	n/a	-	13	13	0	0.0756	0.0400
General Chemistry	Bromide	mg/L	n/a	-	13	12	0	1.8900	1.0308
General Chemistry	Chloride	mg/L	n/a	-	13	13	0	161.0000	138.2077
General Chemistry	Conductivity	uS/cm	n/a	-	13	13	0	1460.0000	1335.1538
General Chemistry	Fluoride	mg/L	n/a	-	13	13	0	0.4460	0.3208
General Chemistry	Hardness	mg/L	n/a	-	13	13	0	742.0000	638.0000
General Chemistry	Nitrate (as N)	mg/L	n/a	-	13	9	0	0.4940	0.3302
General Chemistry	Nitrite (as N)	mg/L	n/a	-	13	0	0	--	--
General Chemistry	Orthophosphate (dissolved)	mg/L	n/a	-	13	1	0	0.0011	0.0011
General Chemistry	Phosphorous	mg/L	n/a	0.03 <sup>(2)</sup>	13	13	0	0.0082	0.0040
General Chemistry	Sulphate	mg/L	n/a	-	13	13	0	393.0000	331.9231
General Chemistry	Temperature, Field	Deg C	n/a	-	13	13	0	22.8000	11.7077
General Chemistry	Total Dissolved Solids (TDS)	mg/L	n/a	-	13	13	0	1020.0000	900.1538
General Chemistry	Total Kjeldahl Nitrogen (TKN)	mg/L	n/a	-	13	13	0	0.5090	0.2508
General Chemistry	Total Organic Carbon (TOC)	mg/L	n/a	-	13	13	0	4.5800	2.4962
General Chemistry	Turbidity	NTU	n/a	-	13	13	0	15.0000	2.8085
Biological	Escherichia coli	MPN/100mL	n/a	100 <sup>(2)</sup>	13	10	0	62.0000	22.3000
Biological	Total Coliform Bacteria	MPN/100mL	n/a	100 <sup>(2)</sup>	13	10	7	3260.0000	658.7000
Metals	Aluminum	mg/L	n/a	0.075 <sup>(2)</sup>	13	13	2	0.1770	0.0348
Metals	Antimony	mg/L	n/a	0.02 <sup>(2)</sup>	13	13	0	0.0003	0.0002
Metals	Arsenic	mg/L	n/a	0.1 <sup>(2)</sup> /0.005 <sup>(3)</sup>	13	13	0	0.0012	0.0008
Metals	Barium	mg/L	n/a	-	13	13	0	0.0352	0.0290
Metals	Beryllium	mg/L	n/a	1.1 <sup>(2)</sup>	13	0	0	--	--
Metals	Bismuth	mg/L	n/a	-	13	0	0	--	--
Metals	Boron	mg/L	n/a	0.2 <sup>(2)</sup>	13	13	1	0.2130	0.1476
Metals	Cadmium	mg/L	n/a	0.0002 <sup>(2)</sup> /0.0005 <sup>(3)</sup>	13	13	0	0.0000	0.0000
Metals	Calcium	mg/L	n/a	-	13	13	0	124.0000	107.3308
Metals	Chromium Total	mg/L	n/a	-	13	0	0	--	--
Metals	Cobalt	mg/L	n/a	0.0009 <sup>(2)</sup>	13	13	0	0.0005	0.0003
Metals	Copper	mg/L	n/a	0.005 <sup>(2)</sup>	13	10	0	0.0013	0.0007
Metals	Iron	mg/L	n/a	0.3 <sup>(2)</sup>	13	13	0	0.1940	0.0471
Metals	Lead	mg/L	n/a	0.025 <sup>(2)</sup> /0.005 <sup>(3)</sup>	13	13	0	0.0006	0.0002
Metals	Magnesium	mg/L	n/a	-	13	13	0	109.0000	89.8077
Metals	Manganese	mg/L	n/a	-	13	13	0	0.0237	0.0098

Table 7.6

**2025 Water Quality Results - Central Sump (SW51A)  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Analyses	Parameters	Units	ECA Criteria	PWQO Criteria	Number of Samples	Number of Detections	Number of Detections Above Effluent Limit or PWQO	Maximum Detected Concentration	Average of Detected Concentrations
Metals	Molybdenum	mg/L	n/a	0.04 <sup>(2)</sup>	13	13	0	0.0175	0.0123
Metals	Nickel	mg/L	n/a	0.025 <sup>(2)</sup>	13	13	0	0.0054	0.0035
Metals	Potassium	mg/L	n/a	-	13	13	0	9.8600	8.4077
Metals	Selenium	mg/L	n/a	0.1 <sup>(2)</sup>	13	13	0	0.0001	0.0001
Metals	Silicon	mg/L	n/a	-	13	13	0	1.7900	1.2515
Metals	Silver	mg/L	n/a	0.0001 <sup>(2)</sup>	13	0	0	--	--
Metals	Sodium	mg/L	n/a	-	13	13	0	66.8000	53.6769
Metals	Strontium	mg/L	n/a	-	13	13	0	3.1800	2.3369
Metals	Thallium	mg/L	n/a	0.0003 <sup>(2)</sup>	13	13	0	0.0002	0.0001
Metals	Tin	mg/L	n/a	-	13	0	0	--	--
Metals	Titanium	mg/L	n/a	-	13	6	0	0.0055	0.0016
Metals	Vanadium	mg/L	n/a	0.006 <sup>(2)</sup>	13	0	0	--	--
Metals	Zinc	mg/L	n/a	0.03 <sup>(2)</sup> /0.02 <sup>(3)</sup>	13	13	8	0.0394	0.0220
Volatiles	Benzene	ug/L	n/a	100 <sup>(2)</sup>	13	1	0	0.9000	0.9000
Volatiles	Ethylbenzene	ug/L	n/a	8 <sup>(2)</sup>	13	1	0	0.9400	0.9400
Volatiles	m&p-Xylenes	ug/L	n/a	-	13	1	0	1.7100	1.7100
Volatiles	o-Xylene	ug/L	n/a	40 <sup>(2)</sup>	13	1	0	0.8500	0.8500
Volatiles	Toluene	ug/L	n/a	0.8 <sup>(2)</sup>	13	1	1	1.0600	1.0600
Volatiles	Xylenes (total)	ug/L	n/a	-	13	1	0	2.5600	2.5600

## Notes:

Screening against Effluent Limits for comparison purposes only. The ECA does not require this discharge to meet Effluent Limits.

Screening against PWQOs for comparison purposes only. The ECA does not require this discharge to meet PWQOs.

n/a - Not Applicable

(1) - ECA Effluent Limit.

(2) - PWQO.

(3) - PWQO/Interim PWQO.

(4) - Minimum pH measured was 7.97.

(5) - Minimum pH measured was 7.75.

Table 8.1

**Residential Well Water Level Data  
2025 Annual Monitoring Report  
Dufferin Milton Quarry  
Region of Halton, Ontario**

Sample Location	Sample Date	Measuring Point Elevation (m AMSL)	Depth to Water (m bref)	Water Elevation (m AMSL)	Remark
DW99	3/26/2025	312.83	7.16	305.67	--
DW99	6/26/2025	312.83	9.18	303.65	--
DW99	9/24/2025	312.83	9.60	303.23	--
DW99	12/22/2025	312.83	9.10	303.73	--
DW100	3/26/2025	319.38	5.26	314.12	--
DW100	6/26/2025	319.38	5.81	313.57	--
DW100	9/24/2025	319.38	6.03	313.35	--
DW103	6/24/2025	319.35	3.80	315.55	--
DW103	9/30/2025	319.35	4.11	315.24	--
DW104	3/26/2025	320.67	4.72	315.95	--
DW104	6/26/2025	320.67	5.20	315.47	--
DW104	9/24/2025	320.67	5.34	315.33	--
DW130	3/26/2025	333.01	2.71	330.30	--
DW130	6/26/2025	333.01	3.72	329.29	--
DW130	9/26/2025	333.01	5.62	327.39	--
DW132A	3/26/2025	343.57	6.01	337.56	--
DW132A	6/26/2025	343.57	6.66	336.91	--
DW132A	9/26/2025	343.57	7.51	336.06	--
DW132A	12/10/2025	343.57	7.64	335.93	--
DW133	3/26/2025	344.51	4.44	340.07	--
DW133	6/26/2025	344.51	5.06	339.45	--
DW133	9/26/2025	344.51	6.34	338.17	--
DW136	3/26/2025	325.41	2.91	322.50	--
DW136	6/26/2025	325.41	3.29	322.12	--
DW136	9/24/2025	325.41	3.75	321.66	--
DW136	12/12/2025	325.41	3.68	321.73	--
DW137	3/26/2025	322.35	1.74	320.61	--
DW137	6/26/2025	322.35	2.91	319.44	--
DW137	9/24/2025	322.35	3.44	318.91	--
DW140	3/26/2025	351.40	7.52	343.88	--
DW140	6/26/2025	351.40	8.90	342.50	--
DW140	9/25/2025	351.40	9.98	341.42	--
DW140	12/3/2025	351.40	10.37	341.03	--
DW140A	3/26/2025	350.32	6.42	343.90	--
DW140A	6/26/2025	350.32	7.80	342.52	--
DW140A	9/25/2025	350.32	8.90	341.42	--
DW140A	12/3/2025	350.32	9.33	340.99	--
DW142A	3/26/2025	341.81	1.13	340.68	--
DW142A	6/26/2025	341.81	1.89	339.92	--
DW142A	9/25/2025	341.81	2.87	338.94	--
DW142A	12/22/2025	341.81	3.20	338.61	--

**Note:**

Measuring point elevations based on GHD survey data.  
m bref - meters below reference elevation.

Table 8.2

**Analytical Results Summary  
Residential Wells  
2025 Milton Annual Monitoring Report**

Sample Location:	BH37		BH109		DW100		DW103		DW103	
Sample ID:	GW-10978-262-47-103025-SS001		GW-10978-262-47-103025-SS002		GW-10978-262-47-121825-RC103		GW-10978-262-47-040125-RC105		GW-10978-262-47-062425-RC105	
Sample Date:	10/30/2025		10/30/2025		12/18/2025		4/2/2025		6/24/2025	
Parameters	Units	ODWS <sup>(1)</sup>	Source							
Aluminum	mg/L	-	-	0.0852	0.0057	ND (0.0030)	ND (0.0030)	0.0060		
Antimony	mg/L	0.006	IMAC	0.00016	0.00011	ND (0.00010)	ND (0.00010)	0.00016		
Arsenic	mg/L	0.01	IMAC	0.00084	0.00052	0.00011	0.00010	0.00016		
Barium	mg/L	1	MAC	0.0320	0.0485	0.00717	0.0206	0.0271		
Beryllium	mg/L	-	-	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)		
Bismuth	mg/L	-	-	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)		
Boron	mg/L	5	IMAC	0.138	0.131	0.019	0.060	0.103		
Cadmium	mg/L	0.005	MAC	0.0000445	0.0000308	0.0000491	0.0000524	0.0000507		
Caesium	mg/L	-	-	0.000033	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)		
Calcium	mg/L	-	-	89.7	97.8	105	90.8	88.2		
Chromium Total	mg/L	0.05	MAC	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)		
Cobalt	mg/L	-	-	0.00036	0.00024	ND (0.00010)	ND (0.00010)	ND (0.00010)		
Copper	mg/L	-	-	0.00089	ND (0.00050)	0.0236	0.00334	0.0326		
Iron	mg/L	-	-	0.304	0.076	ND (0.010)	ND (0.010)	0.039		
Lead	mg/L	0.01	MAC	0.00274	0.000066	0.000407	0.000363	0.00174		
Lithium	mg/L	-	-	0.0133	0.0152	ND (0.0010)	0.0062	0.0110		
Magnesium	mg/L	-	-	54.6	58.5	49.8	56.5	56.6		
Manganese	mg/L	-	-	0.0145	0.00394	0.00015	0.00014	0.00033		
Molybdenum	mg/L	-	-	0.00461	0.00417	0.000180	0.00125	0.00301		
Nickel	mg/L	-	-	0.00092	0.00071	ND (0.00050)	ND (0.00050)	0.00109		
Phosphorous	mg/L	-	-	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)		
Potassium	mg/L	-	-	5.45	5.14	0.480	2.63	4.90		
Rubidium	mg/L	-	-	0.00275	0.00282	0.00054	0.00141	0.00221		
Selenium	mg/L	0.05	MAC	ND (0.000050)	ND (0.000050)	0.000113	0.000050	0.000053		
Silicon	mg/L	-	-	1.57	1.54	1.83	1.90	1.51		
Silver	mg/L	-	-	0.000012	ND (0.000010)	ND (0.000010)	ND (0.000010)	0.000015		
Sodium	mg/L	-	-	<b>31.1</b>	<b>36.8</b>	13.1	17.2	<b>30.7</b>		
Strontium	mg/L	-	-	2.25	2.18	0.0818	1.02	1.86		
Sulphur	mg/L	-	-	75.2	89.8	11.2	36.8	70.6		
Tellurium	mg/L	-	-	0.00039	0.00044	ND (0.00020)	ND (0.00020)	0.00022		
Thallium	mg/L	-	-	0.000062	0.000057	ND (0.000010)	0.000037	0.000054		
Thorium	mg/L	-	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)		
Tin	mg/L	-	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00048		
Titanium	mg/L	-	-	0.00180	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)		
Tungsten	mg/L	-	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)		
Uranium	mg/L	0.02	MAC	0.000769	0.000684	0.000172	0.000447	0.000635		
Vanadium	mg/L	-	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)		
Zinc	mg/L	-	-	0.0199	0.0087	0.0255	0.0488	0.0722		
Zirconium	mg/L	-	-	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)		
Escherichia coli	cfu/100mL	-	MAC	--	--	--	ND (1)	ND (1)		
Escherichia coli	MPN/100mL	-	MAC	ND (1)	ND (1)	ND (1)	--	--		
Total Coliform Bacteria	cfu/100mL	-	ODWQS	--	--	--	ND (1)	10 DLM		
Total Coliform Bacteria	MPN/100mL	-	ODWQS	<b>4</b>	<b>42</b>	ND (1)	--	--		

Table 8.2

**Analytical Results Summary  
Residential Wells  
2025 Milton Annual Monitoring Report**

Sample Location:	BH37	BH109	DW100	DW103	DW103			
Sample ID:	GW-10978-262-47-103025-SS001	GW-10978-262-47-103025-SS002	GW-10978-262-47-121825-RC103	GW-10978-262-47-040125-RC105	GW-10978-262-47-062425-RC105			
Sample Date:	10/30/2025	10/30/2025	12/18/2025	4/2/2025	6/24/2025			
Parameters	Units	ODWS <sup>(1)</sup>	Source					
Alkalinity, Bicarbonate	mg/L	-	-	166	152	370	315	209
Alkalinity, Carbonate	mg/L	-	-	6.3	5.4	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Hydroxide	mg/L	-	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Phenolphthalein	mg/L	-	-	3.1	2.7	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	-	-	172	158	370	315	209
Ammonia-N	mg/L	-	-	0.0140	0.178	ND (0.0050)	0.0338	0.0259
Bromide	mg/L	-	-	0.50	0.63 DLDS	ND (0.10)	ND (0.10)	0.45
Chloride	mg/L	-	-	79.9	89.7 DLDS	22.3	44.4	74.8
Chloride (Dissolved)	mg/L	-	-	--	--	--	--	--
Conductivity	uS/cm	-	-	931	1000	799	853	923
Fluoride	mg/L	1.5	MAC	0.175	0.151 DLDS	0.056	0.091	0.133
Hardness Calculation	mg/L	-	-	449	485	467	459	453
Nitrate (as N)	mg/L	10	MAC	0.144	0.132 DLDS	0.953	0.163	0.307
Nitrite (as N)	mg/L	1	MAC	ND (0.010)	ND (0.020) DLDS	ND (0.010)	ND (0.010)	ND (0.010)
Orthophosphate (dissolved)	mg/L	-	-	ND (0.0010)	ND (0.0010)	0.0013	0.0012	0.0030
pH (lab)	s.u.	-	-	8.41	8.39	8.12	7.82	7.87
Phosphorous	mg/L	-	-	0.0098	0.0020	ND (0.0020)	ND (0.0020)	ND (0.0020)
Sulphate	mg/L	-	-	214	242 DLDS	30.4	100	186
Sulphate (Dissolved)	mg/L	-	-	--	--	--	--	--
Total Dissolved Solids (TDS)	mg/L	-	-	587 DLDS	652 DLDS	412 DLDS	510 DLDS	589 DLDS
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND (0.400) DLB	ND (0.400) DLB	0.198	0.119	0.143
Total Organic Carbon (TOC)	mg/L	-	-	0.99	0.94	0.94	0.91	1.33
Total Suspended Solids (TSS)	mg/L	-	-	10.3	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)
Turbidity	NTU	-	-	2.43	0.30	ND (0.10)	ND (0.10)	0.32

## Notes:

DLDS - Detection limit raised: Dilution required due to high Dissolved Solids/Electrical Conductivity.

DLM - Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

ND - Not detected at the associated reporting limit.

PEHT - Parameter Exceeded Recommended Holding Time Prior to Analysis.

TKNI - TKN result is likely biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

## Criteria Notes:

(1) Ministry of the Environment (MOE), Ontario Drinking Water Standards (ODWS), August 2000, revised January 2001 and June 2003, where applicable.

(2) Sodium is a non-health based standard, but maybe of concern to individuals with sodium reduced diets.

(3) The local guidance for Total Coliform Bacteria is 5 or less in samples 1 to 3 weeks apart.

Table 8.2

**Analytical Results Summary  
Residential Wells  
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Sample Location:	DW103	DW103	DW104	DW105	DW106	DW107
Sample ID:	GW-10978-262-47-093025-RC105	GW-10978-262-47-121625-RC105	GW-10978-262-47-121025-RC106	GW-10978-262-47-110525-RC107	010978-262-47-092525-RC108	GW-10978-262-47-112525-RC109
Sample Date:	9/30/2025	12/16/2025	12/10/2025	11/5/2025	9/25/2025	11/25/2025
Parameters	Units					
Aluminum	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Antimony	mg/L	ND (0.00010)	0.00013	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic	mg/L	0.00014	0.00012	0.00015	ND (0.00010)	ND (0.00010)
Barium	mg/L	0.0276	0.0304	0.0374	0.00186	0.0458
Beryllium	mg/L	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)
Bismuth	mg/L	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron	mg/L	0.109	0.129	ND (0.010)	0.157	0.076
Cadmium	mg/L	0.0000557	0.0000615	0.0000207	ND (0.000050)	0.0000566
Caesium	mg/L	ND (0.000010)	0.000010	ND (0.000010)	ND (0.000010)	ND (0.000010)
Calcium	mg/L	89.7	93.6	73.6	4.74	103
Chromium Total	mg/L	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Copper	mg/L	0.0119	0.0158	0.0110	0.00494	0.0328
Iron	mg/L	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Lead	mg/L	0.000811	0.00126	0.000146	0.000195	0.000552
Lithium	mg/L	0.0104	0.0122	ND (0.0010)	0.0033	0.0037
Magnesium	mg/L	56.8	59.5	35.5	2.12	55.4
Manganese	mg/L	0.00010	0.00012	ND (0.00010)	ND (0.00010)	ND (0.00010)
Molybdenum	mg/L	0.00268	0.00331	0.000603	0.00307	0.00107
Nickel	mg/L	0.00058	0.00104	ND (0.00050)	ND (0.00050)	0.00085
Phosphorous	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium	mg/L	4.74	5.40	0.648	0.859	2.28
Rubidium	mg/L	0.00211	0.00238	0.00069	ND (0.00020)	0.00055
Selenium	mg/L	ND (0.000050)	ND (0.000050)	0.000081	ND (0.000050)	0.000062
Silicon	mg/L	1.45	1.41	2.83	1.59	2.07
Silver	mg/L	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	0.000014
Sodium	mg/L	<b>31.3</b>	<b>34.1</b>	10.0	<b>271</b>	<b>29.1</b>
Strontium	mg/L	1.69	2.08	0.264	0.0880	0.869
Sulphur	mg/L	68.3	79.5	7.95	86.6	58.9
Tellurium	mg/L	0.00029	0.00046	ND (0.00020)	ND (0.00020)	0.00027
Thallium	mg/L	0.000058	0.000059	ND (0.000010)	ND (0.000010)	0.000078
Thorium	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Tin	mg/L	ND (0.00010)	0.00016	ND (0.00010)	ND (0.00010)	0.00024
Titanium	mg/L	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium	mg/L	0.000590	0.000620	0.000268	0.000438	0.000444
Vanadium	mg/L	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc	mg/L	0.0516	0.0698	0.0140	0.0095	0.0595
Zirconium	mg/L	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)
Escherichia coli	cfu/100mL	--	--	--	--	--
Escherichia coli	MPN/100mL	ND (1)	ND (1) PEHT	ND (1)	ND (1)	ND (1)
Total Coliform Bacteria	cfu/100mL	--	--	--	--	--
Total Coliform Bacteria	MPN/100mL	<b>1</b>	ND (1) PEHT	ND (1)	<b>2</b>	ND (1)

**Analytical Results Summary  
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Sample Location:	DW103	DW103	DW104	DW105	DW106	DW107	
Sample ID:	GW-10978-262-47-093025-RC105	GW-10978-262-47-121625-RC105	GW-10978-262-47-121025-RC106	GW-10978-262-47-110525-RC107	010978-262-47-092525-RC108	GW-10978-262-47-112525-RC109	
Sample Date:	9/30/2025	12/16/2025	12/10/2025	11/5/2025	9/25/2025	11/25/2025	
Parameters	Units						
Alkalinity, Bicarbonate	mg/L	195	176	303	201	351	236
Alkalinity, Carbonate	mg/L	ND (2.0)	ND (2.0)	ND (2.0)	11.9	ND (2.0)	ND (2.0)
Alkalinity, Hydroxide	mg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Phenolphthalein	mg/L	ND (2.0)	ND (2.0)	ND (2.0)	6.0	ND (2.0)	ND (2.0)
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	195	176	303	213	351	236
Ammonia-N	mg/L	ND (0.0050)	0.0095	0.0415	0.0128	0.0198	0.0079
Bromide	mg/L	ND (0.50) DLDS	0.74 DLDS	ND (0.10)	ND (0.50) DLDS	ND (0.50) DLDS	0.19
Chloride	mg/L	76.2 DLDS	84.4 DLDS	20.2	97.4 DLDS	253 DLDS	71.0
Chloride (Dissolved)	mg/L	--	--	--	--	--	--
Conductivity	uS/cm	980	974	633	1230	1430	958
Fluoride	mg/L	0.147 DLDS	0.109 DLDS	0.055	0.133 DLDS	ND (0.100) DLDS	0.068
Hardness Calculation	mg/L	458	479	330	20.6	575	485
Nitrate (as N)	mg/L	0.230 DLDS	0.238 DLDS	0.153	0.221 DLDS	3.55 DLDS	0.122
Nitrite (as N)	mg/L	ND (0.050) DLDS	ND (0.020) DLDS	ND (0.010)	ND (0.050) DLDS	ND (0.050) DLDS	ND (0.010)
Orthophosphate (dissolved)	mg/L	0.0012	ND (0.0010)	0.0019	0.0012	0.0029	0.0013
pH (lab)	s.u.	7.92	8.24	7.99	8.71	7.74	8.19
Phosphorous	mg/L	ND (0.0020)	ND (0.0020)	0.0023	ND (0.0020)	ND (0.0020)	ND (0.0020)
Sulphate	mg/L	186 DLDS	221 DLDS	21.7	246 DLDS	16.0 DLDS	167
Sulphate (Dissolved)	mg/L	--	--	--	--	--	--
Total Dissolved Solids (TDS)	mg/L	614 DLDS	609 DLDS	339 DLDS	752 DLDS	849 DLDS	568 DLDS
Total Kjeldahl Nitrogen (TKN)	mg/L	0.090	0.088	0.113	0.111	0.363	0.056
Total Organic Carbon (TOC)	mg/L	2.00	0.74	0.57	1.03	2.51	1.24
Total Suspended Solids (TSS)	mg/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)
Turbidity	NTU	0.10	ND (0.10)	0.16	ND (0.10)	0.24	ND (0.10)

## Notes:

DLDS - Detection limit raised: Dilution require Dissolved Solids/Electrical Conductivity.

DLM - Detection Limit Adjusted due to sample effects (e.g. chemical interference, color)

ND - Not detected at the associated reporting level

PEHT - Parameter Exceeded Recommended Holding Time Prior to Analysis.

TKNI - TKN result is likely biased low due to Nitrate-N is > 10x TKN.

## Criteria Notes:

(1) Ministry of the Environment (MOE), Ontario Standards (ODWS), August 2000, revised January and June 2003, where applicable.

(2) Sodium is a non-health based standard, but of concern to individuals with sodium reduced diets.

(3) The local guidance for Total Coliform Bacteria is less in samples 1 to 3 weeks apart.

**Analytical Results Summary  
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Sample Location:	DW128	DW128A	DW129	DW130	DW130	DW132A	
Sample ID:	GW-10978-262-47-121625-RC114	GW-10978-262-47-121625-RC115	GW-10978-262-47-110525-RC116	GW-10978-262-47-010725-RC117	GW-10978-262-47-121725-RC117	GW-10978-262-47-121025-RC120	
Sample Date:	12/16/2025	12/16/2025	11/5/2025	1/7/2025	12/17/2025	12/10/2025	
Parameters	Units						
Aluminum	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Antimony	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00013
Arsenic	mg/L	0.00022	0.00012	0.00014	0.00012	0.00013	0.00012
Barium	mg/L	0.00045	0.108	0.0209	0.0123	0.0168	0.0706
Beryllium	mg/L	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)
Bismuth	mg/L	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron	mg/L	0.070	0.018	0.011	0.011	0.011	ND (0.010)
Cadmium	mg/L	ND (0.0000050)	0.0000107	0.000153	0.000176	0.000159	0.000172
Caesium	mg/L	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Calcium	mg/L	0.421	75.1	94.4	91.2	99.8	92.9
Chromium Total	mg/L	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00121
Cobalt	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Copper	mg/L	0.00450	0.00320	0.00980	0.0229	0.0242	0.00719
Iron	mg/L	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.033
Lead	mg/L	0.000371	0.000114	0.00102	0.000284	0.000296	0.00117
Lithium	mg/L	0.0129	0.0022	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
Magnesium	mg/L	0.150	31.6	47.2	40.0	44.0	37.5
Manganese	mg/L	0.00013	0.00764	0.00020	0.00013	ND (0.00010)	0.00095
Molybdenum	mg/L	0.00129	0.00115	0.00126	0.000904	0.00122	0.00457
Nickel	mg/L	ND (0.00050)	ND (0.00050)	0.00114	0.00126	0.00156	0.00579
Phosphorous	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium	mg/L	0.076	0.712	0.419	0.498	0.494	0.759
Rubidium	mg/L	ND (0.00020)	0.00085	0.00044	0.00065	0.00078	0.00069
Selenium	mg/L	ND (0.000050)	ND (0.000050)	0.000118	0.000085	0.000087	0.000084
Silicon	mg/L	2.75	3.06	1.82	1.98	2.22	2.31
Silver	mg/L	ND (0.000010)	ND (0.000010)	0.000031	ND (0.000010)	ND (0.000010)	0.000039
Sodium	mg/L	<b>211</b>	8.61	2.94	17.0	19.8	<b>95.5</b>
Strontium	mg/L	0.00595	0.706	0.0487	0.0727	0.0759	0.106
Sulphur	mg/L	47.5	8.32	3.21	3.35	4.93	6.08
Tellurium	mg/L	ND (0.00020)	0.00020	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)
Thallium	mg/L	ND (0.000010)	0.000010	0.000018	0.000035	0.000044	0.000057
Thorium	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Tin	mg/L	ND (0.00010)	ND (0.00010)	0.00012	ND (0.00010)	ND (0.00010)	ND (0.00010)
Titanium	mg/L	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium	mg/L	0.000308	0.000160	0.000393	0.000402	0.000514	0.00116
Vanadium	mg/L	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc	mg/L	ND (0.0030)	0.0099	0.193	0.166	0.193	0.208
Zirconium	mg/L	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)
Escherichia coli	cfu/100mL	--	--	--	ND (1)	--	--
Escherichia coli	MPN/100mL	ND (1) PEHT	ND (1) PEHT	<b>1</b>	--	ND (1)	ND (1)
Total Coliform Bacteria	cfu/100mL	--	--	--	ND (1)	--	--
Total Coliform Bacteria	MPN/100mL	ND (1) PEHT	ND (1) PEHT	<b>6</b>	--	ND (1)	ND (1)

**Analytical Results Summary  
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Sample Location:	DW128	DW128A	DW129	DW130	DW130	DW132A	
Sample ID:	GW-10978-262-47-121625-RC114	GW-10978-262-47-121625-RC115	GW-10978-262-47-110525-RC116	GW-10978-262-47-010725-RC117	GW-10978-262-47-121725-RC117	GW-10978-262-47-121025-RC120	
Sample Date:	12/16/2025	12/16/2025	11/5/2025	1/7/2025	12/17/2025	12/10/2025	
Parameters	Units						
Alkalinity, Bicarbonate	mg/L	225	273	315	396	366	327
Alkalinity, Carbonate	mg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	6.1	ND (2.0)
Alkalinity, Hydroxide	mg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Phenolphthalein	mg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.0	ND (2.0)
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	225	273	315	396	372	327
Ammonia-N	mg/L	0.0146	0.0304	0.0070	0.0410	0.0104	ND (0.0050)
Bromide	mg/L	ND (0.20) DLDS	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.50) DLDS
Chloride	mg/L	52.8 DLDS	14.3	4.81	--	32.8	190 DLDS
Chloride (Dissolved)	mg/L	--	--	--	26.7	--	--
Conductivity	uS/cm	895	580	555	786	759	1180
Fluoride	mg/L	0.088 DLDS	0.074	0.075	0.070	0.054	ND (0.100) DLDS
Hardness Calculation	mg/L	1.67	318	430	392	430	386
Nitrate (as N)	mg/L	0.042 DLDS	ND (0.020)	0.718	0.569	0.563	0.386 DLDS
Nitrite (as N)	mg/L	ND (0.020) DLDS	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.050) DLDS
Orthophosphate (dissolved)	mg/L	0.0010	ND (0.0010)	0.0013	ND (0.0010)	ND (0.0010)	0.0016
pH (lab)	s.u.	8.20	8.26	8.27	7.60	8.31	8.08
Phosphorous	mg/L	ND (0.0020)	ND (0.0020)	ND (0.0020)	ND (0.0020)	0.0031	ND (0.0020)
Sulphate	mg/L	125 DLDS	24.7	9.03	--	12.6	15.9 DLDS
Sulphate (Dissolved)	mg/L	--	--	--	9.33	--	--
Total Dissolved Solids (TDS)	mg/L	509 DLDS	308 DLDS	378 DLDS	411 DLDS	402 DLDS	647 DLDS
Total Kjeldahl Nitrogen (TKN)	mg/L	0.052	0.070	0.191	0.251	0.124	0.147
Total Organic Carbon (TOC)	mg/L	1.30	1.56	1.29	1.41	1.20	0.84
Total Suspended Solids (TSS)	mg/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)
Turbidity	NTU	ND (0.10)	ND (0.10)	ND (0.10)	0.10	ND (0.10)	0.27

## Notes:

DLDS - Detection limit raised: Dilution require  
Dissolved Solids/Electrical Conductivity.  
DLM - Detection Limit Adjusted due to sample  
effects (e.g. chemical interference, color  
ND - Not detected at the associated reporting l  
PEHT - Parameter Exceeded Recommended  
Holding Time Prior to Analysis.  
TKNI - TKN result is likely biased low due to N  
Nitrate-N is > 10x TKN.

## Criteria Notes:

(1) Ministry of the Environment (MOE), Ontario  
Standards (ODWS), August 2000, revised Jar  
and June 2003, where applicable.  
(2) Sodium is a non-health based standard, bu  
concern to individuals with sodium reduced di  
(3) The local guidance for Total Coliform Bacte  
less in samples 1 to 3 weeks apart.

Table 8.2

**Analytical Results Summary  
Residential Wells  
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Sample Location:	DW136	DW137	DW140	DW140A	DW142A	
Sample ID:	GW-10978-262-47-121025-RC110	GW-10978-262-47-120325-RC111	010978-262-47-092525-RC125	010978-262-47-092525-RC126	010978-262-47-092525-RC127	
Sample Date:	12/10/2025	12/3/2025	9/25/2025	9/25/2025	9/25/2025	
Parameters	Units					
Aluminum	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	0.0047
Antimony	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic	mg/L	0.00023	0.00022	0.00024	0.00013	0.0118
Barium	mg/L	0.0778	0.0926	0.0162	0.0178	0.106
Beryllium	mg/L	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)
Bismuth	mg/L	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron	mg/L	0.019	0.018	0.059	0.020	ND (0.010)
Cadmium	mg/L	0.0000419	0.0000660	0.000261	0.000196	ND (0.0000050)
Caesium	mg/L	ND (0.000010)	0.000010	ND (0.000010)	ND (0.000010)	ND (0.000010)
Calcium	mg/L	89.1	99.6	114	107	101
Chromium Total	mg/L	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00015
Copper	mg/L	0.00779	0.0141	0.00753	0.0103	0.00275
Iron	mg/L	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	2.92
Lead	mg/L	0.000166	0.000256	0.000581	0.00107	0.000100
Lithium	mg/L	0.0018	0.0031	ND (0.0010)	ND (0.0010)	ND (0.0010)
Magnesium	mg/L	35.3	38.6	33.3	27.4	41.3
Manganese	mg/L	0.00012	0.00011	0.00018	0.00015	0.0537
Molybdenum	mg/L	0.00130	0.00177	0.000472	0.000149	0.00353
Nickel	mg/L	0.00058	0.00086	0.00172	0.00170	0.00143
Phosphorous	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium	mg/L	3.12	2.75	6.64	6.36	0.557
Rubidium	mg/L	0.00166	0.00216	0.00089	0.00136	0.00115
Selenium	mg/L	0.000173	0.000237	0.00113	0.000479	0.000054
Silicon	mg/L	4.78	5.32	4.02	3.52	3.93
Silver	mg/L	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Sodium	mg/L	104	96.4	11.1	10.2	57.7
Strontium	mg/L	0.243	0.388	0.0997	0.128	0.0826
Sulphur	mg/L	11.9	16.1	4.20	6.05	8.25
Tellurium	mg/L	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)
Thallium	mg/L	0.000058	0.000102	0.000078	0.000078	ND (0.000010)
Thorium	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Tin	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00017	ND (0.00010)
Titanium	mg/L	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium	mg/L	0.000649	0.000859	0.000316	0.000199	0.000099
Vanadium	mg/L	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc	mg/L	0.0288	0.0461	0.257	0.322	0.0138
Zirconium	mg/L	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	0.00155
Escherichia coli	cfu/100mL	--	--	--	--	--
Escherichia coli	MPN/100mL	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Total Coliform Bacteria	cfu/100mL	--	--	--	--	--
Total Coliform Bacteria	MPN/100mL	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)

Table 8.2

**Analytical Results Summary  
Residential Wells  
2025 Milton Annual Monitoring Report**

Sample Location:	DW136	DW137	DW140	DW140A	DW142A	
Sample ID:	GW-10978-262-47-121025-RC110	GW-10978-262-47-120325-RC111	010978-262-47-092525-RC125	010978-262-47-092525-RC126	010978-262-47-092525-RC127	
Sample Date:	12/10/2025	12/3/2025	9/25/2025	9/25/2025	9/25/2025	
Parameters	Units					
Alkalinity, Bicarbonate	mg/L	315	307	349	328	348
Alkalinity, Carbonate	mg/L	ND (2.0)	10.0	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Hydroxide	mg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Phenolphthalein	mg/L	ND (2.0)	5.0	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	315	317	349	328	348
Ammonia-N	mg/L	0.0299	ND (0.0050)	ND (0.0050)	ND (0.0050)	0.238
Bromide	mg/L	ND (0.50) DLDS	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.20) DLDS
Chloride	mg/L	193 DLDS	158	14.7	11.4	92.5 DLDS
Chloride (Dissolved)	mg/L	--	--	--	--	--
Conductivity	uS/cm	1210	1140	754	711	937
Fluoride	mg/L	ND (0.100) DLDS	0.072	0.072	0.077	0.081 DLDS
Hardness Calculation	mg/L	368	408	422	380	422
Nitrate (as N)	mg/L	3.13 DLDS	2.64	9.12	7.87	ND (0.040) DLDS
Nitrite (as N)	mg/L	ND (0.050) DLDS	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020) DLDS
Orthophosphate (dissolved)	mg/L	0.0026	0.0019	0.0026	0.0014	0.0012
pH (lab)	s.u.	7.96	8.41	7.68	7.63	7.69
Phosphorous	mg/L	ND (0.0020)	ND (0.0020)	0.0024	ND (0.0020)	0.0043
Sulphate	mg/L	31.6 DLDS	43.3	10.2	16.6	20.1 DLDS
Sulphate (Dissolved)	mg/L	--	--	--	--	--
Total Dissolved Solids (TDS)	mg/L	679 DLDS	634 DLDS	437 DLDS	407 DLDS	530 DLDS
Total Kjeldahl Nitrogen (TKN)	mg/L	0.374	0.340	0.570 TKNI	0.386 TKNI	0.810
Total Organic Carbon (TOC)	mg/L	1.47	1.82	1.98	1.20	9.61
Total Suspended Solids (TSS)	mg/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)
Turbidity	NTU	ND (0.10)	ND (0.10)	8.10	0.22	0.24

## Notes:

DLDS - Detection limit raised: Dilution require Dissolved Solids/Electrical Conductivity.  
DLM - Detection Limit Adjusted due to sample effects (e.g. chemical interference, color)  
ND - Not detected at the associated reporting level  
PEHT - Parameter Exceeded Recommended Holding Time Prior to Analysis.  
TKNI - TKN result is likely biased low due to Nitrate-N is > 10x TKN.

## Criteria Notes:

(1) Ministry of the Environment (MOE), Ontario Standards (ODWS), August 2000, revised Jar and June 2003, where applicable.  
(2) Sodium is a non-health based standard, but concern to individuals with sodium reduced diet  
(3) The local guidance for Total Coliform Bacteria less in samples 1 to 3 weeks apart.