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**Dufferin Aggregates Teedon Pit – 2022 Combined Annual Monitoring Report**

Please find enclosed the Annual Monitoring Report for the Dufferin Aggregates Teedon Pit for the 2021 calendar year. This report fulfills the requirements for PTTW No. 6258-BRDJ2M and ECA No. 1293-CF7J3M. Dufferin Aggregates is a division of CRH Canada Group Inc.

Hard copies of the report can be provided upon request.

Please do not hesitate to contact me if you have any questions or comments.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Jennah Pettenuzzo'.

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# 2022 Annual Monitoring Report

## Teedon Pit

Dufferin Aggregates, a division of CRH Canada Group Inc.

28 April 2023

→ The Power of Commitment



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# 1. Introduction

GHD was retained by Dufferin Aggregates, a division of CRH Canada Group Inc. (Dufferin), to complete the 2022 Annual Monitoring Report (AMR) for the Dufferin Teedon Pit (Site) for the period between January 1 and December 31, 2022. This monitoring report was completed pursuant to and combines the associated monitoring results of:

- Ontario Ministry of the Environment, Conservation and Parks (MECP) Permit to Take Water (PTTW) No. 6258-BRDJ2M issued on January 14, 2021
- MECP Environmental Compliance Approval (ECA) No. 1293-CF7J3M issued on (December 6, 2022)

The Dufferin Teedon Pit is located at 40 Darby Rd, Township of Tiny, County of Simcoe, Ontario (north 1/2 Lot 79 Concession 1, PT south 1/2 Lot 80 Concession 1). Dufferin also owns land located to the North of the Site (proposed Teedon Pit Extension). This AMR includes data collected by Dufferin and GHD and includes relevant data from the proposed Teedon Pit Extension, where applicable. A map of the Site and surrounding lands is presented on Figure 1.1.

The purpose of the AMR is to document the results of the 2022 monitoring program specified in the PTTW and ECA. A copy of the PTTW is presented in Appendix A. A copy of the ECA is provided in Appendix B. Please note that ECA No. 1293-CF7J3M was issued on December 6, 2022. No washing operations occurred on-Site following the issuance of the ECA on December 6, 2022, as such the monitoring requirements specified in the ECA are not applicable for this reporting year. The commencement of works under ECA No. 1293-CF7J3M will be documented in the 2023 AMR.

The 2022 monitoring program and related activities include the following, which are discussed in detail in the subsequent sections:

- Quarterly hydraulic monitoring events (groundwater levels and datalogger downloads)
- Recording of water takings (completed by Dufferin)
- Daily Source Pond Water Level Monitoring (completed by Dufferin)
- Routine berm inspections (completed by Dufferin)
- Private water well sampling
- Sump Pond Water Quality Monitoring
- MW7-18 relocation.

## 2. Background

### 2.1 Geologic/Hydrogeologic Setting

The regional overburden deposits near the Site are approximately 140 to 150 metres (m) thick (Singer et al., 1999). They were deposited during and shortly after the Wisconsinian glaciation, and as such are all Pleistocene in age. The primary overlying deposits are the silty to sandy till. These deposits are stone-poor and carbonate-derived (OGS, 2003).

The top of bedrock elevations near the Site are approximately 130 to 140m AMSL (Singer et al., 1999). The bedrock beneath the overburden in this area is the Shadow Lake Formation, which is part of the Simcoe and Ottawa Groups and are Middle Ordovician in age (OSG, 2006). It is usually found to be more than 12 m thick, and due to its relative thinness the Shadow Lake Formation and overlying Gull River Formation are commonly portrayed as a single unit (Singer et al., 1999). The Shadow Lake Formation consists of shale, sandstone, limestone, and conglomerate.

The Teedon Pit is located above the Alliston Aquifer Complex (an overburden aquifer), which covers the entire area between the Oak Ridges Moraine and Georgian Bay. It consists of fine to coarse sand deposits that occur at variable depths in close association with silt and clay deposits (Singer, 2003). All these materials were laid down in glacial and glaciolacustrine environments (Singer, 2003). The Alliston Aquifer Complex consists of multiple aquifers at shallow and deep levels. The Alliston Aquifer (referred to as the Upper Aquifer on-Site) has a relatively high permeability and generally has good water-yielding capacity. A thick silt and clay aquitard underlies the source/sump pond, settling pond, and the unnamed pond and downstream unnamed tributary. The aquitard layer limits the interconnections between this shallow groundwater system (shallow groundwater zone) and the Upper Aquifer as is evidenced by the large (greater than 15 metres) water elevation difference between shallow groundwater zone monitoring wells and the Upper Aquifer monitoring wells (refer to Section 4.2).

## 2.2 Permit to Take Water (PTTW)

This monitoring report satisfies the requirements of the monitoring program under the MECP Section 34.1 of the Ontario Water Resources Act (OWRA) PTTW No. 6258-BRDJ2M which was issued on January 14, 2021 and amended January 19, 2021 as presented in Appendix A.

PTTW No. 6258-BRDJ2M includes the following authorized water takings, as specified in Table A, therein:

Source Name	Source Type	Taking Specific Purpose	Taking Major Category	Max Taken (L/min)	Max Hours Per Day	Max Taken (L/day)	Max Days Per Year
PW1-09 (WWR#7124734)	Well Drilled	Aggregate Washing	Industrial	950	24	1,368,000	210
Source Pond	Pond Dugout	Aggregate Washing	Industrial	7,274	12	5,237,280	210
					<b>Total</b>	<b>6,605,280</b>	

The PTTW No. 6258-BRDJ2M environmental monitoring requirements are presented in Condition 4.2 and summarized below:

### Condition 4.2

- Install and maintain dataloggers at the on-Site and off-Site monitoring wells listed in Schedule B and monitor groundwater levels at a minimum frequency of every four hours. This monitoring shall occur, at a minimum, between February 15 and December 15 of each year for which the Permit is valid.
- Should any other on-Site monitoring well be installed, then groundwater levels shall be monitored as per item (i) above and the data included in the Annual Monitoring Report.
- Measure water levels in private water wells WWR 7150632 and WWR 5717709, if permission is granted by the well owners. Should the permission of either of these domestic water well owners be withdrawn, then the permit holder shall replace the well for which permission has been denied with a well in the same aquifer either on or off site.
- Measure the water level elevation in the Source Pond between February 15 and December 15 when the pond is not frozen at a minimum frequency of twice per day, once in the early morning and once in the late afternoon or evening.

Please note the PTTW references the locations Source Pond (as above), the ECA also refers to this same location as the Sump Pond. Throughout this report this feature will be referred to as the Sump Pond; except were directly referencing a PTTW requirement. Within the Source/Sump Pond water levels and samples are collected in reference to monitoring location SW1, as shown on Figure 1.1.

## 2.3 Environmental Compliance Approval (ECA)

ECA No. 1293-CF7J3M was issued on December 6, 2022. Aggregate washing occurred on-Site in 2022, as historically documented with MECP. The 2022 aggregate washing season ceased on November 11, 2022.

Following issuance of the ECA on December 6 and through the end of 2022, no aggregate washing operations occurred on Site that would be subject to the terms and conditions of the ECA. Therefore, the ECA Works subjected to ECA No. 1293-CF7J3M, will be documented in the 2023 Annual Monitoring Report.

ECA No. 1293-CF7J3M is presented in Appendix B.

## 2.4 Additional Monitoring

Further to the monitoring program within PTTW No. 6258-BRDJ2M, the following additional groundwater and surface water monitoring activities were completed in 2022 and presented herein (PTTW Condition 4.3.ii.):

- Water Quality Monitoring at SW1 and the unnamed pond adjacent to the Sump Pond (SW2)
- Private Water Well Sampling

These programs were completed in 2022 prior to the issuance of ECA No. 1293-CF7J3M but were formalized in the ECA monitoring program following issuance.

The additional monitoring activities have been incorporated into the discussion of Site results below, where appropriate, and will be incorporated into discussions on the ECA monitoring program in subsequent annual reports.

## 3. Site Operations

The Teedon Pit is licensed under the MNRF ARA Licence No. 3670 for above water table aggregate extraction of up to 600,000 tonnes annually. The Teedon Pit has an 85.39 hectare (ha) licensed area of which 50.5 ha can be extracted.

The Teedon Pit was acquired by Dufferin in 2017 and was previously owned by Cedarhurst Quarries & Crushing Limited since 1987. The accuracy of the hydraulic monitoring data collected prior to ownership by Dufferin, could not be confirmed as these data were collected by the previous owner; however, the data has been reviewed and deemed appropriate to include herein for context.

2022 Site operations included aggregate extraction and processing, which includes on-Site water use for aggregate washing operations, dust suppression, and operational uses (i.e., equipment washing and filling office water supply).

### 3.1 Relocation Of MW7-18

On November 2, 2022, Dufferin relocated monitoring well MW7-18 approximately 52 m North to make way for the modifications to the on-Site aggregate washing operations in accordance with Condition 4.4 of the PTTW. These modifications involve construction of a lined recirculation cell.

Modifications to the existing sump pond are permitted under ECA No. 1293-CF7J3M. The proposed modifications place MW7-18 within the construction area of the lined recirculation cell. Issuance of the ECA approval was deemed imminent at the time of relocation. GHD, on behalf of Dufferin, assessed the location of the replacement well and oversaw the installation. The stratigraphic and instrumentation log for MW7R-22 is presented in Appendix D. The relocation was proactively completed to allow for monitoring prior to construction operations. MW7-18 was abandoned on November 3, 2022. Prior to abandonment, water elevations were cross referenced between the two wells to ensure a consistent monitoring interval. Shallow groundwater elevations at MW7R-22 were observed to be a metre lower than MW7-18 and considered representative of the shallow groundwater zone as evidenced by the large separation

(greater than 15 m) from the Upper Aquifer groundwater elevations. Monitoring results are summarized in subsequent sections.

## 4. Hydraulic Monitoring

The following 2022 routine activities were completed by GHD at the Site on the dates presented below:

Date (2021)	Site-wide Hydraulic Monitoring	Pond Sampling	Private Well Sampling
January 20	Completed	Completed	Completed
February 17	NR	Completed	Completed
March 17	NR	Completed	Completed
April 21	Completed	Completed	Completed
May 27	NR	Completed	Completed
June 16	NR	Completed	Completed
July 14	Completed	Completed	Completed
October 13	Completed	Completed	Completed
NR – Monitoring not required			

Groundwater depths were measured using a water level meter to the nearest 0.01 m. Dataloggers were downloaded and verified at the pumping well, on-Site groundwater monitoring wells, private wells, and SW1 during each of the 2022 hydraulic monitoring events.

The monitoring well completion details are provided in Table 4.1 and the groundwater and surface water monitoring locations are presented on Figure 1.1. A summary of the 2022 groundwater elevations is provided in Table 4.2.

SW1 and SW2 sampling was completed as presented above and results are summarized Section 6.0, below.

In addition to the field activities completed by GHD, Dufferin completed the daily flow meter readings during periods of taking (PTTW Condition 4.1) and twice daily SW1 water level observation (PTTW Condition 4.2.iv.). Dufferin monitoring results are discussed in Section 5.

### 4.1 Precipitation

The 2022 daily and monthly precipitation data were obtained from Environment Canada's Collingwood, Ontario station located approximately 35 kilometres west-southwest of the Site (Climate Station I.D. #6111792). 2022 precipitation data are presented on Figure 4.1 and are compared to the monthly Environment Canada Climate Normals (1981-2010) prepared by Environment Canada for Station #6115127 located at the Midland Wastewater Treatment Plant. Climate Normals are not available for the Collingwood station and weather data is no longer presented for the Midland station.

Conditions at the Collingwood station have been observed to be generally typical of the conditions at the Site. Due to the localized nature of thunderstorm activity in the summer months, some variation in precipitation totals may occur between the Collingwood station and the Site.

Precipitation totals in 2022 (803.8 millimetres [mm]) were less than the climate normal annual precipitation total from 1981-2010 of 1,040.6 mm. As shown on Figure 4.1, 2022 had variable precipitation overall: lower than normal precipitation over the winter months resulted in a lower-than-normal snowpack and freshet; and, large precipitation events in both June and August 2022 contributed to those months being the only months of above average precipitation in 2022.



The 2022 dry conditions were compounded by lower-than-average precipitation in 2021 (821.4 mm).

## 4.2 Site Wide Groundwater Elevations

Hydraulic water level monitoring events occurred in 2022 at one pumping well (PW1-09), eight on-Site groundwater monitoring wells (MW1, MW1-09, MW4-10, MW5-18, MW6-18, MW6R-18, MW7-18/MW7R-22, and MW8-18), three off-Site groundwater monitoring wells located on adjacent Dufferin property as per PTTW Condition 4.3 ii. (MW9-18, MW10S-18, and MW10D-18), two private wells (#50632 and #17709; herein referred to as WW9 and WW15, respectively), and one surface water location for elevation (SW1).

Groundwater elevation contours for the January 20, 2022 and October 13, 2022 monitoring events are provided on Figure 4.2 and Figure 4.3, respectively. Conditions on January 20, 2022 represent the Site with no water taking from PW1-09 or the Sump Pond. Conditions on October 13, 2022 represent the Site following a season of water taking at both PW1-09 and the Sump Pond. The groundwater elevation contours show that groundwater in the Upper Aquifer generally flows to the west, from about 238 to 234 m above mean sea level (AMSL). Localized drawdown in the immediate vicinity of PW1-09 (i.e., up to approximately 0.4 m at MW5-18) is anticipated during routine water takings. Drawdown recovers rapidly following the cessation of pumping at PW1-09.

A hydrograph presenting the historical monitoring well groundwater elevation data (2010 to current) is presented on Figure 4.4. A hydrograph presenting the monitoring well groundwater elevation data for 2022 is presented on Figure 4.5. In addition, individual hydrographs for on-Site monitoring wells, monitored private wells, and SW1 are presented in Appendix C. The Appendix C hydrographs present both manually recorded water levels along with datalogger data and daily precipitation for 2022.

Groundwater elevations measured in 2022 were generally within historical ranges for each of the locations (within historical lows and highs); however, some of the more recently installed wells (i.e., 2018) approach or fell below their respective observed historical minimum ranges. The lower water levels across the Site are attributable to the below average precipitation observed in 2021 and 2022, as discussed in Section 4.1. Monitoring wells with longer data sets remained within their historical ranges. Groundwater levels in the Upper Aquifer typically vary by approximately 0.3 m due to seasonal climatic conditions. Somewhat larger variations of up to 0.7 m were observed at monitoring well MW5-18 which are attributed to pumping influences from PW1-09, as anticipated. Monitoring well MW5-18 is located approximately 110 m from pumping well PW1-09. In the shallow groundwater zone, annual variation of approximately 0.5 to 1.5 m can be observed with noticeable response to periods of increased precipitation. As presented on Figure 4.4 and 4.5, the shallow groundwater zone and the Upper Aquifer potentiometric surfaces are typically separated by greater than 15 m due to the presence of the local aquitard.

The surface water hydrograph for SW1 in 2022 is presented on Figure 4.5. Appendix C also presents the historical data at SW1; however, data prior to August 2017 (the start of Dufferin washing operations) was not made available by the previous landowner. In the Spring of 2021, Dufferin implemented measures to reduce the sustained water elevation within the Sump Pond and raised the outlet elevation as a further factor of safety to prevent overflow of the Sump Pond. The float control (which ceases the supply of water from PW1-09) was also adjusted such that a minimum of 0.30 m of freeboard was maintained below the historical outlet elevation throughout the washing season. Operation of the float control began in 2018.

No overflow from the Sump Pond to the unnamed pond was observed in 2022.

Groundwater elevations at Private Wells WW9 and WW15 showed routine variability and response to domestic supply demands as presented in Appendix C. Please note that a manual water level was recorded on July 14, 2022 at WW9 during apparent heavy domestic use; at that time the groundwater elevation was 184.94m AMSL. The datalogger at WW9 is hung at an elevation of 211m AMSL. During extended periods of domestic supply well usage, water levels at WW9 may drop below the monitoring interval of the datalogger but water levels generally recover to within the monitoring interval within a couple hours after the domestic usage ceases. The four-hour transducer monitoring frequency may not capture the full extent of drawdown to 211m AMSL due to the rapid response to domestic use.

## 5. Water Taking

PTTW No. 6258-BRDJ2M allows for the water taking from PW1-09 with takings up to 24 hours per day and up to 210 days per year. Routine water takings are permitted up to 950 litres per minute (L/min) (maximum of 1,368,000 litres per day [L/day]). PTTW No. 6258-BRDJ2M also allows for water taking from the Sump Pond with takings up to 12 hours per day and up to 210 days per year. Water taking is permitted up to 7,274 L/min (maximum of 5,237,280 L/day). It is noted that the Sump Pond also received clarified water recirculated from the on-Site aggregate washing system and the water taking from the Sump Pond includes water supplied from PW1-09, recirculated wash water, direct precipitation, and adjacent runoff.

The water taking data for 2022 are presented in Table 5.1 along with the twice daily sump pond (SW1) water levels collected by Dufferin. Please note that the manual measurement collected by Dufferin generally track the datalogger data, as presented in Appendix C – Figure C-13.

Water takings from PW1-09 and the Sump Pond, for the purposes of aggregate washing, occurred between April 5 and November 11, 2022. Limited water takings also occurred in January, November, and December for on-Site uses (filling office water supply, equipment washing, etc). There were no exceedances of the permitted water taking quantities or rates in 2022 from either PW1-09 or the Sump Pond.

## 6. Analytical Results

Water quality sampling was complete throughout 2022. Monthly surface water samples were collected at SW1 and at select Private Water Supply Wells, through July 2022. After July 2022, the monitoring transitioned to quarterly (consistent with the subsequently approved ECA monitoring program) with an event occurring in October 2022. Surface water samples collected in January, February, and March, 2022 were collected prior to the initiation of aggregate washing; the remaining surface water samples were collected mid-week during washing operations to evaluate typical surface water quality during washing operations. Surface water and private water well sampling events were completed during the same mobilization/day for each event in 2022.

### 6.1 Surface Water Quality

For the purposes of this Report, SW1 is the monitoring location designation for the Sump Pond and SW2 is the monitoring location designation for the unnamed pond adjacent to the Sump Pond.

SW1 and SW2 water quality samples were each collected near the overflow structure to the unnamed pond (see Figure 1.1); SW1 is near the inlet and SW2 is near the outlet. No flow through the Sump Pond overflow was observed during the sampling events. For each location, samples were collected using an extendable swing arm sampler from the shoreline; approximately 3 m into the respective pond. Surface water samples collected in January, February, and March, 2022 were collected through the ice within a metre of the shoreline where surface water is relatively shallow.

Surface water quality samples were collected and submitted to ALS Laboratories in Waterloo, Ontario. The surface water samples were collected in laboratory-supplied analyte-specific sample containers, preserved according to laboratory requirements, and delivered in coolers, on ice, under chain-of-custody procedures. All surface water samples were analyzed for the following parameters: total and dissolved (field filtered) metals, anions, turbidity and TSS. Dufferin added speciated alkalinity for samples collected in 2022. Laboratory results were reviewed and validated by a GHD chemists to confirm acceptability of the laboratory results; all 2022 results were considered accepted for use with the noted qualifiers.

The 2022 validated analytical results are provided in Table 6.1 and are screened against Ontario Provincial Water Quality Objectives (PWQOs) to provide context.

In general water quality at both SW1 and SW2 are within the PWQO with the following exceptions:

- Total Aluminum at SW1 was detected above the PWQO in all samples except January and February, 2022 ranging from 0.156 to 0.398 milligram per litre (mg/L). The PWQO for aluminum (0.075 mg/L) is based on clay-free samples. Elevated aluminum is to be expected given the presence of the clay within the aggregate wash water. All field-filtered dissolved aluminum results were below the PWQO and demonstrate that the total aluminum is likely the result of suspended clays within the wash water at SW1.
- Total Aluminum at SW2 was detected above the PWQO in February 2022 at estimated concentrations of 0.108/0.436 mg/L (duplicate sample collected). Elevated aluminum is to be expected given the presence of the clay within the natural overburden and pond sediment deposits, which are disturbed by natural conditions such as wildlife (beavers are active in this pond), wind, and disturbance of the ice layer during winter sampling. It is noted that the remaining total aluminum and all dissolved aluminum results were below the PWQO.
- Total iron at SW1 was detected above the PWQO of 0.30 mg/L in eight of fourteen samples ranging from 0.318 to 0.407 mg/L. Iron is likely the results of suspend solids within the water sample. All field-filtered dissolved iron results were below the PWQO.
- Total iron at SW2 was also detected above the PWQO in seven of ten samples at concentrations ranging from 0.37 to 3.74 mg/L. It is noted the iron floc is routinely observed around the perimeter of the unnamed pond and concentrations of iron are likely the result of venting of shallow perched groundwater from iron rich soils near SW2.
- Dissolved iron at SW2 was also detected above the PWQO in one of ten samples at a concentration of 0.38 mg/L. Similar to total iron, concentrations of dissolved iron are likely the result of venting of shallow perched groundwater from iron rich soils near SW2.
- Total phosphorous at SW2 was detected above the PWQO of 0.01 mg/L in February 2022 at concentrations of 0.052/0.091 mg/L (duplicate sample collected). The remaining total and dissolved phosphorous results were below the laboratory detection limit of 0.05mg/L. Elevated phosphorous is likely attributable to the suspension of pond sediments disturbed during sampling through the ice layer.

Field parameters were also collected at the time of sampling for general characterization and are summarized in Table 6.1. Field equipment is calibrated on a daily basis; however, where available, laboratory analyses should be relied upon for detailed analysis due to the limitations of field monitoring equipment. Field parameters are also compared to PWQOs. All field parameters were within the PWQO's except for Dissolved Oxygen (DO) at SW1 (March) and SW2 (March, April, and June) which were detected below the PWQO of greater than 4 mg/L; note that the PWQO of DO is dependant on water temperature and concentrations are also dependent on natural biological activity so this result is not unexpected.

The surface water chemistry of both the sump pond (SW1) and the unnamed pond (SW2) is predominantly characteristic of the minerology of the local sand and gravel deposits combined with precipitation and stormwater runoff. As anticipated, based on the intent of the sump pond (i.e., receiving wash water containing naturally occurring clays and silts in suspension), total metals concentrations are generally elevated within the water at SW1 (yet generally still below PWQOs). The dissolved metals concentrations, however, demonstrate that any such suspended sediment would be removed by natural filtering through the depositional liner of the silt pond and/or the local aquitard underlying the Sump Pond. The SW2 results confirm that clays and silts in suspension within the Sump Pond do not pass through the approximately 20 m of soil separating the two pond water surfaces.

## 6.2 Private Water Well Sampling

Monthly private well sampling was completed between January and July at six private wells.

In 2022, untreated water samples and treated water samples (where applicable) were collected from six private supply wells and submitted to ALS Laboratories in Waterloo, Ontario under Chain of Custody procedures. All samples were analyzed for: total and dissolved (lab filtered) metals, anions, turbidity, and TSS. Bacteria samples (E.coli and Total Coliforms) were also collected.

Due to the confidential nature of the private water well sample results, those results are not presented here. However, all results were promptly provided to the respective landowners along with observations of the results following receipt of the results from the laboratory.

## 7. Response to Public Inquiries

Condition 5.1 of the PTTW stipulates that the Permit Holder shall immediately notify the local District Office of any complaint arising from the water taking.

No complaints relating to the water taking were received by Dufferin Aggregates for the Teedon Pit in 2022 and no complaints were reported to Dufferin by the MECP in 2022.

Furthermore, on February 1, 2021 (within 30 days of the issuance of the Permit), Dufferin distributed its Dufferin Aggregates Teedon Pit – Well Complaint Response Procedure described in item 4 of Schedule A of PTTW No. 6258-BRDJ2M to the Teedon Pit Community Liaison Committee (CLC), the Corporation of the Township of Tiny and the Corporation of the Township of Tay (PTTW Condition 4.5).

## 8. Conclusions and Recommendations

Based on the results of the 2022 monitoring program, the following conclusions are provided:

- 1) On each day water was taken, the volume and rate of taking was recorded and takings were submitted to WTRS prior to March 31, 2023 (Condition 4.1).
- 2) Dataloggers were in place at all on- and off-Site monitoring locations throughout 2022 (Condition 4.2 i.)
- 3) No new monitoring locations were installed in 2022; however, MW7-18 was relocated to MW7R-23 in preparation for modifications to the approved ECA works (Condition 4.2 ii.).
- 4) Water levels were recorded at WWR 7150632 and WWR 5717709 throughout 2022 (Condition 4.2 iii.)
- 5) Water level observations were recorded twice per day in the Sump Pond and elevation data was supplemented with a datalogger during 2022 (Condition 4.2 iv.).
- 6) There are no indications of water quantity or water quality impacts to water resources arising from the water taking activities.
- 7) No water supply complaints relating to the water taking were received for the Teedon Pit in 2022

Based on the results of the 2022 monitoring program, the following recommendations are provided:

- 1) The monitoring program required by PTTW No. 6258-BRDJ2M should be continued in 2023.
- 2) The additional monitoring activities, now specified by ECA No. 1293-CF7J3M, shall continue to be implemented in 2023.
- 3) As required by PTTW Condition 4.7, this report should be posted to the Dufferin Aggregates website prior to May 31, 2023.
- 4) Data presented herein should be provided electronically to MECP (Condition 4.3 iii.) under separate cover.



## 9. References

- Environment Canada, 2023. 1981 to 2010 Canadian Climate Normals – Midland Water Pollution Control Plant (ID 6115127). Accessed on March 20, 2023.
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All of Which is Respectfully Submitted,

GHD



Richard Chatfield, P. Eng.



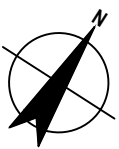
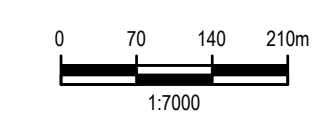
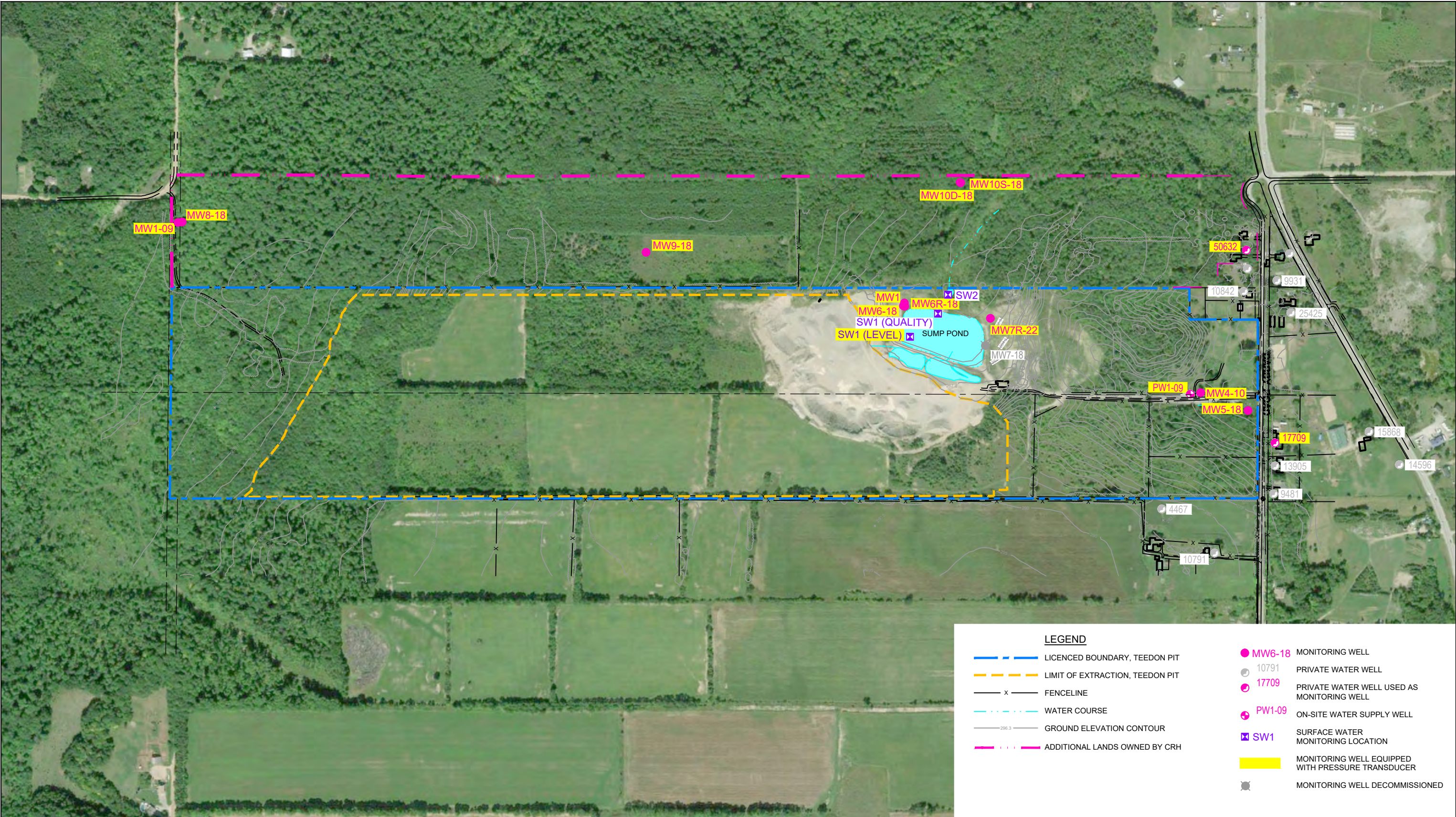
Dan Puddephatt, P. Geo (Limited)



J. Richard Murphy, M.A.Sc., P. Eng.

# Figures





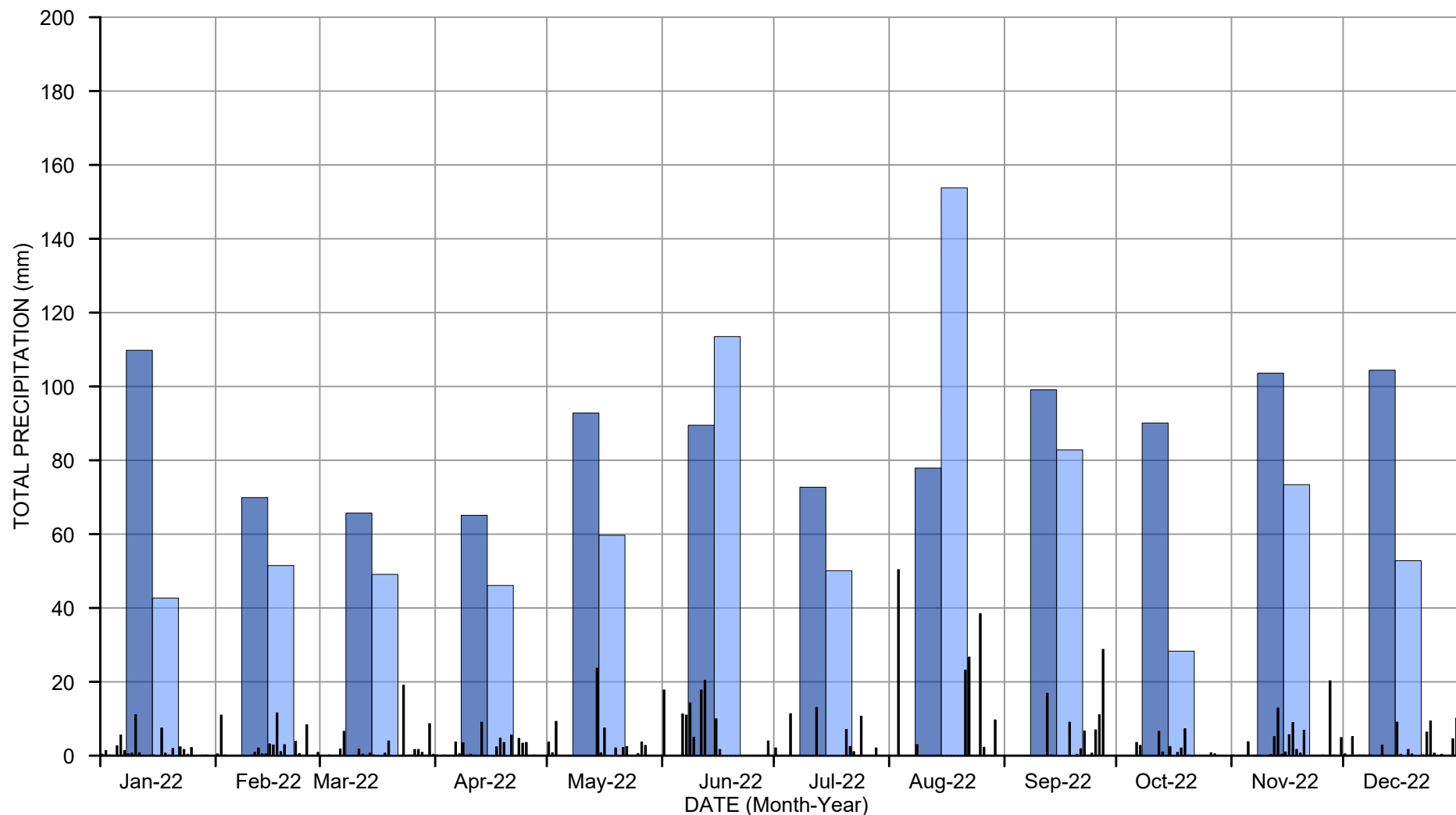
DUFFERIN AGGREGATES TEEDON PIT  
TOWNSHIP OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 2023

MONITORING LOCATIONS

FIGURE 1.1



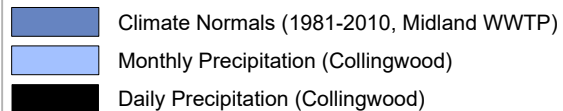


NOTE:

(1) Collingwood data obtained from Environment Canada Station #6111792.

(2) Climate Normal data obtained from Environment Canada Station #6115127; not available for Station #6111792.

LEGEND



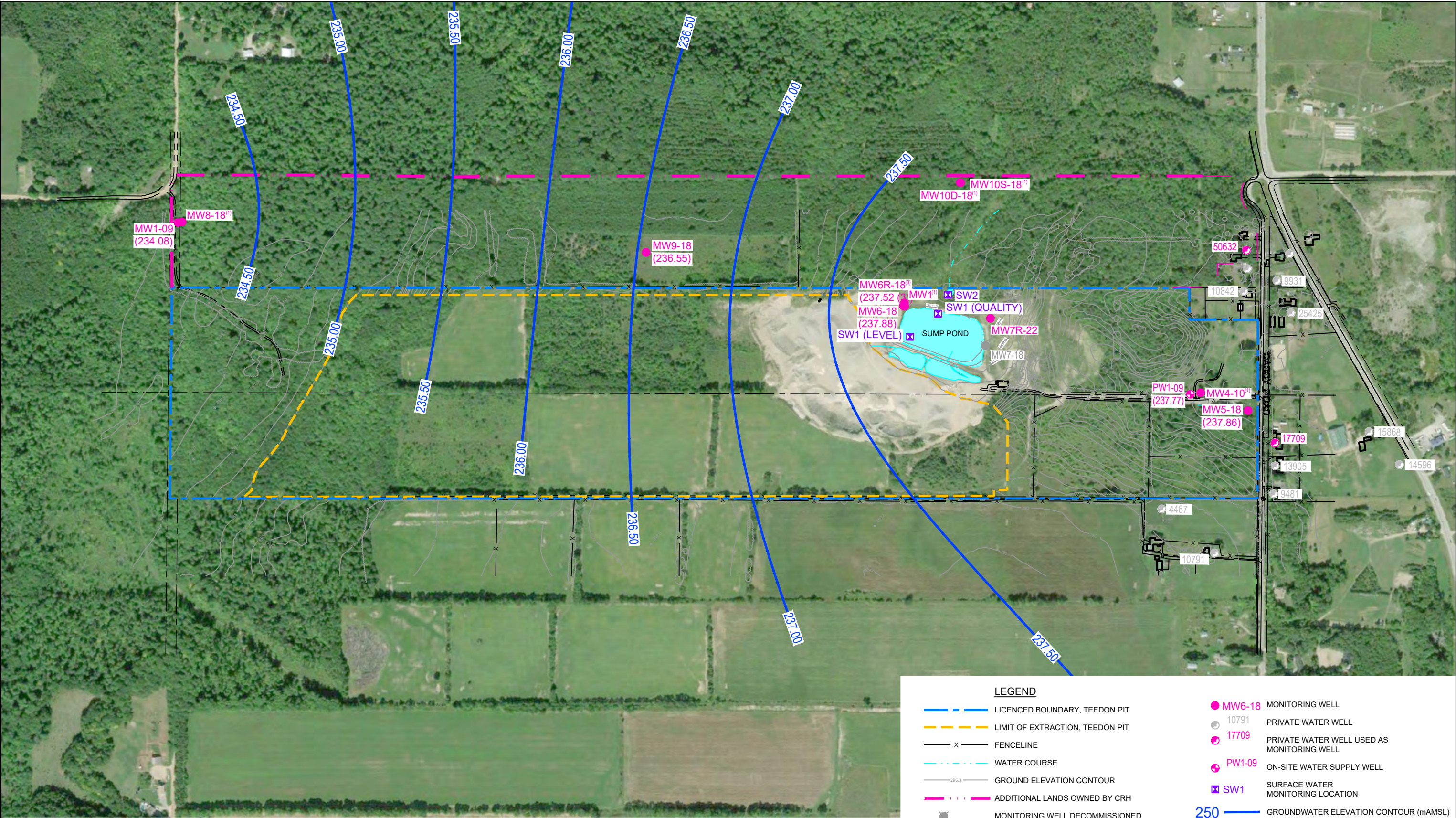
DUFFERIN AGGREGATES TEEDON PIT  
TOWNSHIP OF TINY, COUNTY OF  
SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

2022 PRECIPITATION SUMMARY

FIGURE 4.1





- NOTES
1. SHALLOW GROUNDWATER ELEVATIONS WERE NOT USED TO GENERATE THE GROUNDWATER CONTOURS.
  2. DOMESTIC GROUNDWATER ELEVATIONS WERE NOT USED TO GENERATE THE GROUNDWATER CONTOURS.
  3. MW6R-18 GROUNDWATER ELEVATION NOT USED AS IT IS LOCATED AT A SHALLOWER INTERVAL WITHIN THE UPPER AQUIFER.

070140210m

1:7000

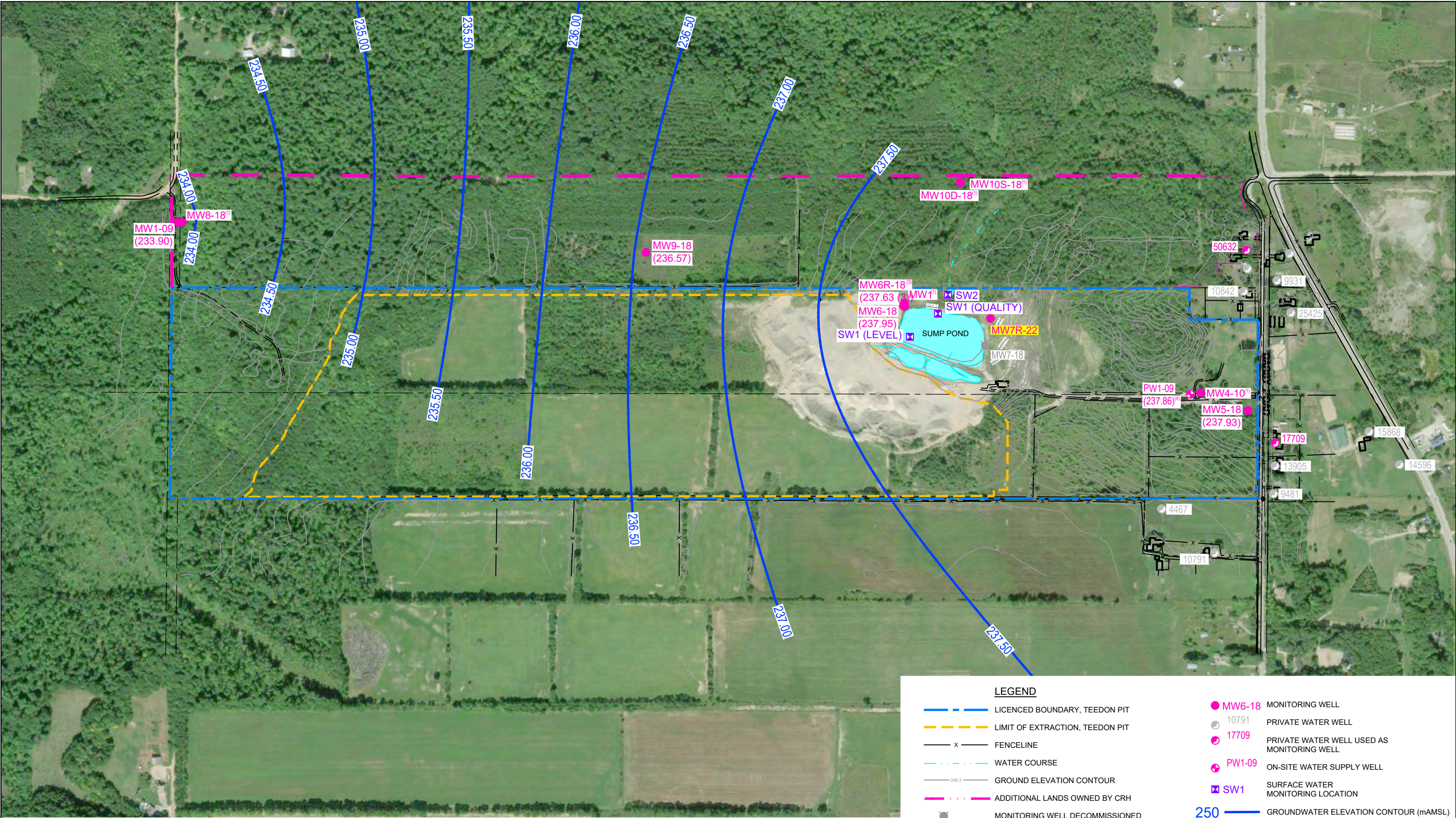
DUFFERIN AGGREGATES TEEDON PIT  
TOWNSHIP OF TINY, COUNTY OF SIMCOE, ONTARIO

GROUNDWATER ELEVATION CONTOURS  
UPPER AQUIFER  
JANUARY 20, 2022

Project No. 11155365  
Date March 2023

FIGURE 4.2





- NOTES
1. SHALLOW GROUNDWATER ELEVATIONS WERE NOT USED TO GENERATE THE GROUNDWATER CONTOURS.
  2. DOMESTIC GROUNDWATER ELEVATIONS WERE NOT USED TO GENERATE THE GROUNDWATER CONTOURS.
  3. MW6R-18 GROUNDWATER ELEVATION NOT USED AS IT IS LOCATED AT A SHALLOWER INTERVAL WITHIN THE UPPER AQUIFER.

LEGEND

- LICENCED BOUNDARY, TEEDON PIT
- LIMIT OF EXTRACTION, TEEDON PIT
- FENCELINE
- WATER COURSE
- GROUND ELEVATION CONTOUR
- ADDITIONAL LANDS OWNED BY CRH
- MONITORING WELL DECOMMISSIONED
- MW6-18 MONITORING WELL
- 10791 PRIVATE WATER WELL
- 17709 PRIVATE WATER WELL USED AS MONITORING WELL
- PW1-09 ON-SITE WATER SUPPLY WELL
- SW1 SURFACE WATER MONITORING LOCATION
- 250 GROUNDWATER ELEVATION CONTOUR (mAMS)
- (238.15) GROUNDWATER ELEVATION (mAMS)

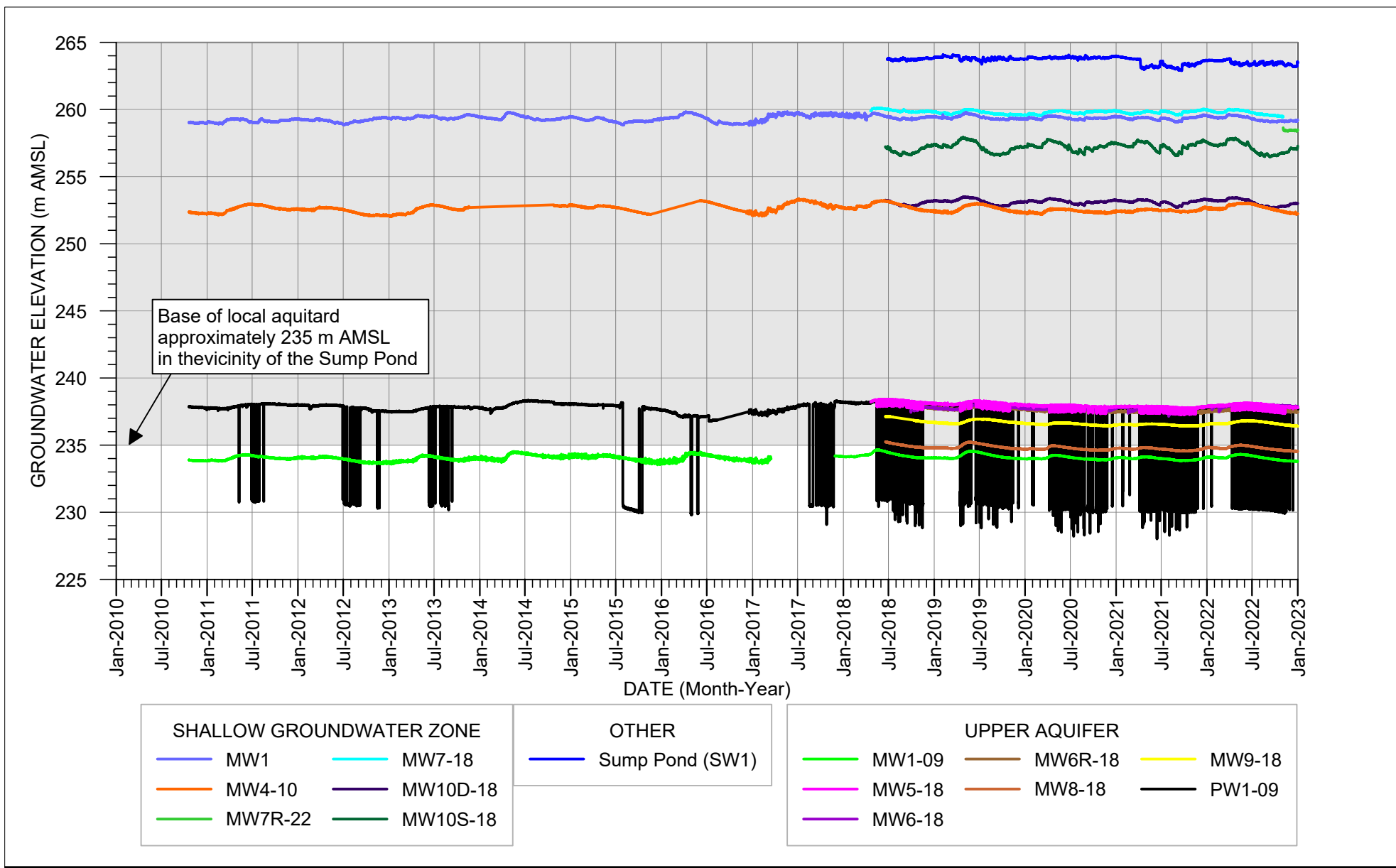
DUFFERIN AGGREGATES TEEDON PIT  
TOWNSHIP OF TINY, COUNTY OF SIMCOE, ONTARIO

**GROUNDWATER ELEVATION CONTOURS  
UPPER AQUIFER  
OCTOBER 13, 2022**

Project No. 11155365  
Date March 2023

FIGURE 4.3





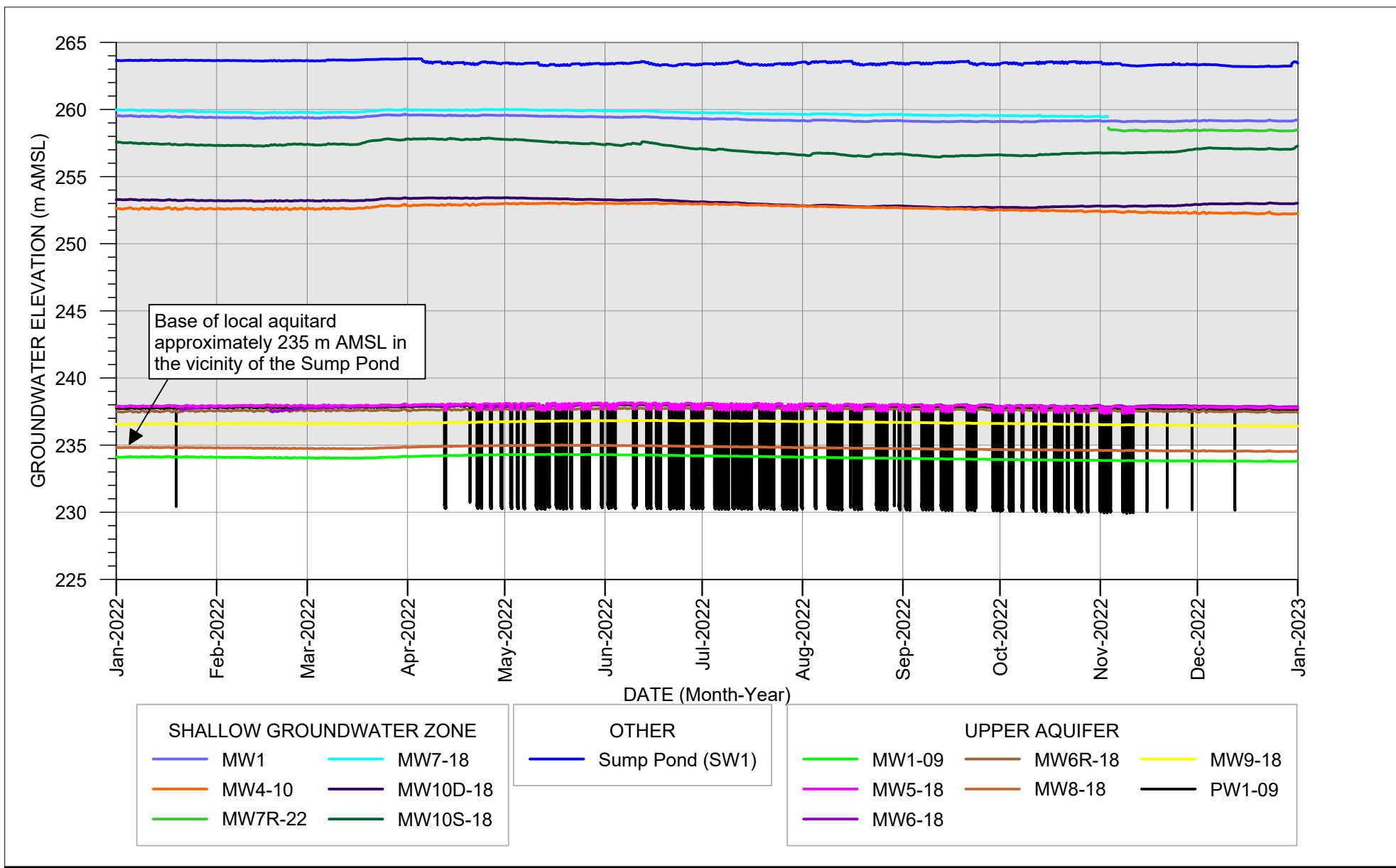
DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO 2022  
ANNUAL MONITORING REPORT

Project No. 11155365  
Date March 28, 2023

**HYDROGRAPH - HISTORICAL  
GROUNDWATER ELEVATIONS**

**FIGURE 4.4**





DUFFERIN AGGREGATES TEEDON PIT  
TOWNSHIP OF TINY, COUNTY OF SIMCOE,  
ONTARIO 2022 ANNUAL MONITORING REPORT

### HYDROGRAPH 2022 GROUNDWATER ELEVATIONS

Project No. 11155365  
Date March 28, 2023

FIGURE 4.5

# Tables

Table 4.1

**Monitoring Well Completion Details  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Monitoring Well	MECP Well ID	Completion Date	Easting	Northing	Ground Elevation (m AMSL)	Reference Elevation (m AMSL)	Well Bottom Elevation (m AMSL)	Well Depth (m bgs)
PW1-09 <sup>(2)</sup>	7124734	4/29/2009	592343.75	4945072.04	260.72	261.32	191.4	69.3
MW1 <sup>(2)</sup>	7054134	11/8/2007	591776.70	4944920.92	267.45	267.64	245.0	18.3
MW1-09 <sup>(5)</sup>	7124729	6/2/2009	590519.95	4944300.96	245.45	246.04	180.4	65.1
MW4-10 <sup>(2)</sup>	7150631	8/5/2010	592346.97	4945073.66	260.60	261.31	242.3	17.7
MW5-18 <sup>(3)</sup>	A241648	4/5/2018	592450.79	4945106.20	256.39	257.19	186.6	69.2
MW6-18 <sup>(3)</sup>	A241641	3/29/2018	591778.54	4944916.15	267.60	268.43	197.5	70.1
MW6R-18 <sup>(6)</sup>	A241645	10/2/2018	591780.60	4944916.96	267.57	268.20	218.8	48.8
MW7-18 <sup>(8)</sup>	A215946	4/9/2018	591953.92	4944937.13	266.83	267.56	242.8	24.1
MW7R-22 <sup>(7)</sup>	A211723	11/3/2022	591933.69	4944985.63	267.35	268.23	243.6	23.8
MW8-18 <sup>(5)</sup>	A242552	6/11/2018	590518.91	4944303.17	245.35	245.88	224.6	20.7
MW9-18 <sup>(4)</sup>	A242553	6/6/2018	591302.29	4944734.10	291.58	292.50	230.9	60.7
MW10S-18 <sup>(4)</sup>	A242554	6/6/2018	591743.06	4945177.24	259.44	260.42	248.8	10.7
MW10D-18 <sup>(4)</sup>	A242555	6/6/2018	591741.82	4945176.99	259.55	260.52	233.6	25.9
WW9 - #50632 <sup>(5)</sup>	7150632	8/4/2010	592280.17	4945366.28	260.48	261.12	181.3	79.2
WW15 - #17709 <sup>(5)</sup>	5717709	9/23/1981	592521.69	4945085.40	256.73	257.27	198.0	57.9
#16440 <sup>(1)</sup>	5716440	11/8/1979	591461.00	4944573.00	293.00	293.00	252.3	42.7

## Notes:

- (1) Installed as a test well and was decommissioned shortly after construction; survey details from Site Plans.
- (2) Northing, eastings, ground elevation and reference elevation measured on March 15, 2018.
- (3) Northing, eastings, ground elevation and reference elevation measured on April 18, 2018.
- (4) Northing, eastings, ground elevation and reference elevation measured on June 13, 2018.
- (5) Northing, eastings, ground elevation and reference elevation measured on July 19, 2018.
- (6) Northing, eastings, ground elevation and reference elevation measured on October 11, 2018.
- (7) Northing, eastings, ground elevation and reference elevation measured on November 29, 2022.
- (8) MW7-18 abandoned on November 3, 2022 and replace with MW7R-22.
- m AMSL Metres above mean sea level.
- m bgs Metres below ground surface.
- NA Information not available.

Table 4.2

**Summary of 2022 Groundwater Elevations  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

<b>Well Location</b>	<b>January 20, 2022 Groundwater Elevation (m AMSL)</b>	<b>April 21, 2022 Groundwater Elevation (m AMSL)</b>	<b>July 14, 2022 Groundwater Elevation (m AMSL)</b>	<b>October 13, 2022 Groundwater Elevation (m AMSL)</b>	<b>November 3, 2022 Groundwater Elevation (m AMSL)</b>
PW1-09	237.77	237.98	237.99	237.86	--
MW1	259.40	259.51	259.22	259.10	--
MW1-09	234.08	234.25	234.16	233.91	--
MW4-10	252.56	252.93	252.79	252.39	--
MW5-18	237.86	238.08	238.06	237.93	--
MW6-18	237.88	237.95	237.84	237.95	--
MW6R-18	237.52	237.68	237.78	237.64	--
MW7-18	259.85	259.94	259.69	259.55	259.59
MW7R-22	NI	NI	NI	NI	258.54
MW8-18	234.81	234.95	234.90	234.67	--
MW9-18	236.55	236.69	236.79	236.57	--
MW10S-18	257.36	257.79	256.87	256.64	--
MW10D-18	253.21	253.39	253.08	252.73	--
WW9 - #50632	237.86	234.19	184.94	234.33	--
WW15 - #17709	237.86	238.03	237.88	237.86	--

## Notes:

m AMSL      Metres above mean sea level  
 NI              Not installed  
 --              No measurement recorded

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)	Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)						
Weekends shown in gray for reference								
1/1/2022	-	-	-	-	-	-	-	
1/2/2022	-	-	-	-	-	-	-	
1/3/2022	-	-	-	-	-	-	-	
1/4/2022	-	-	-	-	-	-	-	
1/5/2022	-	-	-	-	-	-	-	
1/6/2022	-	-	-	-	-	-	-	
1/7/2022	-	-	-	-	-	-	-	
1/8/2022	-	-	-	-	-	-	-	
1/9/2022	-	-	-	-	-	-	-	
1/10/2022	-	-	-	-	-	-	-	
1/11/2022	-	-	-	-	-	-	-	
1/12/2022	552.7	3,869	-	-	-	-	-	- Tried to fill office water tank
1/13/2022	-	-	-	-	-	-	-	
1/14/2022	-	-	-	-	-	-	-	
1/15/2022	-	-	-	-	-	-	-	
1/16/2022	-	-	-	-	-	-	-	
1/17/2022	-	-	-	-	-	-	-	
1/18/2022	-	-	-	-	-	-	-	
1/19/2022	555.2	42,192	-	-	-	-	-	- Tried to fill office water tank
1/20/2022	-	-	-	-	-	-	-	
1/21/2022	-	-	-	-	-	-	-	
1/22/2022	-	-	-	-	-	-	-	
1/23/2022	-	-	-	-	-	-	-	
1/24/2022	-	-	-	-	-	-	-	
1/25/2022	-	-	-	-	-	-	-	
1/26/2022	-	-	-	-	-	-	-	
1/27/2022	-	-	-	-	-	-	-	
1/28/2022	-	-	-	-	-	-	-	
1/29/2022	-	-	-	-	-	-	-	
1/30/2022	-	-	-	-	-	-	-	
1/31/2022	-	-	-	-	-	-	-	
2/1/2022	-	-	-	-	-	-	-	
2/2/2022	-	-	-	-	-	-	-	
2/3/2022	-	-	-	-	-	-	-	
2/4/2022	-	-	-	-	-	-	-	

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)		Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)							
2/5/2022	-	-	-	-	-	-	-	-	
2/6/2022	-	-	-	-	-	-	-	-	
2/7/2022	-	-	-	-	-	-	-	-	
2/8/2022	-	-	-	-	-	-	-	-	
2/9/2022	-	-	-	-	-	-	-	-	
2/10/2022	-	-	-	-	-	-	-	-	
2/11/2022	-	-	-	-	-	-	-	-	
2/12/2022	-	-	-	-	-	-	-	-	
2/13/2022	-	-	-	-	-	-	-	-	
2/14/2022	-	-	-	-	-	-	-	-	
2/15/2022	-	-	-	-	-	Frozen	Frozen	-	
2/16/2022	-	-	-	-	-	Frozen	Frozen	-	
2/17/2022	-	-	-	-	-	Frozen	Frozen	-	
2/18/2022	-	-	-	-	-	Frozen	Frozen	-	
2/19/2022	-	-	-	-	-	-	-	-	
2/20/2022	-	-	-	-	-	-	-	-	
2/21/2022	-	-	-	-	-	-	-	-	
2/22/2022	-	-	-	-	-	Frozen	Frozen	-	
2/23/2022	-	-	-	-	-	Frozen	Frozen	-	
2/24/2022	-	-	-	-	-	Frozen	Frozen	-	
2/25/2022	-	-	-	-	-	Frozen	Frozen	-	
2/26/2022	-	-	-	-	-	-	-	-	
2/27/2022	-	-	-	-	-	-	-	-	
2/28/2022	-	-	-	-	-	Frozen	Frozen	-	
3/1/2022	-	-	-	-	-	Frozen	Frozen	-	
3/2/2022	-	-	-	-	-	Frozen	Frozen	-	
3/3/2022	-	-	-	-	-	Frozen	Frozen	-	
3/4/2022	-	-	-	-	-	Frozen	Frozen	-	
3/5/2022	-	-	-	-	-	-	-	-	
3/6/2022	-	-	-	-	-	-	-	-	
3/7/2022	-	-	-	-	-	Frozen	Frozen	-	
3/8/2022	-	-	-	-	-	Frozen	Frozen	-	
3/9/2022	-	-	-	-	-	Frozen	Frozen	-	
3/10/2022	-	-	-	-	-	Frozen	Frozen	-	
3/11/2022	-	-	-	-	-	Frozen	Frozen	-	
3/12/2022	-	-	-	-	-	-	-	-	

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)	Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)						
3/13/2022	-	-	-	-	-	-	-	-
3/14/2022	-	-	-	-	-	Frozen	Frozen	-
3/15/2022	-	-	-	-	-	Frozen	Frozen	-
3/16/2022	-	-	-	-	-	Frozen	Frozen	-
3/17/2022	-	-	-	-	-	Frozen	Frozen	-
3/18/2022	-	-	-	-	-	Frozen	Frozen	-
3/19/2022	-	-	-	-	-	-	-	-
3/20/2022	-	-	-	-	-	-	-	-
3/21/2022	-	-	-	-	-	Frozen	Frozen	-
3/22/2022	-	-	-	-	-	Frozen	Frozen	-
3/23/2022	-	-	-	-	-	Frozen	Frozen	-
3/24/2022	-	-	-	-	-	Frozen	Frozen	-
3/25/2022	-	-	-	-	-	Frozen	Frozen	-
3/26/2022	-	-	-	-	-	-	-	-
3/27/2022	-	-	-	-	-	-	-	-
3/28/2022	-	-	-	-	-	263.86	263.86	-
3/29/2022	-	-	-	-	-	263.86	263.86	-
3/30/2022	-	-	-	-	-	263.86	263.86	-
3/31/2022	-	-	-	-	-	263.86	263.86	-
4/1/2022	-	-	-	-	-	263.86	263.86	-
4/2/2022	-	-	-	-	-	-	-	-
4/3/2022	-	-	-	-	-	-	-	-
4/4/2022	-	-	-	-	-	263.86	263.86	-
4/5/2022	-	-	9	3,502.5	1,926,395	263.87	263.68	-
4/6/2022	-	-	8	5,794.7	2,926,311	263.68	263.54	-
4/7/2022	-	-	10	6,176.6	3,860,361	263.66	263.52	-
4/8/2022	-	-	10	6,199.0	3,874,367	263.64	263.49	-
4/9/2022	-	-	-	-	-	-	-	-
4/10/2022	-	-	-	-	-	-	-	-
4/11/2022	-	-	11	5,904.7	3,838,027	263.62	263.45	-
4/12/2022	-	-	10	5,281.8	3,089,841	263.56	263.45	- Staff Gauge resurveyed due to heaving
4/13/2022	552.1	364,374	9	4,832.4	2,681,963	263.58	263.46	-
4/14/2022	-	-	11	6,206.1	4,189,124	263.58	263.47	-
4/15/2022	-	-	-	-	-	-	-	-
4/16/2022	-	-	-	-	-	-	-	-
4/17/2022	-	-	-	-	-	-	-	-

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)		Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)							
4/18/2022	-	-	11	6,095.3	4,175,307	263.57	263.39	-	
4/19/2022	-	-	1	5,537.5	193,813	263.52	263.52	-	
4/20/2022	561.4	19,648	11	6,014.1	4,119,662	263.52	263.36	-	Filled office water tank from PW1-09
4/21/2022	-	-	11	6,203.1	4,249,123	263.49	263.35	-	
4/22/2022	553.1	365,060	11	6,077.6	4,071,966	263.49	263.42	-	
4/23/2022	553.0	364,978	-	-	-	-	-	-	
4/24/2022	-	-	-	-	-	-	-	-	
4/25/2022	-	-	11	6,324.9	3,984,712	263.62	263.52	-	
4/26/2022	552.7	364,769	11	6,181.4	4,172,468	263.60	263.52	-	
4/27/2022	-	-	11	5,884.8	3,707,431	263.61	263.51	-	
4/28/2022	-	-	11	5,890.7	3,976,195	263.56	263.45	-	
4/29/2022	552.3	364,524	11	5,993.3	3,775,757	263.51	263.42	-	
4/30/2022	-	-	-	-	-	-	-	-	
5/1/2022	-	-	-	-	-	-	-	-	
5/2/2022	552.6	364,742	11	5,955.7	3,752,098	263.54	263.42	-	
5/3/2022	-	-	11	6,136.8	3,958,214	263.53	263.42	-	
5/4/2022	551.3	363,828	11	6,186.8	4,176,064	263.50	263.41	-	
5/5/2022	-	-	11	5,911.7	3,990,390	263.51	263.42	-	
5/6/2022	553.8	365,492	3	6,180.3	927,047	263.47	263.46	-	
5/7/2022	-	-	-	-	-	-	-	-	
5/8/2022	-	-	-	-	-	-	-	-	
5/9/2022	-	-	-	-	-	263.53	263.53	-	
5/10/2022	565.2	373,057	-	-	-	263.53	263.54	-	
5/11/2022	547.9	608,221	10	6,155.3	3,600,871	263.57	263.27	-	
5/12/2022	575.5	638,776	10	5,966.7	3,490,527	263.38	263.26	-	
5/13/2022	-	-	11	5,208.9	3,489,959	263.38	263.26	-	
5/14/2022	547.3	361,250	-	-	-	-	-	-	
5/15/2022	-	-	-	-	-	-	-	-	
5/16/2022	618.8	408,434	11	5,735.9	3,929,066	263.41	263.25	-	
5/17/2022	550.9	363,569	11	5,814.1	3,982,630	263.41	263.26	-	
5/18/2022	552.7	364,778	9	5,674.8	3,206,242	263.41	263.26	-	
5/19/2022	552.9	364,933	11	5,820.1	3,957,646	263.42	263.26	-	
5/20/2022	-	-	11	5,887.8	3,827,050	263.43	263.27	-	
5/21/2022	552.0	364,287	-	-	-	-	-	-	
5/22/2022	-	-	-	-	-	-	-	-	
5/23/2022	-	-	-	-	-	-	-	-	



Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)		Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)							
5/24/2022	553.1	365,028	11	6,076.0	4,162,058	263.48	263.33	-	
5/25/2022	554.7	366,106	11	5,969.9	4,089,378	263.47	263.34	-	
5/26/2022	554.9	366,206	10	5,906.5	3,691,532	263.48	263.37	-	
5/27/2022	-	-	11	6,097.1	3,993,608	263.50	263.40	-	
5/28/2022	-	-	-	-	-	-	-	-	
5/29/2022	-	-	-	-	-	-	-	-	
5/30/2022	551.1	363,733	11	6,147.8	4,211,269	263.50	263.42	-	
5/31/2022	-	-	11	6,083.0	4,106,034	263.50	263.42	-	
6/1/2022	553.1	365,078	9	5,892.5	3,152,489	263.49	263.43	-	
6/2/2022	550.5	363,328	11	6,113.4	4,157,137	263.51	263.45	-	
6/3/2022	554.5	365,969	11	6,009.7	4,116,633	263.52	263.44	-	
6/4/2022	-	-	-	-	-	-	-	-	
6/5/2022	-	-	-	-	-	-	-	-	
6/6/2022	-	-	11	5,931.8	3,974,302	263.54	263.46	-	
6/7/2022	-	-	11	6,279.9	4,301,740	263.50	263.46	-	
6/8/2022	-	-	-	-	-	263.50	263.51	-	
6/9/2022	550.1	363,069	-	-	-	263.52	263.54	-	
6/10/2022	550.1	41,256	-	-	-	263.58	263.58	-	
6/11/2022	-	-	-	-	-	-	-	-	
6/12/2022	-	-	-	-	-	-	-	-	
6/13/2022	562.5	371,247	9	2,776.0	1,499,022	263.65	263.53	-	
6/14/2022	544.6	359,409	9	6,146.0	3,411,033	263.60	263.42	-	
6/15/2022	-	-	11	5,918.5	4,054,174	263.53	263.36	-	
6/16/2022	550.0	362,992	10	6,088.5	3,470,464	263.45	263.29	-	
6/17/2022	554.0	365,656	10	5,969.4	3,730,900	263.43	263.26	-	
6/18/2022	-	-	-	-	-	-	-	-	
6/19/2022	-	-	-	-	-	-	-	-	
6/20/2022	553.3	365,183	11	5,863.9	3,840,866	263.40	263.26	-	
6/21/2022	555.1	466,292	11	5,137.3	3,493,366	263.37	263.26	-	
6/22/2022	538.9	355,654	11	5,000.3	3,225,169	263.39	263.28	-	
6/23/2022	548.9	362,255	-	-	-	263.41	263.42	-	
6/24/2022	553.0	364,983	7	5,257.4	2,313,264	263.45	263.35	-	
6/25/2022	-	-	-	-	-	-	-	-	
6/26/2022	-	-	-	-	-	-	-	-	
6/27/2022	551.6	364,078	11	5,193.0	3,375,450	263.45	263.33	-	
6/28/2022	553.2	365,087	11	5,146.5	3,499,612	263.43	263.32	-	

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)		Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)							
6/29/2022	552.7	364,810	11	5,162.8	3,278,354	263.43	263.35	-	
6/30/2022	551.6	364,024	11	5,290.3	3,570,967	263.45	263.37	-	
7/1/2022	-	-	-	-	-	-	-	-	
7/2/2022	-	-	-	-	-	-	-	-	
7/3/2022	-	-	-	-	-	-	-	-	
7/4/2022	555.6	366,674	11	5,037.9	3,425,796	263.47	263.38	-	
7/5/2022	556.6	367,383	7	5,241.5	2,306,261	263.47	263.42	-	
7/6/2022	564.3	406,307	11	5,273.1	3,585,730	263.52	263.44	-	
7/7/2022	559.7	436,529	11	5,461.5	3,549,957	263.53	263.46	-	
7/8/2022	560.1	436,852	11	5,867.7	3,960,674	263.55	263.47	-	
7/9/2022	-	-	-	-	-	-	-	-	
7/10/2022	569.5	546,713	-	-	-	-	-	-	
7/11/2022	547.0	393,814	-	-	-	263.64	263.65	-	
7/12/2022	552.6	364,715	11	5,822.9	3,959,539	263.68	263.48	-	
7/13/2022	556.1	283,594	11	5,943.7	3,982,251	263.48	263.40	-	
7/14/2022	553.7	365,442	11	5,859.8	3,808,880	263.50	263.33	-	
7/15/2022	554.3	365,810	11	5,065.2	3,418,982	263.46	263.28	-	
7/16/2022	-	-	-	-	-	-	-	-	
7/17/2022	-	-	-	-	-	-	-	-	
7/18/2022	551.8	364,205	11	5,923.9	4,028,244	263.43	263.26	-	
7/19/2022	549.7	362,828	11	5,076.1	3,375,639	263.42	263.27	-	
7/20/2022	550.4	363,274	11	5,959.8	4,052,660	263.42	263.26	-	
7/21/2022	543.9	358,996	8	6,096.1	2,895,649	263.42	263.29	-	
7/22/2022	554.2	365,751	11	6,062.1	4,000,989	263.45	263.30	-	
7/23/2022	-	-	-	-	-	-	-	-	
7/24/2022	-	-	-	-	-	-	-	-	
7/25/2022	554.6	366,042	5	5,614.4	1,600,093	263.48	263.38	-	
7/26/2022	556.9	609,763	10	6,250.9	3,813,043	263.51	263.37	-	
7/27/2022	556.5	367,274	11	6,188.4	4,177,200	263.53	263.38	-	
7/28/2022	553.8	365,492	11	6,202.8	4,000,800	263.52	263.38	-	
7/29/2022	554.5	366,001	4	6,237.2	1,621,670	263.53	263.44	-	
7/30/2022	-	-	-	-	-	-	-	-	
7/31/2022	548.5	362,032	-	-	-	-	-	-	
8/1/2022	-	-	-	-	-	-	-	-	
8/2/2022	-	-	11	6,348.3	4,285,084	263.62	263.43	-	
8/3/2022	-	-	11	6,089.2	4,110,198	263.53	263.50	-	

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)		Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)							
8/4/2022	549.7	362,796	6	6,046.1	2,176,611	263.64	263.55	-	
8/5/2022	-	-	11	6,056.7	4,088,243	263.68	263.56	-	
8/6/2022	-	-	-	-	-	-	-	-	
8/7/2022	-	-	-	-	-	-	-	-	
8/8/2022	550.7	363,469	11	6,240.8	4,118,905	263.65	263.52	-	
8/9/2022	551.7	364,142	11	6,129.2	4,045,278	263.64	263.53	-	
8/10/2022	594.2	534,788	10	5,899.6	3,362,769	263.65	263.55	-	
8/11/2022	551.8	364,187	11	6,111.9	4,125,529	263.68	263.55	-	
8/12/2022	552.6	364,728	11	6,101.8	4,118,715	263.66	263.55	-	
8/13/2022	-	-	-	-	-	-	-	-	
8/14/2022	-	-	-	-	-	-	-	-	
8/15/2022	517.5	108,670	-	-	-	263.66	263.66	-	
8/16/2022	552.5	364,646	11	6,113.6	4,065,530	263.68	263.41	-	
8/17/2022	552.7	364,801	11	6,044.7	3,929,066	263.54	263.36	-	
8/18/2022	549.5	362,642	11	6,009.6	4,086,539	263.50	263.31	-	
8/19/2022	-	-	10	5,519.7	3,146,244	263.45	263.33	-	
8/20/2022	-	-	-	-	-	-	-	-	
8/21/2022	-	-	-	-	-	-	-	-	
8/22/2022	-	-	11	6,055.8	4,027,108	263.45	263.35	-	
8/23/2022	550.9	363,583	11	5,912.0	3,961,053	263.46	263.31	-	
8/24/2022	552.1	364,396	11	4,836.4	3,288,764	263.47	263.33	-	
8/25/2022	551.8	364,174	8	5,924.8	2,873,505	263.49	263.35	-	
8/26/2022	551.6	364,060	11	6,038.8	4,106,413	263.52	263.38	-	
8/27/2022	-	-	-	-	-	-	-	-	
8/28/2022	-	-	-	-	-	-	-	-	
8/29/2022	498.5	29,909	11	5,982.3	4,067,991	263.56	263.44	-	
8/30/2022	527.9	348,385	11	5,666.4	3,768,186	263.54	263.41	-	
8/31/2022	-	-	11	4,853.0	3,227,251	263.55	263.41	-	
9/1/2022	552.9	364,942	11	5,849.3	3,977,520	263.52	263.39	-	
9/2/2022	550.0	363,023	11	5,090.3	3,461,379	263.53	263.40	-	
9/3/2022	-	-	-	-	-	-	-	-	
9/4/2022	-	-	-	-	-	-	-	-	
9/5/2022	-	-	-	-	-	-	-	-	
9/6/2022	550.8	363,510	11	5,800.6	3,944,397	263.56	263.40	-	
9/7/2022	551.6	364,051	11	5,464.7	3,633,994	263.54	263.41	-	

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)		Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)							
9/8/2022	551.2	363,805	9	5,376.6	3,010,915	263.54	263.43	-	
9/9/2022	551.6	364,065	11	5,401.4	3,672,983	263.54	263.42	-	
9/10/2022	-	-	-	-	-	-	-	-	
9/11/2022	-	-	-	-	-	-	-	-	
9/12/2022	551.6	364,069	5	4,612.6	1,245,400	263.57	263.50	-	
9/13/2022	549.1	395,342	11	5,439.3	3,698,724	263.62	263.51	-	
9/14/2022	554.4	365,915	11	5,278.5	3,510,211	263.62	263.52	-	
9/15/2022	542.4	357,991	11	5,410.6	3,679,229	263.63	263.52	-	
9/16/2022	-	-	10	5,292.4	3,201,889	263.64	263.54	-	
9/17/2022	-	-	-	-	-	-	-	-	
9/18/2022	-	-	-	-	-	-	-	-	
9/19/2022	-	-	-	-	-	263.65	263.65	-	
9/20/2022	554.0	365,660	-	-	-	263.65	263.65	-	
9/21/2022	554.3	365,810	11	4,142.2	2,816,724	263.69	263.38	-	
9/22/2022	555.9	366,897	9	4,671.7	2,546,067	263.54	263.39	-	
9/23/2022	481.2	43,306	11	5,953.7	4,048,496	263.51	263.26	-	
9/24/2022	-	-	-	-	-	-	-	-	
9/25/2022	-	-	-	-	-	-	-	-	
9/26/2022	-	-	11	6,052.8	4,115,876	263.48	263.36	-	
9/27/2022	-	-	10	5,738.4	3,385,671	263.47	263.35	-	
9/28/2022	553.7	365,424	11	5,559.1	3,641,186	263.45	263.30	-	
9/29/2022	549.1	362,410	11	5,941.9	3,773,107	263.47	263.33	-	
9/30/2022	555.6	366,724	11	5,943.4	4,041,493	263.49	263.35	-	
10/1/2022	555.6	366,724	-	-	-	-	-	-	
10/2/2022	-	-	-	-	-	-	-	-	
10/3/2022	554.5	365,988	10	5,431.1	3,204,350	263.56	263.45	-	
10/4/2022	553.4	365,265	11	5,964.2	4,055,688	263.56	263.42	-	
10/5/2022	-	-	11	5,808.9	3,833,863	263.57	263.42	-	
10/6/2022	-	-	11	4,974.8	3,382,832	263.53	263.31	-	
10/7/2022	554.2	365,797	11	5,439.0	3,698,535	263.49	263.26	-	
10/8/2022	-	-	-	-	-	-	-	-	
10/9/2022	-	-	-	-	-	-	-	-	
10/10/2022	-	-	-	-	-	-	-	-	
10/11/2022	567.8	408,821	2	2,342.4	292,801	263.53	263.50	-	
10/12/2022	-	-	9	6,230.7	3,489,202	263.58	263.33	-	

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)		Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)							
10/13/2022	554.6	366,028	11	5,840.3	3,912,978	263.59	263.45	-	
10/14/2022	554.3	365,856	11	5,987.4	4,011,588	263.61	263.44	-	
10/15/2022	-	-	-	-	-	-	-	-	
10/16/2022	-	-	-	-	-	-	-	-	
10/17/2022	553.0	364,956	9	6,089.7	3,136,212	263.62	263.47	-	
10/18/2022	550.6	363,396	6	5,900.2	1,976,552	263.61	263.49	-	
10/19/2022	541.4	357,336	11	6,001.7	4,111,145	263.63	263.45	-	
10/20/2022	-	-	11	5,660.4	3,877,395	263.65	263.45	-	
10/21/2022	550.5	363,333	8	5,886.7	2,943,346	263.62	263.44	-	
10/22/2022	-	-	-	-	-	-	-	-	
10/23/2022	-	-	-	-	-	-	-	-	
10/24/2022	542.9	390,905	7	5,705.5	2,367,774	263.65	263.49	-	
10/25/2022	536.5	354,104	11	5,608.0	3,813,422	263.65	263.45	-	
10/26/2022	-	-	11	5,011.2	3,407,626	263.64	263.53	-	
10/27/2022	510.2	336,715	11	5,512.6	3,693,425	263.63	263.49	-	
10/28/2022	-	-	11	5,544.5	3,714,812	263.62	263.46	-	
10/29/2022	-	-	-	-	-	-	-	-	
10/30/2022	-	-	-	-	-	-	-	-	
10/31/2022	529.0	349,122	-	-	-	263.59	263.59	-	
11/1/2022	552.3	364,492	11	5,767.7	3,691,343	263.61	263.40	-	
11/2/2022	612.2	404,061	11	4,750.8	3,111,796	263.52	263.38	-	
11/3/2022	538.8	355,636	11	5,840.3	4,000,611	263.52	263.38	-	
11/4/2022	-	-	11	4,978.0	3,409,897	263.52	263.39	-	
11/5/2022	-	-	-	-	-	-	-	-	
11/6/2022	-	-	-	-	-	-	-	-	
11/7/2022	546.6	360,723	11	5,827.0	3,933,230	263.48	263.29	-	
11/8/2022	550.9	363,574	11	5,884.0	3,824,589	263.41	263.21	-	
11/9/2022	534.7	352,918	11	5,049.6	3,383,210	263.35	263.21	-	
11/10/2022	548.9	362,260	11	5,647.0	3,670,523	263.35	263.20	-	
11/11/2022	-	-	11	5,544.0	3,631,344	263.35	263.20	-	
11/12/2022	-	-	-	-	-	-	-	-	
11/13/2022	-	-	-	-	-	-	-	-	
11/14/2022	-	-	-	-	-	263.35	263.35	-	
11/15/2022	506.5	22,794	-	-	-	263.36	263.36	-	Filled office water tank from PW1-09
11/16/2022	-	-	-	-	-	-	-	-	

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond Amount of Taking (L/day)	Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)	Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)						
11/17/2022	-	-	-	-	-	-	-	-
11/18/2022	-	-	-	-	-	-	-	-
11/19/2022	-	-	-	-	-	-	-	-
11/20/2022	-	-	-	-	-	-	-	-
11/21/2022	501.6	15,048	-	-	-	-	-	- Filled office water tank from PW1-09
11/22/2022	-	-	-	-	-	263.39	263.39	-
11/23/2022	-	-	-	-	-	263.39	263.39	-
11/24/2022	-	-	8	475.3	213,876	263.39	263.35	- Pumped Sump Pond for Equipment Washing
11/25/2022	-	-	10	1,496.2	852,853	263.38	263.37	- Pumped Sump Pond for Equipment Washing
11/26/2022	-	-	-	-	-	-	-	-
11/27/2022	-	-	-	-	-	-	-	-
11/28/2022	-	-	-	-	-	263.41	263.41	-
11/29/2022	584.8	26,317	4	1,256.4	263,843	263.41	263.38	- Filled office water tank from PW1-09
11/30/2022	-	-	8	1,571.6	730,773	263.38	263.35	- Pumped Sump Pond for Equipment Washing
12/1/2022	-	-	-	-	-	263.37	263.37	- Pumped Sump Pond for Equipment Washing
12/2/2022	-	-	-	-	-	263.37	263.37	-
12/3/2022	-	-	-	-	-	-	-	-
12/4/2022	-	-	-	-	-	-	-	-
12/5/2022	-	-	-	-	-	263.37	263.37	-
12/6/2022	-	-	1	1,719.2	103,152	263.37	263.37	- Pumped Sump Pond for Equipment Washing
12/7/2022	-	-	8	2,582.0	1,239,343	263.37	263.25	- Pumped Sump Pond for Equipment Washing
12/8/2022	-	-	-	-	-	263.25	263.25	-
12/9/2022	-	-	-	-	-	-	-	-
12/10/2022	-	-	-	-	-	-	-	-
12/11/2022	-	-	-	-	-	-	-	-
12/12/2022	533.9	42,711	-	-	-	-	-	- Filled office water tank from PW1-09
12/13/2022	-	-	-	-	-	-	-	-
12/14/2022	-	-	-	-	-	-	-	-
12/15/2022	-	-	-	-	-	-	-	-
12/16/2022	-	-	-	-	-	-	-	-
12/17/2022	-	-	-	-	-	-	-	-
12/18/2022	-	-	-	-	-	-	-	-
12/19/2022	-	-	-	-	-	-	-	-
12/20/2022	-	-	-	-	-	-	-	-
12/21/2022	-	-	-	-	-	-	-	-

Table 5.1

**Water Taking Summary and Sump Pond (SW1) Daily Water Levels  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario**

Date	PW1-09		Hours of Taking	Rate of Taking (L/min)	Sump Pond		Start of Day SW1 Elevation (m AMSL)	End of Day SW1 Elevation (m AMSL)	Comments
	Rate of Taking (L/min)	Amount of Taking (L/day)			Amount of Taking (L/day)				
12/22/2022	-	-	-	-	-	-	-	-	
12/23/2022	-	-	-	-	-	-	-	-	
12/24/2022	-	-	-	-	-	-	-	-	
12/25/2022	-	-	-	-	-	-	-	-	
12/26/2022	-	-	-	-	-	-	-	-	
12/27/2022	-	-	-	-	-	-	-	-	
12/28/2022	-	-	-	-	-	-	-	-	
12/29/2022	-	-	-	-	-	-	-	-	
12/30/2022	-	-	-	-	-	-	-	-	
12/31/2022	-	-	-	-	-	-	-	-	

Table 6.1  
2022 Water Quality Results - SW1 and SW2  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario

Sample Location:				SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1	
Sample ID:				SW-11155365-012022-RC-01	SW-11155365-012022-RC-02	SW-11155365-021722-RC-01	SW-11155365-031722-RC-01	SW-11155365-031722-RC-02	SW-11155365-042122-RC-01	SW-11155365-042122-RC-02	SW-11155365-042122-RC-02	SW-11155365-052722-RC-01	SW-11155365-052722-RC-02
Sample Date:				1/20/2022	1/20/2022 (Duplicate)	2/17/2022	3/17/2022	3/17/2022 (Duplicate)	4/21/2022	4/21/2022 (Duplicate)	5/27/2022 (Duplicate)	5/27/2022	5/27/2022 (Duplicate)
Parameters	Units	PWQO											
Metals													
Aluminum	mg/L	0.075	(1,2)	0.0428	0.0426	0.0285	0.251	0.256	0.354	0.398	0.319	0.315	
Aluminum (Dissolved)	mg/L	0.075	(1,2)	0.0049	0.0047	0.0034	0.0132	0.0130	0.0141	0.0140	0.0189	0.0200	
Antimony	mg/L	0.02	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	
Antimony (Dissolved)	mg/L	0.02	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	
Arsenic	mg/L	0.005		0.00019	0.00019	0.00018	0.00018	0.00020	0.00025	0.00025	0.00025	0.00024	
Arsenic (Dissolved)	mg/L	0.005		0.00016	0.00018	0.00017	0.00012	0.00015	0.00019	0.00018	0.00019	0.00021	
Barium	mg/L	-		0.0261	0.0259	0.0258	0.0148	0.0149	0.0283	0.0286	0.0282	0.0278	
Barium (Dissolved)	mg/L	-		0.0260	0.0265	0.0265	0.0112	0.0109	0.0231	0.0231	0.0249	0.0248	
Beryllium	mg/L	0.011	(3)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	
Beryllium (Dissolved)	mg/L	0.011	(3)	ND (0.000020)	ND (0.000020)	ND (0.000020)	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)	ND (0.000050)	ND (0.000050)	ND (0.000050)	
Bismuth (Dissolved)	mg/L	-		ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	
Boron	mg/L	0.2	(1)	0.018	0.018	0.019	ND (0.010)	ND (0.010)	0.015	0.016	0.020	0.021	
Boron (Dissolved)	mg/L	0.2	(1)	0.020	0.019	0.019	ND (0.010)	ND (0.010)	0.016	0.015	0.021	0.020	
Cadmium	mg/L	0.0002		ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	0.0000229	0.0000236	ND (0.0000050)	ND (0.0000050)	0.0000088	ND (0.0000050)	
Cadmium (Dissolved)	mg/L	0.0002		ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	0.0000161	0.0000136	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	
Calcium	mg/L	-		40.9	40.8	41.8	21.5	21.8	42.2	44.3	39.7	40.4	
Calcium (Dissolved)	mg/L	-		42.4	42.2	41.2	18.8	18.6	40.9	40.4	43.7	42.7	
Chromium Total	mg/L	0.001	(4)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00053	0.00055	0.00062	0.00056	0.00054	
Chromium Total (dissolved)	mg/L	0.001	(4)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	
Cobalt	mg/L	0.0009		ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00019	0.00020	0.00027	0.00027	0.00022	0.00022	
Cobalt (Dissolved)	mg/L	0.0009		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	
Copper	mg/L	0.005		ND (0.00050) J	ND (0.00050) J	ND (0.00050) J	0.00355	0.00304	0.00141	0.00144	0.00142	0.00125	
Copper (Dissolved)	mg/L	0.005		0.00222 J	0.00194 J	0.00129 J	0.00192	0.00196	0.00048	0.00044	0.00041	0.00043	
Iron	mg/L	0.3		0.035	0.037	0.035	0.407	0.385	0.318	0.386	0.334	0.325	
Iron (Dissolved)	mg/L	0.3		ND (0.010)	ND (0.010)	ND (0.010)	0.014	0.017	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	
Lead	mg/L	0.005	(5)	ND (0.000050)	ND (0.000050)	ND (0.000050)	0.000375	0.000356	0.000213	0.000237	0.000169	0.000165	
Lead (Dissolved)	mg/L	0.005	(5)	0.000061	0.000052	ND (0.000050)	0.000054	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	
Lithium	mg/L	-		ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	
Lithium (Dissolved)	mg/L	-		ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	
Magnesium	mg/L	-		8.40	8.28	9.38	4.28	4.22	7.83	8.14	9.02	9.27	
Magnesium (Dissolved)	mg/L	-		8.71	8.77	9.05	3.12	3.08	8.37	8.10	8.91	8.77	
Manganese	mg/L	-		0.0123	0.0126	0.0118	0.0546	0.0550	0.0310	0.0315	0.0373	0.0378	
Manganese (Dissolved)	mg/L	-		0.00179	0.00179	0.00472	0.0387	0.0410	0.00862	0.00855	0.00170	0.00177	
Molybdenum	mg/L	0.04	(1)	0.00250	0.00250	0.00238	0.000997	0.000983	0.00196	0.00200	0.00223	0.00224	
Molybdenum (Dissolved)	mg/L	0.04	(1)	0.00259	0.00265	0.00244	0.000849	0.000827	0.00199	0.00201	0.00231	0.00227	
Nickel	mg/L	0.025		ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00383	0.00418	0.00060	0.00063	0.00062	0.00053	
Nickel (Dissolved)	mg/L	0.025		ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00119	0.00103	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	
Phosphorous	mg/L	0.01	(1,6)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	
Phosphorous (Dissolved)	mg/L	0.01	(1,6)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	
Potassium	mg/L	-		2.86	2.80	3.01	2.96	2.96	2.57	2.62	2.78	2.76	
Potassium (Dissolved)	mg/L	-		2.80	2.81	2.91	2.73	2.78	2.54	2.49	2.78	2.77	
Selenium	mg/L	0.1		0.000050	0.000054	ND (0.000050)	0.000054	0.000066	ND (0.000050)	ND (0.000050)	0.000064	0.000059	
Selenium (Dissolved)	mg/L	0.1		ND (0.000050)	ND (0.000050)	ND (0.000050)	0.000058	0.000082	ND (0.000050)	0.000052 J	ND (0.000050)	ND (0.000050)	
Silicon	mg/L	-		3.64	3.67	3.72	1.85	1.90	2.96	3.07	4.17	3.98	
Silicon (Dissolved)	mg/L	-		3.68	3.65	3.67	1.13	1.13	2.29	2.25	3.79	3.67	
Silver	mg/L	0.0001		ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	
Silver (Dissolved)	mg/L	0.0001		ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	
Sodium	mg/L	-		6.67	6.54	6.67	3.69	3.68	6.79	6.85	7.22	7.50	
Sodium (Dissolved)	mg/L	-		6.80	6.88	6.51	3.22	3.17	7.02	7.08	7.95	7.64	
Strontium	mg/L	-		0.108	0.107	0.106	0.0498	0.0501	0.103	0.105	0.118	0.115	
Strontium (Dissolved)	mg/L	-		0.108	0.108	0.112	0.0437	0.0428	0.0966	0.0993	0.118	0.117	
Thallium	mg/L	0.0003	(1)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	0.000010	0.000011	
Thallium (Dissolved)	mg/L	0.0003	(1)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	
Tin	mg/L	-		ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00018	0.00016	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	
Tin (Dissolved)	mg/L	-		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	
Titanium	mg/L	-		0.00166	0.00162	ND (0.00150)	0.0141	0.0138	0.0163	0.0187	0.0140	0.0137	
Titanium (Dissolved)	mg/L	-		ND (0.00030)	ND (0.00030)	ND (0.00030)	0.00044	0.00038	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	
Tungsten	mg/L	0.03	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	
Tungsten (Dissolved)	mg/L	0.03	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	
Uranium	mg/L	0.005	(1)	0.000471	0.000459	0.000436	0.000172	0.000173	0.000387	0.000401	0.000400	0.000410	
Uranium (Dissolved)	mg/L	0.005	(1)	0.000449	0.000439	0.000439	0.000151	0.000151	0.000383	0.000368	0.000399	0.000398	



Table 6.1  
2022 Water Quality Results - SW1 and SW2  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario

Sample Location:			SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1
Sample ID:			SW-11155365-012022-RC-01	SW-11155365-012022-RC-02	SW-11155365-021722-RC-01	SW-11155365-031722-RC-01	SW-11155365-031722-RC-02	SW-11155365-042122-RC-01	SW-11155365-042122-RC-02	SW-11155365-052722-RC-01	SW-11155365-052722-RC-02
Sample Date:			1/20/2022	1/20/2022 (Duplicate)	2/17/2022	3/17/2022	3/17/2022 (Duplicate)	4/21/2022	4/21/2022 (Duplicate)	5/27/2022	5/27/2022 (Duplicate)
Parameters	Units	PWQO									
General Chemistry											
Alkalinity, Bicarbonate	mg/L	-	148	149	142	56.8	59.8	148	146	135	136
Alkalinity, Carbonate	mg/L	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	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)	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)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Total (As CaCO3)	mg/L	-	148	149	142	56.8	59.8	148	146	135	136
Chloride	mg/L	-	--	--	--	--	--	--	--	--	--
Chloride (Dissolved)	mg/L	-	8.92	8.95	9.10	4.80	4.86	11.2	11.2	10.6	10.6
Nitrate (as N)	mg/L	-	ND (0.020)	ND (0.020)	ND (0.020)	0.258	0.237	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
Nitrite (as N)	mg/L	-	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	0.0033	ND (0.0030)
pH (lab)	s.u.	6.5-8.5	--	--	--	--	--	--	--	--	--
Sulphate	mg/L	-	--	--	--	--	--	--	--	--	--
Sulphate (Dissolved)	mg/L	-	9.31	9.46	9.47	3.12	3.33	8.06	8.06	9.28	9.30
Total Suspended Solids (TSS)	mg/L	-	ND (3.0)	ND (3.0)	ND (3.0)	10.1	9.3	10.7	9.5	12.5 J	8.3 J
Turbidity	NTU	-	1.02	1.10	0.99	3.57	3.10	15.0	13.0	9.74	9.10
Field Parameters											
Conductivity Field	uS/cm	-	360.00	360.00	287.00	273.00		273.00	291	291	331
Dissolved Oxygen, Field	mg/L	>4	19.23	19.23	7.05	1.01		1.01	10.29	10.29	6.82
ORP, Field	millivolts	-	267	267	417	267		267	372	372	311
pH Field	s.u.	6.5-8.5	8.05	8.05	7.40	7.41		7.41	8.37	8.37	7.17
Temperature, Field	Deg C	-	2.78	2.78	2.22	6.59		6.59	11.15	11.15	16.12
Turbidity, field	NTU	-	8.9	8.9	11.1	0		0	32.3	32.3	17.3

Notes:

- ND (#)    Not present at or above the associated value
- J        Estimated concentration based on GHD Data Verification
- PWQO    Provincial Water Quality Objectives, February 1999
- (1)       Interim PWQO
- (2)       At pH >6.5 to 9.0, based on clay-free samples
- (3)       Assume hardness as CaCO3 <75 mg/L
- (4)       PWQO for trivalent chromium (Cr III) is 8.9 µg/L
- (5)       Alkalinity as CaCO3 >80 mg/L
- (6)       Prevent excessive plant growth in rivers and streams
- Detected above PWQO; below for Dissolved Oxygen

Table 6.1  
2022 Water Quality Results - SW1 and SW2  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario

Sample Location:				SW1	SW1	SW1	SW1	SW1	SW2	SW2	SW2	SW2
Sample ID:				SW-11155365-061622-RC-01	SW-11155365-061622-RC-02	SW-11155365-07/14/22-RC-01	SW-11155365-07/14/22-RC-02	SW-11155365-101322-RC-001	SW-11155365-012022-RC-03	SW-11155365-021722-RC-02	SW-11155365-021722-RC-03	SW-11155365-031722-RC-03
Sample Date:				6/16/2022	6/16/2022 (Duplicate)	7/14/2022	7/14/2022 (Duplicate)	10/13/2022	1/20/2022	2/17/2022	2/17/2022 (Duplicate)	3/17/2022
Parameters	Units	PWQO										
<b>Metals</b>												
Aluminum	mg/L	0.075	(1,2)	0.386	0.389	0.156	0.171	0.247	ND (0.0030)	0.108 J	0.436 J	0.0271
Aluminum (Dissolved)	mg/L	0.075	(1,2)	0.0205	0.0209	0.0190	0.0200	0.0144	0.0012	0.0012	0.0013	0.0012
Antimony	mg/L	0.02	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Antimony (Dissolved)	mg/L	0.02	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic	mg/L	0.005		0.00026	0.00028	0.00025	0.00025	0.00028	0.00022	0.00020 J	0.00042 J	0.00014
Arsenic (Dissolved)	mg/L	0.005		0.00021	0.00022	0.00022	0.00025	0.00024	0.00021	0.00014	0.00013	0.00013
Barium	mg/L	-		0.0274	0.0277	0.0287	0.0293	0.0276	0.0207	0.0174 J	0.0353 J	0.0149
Barium (Dissolved)	mg/L	-		0.0240	0.0232	0.0260	0.0265	0.0238	0.0201	0.0153	0.0160	0.0162
Beryllium	mg/L	0.011	(3)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)
Beryllium (Dissolved)	mg/L	0.011	(3)	ND (0.000020)	ND (0.000020)	ND (0.000020)	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)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Bismuth (Dissolved)	mg/L	-		ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron	mg/L	0.2	(1)	0.020	0.021	0.021	0.022	0.022	0.013	ND (0.010)	0.010	ND (0.010)
Boron (Dissolved)	mg/L	0.2	(1)	0.021	0.022	0.021	0.022	0.024	0.013	0.011	ND (0.010)	ND (0.010)
Cadmium	mg/L	0.0002		ND (0.0000050)	0.0000052	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	0.0000074 J	0.0000140 J	ND (0.0000050)
Cadmium (Dissolved)	mg/L	0.0002		ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)
Calcium	mg/L	-		39.5	40.6	40.6	40.6	38.0	62.8	46.0	50.8	46.2
Calcium (Dissolved)	mg/L	-		38.3	38.0	37.1	38.1	37.4	61.0	42.7	46.1	44.9
Chromium Total	mg/L	0.001	(4)	0.00062	0.00062	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00062	ND (0.00050)
Chromium Total (dissolved)	mg/L	0.001	(4)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt	mg/L	0.0009		0.00026	0.00026	0.00012	0.00012	0.00020	0.00019	0.00019 J	0.00057 J	0.00012
Cobalt (Dissolved)	mg/L	0.0009		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00016	ND (0.00010)	ND (0.00010)	0.00011
Copper	mg/L	0.005		0.00139	0.00140	0.00079	0.00082	0.00125	ND (0.00050)	0.00061 J	0.00119 J	ND (0.00050)
Copper (Dissolved)	mg/L	0.005		0.00055	0.00050	0.00047	0.00065	0.00048	ND (0.00020)	0.00027	ND (0.00020)	ND (0.00020)
Iron	mg/L	0.3		0.383	0.386	0.122	0.139	0.247	1.04	1.18 J	3.74 J	0.520
Iron (Dissolved)	mg/L	0.3		ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.380	0.153 J	0.298 J	0.157
Lead	mg/L	0.005	(5)	0.000201	0.000226	0.000091	0.000092	0.000165	ND (0.000050)	0.000139 J	0.000272 J	0.000066
Lead (Dissolved)	mg/L	0.005	(5)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Lithium	mg/L	-		0.0010	0.0011	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
Lithium (Dissolved)	mg/L	-		ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
Magnesium	mg/L	-		8.48	8.50	8.25	8.20	8.38	9.07	7.08	7.65	7.65
Magnesium (Dissolved)	mg/L	-		7.64	7.57	8.01	8.14	8.05	9.07	7.08	7.50	6.86
Manganese	mg/L	-		0.0411	0.0415	0.0222	0.0223	0.0244	4.64	1.86 J	4.46 J	1.56
Manganese (Dissolved)	mg/L	-		0.00262	0.00276	0.00896	0.00915	0.00072	4.09	1.19	1.79	1.60
Molybdenum	mg/L	0.04	(1)	0.00238	0.00237	0.00268	0.00266	0.00258	0.000444	0.000243 J	0.000361 J	0.000258
Molybdenum (Dissolved)	mg/L	0.04	(1)	0.00270	0.00270	0.00272	0.00279	0.00285	0.000435	0.000617 J	0.000303 J	0.000236
Nickel	mg/L	0.025		0.00058	0.00058	ND (0.00050)	ND (0.00050)	0.00066	ND (0.00050)	ND (0.00050)	0.00078	ND (0.00050)
Nickel (Dissolved)	mg/L	0.025		ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Phosphorous	mg/L	0.01	(1,6)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	0.052	ND (0.050)
Phosphorous (Dissolved)	mg/L	0.01	(1,6)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium	mg/L	-		3.00	2.94	3.03	3.04	2.57	1.34	1.25	1.29	1.13
Potassium (Dissolved)	mg/L	-		3.08	3.03	2.89	3.08	2.85	1.30	1.47	1.19	1.14
Selenium	mg/L	0.1		0.000058	0.000064	ND (0.000050)	0.000059	ND (0.000050)	ND (0.000050)	0.000050	0.000056	ND (0.000050)
Selenium (Dissolved)	mg/L	0.1		0.000067	0.000072	0.000058	0.000070	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Silicon	mg/L	-		4.27	4.24	4.60	4.65	4.94	5.25	3.98	5.00	3.74
Silicon (Dissolved)	mg/L	-		3.83	3.86	4.67	4.61	4.49	5.26	3.74	4.14	3.31
Silver	mg/L	0.0001		ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Silver (Dissolved)	mg/L	0.0001		ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Sodium	mg/L	-		7.16	7.34	7.60	7.72	7.25	5.68	3.83	4.07	4.27
Sodium (Dissolved)	mg/L	-		6.96	6.93	7.60	7.57	7.53	5.65	4.33	4.09	4.14
Strontium	mg/L	-		0.109	0.106	0.128	0.126	0.110	0.155	0.104	0.117	0.111
Strontium (Dissolved)	mg/L	-		0.105	0.106	0.126	0.127	0.111	0.149	0.108	0.114	0.103
Thallium	mg/L	0.0003	(1)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Thallium (Dissolved)	mg/L	0.0003	(1)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Tin	mg/L	-		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Tin (Dissolved)	mg/L	-		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Titanium	mg/L	-		0.0163	0.0164	0.00585	0.00657	0.0108	ND (0.00030)	0.00682 J	0.0237 J	0.00146
Titanium (Dissolved)	mg/L	-		ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten	mg/L	0.03	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Tungsten (Dissolved)	mg/L	0.03	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium	mg/L	0.005	(1)	0.000436	0.000456	0.000439	0.000434	0.000371	0.000072	0.000082 J	0.000104	0.000070
Uranium (Dissolved)	mg/L	0.005	(1)	0.000433	0.000441	0.000396	0.000406	0.000380	0.000071	0.000139 J	0.000079 J	0.000074
Vanadium	mg/L	0.006	(1)	0.00108	0.00108	0.00079	0.00081	0.00091	ND (0.00050)	ND (0.00050) J	0.00102 J	ND (0.00050)
Vanadium (Dissolved)	mg/L	0.006	(1)	ND (0.00050)	ND (0.00050)	0.00054	0.00053	0.00053	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc	mg/L	0.03		ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	0.0074	0.0050	ND (0.0030)
Zinc (Dissolved)	mg/L	0.03		ND (0.0010)	ND (0.0010)	0.0013	0.0014	0.0019	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
Zirconium	mg/L	0.004	(1)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)
Zirconium (Dissolved)	mg/L	0.004	(1)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)

Table 6.1  
2022 Water Quality Results - SW1 and SW2  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario

Sample Location:			SW1	SW1	SW1	SW1	SW1	SW2	SW2	SW2	SW2
Sample ID:			SW-11155365-061622-RC-01	SW-11155365-061622-RC-02	SW-11155365-07/14/22-RC-01	SW-11155365-07/14/22-RC-02	SW-11155365-101322-RC-001	SW-11155365-012022-RC-03	SW-11155365-021722-RC-02	SW-11155365-021722-RC-03	SW-11155365-031722-RC-03
Sample Date:			6/16/2022	6/16/2022 (Duplicate)	7/14/2022	7/14/2022 (Duplicate)	10/13/2022	1/20/2022	2/17/2022	2/17/2022 (Duplicate)	3/17/2022
Parameters	Units	PWQO									
General Chemistry											
Alkalinity, Bicarbonate	mg/L	-	126	127	124	122	122	218	145	148	151
Alkalinity, Carbonate	mg/L	-	ND (2.0)	ND (2.0)	6.0 J	3.8 J	4.7	ND (2.0)	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)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Phenolphthalein	mg/L	-	ND (2.0)	ND (2.0)	3.0	ND (2.0)	2.3	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Alkalinity, Total (As CaCO3)	mg/L	-	128	129	130	126	126	218	145	148	151
Chloride	mg/L	-	--	--	--	--	--	--	--	--	--
Chloride (Dissolved)	mg/L	-	10.2	10.2	8.93	8.82	8.35	6.74	5.76	6.02	6.02
Nitrate (as N)	mg/L	-	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	0.081	0.083	ND (0.020)
Nitrite (as N)	mg/L	-	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	0.0035	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
pH (lab)	s.u.	6.5-8.5	--	--	--	--	--	--	--	--	--
Sulphate	mg/L	-	--	--	--	--	--	--	--	--	--
Sulphate (Dissolved)	mg/L	-	9.26	9.24	10.1	9.95	10.6	3.05	4.00	4.20	2.66
Total Suspended Solids (TSS)	mg/L	-	9.9	12.7	5.6	5.6	10.4	5.7	44.8 J	15.6 J	5.9
Turbidity	NTU	-	0.43 J	9.10 J	5.06	4.47	8.29	2.29	8.95 J	4.13 J	1.74
Field Parameters											
Conductivity Field	uS/cm	-	290	290	281	281	291.00	495.00	298.00	298.00	287.00
Dissolved Oxygen, Field	mg/L	>4	4.48	4.48	8.85	8.85	--	15.34	15.74	15.74	3.40
ORP, Field	millivolts	-	229	229	218	218	130	18	320	320	142
pH Field	s.u.	6.5-8.5	8.01	8.01	8.47	8.47	8.12	7.45	7.19	7.19	7.13
Temperature, Field	Deg C	-	22.95	22.95	24.73	24.73	12.52	1.87	2.62	2.62	8.89
Turbidity, field	NTU	-	29.9	29.9	7.8	7.8	--	6.2	9.1	9.1	6.7
Notes:											
ND (#)	Not present at or above the associated value										
J	Estimated concentration based on GHD Data Verification										
PWQO	Provincial Water Quality Objectives, February 1999										
(1)	Interim PWQO										
(2)	At pH >6.5 to 9.0, based on clay-free samples										
(3)	Assume hardness as CaCO3 <75 mg/L										
(4)	PWQO for trivalent chromium (Cr III) is 8.9 µg/L										
(5)	Alkalinity as CaCO3 >80 mg/L										
(6)	Prevent excessive plant growth in rivers and streams										
	Detected above PWQO; below for Dissolved Oxygen										

Table 6.1  
2022 Water Quality Results - SW1 and SW2  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario

Sample Location:			SW2		SW2		SW2		SW2		SW2		SW2	
Sample ID:			SW-11155365-042122-RC-03		SW-11155365-052722-RC-03		SW-11155365-061622-RC-03		SW-11155365-07/14/22-RC-03		SW-11155365-101322-RC-002		SW-11155365-101322-RC-003	
Sample Date:			4/21/2022		5/27/2022		6/16/2022		7/14/2022		10/13/2022		10/13/2022 (Duplicate)	
Parameters	Units	PWQO												
<b>Metals</b>														
Aluminum	mg/L	0.075	(1,2)	0.0144	0.0676	0.0407	0.0147	0.0109	0.0101					
Aluminum (Dissolved)	mg/L	0.075	(1,2)	0.0013	0.0043	0.0025	0.0011	0.0012	0.0012					
Antimony	mg/L	0.02	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Antimony (Dissolved)	mg/L	0.02	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Arsenic	mg/L	0.005		0.00012	0.00017	0.00020	0.00022	0.00016	0.00014					
Arsenic (Dissolved)	mg/L	0.005		0.00012	0.00016	0.00022	0.00020	0.00014	0.00012					
Barium	mg/L	-		0.0133	0.0146	0.0125	0.0136	0.0137	0.0139					
Barium (Dissolved)	mg/L	-		0.0129	0.0124	0.0124	0.0135	0.0134	0.0136					
Beryllium	mg/L	0.011	(3)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)	ND (0.000020)					
Beryllium (Dissolved)	mg/L	0.011	(3)	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)					
Bismuth (Dissolved)	mg/L	-		ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)					
Boron	mg/L	0.2	(1)	0.011	0.013	0.013	0.013	0.014	0.014					
Boron (Dissolved)	mg/L	0.2	(1)	0.011	0.013	0.014	0.013	0.014	0.014					
Cadmium	mg/L	0.0002		ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)					
Cadmium (Dissolved)	mg/L	0.0002		ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)					
Calcium	mg/L	-		62.6	62.1	62.4	63.2	66.3	65.5					
Calcium (Dissolved)	mg/L	-		61.7	66.8	62.4	63.2	66.3	65.5					
Chromium Total	mg/L	0.001	(4)	ND (0.000050)	ND (0.000050)	0.00082	ND (0.000050)	ND (0.000050)	ND (0.000050)					
Chromium Total (dissolved)	mg/L	0.001	(4)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)					
Cobalt	mg/L	0.0009		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Cobalt (Dissolved)	mg/L	0.0009		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Copper	mg/L	0.005		ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00077	ND (0.00050)	ND (0.00050)					
Copper (Dissolved)	mg/L	0.005		ND (0.00020)	0.00026	ND (0.00020)	ND (0.00020)	0.00028	0.00025					
Iron	mg/L	0.3		0.245	0.214	0.182	<b>0.342</b>	<b>0.354</b>	<b>0.337</b>					
Iron (Dissolved)	mg/L	0.3		0.028	0.042	0.078	0.027	0.131	0.138					
Lead	mg/L	0.005	(5)	ND (0.000050)	0.000060	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)					
Lead (Dissolved)	mg/L	0.005	(5)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)					
Lithium	mg/L	-		ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)					
Lithium (Dissolved)	mg/L	-		ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)					
Magnesium	mg/L	-		9.02	10.4	9.83	10.2	9.80	9.82					
Magnesium (Dissolved)	mg/L	-		9.30	10.1	9.07	10.1	9.76	9.70					
Manganese	mg/L	-		0.157	0.277	0.153 J	0.440	0.359	0.354					
Manganese (Dissolved)	mg/L	-		0.139	0.0966	0.349 J	0.398	0.360	0.374					
Molybdenum	mg/L	0.04	(1)	0.000227	0.000272	0.000265	0.000205	0.000154	0.000170					
Molybdenum (Dissolved)	mg/L	0.04	(1)	0.000217	0.000282	0.000284	0.000201	0.000152	0.000151					
Nickel	mg/L	0.025		ND (0.00050)	ND (0.00050)	0.00056	ND (0.00050)	ND (0.00050)	ND (0.00050)					
Nickel (Dissolved)	mg/L	0.025		ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)					
Phosphorous	mg/L	0.01	(1,6)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)					
Phosphorous (Dissolved)	mg/L	0.01	(1,6)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)					
Potassium	mg/L	-		1.44	1.59	1.57	1.45	1.84	1.87					
Potassium (Dissolved)	mg/L	-		1.42	1.59	1.56	1.42	2.09	2.14					
Selenium	mg/L	0.1		ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)					
Selenium (Dissolved)	mg/L	0.1		ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)					
Silicon	mg/L	-		3.86	3.00	2.83	3.75	4.68	4.69					
Silicon (Dissolved)	mg/L	-		3.64	2.82	2.99	3.67	5.16	5.08					
Silver	mg/L	0.0001		ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)					
Silver (Dissolved)	mg/L	0.0001		ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)					
Sodium	mg/L	-		5.49	5.60	5.23	5.59	5.81	6.01					
Sodium (Dissolved)	mg/L	-		5.26	5.86	5.18	5.39	5.98	5.92					
Strontium	mg/L	-		0.144	0.151	0.147	0.160	0.153	0.153					
Strontium (Dissolved)	mg/L	-		0.140	0.156	0.146	0.168	0.152	0.152					
Thallium	mg/L	0.0003	(1)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)					
Thallium (Dissolved)	mg/L	0.0003	(1)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)					
Tin	mg/L	-		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Tin (Dissolved)	mg/L	-		ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Titanium	mg/L	-		ND (0.00090)	0.00276	0.00165	0.00068	0.00047	0.00038					
Titanium (Dissolved)	mg/L	-		ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)					
Tungsten	mg/L	0.03	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Tungsten (Dissolved)	mg/L	0.03	(1)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)					
Uranium	mg/L	0.005	(1)	0.000111	0.000130	0.000130	0.000083	0.000066	0.000063					
Uranium (Dissolved)	mg/L	0.005	(1)	0.000107	0.000123	0.000120	0.000076	0.000068	0.000070					
Vanadium	mg/L	0.006	(1)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)					
Vanadium (Dissolved)	mg/L	0.006	(1)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)					
Zinc	mg/L	0.03		ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)					
Zinc (Dissolved)	mg/L	0.03		ND (0.0010)	ND (0.0010)	ND (0.0010)	0.0016	0.0012	0.0015					
Zirconium	mg/L	0.004	(1)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)					
Zirconium (Dissolved)	mg/L	0.004	(1)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)					

Table 6.1

2022 Water Quality Results - SW1 and SW2  
2022 Annual Monitoring Report  
Dufferin Aggregates Teedon Pit  
Township of Tiny, County of Simcoe, Ontario

Sample Location:			SW2	SW2	SW2	SW2	SW2	SW2
Sample ID:			SW-11155365-042122-RC-03	SW-11155365-052722-RC-03	SW-11155365-061622-RC-03	SW-11155365-07/14/22-RC-03	SW-11155365-101322-RC-002	SW-11155365-101322-RC-003
Sample Date:			4/21/2022	5/27/2022	6/16/2022	7/14/2022	10/13/2022	10/13/2022 (Duplicate)
Parameters	Units	PWQO						
General Chemistry								
Alkalinity, Bicarbonate	mg/L	-	214	207	204	203	191	194
Alkalinity, Carbonate	mg/L	-	ND (2.0)	ND (2.0)	ND (2.0)	5.8	10.3	9.9
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)	2.9	5.1	4.9
Alkalinity, Total (As CaCO3)	mg/L	-	214	207	204	209	201	203
Chloride	mg/L	-	--	--	--	--	--	--
Chloride (Dissolved)	mg/L	-	7.03	7.15	6.49	6.77	7.84	7.79
Nitrate (as N)	mg/L	-	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
Nitrite (as N)	mg/L	-	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
pH (lab)	s.u.	6.5-8.5	--	--	--	--	--	--
Sulphate	mg/L	-	--	--	--	--	--	--
Sulphate (Dissolved)	mg/L	-	2.77	2.14	1.68	0.98	0.60	0.58
Total Suspended Solids (TSS)	mg/L	-	ND (3.0)	6.1	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)
Turbidity	NTU	-	1.53	3.05	1.76	1.53	1.34	1.47
Field Parameters								
Conductivity Field	uS/cm	-	374	444	389	0	388.00	388.00
Dissolved Oxygen, Field	mg/L	>4	0	6.04	1.2	22.12	--	--
ORP, Field	millivolts	-	376	315	251	266	133	133
pH Field	s.u.	6.5-8.5	7.95	7.16	7.65	7.31	7.75	7.75
Temperature, Field	Deg C	-	12.33	16.88	23.68	25.98	12.27	12.27
Turbidity, field	NTU	-	0	0	10.6	6.9	--	--
Notes:								
ND (#)	Not present at or above the associated value							
J	Estimated concentration based on GHD Data Verification							
PWQO	Provincial Water Quality Objectives, February 1999							
(1)	Interim PWQO							
(2)	At pH >6.5 to 9.0, based on clay-free samples							
(3)	Assume hardness as CaCO3 <75 mg/L							
(4)	PWQO for trivalent chromium (Cr III) is 8.9 µg/L							
(5)	Alkalinity as CaCO3 >80 mg/L							
(6)	Prevent excessive plant growth in rivers and streams							
	Detected above PWQO; below for Dissolved Oxygen							

# Appendices

# **Appendix A**

**Permit to Take Water No. 6258 BRDJ2M**

**Ministry of the Environment,  
Conservation and Parks**

Environmental Assessment and  
Permissions Division  
Brownfields and Permit to Take Water  
Permit To Take Water Unit  
Floor 1, 135 St Clair Ave W  
Toronto, ON  
M4V 1P5  
Tel: (416) 326-3766

**Ministère de l'Environnement, de la  
Protection de la nature et des  
Parcs**

Direction des évaluations et des  
permissions environnementales  
1er étage, 135 av St. Clair O  
Toronto, ON  
M4V 1P5  
Tél: (416) 326-3766



January 19, 2021

CRH Canada Group Inc.  
Floor 4 - 2300 Steeles Ave W  
Concord, Ontario, L4K 5X6  
Canada

Attn: Kevin Mitchell

**RE:** Amendment to Permit To Take Water Number 6258-BRDJ2M  
90 Darby Rd Lots 79 and 80 Concession 1 Original Township of Tiny  
Tiny, County of Simcoe  
Reference Number 0363-AV9PXX

In an email dated January 15, 2021 to Ms. Erinn Lee (MECP) from Kevin Mitchell of CRH Canada Group Inc., an error was identified in Permit To Take Water number 6258-BRDJ2M, issued on January 14, 2021. Specifically, the submission deadline for an annual report was identified as April 31, rather than April 30 of each year following the issuance of the Permit To Take Water.

As Director under section 34.1 of the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, as amended ("OWRA"), and pursuant to my authority under subsection 34.1(2) of the OWRA, I am exercising my discretion to amend Permit to Take Water 6258-BRDJ2M by amending Condition 4.3 as follows:

- 4.3 The Permit Holder shall submit an Annual Monitoring Report to the District Office and the Director by April 30<sup>th</sup> of each year following the issuance of the Permit to Take Water. The report shall include:**
- i. All of the monitoring data collected for the preceding calendar year for the locations listed under 4.1 and 4.2.**
  - ii. All other relevant groundwater or surface water monitoring data collected by the Permit Holder for the preceding calendar year from any on site and off-site monitoring wells/ locations, including on the adjacent property where the proposed Teedon Pit extension is located and identified by the land registry**



**system's PIN 583870135.**

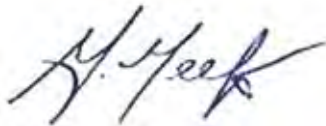
**iii. An electronic version of all of the monitoring data reported.**

Please note that all other terms and conditions of Permit to Take Water 5684-BRCSS4 shall remain in force, including the maximum water taking rates and volumes listed in Table A.

This notice, as of January 19, 2021, forms part of the Permit and is to remain attached to the Permit at all times.

Any change in circumstances related to this permit should be reported promptly to a Director.

Yours truly,

A handwritten signature in blue ink, appearing to read 'G. Meek', is positioned above a horizontal line.

---

Gregory Meek

Supervisor (Acting), Permit To Take Water

Director, Section 34.1, Ontario Water Resources Act, R.S.O. 1990

Environmental Assessment and Permissions Branch

File Storage Number: SI-SI-TI-C1-220

**PERMIT TO TAKE WATER**  
Surface and Ground Water  
NUMBER 6258-BRDJ2M

*Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:*

CRH Canada Group Inc.  
Floor 4 - 2300 Steeles Ave W  
Concord, Ontario, L4K 5X6  
Canada

*For the water taking from:* PW1-09 (WWR # 7124734), Source Pond

*Located at:* 90 Darby Rd Lots 79 and 80 Concession 1 Original Township of Tiny  
Tiny, County of Simcoe

*For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:*

**DEFINITIONS**

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment, Conservation and Parks.
- (d) "District Office" means the Barrie District Office.
- (e) "Permit" means this Permit to Take Water No. 6258-BRDJ2M including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means CRH Canada Group Inc..
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

*You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:*

## **TERMS AND CONDITIONS**

### **1. Compliance with Permit**

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated January 17, 2018 and signed by Nicolle Bellissimo, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

### **2. General Conditions and Interpretation**

- 2.1 Inspections  
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act* , R.S.O. 1990, the *Pesticides Act* , R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.
- 2.2 Other Approvals  
The issuance of, and compliance with this Permit, does not:  
  - (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act* , and

the *Environmental Protection Act* , and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

## 2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

## 2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

## 2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

## 2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

# 3. Water Takings Authorized by This Permit

## 3.1 Expiry

This Permit expires on **January 13, 2031**. No water shall be taken under authority of this Permit after the expiry date.

## 3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

**Table A**

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	PW1-09 (WWR # 7124734)	Well Drilled	Aggregate Washing	Industrial	950	24	1,368,000	210	17 592343 4945072
2	Source Pond	Pond Dugout	Aggregate Washing	Industrial	7,274	12	5,237,280	210	17 591900 4944960
						<b>Total Taking:</b>	6,605,280		

3.3 In addition to aggregate washing, the water taken under this Permit may also be used for other onsite uses including dust suppression.

#### 4. Monitoring

4.1 Under section 9 of O. Reg. 387/04 as amended from time to time, the Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter or calculated in accordance with the method described in the application for this Permit, or as otherwise accepted by the Director.

The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31<sup>st</sup> in every year, the records required by this condition to the ministry's Water Taking Reporting System.

4.2 The Permit Holder shall implement the following groundwater and pond water level monitoring program:

- i. Install and maintain dataloggers at the on-site and off-site monitoring wells listed in Schedule B and monitor groundwater levels at a minimum frequency of once every four hours. This monitoring shall occur, at a minimum, between February 15 and December 15 of every year for which the Permit is valid.
- ii. Should any other on-site monitoring well be installed, then groundwater levels shall be monitored as per item (i) above and the data included in the Annual Monitoring Report.
- iii. Measure water levels in private water wells WWR 7150632 and WWR 5717709, if permission is granted by the well owners. Should the permission of either of these the domestic water well owners be withdrawn, then the Permit Holder shall replace the well for which permission has been denied with a well in the same aquifer either on or

off site.

- iv. measure the water level elevation in the Source Pond between February 15 and December 15 when the pond is not frozen at a minimum frequency of twice per day, once in the early morning and once in the late afternoon or evening.

4.3 The Permit Holder shall submit an Annual Monitoring Report to the District Office and the Director by April 31<sup>st</sup> of each year following the issuance of the Permit to Take Water. The report shall include:

- i. All of the monitoring data collected for the preceding calendar year for the locations listed under 4.1 and 4.2.
- ii. All other relevant groundwater or surface water monitoring data collected by the Permit Holder for the preceding calendar year from any on site and off-site monitoring wells/ locations, including on the adjacent property where the proposed Teedon Pit extension is located and identified by the land registry system's PIN 583870135.
- iii. An electronic version of all of the monitoring data reported.

4.4 The Permit Holder may replace damaged or inoperable monitoring wells without amendment of the PTTW. The changes shall maintain or expand the intended scope of the monitoring program, be approved at the time of the change by a responsible qualified professional, and be documented in the Annual Monitoring Report along with the justification for the changes.

4.5 Within 30 days of the issuance of the Permit, the Permit Holder shall distribute its *Dufferin Aggregates Teedon Pit – Well Complaint Response* described in Item 4 of Schedule A of this Permit to the Teedon Pit Community Liaison Committee (CLC), the Corporation of the Township of Tiny and the Corporation of the Township of Tay.

4.6 Any request for an amendment or renewal of this Permit shall be accompanied by a report prepared by a Qualified Person (P.Geo. or equivalent) assessing all data collected under the Conditions 4.1 to 4.4 of this Permit. The report shall also document all reported well interference complaints and how they were addressed. The report shall include an electronic version of the monitoring data collected. This Condition does not apply to administrative amendments.

4.7 The Permit Holder shall make the Annual Monitoring Report required by Condition 4.3 available publicly by posting it on the Company's website by May 31<sup>st</sup> of each year following the issuance of the Permit to Take Water.

## **5. Impacts of the Water Taking**

### **5.1 Notification**

The Permit Holder shall immediately notify the local District Office of any complaint arising

from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

## 5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

### For Groundwater Takings

If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.

If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

## 6. **Director May Amend Permit**

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to

safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.



*In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 101 of the Ontario Water Resources Act, as amended provides that the Notice requiring a hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*In addition to these legal requirements, the Notice should also include:*

- a. The name of the appellant;
- b. The address of the appellant;
- c. The Permit to Take Water number;
- d. The date of the Permit to Take Water;
- e. The name of the Director;
- f. The municipality within which the works are located;

*This notice must be served upon:*

*The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto ON  
M5G 1E5  
Fax: (416) 326-5370  
Email:  
ERTTribunalsecretary@ontario.ca*

*AND*

*The Minister of the Environment,  
Conservation and Parks  
777 Bay Street, 5th Floor  
Toronto, Ontario  
M7J 2J3*

*AND*

*The Director, Section 34.1,  
Ministry of the Environment,  
Conservation and Parks  
Client Services and Permissions  
Branch  
1st Floor  
135 St Clair Ave W  
Toronto ON M4V 1P5  
Fax: (416) 314-8452*

***Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:***

by Telephone at  
(416) 212-6349  
Toll Free 1(866) 448-2248

by Fax at  
(416) 326-5370  
Toll Free 1(844) 213-3474

by e-mail at  
www.ert.gov.on.ca

*This instrument is subject to Section 38 of the **Environmental Bill of Rights** that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.*

This Permit cancels and replaces Permit Number 5003-APFH26, issued on 2017/08/14.

Dated at Toronto this 14th day of January, 2021.

A handwritten signature in black ink, reading "Adam Leus". The signature is stylized with a large, sweeping initial "A" and a long, horizontal flourish at the bottom.

Adam Leus  
Director, Section 34.1  
*Ontario Water Resources Act* , R.S.O. 1990

## **Schedule A**

This Schedule “A” forms part of Permit To Take Water 6258-BRDJ2M, dated January 14, 2021.

1. GHD. 2018. Category 1 Permit-To-Take-Water Renewal Application Supporting Hydrologic and Hydrogeologic Study Dufferin Teedon Pit, Township of Tiny, County of Simcoe, Ontario; Project: 11155365, Report No 1, Signed and stamped by Gary Lagos, P.Geo. and signed by J. Richard Murphy, P. Eng. January 18, 2018.
2. GHD. 2018. Items Completed At The Request of MOECC Associated with the PTTW Renewal, Dufferin Teedon Pit, Township of Tiny, County of Simcoe, Ontario letter to Mr. Vincent Bulman, MOECC, Central Region, Water Unit signed and stamped by Gary I. Lagos of GHD; April 20, 2018 Reference No. 11155365.
3. GHD. April 26, 2018. Re: 2018 Domestic Well Survey Dufferin Teedon Pit, Township of Tiny, County of Simcoe letter addressed to V. Bulman, Ministry of the Environment and Climate Change Ontario; April 26, 2018; signed and stamped by Gary I. Lagos, P. Geo. of GHD. Reference No. 11155365.
4. Dufferin. 2018. Dufferin Aggregates Teedon Pit - Well Interference Protocol, addressed to the Ministry of the Environment, Conservation and Parks, signed by Maria Tapalovic of Dufferin Aggregates, a division of CRH Canada Group Inc. dated August 2, 2018.

## Schedule B

This Schedule B forms part of Permit to Take Water 6258-BRDJ2M, dated January 13, 2021

### **Teedon Pit Production and Monitoring Wells** **Dufferin Teedon Pit, Township of Tinv, County of Simcoe, Ontario**

Location	MOECC Well ID	Well Tag Number	Completion Date	Easting	Northing
<b>PW1-09</b> (1)(5)	<b>7124734</b>	A082190	4/29/2009	592343.75	4945072.04
<b>MW1-09</b> (3)(5)	<b>7124729</b>	A082184	6/2/2009	590513.00	4944298.00
<b>MW1</b> (1)(5)	<b>7054134</b>	A062215	11/8/2007	591776.70	4944920.92
<b>MW4-10</b> (1)(5)	<b>7150631</b>	A105968	8/5/2010	592346.97	4945073.66
<b>MW5-18</b> (4)(5)	<b>7310101</b>	A241648	4/5/2018	592450.79	4945106.20
<b>MW6-18</b> (4)(5)	<b>7310100</b>	A241641	3/29/2018	591778.54	4944916.15
<b>MW7-18</b> (4)(5)	<b>7310099</b>	A215946	4/9/2018	591953.92	4944937.13
<b>MW8-18</b>	<b>7314361</b>	A242552	6/11/2018	590518.91	4944303.17
<b>#50632</b> (5)	<b>7150632</b>		8/4/2010	592282.00	4945366.00
<b>#17709</b> (5)	<b>5717709</b>		9/23/1981	592539.00	4945093.00
<b>#16440</b> (3)	<b>5716440</b>		11/8/1979	591461.00	4944573.00

Notes:

- (1) Northing, eastings, measured on March 15, 2018.
- (2) Northing, eastings, measured on April 18, 2018.
- (3) Northing, eastings, from the approved Site Plans.
- (4) These monitoring wells include Tag Numbers.
- (5) Pressure transducers are installed at these locations.

# **Appendix B**

**Environmental Compliance Approval No.  
1293-CF7J3M**

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER 1293-CF7J3M  
Issue Date: December 6, 2022

CRH Canada Group Inc.  
2300 Steeles Avenue West, 4th floor  
Concord, Ontario  
L4K 5X6

Site Location: Dufferin Aggregates - Teedon Pit  
40 Darby Road  
the north half of Lot 79 and the south half of Lot 80,  
Concession 1  
Township of Tiny, County of Simcoe  
L0K 2E1

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

upgrades to the existing Works for the collection, transmission, treatment and reuse of wash water from existing aggregate washing operations located at the existing Teedon Pit located in the Township of Tiny, County of Simcoe, consisting of the following:

- one (1) upgraded two-cell sump (source)/recirculation pond divided by a new engineered berm located along the eastern boundary of the sump (source) pond cell, located in the north of the eastern half of the site and constructed above the groundwater table with the bottom of the pond constructed into naturally occurring silt/clayey silt deposit, complete with a sustained water level a minimum 1.0 m below the berm crest around the edges of the pond, having a total footprint size of approximately 10,000 m<sup>2</sup> and a total capacity of approximately 43,000 m<sup>3</sup>, consisting of the following:
  - one (1) upgraded sump (source) pond cell located in the western part of the sump (source)/recirculation pond, receiving water from the existing supply well (PW1-09), having a footprint size of approximately 4,500 m<sup>2</sup> and a capacity of approximately 16,000 m<sup>3</sup>, complete with a minimum 200 mm diameter emergency overflow pipe designed to convey any overflow to the existing unnamed downstream pond, one (1) automatic high-level float control, installed and maintained at least 0.3 metres below the elevation of the 200 mm diameter emergency overflow pipe, that stops the supply of water from the existing supply well (PW1-09) and one (1) or two (2) appropriately sized pumping arrangement(s) supplying clarified water to the existing wash plant;

- one (1) new recirculation pond cell lined with a synthetic liner (HDPE, or another material of equivalent or lower permeability), located in the eastern part of the sump (source)/recirculation pond, receiving water from the existing supply well (PW1-09) and effluent from the last cell of the upgraded silt pond and the upgraded sump (source) pond cell, having a maximum water depth of 8.0 m, a maximum area of 5,500 m<sup>2</sup> and a maximum capacity of 27,000 m<sup>3</sup>, complete with an emergency overflow pipe designed to convey the 100-year return storm to the upgraded sump (source) pond cell and one (1) appropriately sized pumping arrangement supplying clarified water to the existing wash plant;
- one (1) upgraded multiple-cell in series silt pond located south of the upgraded two-cell sump (source)/recirculation pond, constructed above the groundwater table with the bottom of the pond constructed into naturally occurring clay or silt deposits and complete with a sustained water level a minimum 1.0 m below the berm crest around the edges of the pond, having a maximum depth of 6 m and a maximum footprint size of approximately 8,500 m<sup>2</sup>, each cell separated from the next one by a berm complete with an interconnected pipe, the first cell complete with a maximum 450 mm diameter inlet pipe discharging wash water from the existing wash plant to the first cell and the last cell discharging via an outlet structure to the new recirculation pond cell;
- all other controls, electrical equipment, instrumentation, piping, valves and appurtenances essential for the proper operation of the aforementioned Works;

all in accordance with the supporting documents listed in Schedule A.

*For the purpose of this environmental compliance approval, the following definitions apply:*

"Approval" means this entire document and any schedules attached to it, and the application;

"District Manager" means the District Manager of the Barrie District Office of the Ministry;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;

"Licensed Engineering Practitioner" means a person who holds a licence, limited licence or temporary licence under the Professional Engineers Act, R.S.O. 1990, c. P.28

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Owner" means CRH Canada Group Inc. and its successors and assignees;

"OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended; and

"Works" means the sewage works described in the Owner's applications, this Approval and in the supporting documentation referred to herein, to the extent approved by this Approval.

*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

## **TERMS AND CONDITIONS**

### **1. GENERAL PROVISIONS**

1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
2. The Owner shall design, construct, operate and maintain the Works in accordance with the conditions of this Approval.
3. Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence.
4. The issuance of, and compliance with the conditions of this Approval does not:
  - a. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approval from the local conservation authority necessary to construct or operate the Works; or
  - b. limit in any way the authority of the Ministry to require certain steps be taken to require the Owner to furnish any further information related to compliance with this Approval.

### **2. EXPIRY OF APPROVAL**

The approval issued by this Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

### **3. CHANGE OF OWNER**

1. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:
  - a. change of address of Owner;
  - b. change of Owner, including address of new owner;
  - c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act*, R.S.O. 1990, c.B17 shall be included in the notification to the District Manager;
  - d. change of name of the corporation and a copy of the most current information filed under the



*Corporations Informations Act* , R.S.O. 1990, c. C39 shall be included in the notification to the District Manager.

2. In the event of any change in ownership of the Works, the Owner shall notify the succeeding owner in writing, of the existence of this Approval, and forward a copy of the notice to the District Manager.
3. The Owner shall ensure that all communications made pursuant to this condition refer to the number of this Approval.

#### **4. CONSTRUCTION OF WORKS/RECORD DRAWINGS**

1. Upon completion of construction of the Works, the Owner shall prepare and submit a written statement to the District Manager, certified by a Licensed Engineering Practitioner, that the Works are constructed in accordance with this Approval.
2. Within one (1) year of completion of construction of the Works, a set of record drawings of the Works shall be prepared or updated. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be readily accessible for reference at the Works.

#### **5. OPERATION AND MAINTENANCE**

1. The Owner shall ensure that at all times, the Works and related equipment and appurtenances which are installed or used to achieve compliance with this Approval are properly operated and maintained. The Owner shall also ensure that all monitoring programs and maintenance schedules for the Works are complied with.
2. The Owner shall ensure that the automatic high-level float control installed in the sump (source) pond cell is installed and maintained at least 0.3 metres below the elevation of the sump (source) pond cell emergency overflow pipe.
3. The Owner shall, upon identification of any spill, bypass or loss of any product, by-product, intermediate product, oil, fuel, solvent, waste material or any other polluting substance into the environment, take immediate action to prevent the further occurrence of such loss and prevent the substance from entering the upgraded silt pond and the upgraded sump (source)/recirculation pond.
4. In furtherance of, but without limiting the generality of, the obligation imposed by subsection 1, the Owner shall ensure that equipment and material for the containment, clean up and disposal of any spill, bypass or loss of any product, by product, intermediate product, oil, fuel, solvent, waste material or any other polluting substance are kept on hand and in good repair for immediate use in the event of:
  - a. any spill, bypass or loss of any product, by product, intermediate product, oil, fuel, solvent, waste material or any other polluting substance;

- b. a spill within the meaning of Part X of the EPA; or
  - c. the identification of an abnormal amount of any product, by product, intermediate product, oil, fuel, solvent, waste material or any other polluting substance in any part of the Works.
5. The Owner shall ensure that the design minimum liquid retention volumes of the Works are maintained at all times.
6. The Owner shall undertake weekly (once a week) during the operating season and monthly (once a month) during the non-operating season assessments of the condition of the upgraded sump (source)/recirculation pond perimeter containment berms. When appropriate, an assessment shall be conducted by a qualified Licensed Engineering Practitioner.
7. The Owner shall undertake weekly (once a week) during the operating season and monthly (once a month) during the non-operating season visual inspections of the Works for potential spills, structural integrity of the perimeter containment berms and accumulation of sediment in the Works and undertake corrective measures, if necessary, to ensure continued suspended solids removal performance of the Works, with results recorded in a log book.
8. The Owner shall periodically measure or otherwise assess the amount of sediment accumulating in the upgraded silt pond and the upgraded sump (source)/recirculation pond and remove the sediment, if necessary, to ensure continued suspended solids removal performance of the upgraded silt pond and the upgraded sump (source)/recirculation pond, with results recorded in a log book. No sediment shall be used on site for rehabilitation without complying with all applicable laws in place at the time of reuse.
9. The Owner shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the site. The logbook shall include the following:
- a. any spill, bypass or loss of any product, by product, intermediate product, oil, fuel, solvent, waste material or any other polluting substance;
  - b. the name of the Works;
  - c. the name of the inspector who conducted each inspection;
  - d. the date and results of each inspection, description of maintenance and cleaning, including an estimate of the quantity of any materials removed and method of clean-out of the Works; and
  - e. the date measurement of sediment was undertaken, the amount of sediment measured, if sediment removal was undertaken and where any removed sediment was placed.
10. The log book shall be retained at the site and be made available for Ministry inspection upon request.
11. The Owner shall prepare an operations manual prior to the introduction of wash water to the

Works, that includes, but not necessarily limited to, the following information:

- a. operating procedures for routine operation of the Works;
- b. inspection programs, including frequency of inspection for the Works and the methods or tests employed to detect when maintenance is necessary;
- c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;
- d. contingency plans and procedures for dealing with potential spill, bypasses and any other abnormal situations and for notifying the District Manager; and
- e. complaint procedures for receiving and responding to public complaints.

12. The operations manual shall include a maintenance plan and associated figures describing:

- a. the bottom elevation of the upgraded silt pond and the upgraded sump (source)/recirculation pond;
- b. maintenance tasks and methods for cleaning out (dredging) the ponds;
- c. steps to ensure the liner integrity during dredging activities;
- d. the thickness or other measurement of sediment that will trigger dredging activities;
- e. estimated volume of sediment to be removed annually as well as storage location of sediment;
- f. sediment stockpile dewatering method; and
- g. the proposed use of sediment for site restoration.

13. The Owner shall maintain the operations manual up to date through revisions undertaken from time to time and retain a copy at the location of the Works. Upon request, the Owner shall make the manual available for inspection and copying by Ministry personnel.

14. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the operation and maintenance activities required by this Approval.

## **6. SURFACE WATER QUALITY MONITORING AND RECORDING**

The Owner shall, upon issuance of this Approval, carry out the following monitoring program:

- 1. All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

2. Samples shall be collected and analyzed at the following sampling locations, at the sampling frequencies and using the sample type specified for each parameter listed:

<b>Table 1 - Surface Water Monitoring</b>	
<b>Sampling Locations</b>	1) The upgraded sump (source) pond cell (SW1); and 2) The unnamed downstream pond (SW2)
<b>Sampling Frequency</b>	1) before commencement of the operating season; 2) in April/May; 3) in July/August; and 4) in October/November
<b>Sampling Type</b>	Grab
<b>Sampling Parameters</b>	Total Suspended Solids (TSS), Metals, Anions, Turbidity

<b>Table 2 - Surface Water Monitoring</b>	
<b>Sampling Location</b>	Water discharged from the upgraded sump (source) pond cell emergency overflow pipe discharging to the unnamed downstream pond
<b>Sampling Frequency</b>	During an emergency overflow event from the upgraded sump (source) pond cell emergency overflow pipe discharging to the unnamed downstream pond
<b>Sampling Type</b>	Grab
<b>Sampling Parameters</b>	Total Suspended Solids (TSS), Metals, Anions, Turbidity

3. The methods and protocols for sampling, analysis, toxicity testing, and recording shall conform, in order of precedence, to the methods and protocols specified in the following:
- the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended; and
  - the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition) as amended from time to time by more recently published editions.
4. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

## **7. GROUNDWATER QUALITY MONITORING AND RECORDING**

Subject to continued permission of the well owner, the Owner shall, upon issuance of this Approval, carry out the following groundwater quality monitoring program until the installation of the lined recirculation cell has been completed:

1. All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.
2. Subject to landowner permission, samples of groundwater shall be collected at the location and frequency specified below, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

<b>Table 3 - Groundwater Quality Monitoring</b>	
<b>Sampling Locations</b>	Private water wells at the following addresses:  1) 127 Darby Road, Tay, Ontario;  2) 6970 Highway 93, Tiny, Ontario;  3) 7062 Highway 93, Tiny, Ontario;  4) 1189 Marshall Road, Tiny, Ontario; and  5) 1190 Marshall Road, Tiny, Ontario
<b>Sampling Frequency</b>	Quarterly (once every three months)
<b>Sampling Type</b>	Grab
<b>Sampling Parameters</b>	Total Suspended Solids (TSS), Metals, Anions, Turbidity

3. The methods and protocols for sampling, analysis, toxicity testing, and recording shall conform, in order of precedence, to the methods and protocols specified in the following:
  - a. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended; and
  - b. the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition) as amended from time to time by more recently published editions.
4. The Owner shall ensure that the results of the groundwater monitoring sampling shall be provided to the respective owner of the drinking water well forthwith after the result of the sampling have been received from a laboratory.
5. The Owner shall forthwith notify the District Manager after a well water complaint is received. Furthermore, the Owner shall forthwith test the complainant's well water, as directed by the District

Manager, for Total Suspended Solids (TSS), Metals, Anions, Turbidity and any other sampling parameters as directed by the District Manager.

6. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

## **8. SPILL CONTINGENCY AND POLLUTION PREVENTION PLAN**

1. Within three (3) months of the construction of the Works, the Owner shall implement a Spill Contingency and Pollution Prevention Plan that includes, but is not necessarily limited to, the following information:
  - a. the name, job title and location (address) of the Owner, person in charge, management or person(s) in control of the facility;
  - b. the name, job title and 24-hour telephone number of the person(s) responsible for activating the Spill Contingency and Pollution Prevention Plan;
  - c. a site plan drawn to scale showing the facility, nearby buildings, streets, drainage patterns, any receiving body(ies) of water that could potentially be significantly impacted and any features which need to be taken into account in terms of potential impacts on access and response (including physical obstructions and location of response and clean-up equipment);
  - d. steps to be taken to report, contain, clean up and dispose of contaminants following a spill;
  - e. a listing of telephone numbers for: local clean-up company(ies) who may be called upon to assist in responding to spills; local emergency responders including health institution(s); and MOE Spills Action Centre 1-800-268-6060;
  - f. Materials Safety Data Sheets (MSDS) for each hazardous material which may be transported or stored within the area serviced by the Works;
  - g. the means (internal corporate procedures) by which the Spill Contingency and Pollution Prevention Plan is activated and a description of the Trigger Mechanism(s);
  - h. a description of the spill response and pollution prevention training provided to employees assigned to work in the area serviced by the Works, the date(s) on which the training was provided and by whom;
  - i. an inventory of response and clean-up equipment available to implement the Spill Contingency and Pollution Prevention Plan, location and, date of maintenance/replacement if warranted; and
  - j. the date on which the Spill Contingency and Pollution Prevention Plan was prepared and subsequently, amended.
2. The Spill Contingency and Pollution Prevention Plan shall be kept in a conspicuous, readily accessible

location on-site.

3. The Spill Contingency and Pollution Prevention Plan shall be amended from time to time as required by changes in the existing aggregate washing operations.

## **9. REPORTING**

1. Each operating season, one (1) week prior to the start-up of the operation of the Works, the Owner shall notify the District Manager (in writing) of the pending start-up date.
2. The Owner shall forthwith orally report to the District Manager or designate, of an emergency overflow event from the upgraded sump (source) pond cell (discharge from the upgraded sump (source) pond cell emergency overflow pipe discharging to the unnamed downstream pond).
3. The Owner shall, upon request, make all reports, manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.
4. In addition to the obligations under Part X of the EPA and O. Reg. 675/98 (Classification and Exemption Of Spills and Reporting of Discharges), the Owner shall, within fifteen (15) days of the occurrence of any reportable spill as provided in Part X of the EPA and Ontario Regulation 675/98, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and a schedule of implementation.
5. The Owner shall prepare an annual performance report by May 31<sup>st</sup> of the following year. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The report shall contain, but shall not be limited to, the following information:
  - a. a summary and interpretation of all monitoring data, including an overview of the success and adequacy of the Works;
  - b. a description of any operating problems encountered and corrective actions taken;
  - c. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;
  - d. a complete record of water well complaints received (whether directly or through the Ministry);
  - e. a record of the upgraded sump (source)/recirculation pond perimeter containment berms inspections;
  - f. a record of visual inspections of the Works;
  - g. a summary of any by-pass, spill or abnormal discharge events; and

- h. any other information the District Manager requires from time to time.
- 6. The Owner shall make the annual performance report publicly available by posting it on the Owner's website by May 31<sup>st</sup> of each year following the issuance of the Approval. The annual performance report shall be combined with Permit To Take Water annual report.

## **10. SPECIAL CONDITION – PUBLIC ACCESSIBILITY TO REPORT**

The Owner shall make the annual performance report required by condition 9 available to the community advisory panel and public by posting it on the Owner's website at the time specified in condition 9.

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which Approval was granted. This condition is also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. Condition 1.4 is included to emphasize that the issuance of this Approval does not diminish any other statutory and regulatory obligations to which the Owner is subject in the construction, maintenance and operation of the Works. The condition specifically highlights the need to obtain any necessary conservation authority approvals. The condition also emphasizes the fact that this Approval doesn't limit the authority of the Ministry to require further information.
2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.
3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.
4. Condition 4 is included to ensure that the Works are constructed in accordance with the Approval and that record drawings of the Works "as constructed" are maintained for future references.
5. Condition 5 is included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner and made available to the Ministry. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the Owner in staff training, in proper operations and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Work. Condition 5 is also included to ensure that the Works will be operated and maintained in a manner enabling compliance with the terms and conditions of this Approval, such that the environment is protected and deterioration, loss, injury or damage to any person or property is minimised and/or prevented. Furthermore, Condition 5 is included to ensure that accumulated sediment in the upgraded silt pond and the upgraded sump (source)/recirculation pond is removed to maintain the intended sediment removal performance of the Works.
6. Conditions 6 and 7 are included to enable the Owner to evaluate and demonstrate the performance of the



Works, on a continual basis, and to demonstrate that the Works are properly operated and maintained and do not cause any impairment to the environment.

7. Condition 8 is included to ensure that the Owner will implement the Spill Contingency and Pollution Prevention Plan, such that the environment is protected and deterioration, loss, injury or damage to any person(s) or property is prevented.
8. Conditions 9 and 10 are included to provide a performance record for future references, to ensure that the Ministry as well as the general public is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

Schedule A forms part of this Approval and contains a list of supporting documentation/information received, reviewed and relied upon in the issuance of this Approval.

#### **SCHEDULE A**

1. Environmental Compliance Approval Application submitted by Gary I. Lagos, M.Sc., P.Geo., GHD Limited, dated February 16, 2021 and received on February 16, 2021.
2. The design report titled "OWRA S53 Environmental Compliance Approval (ECA) Supporting Information Teedon Pit Dufferin Aggregates, a division of CRH Canada Group Inc." dated June 7, 2022 and prepared by GHD Limited.
3. All other information and documentation provided by GHD Limited.

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights*, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar\*  
Ontario Land Tribunal  
655 Bay Street, Suite 1500  
Toronto, Ontario  
M5G 1E5  
OLT.Registrar@ontario.ca

and

The Minister of the Environment,  
Conservation and Parks  
777 Bay Street, 5th Floor  
Toronto, Ontario  
M7A 2J3

and

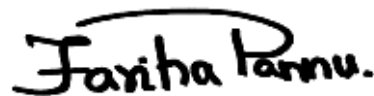
The Director appointed for the purposes of  
Part II.1 of the *Environmental Protection Act*  
Ministry of the Environment,  
Conservation and Parks  
135 St. Clair Avenue West, 1st Floor  
Toronto, Ontario  
M4V 1P5

**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

This instrument is subject to Section 38 of the *Environmental Bill of Rights*, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at <https://ero.ontario.ca/>, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

DATED AT TORONTO this 6th day of December, 2022



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Fariha Pannu, P.Eng.  
Director

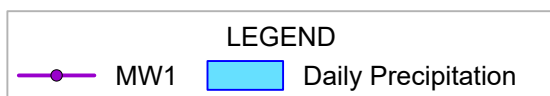
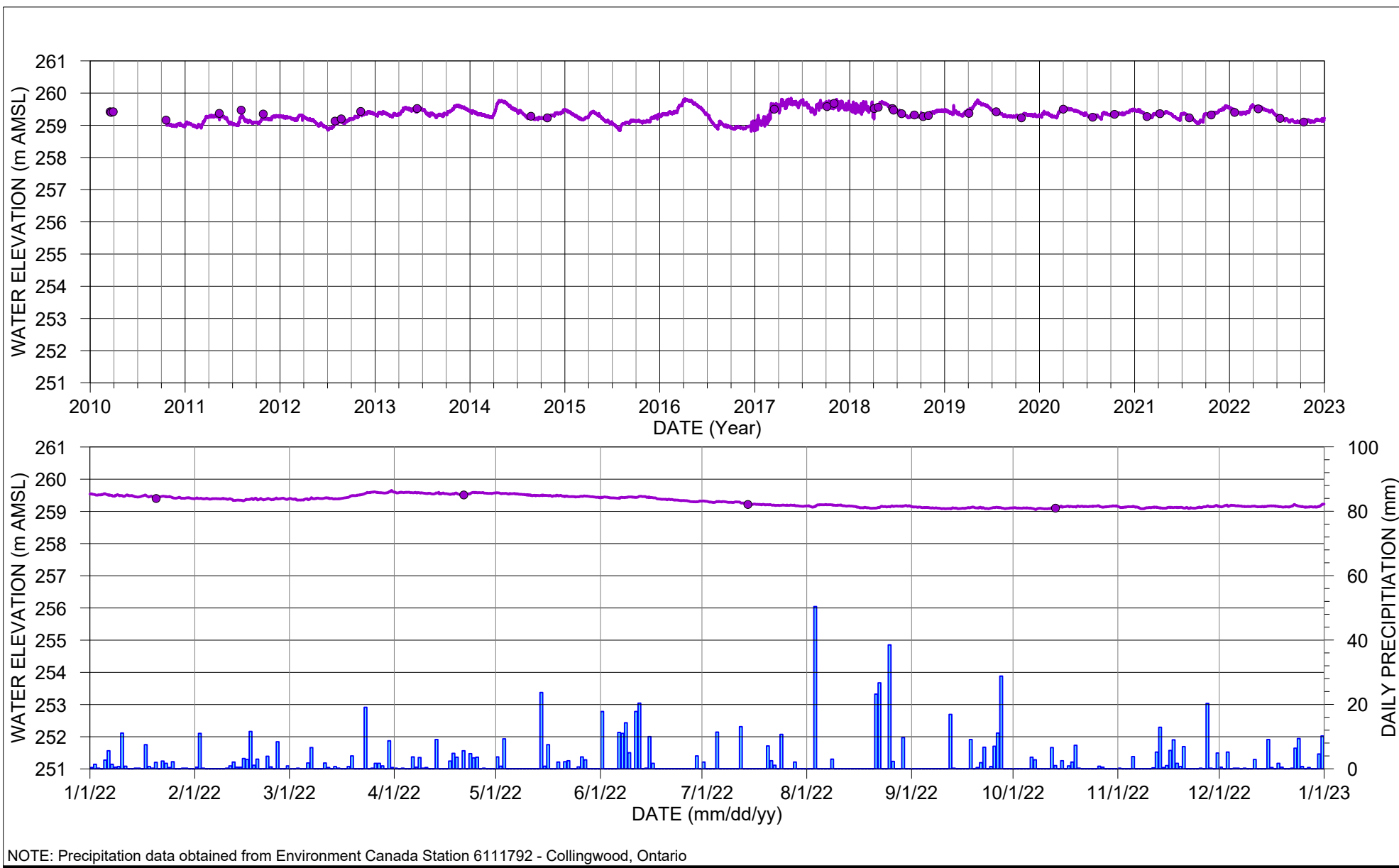
appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*

KC/

c: District Manager, MECP Barrie District Office  
Richard Chatfield, P.Eng., GHD Limited

# Appendix C

## Hydrographs

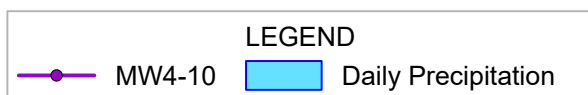
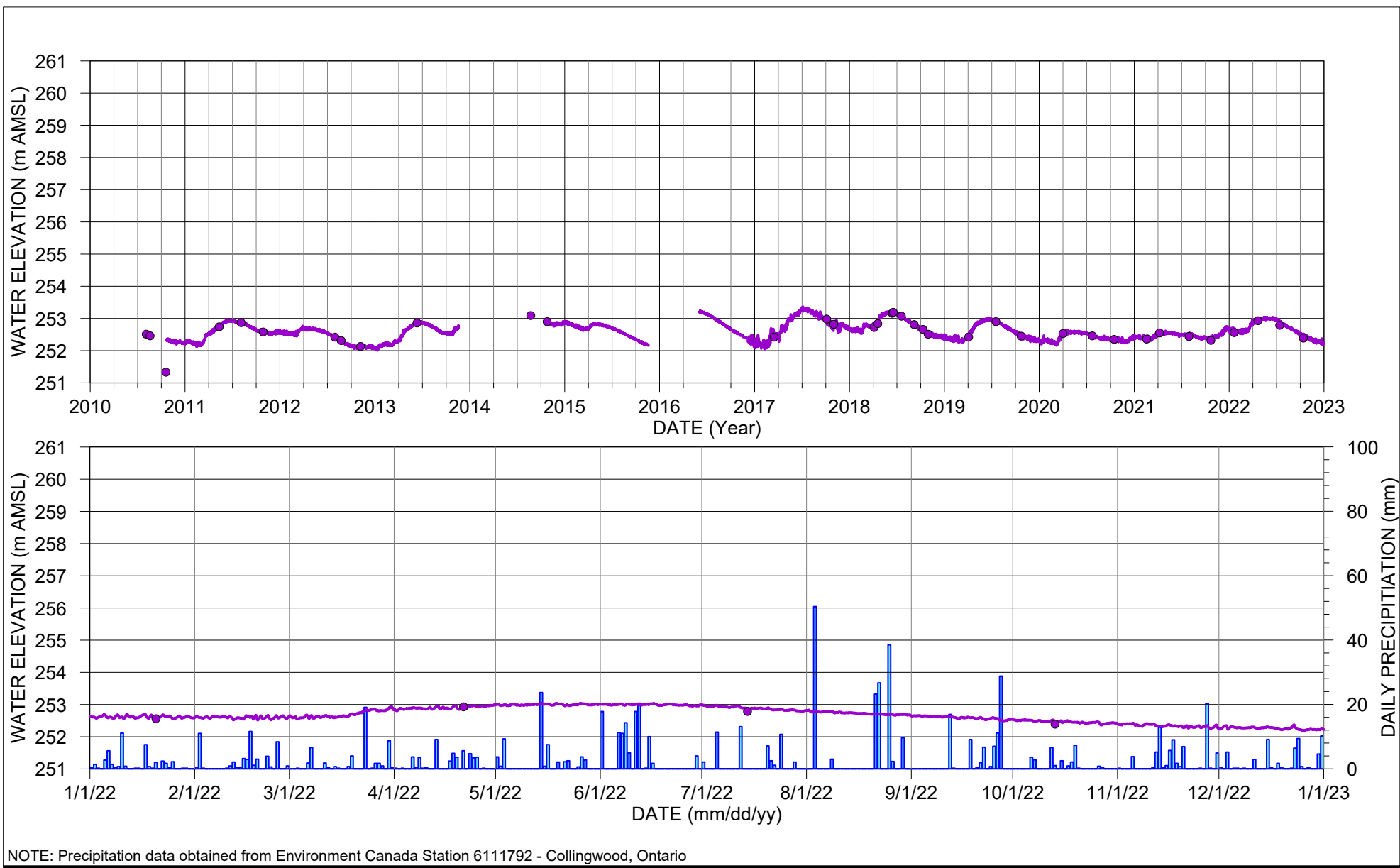


DUFFERIN AGGREGATES TEEDON PIT  
TOWNSHIP OF TINY, COUNTY OF SIMCOE,  
ONTARIO

HYDROGRAPH  
SHALLOW GROUNDWATER ZONE  
MW1

Project No. **11155365**  
Date **March 28, 2023**

**FIGURE C-1**

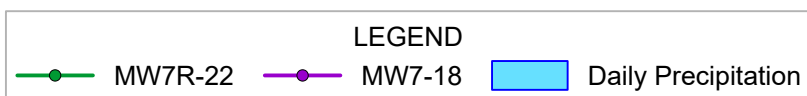
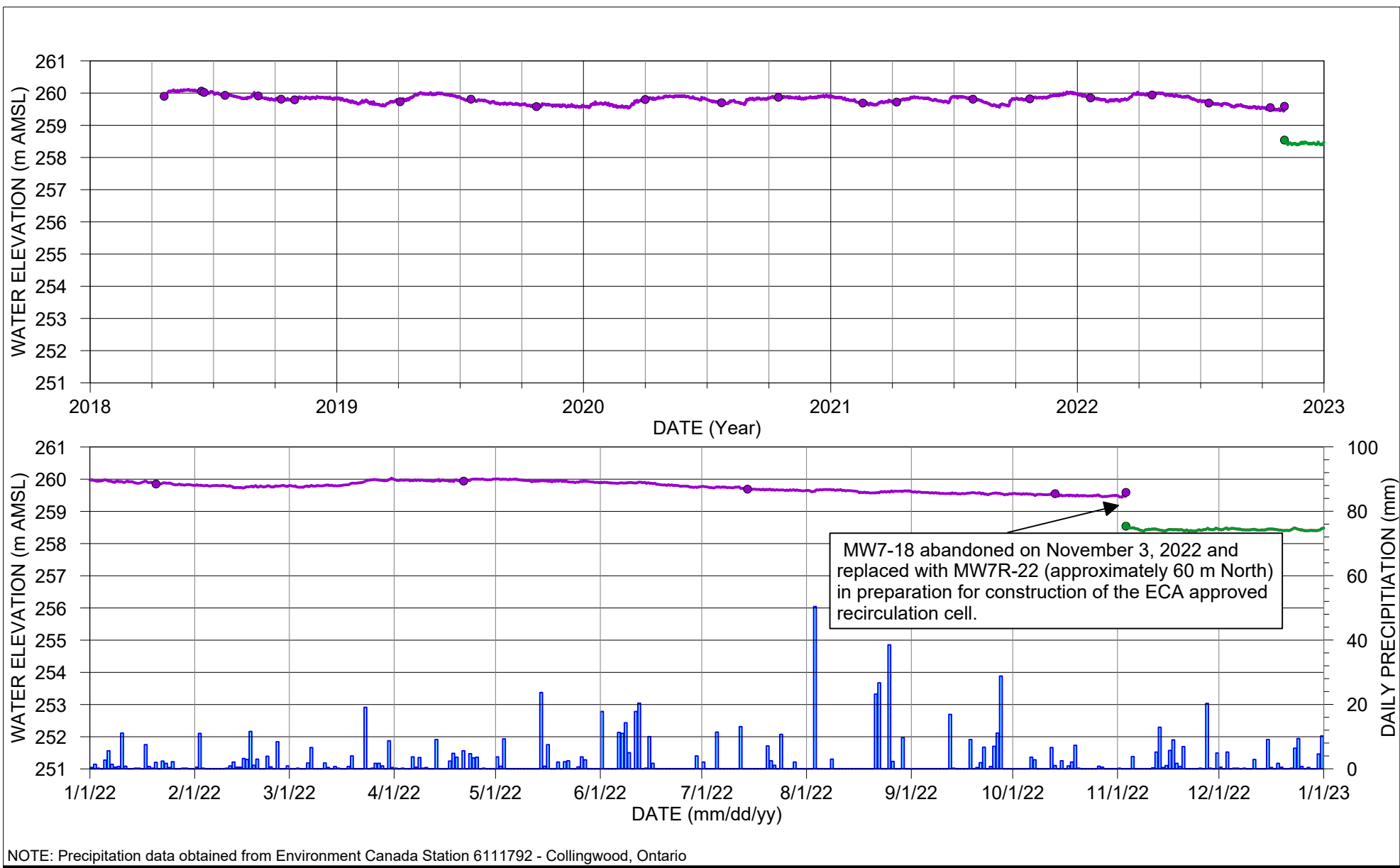


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

**HYDROGRAPH**  
**SHALLOW GROUNDWATER ZONE MW4-10**

**FIGURE C-2**



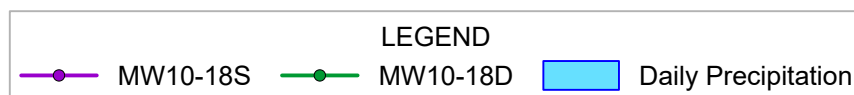
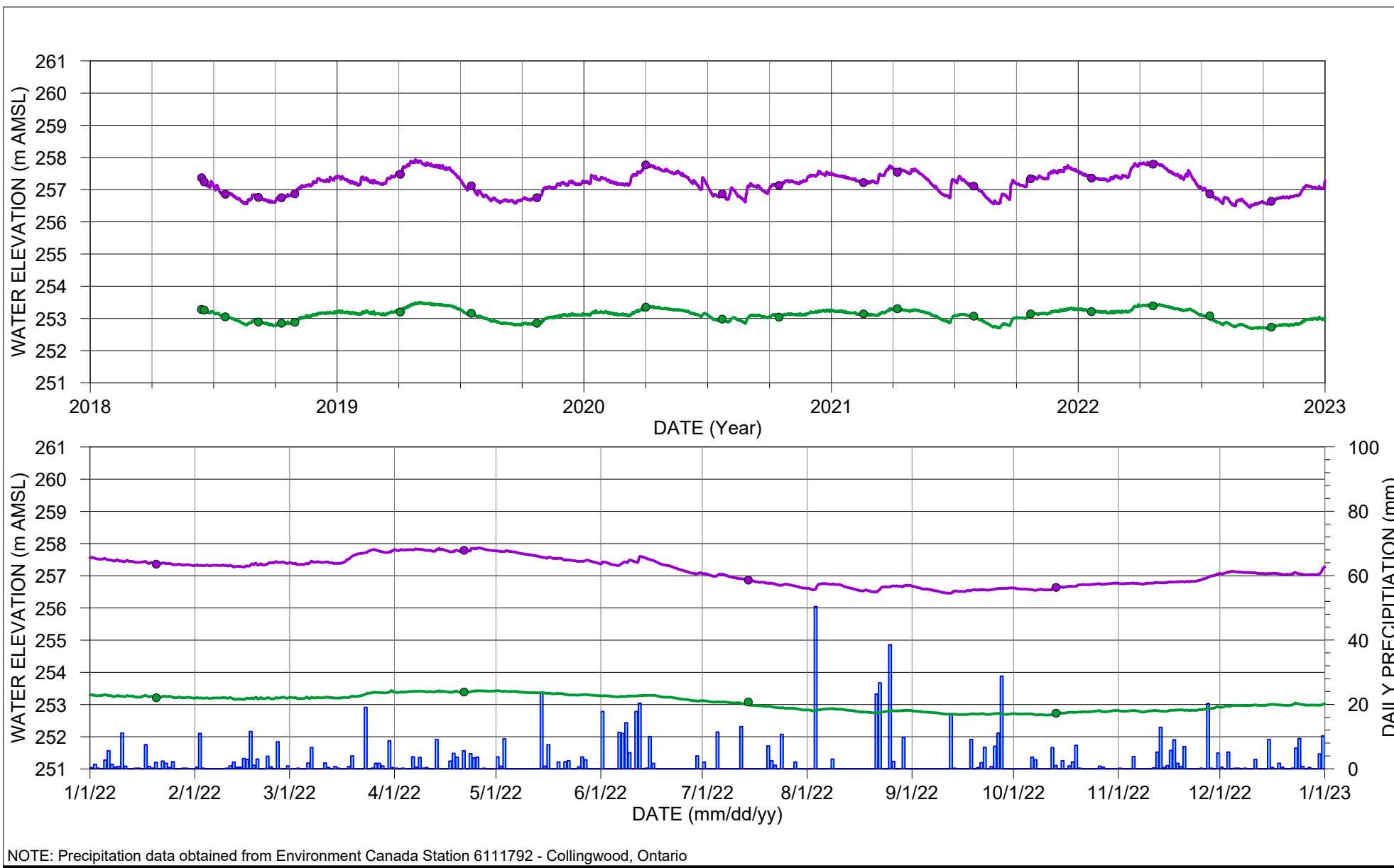
DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

HYDROGRAPH  
SHALLOW GROUNDWATER ZONE  
MW7R-22

Project No. 11155365  
Date March 28, 2023

FIGURE C-3



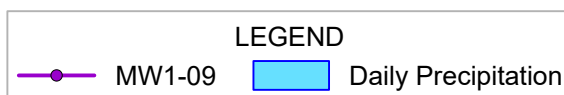
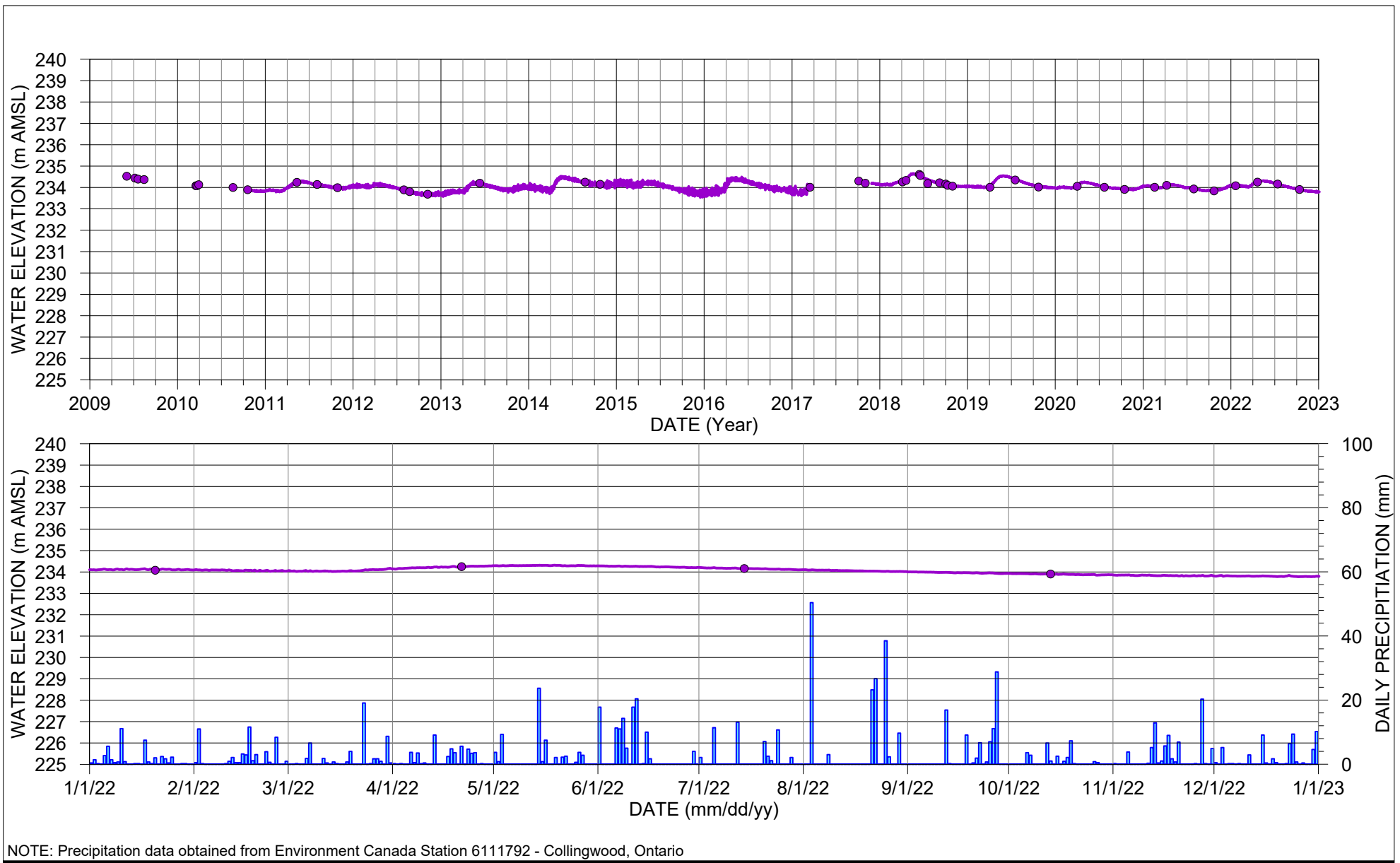


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

HYDROGRAPH  
SHALLOW GROUNDWATER ZONE  
MW10-18

FIGURE C-4

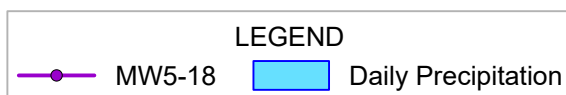
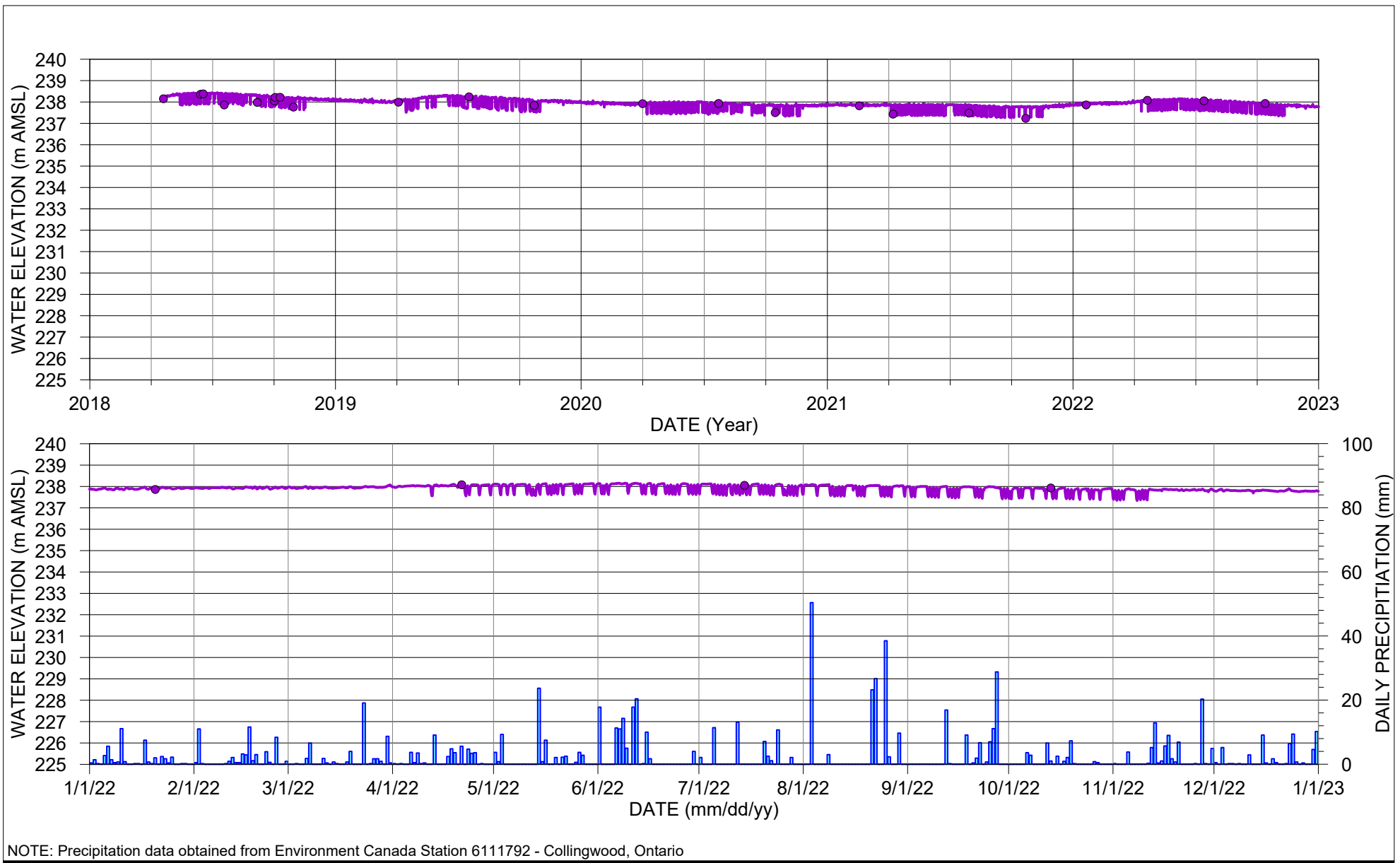


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

**HYDROGRAPH  
UPPER AQUIFER  
MW1-09**

**FIGURE C-5**

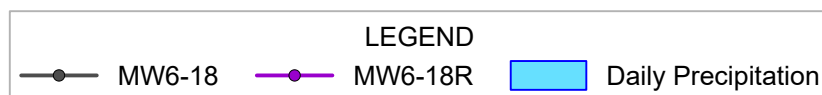
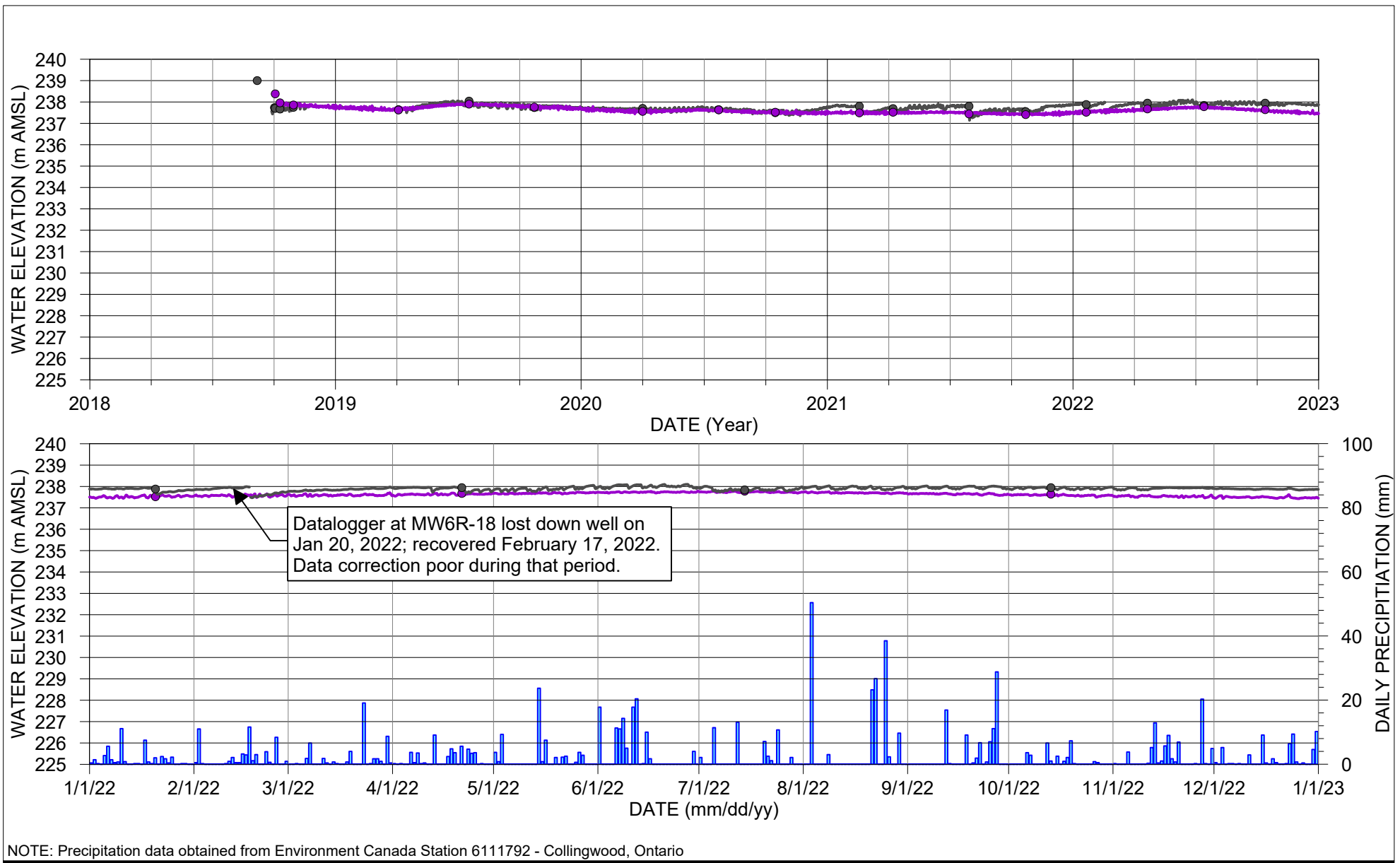


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

HYDROGRAPH  
UPPER AQUIFER  
MW5-18

**FIGURE C-6**

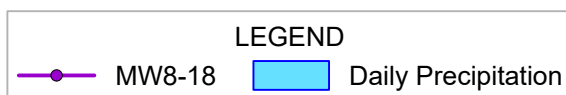
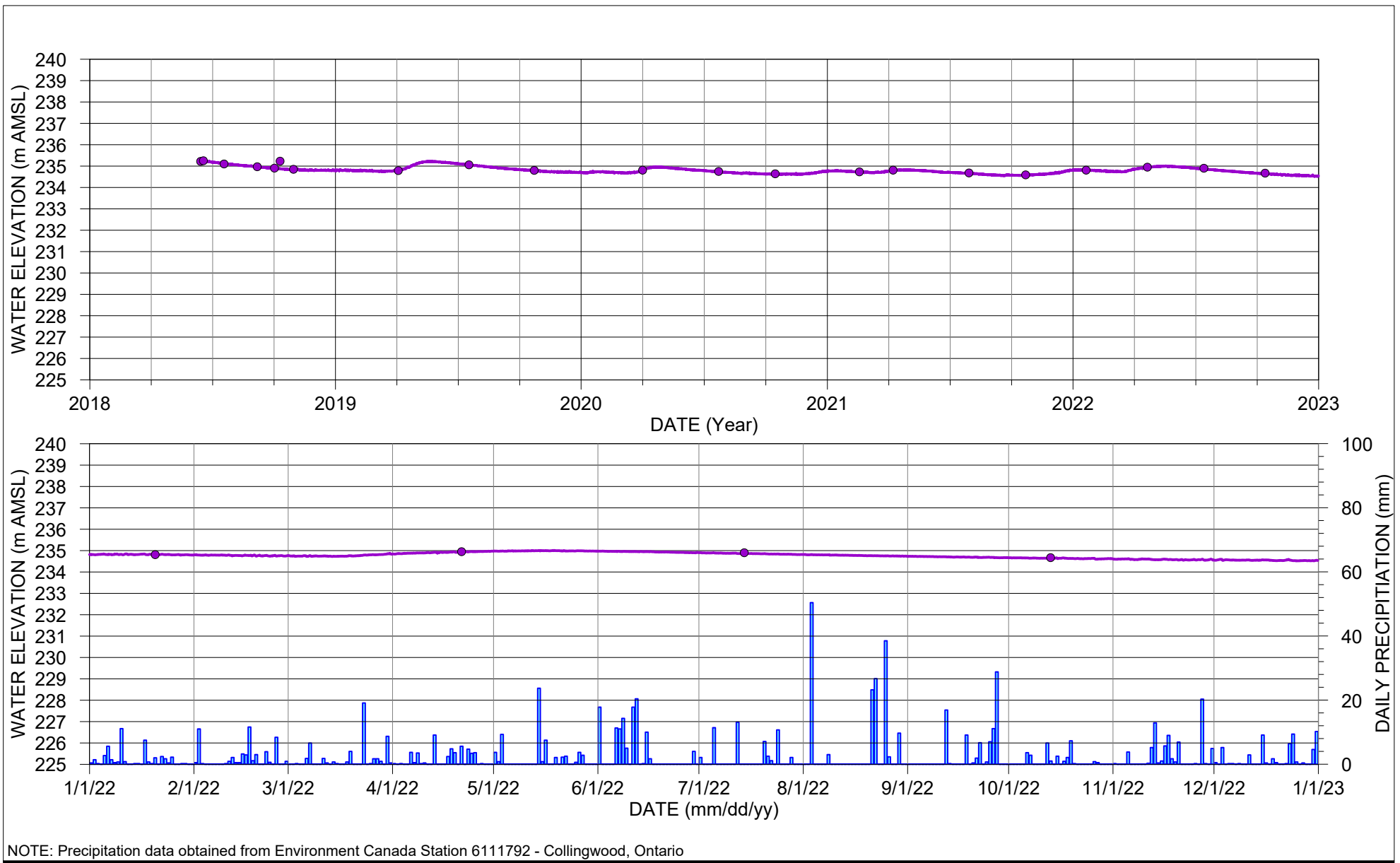


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

HYDROGRAPH  
UPPER AQUIFER  
MW6-18

FIGURE C-7

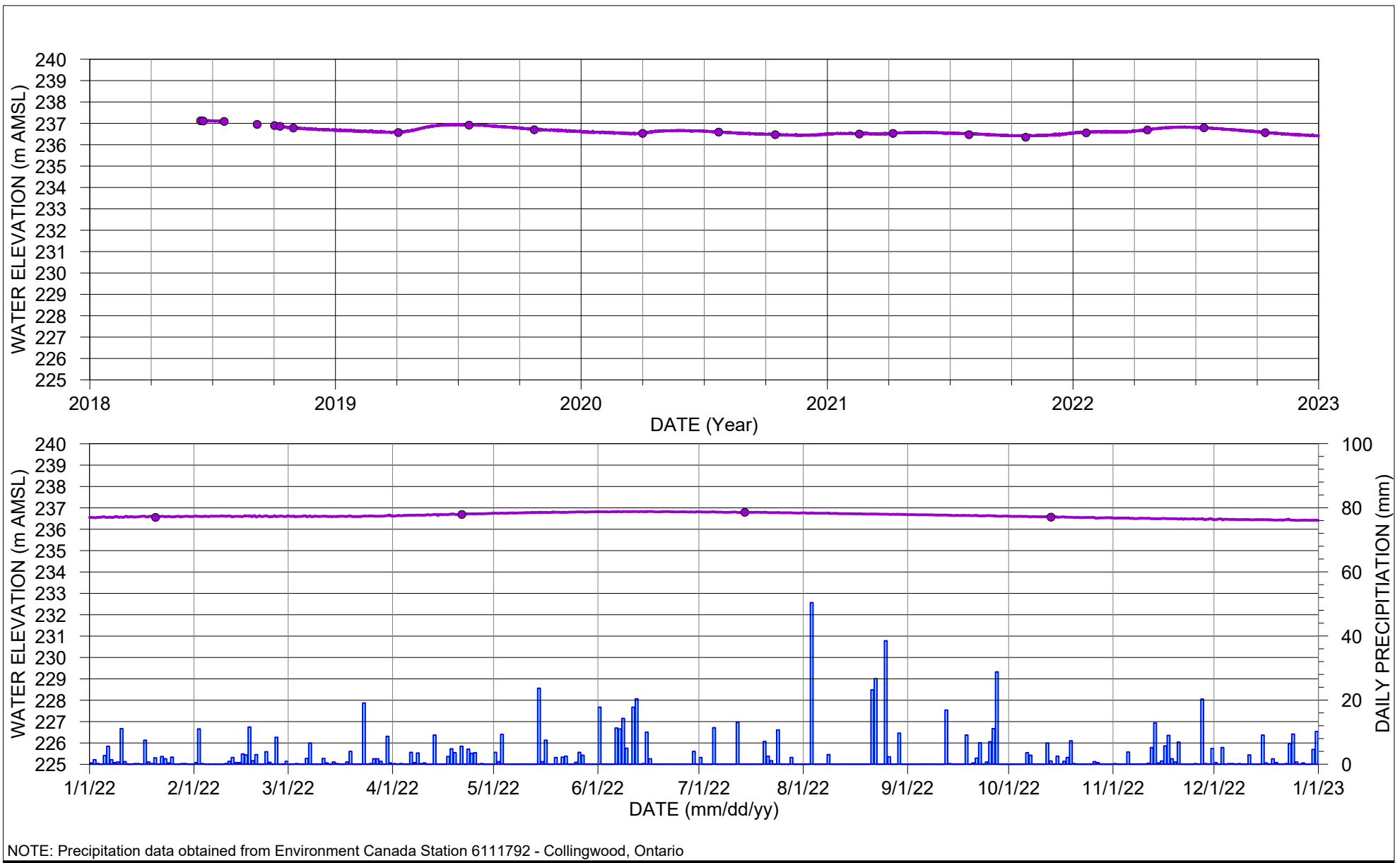


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

HYDROGRAPH  
UPPER AQUIFER  
MW8-18

FIGURE C-8

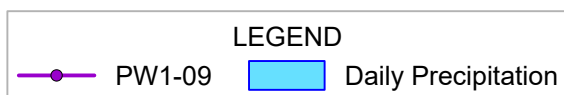
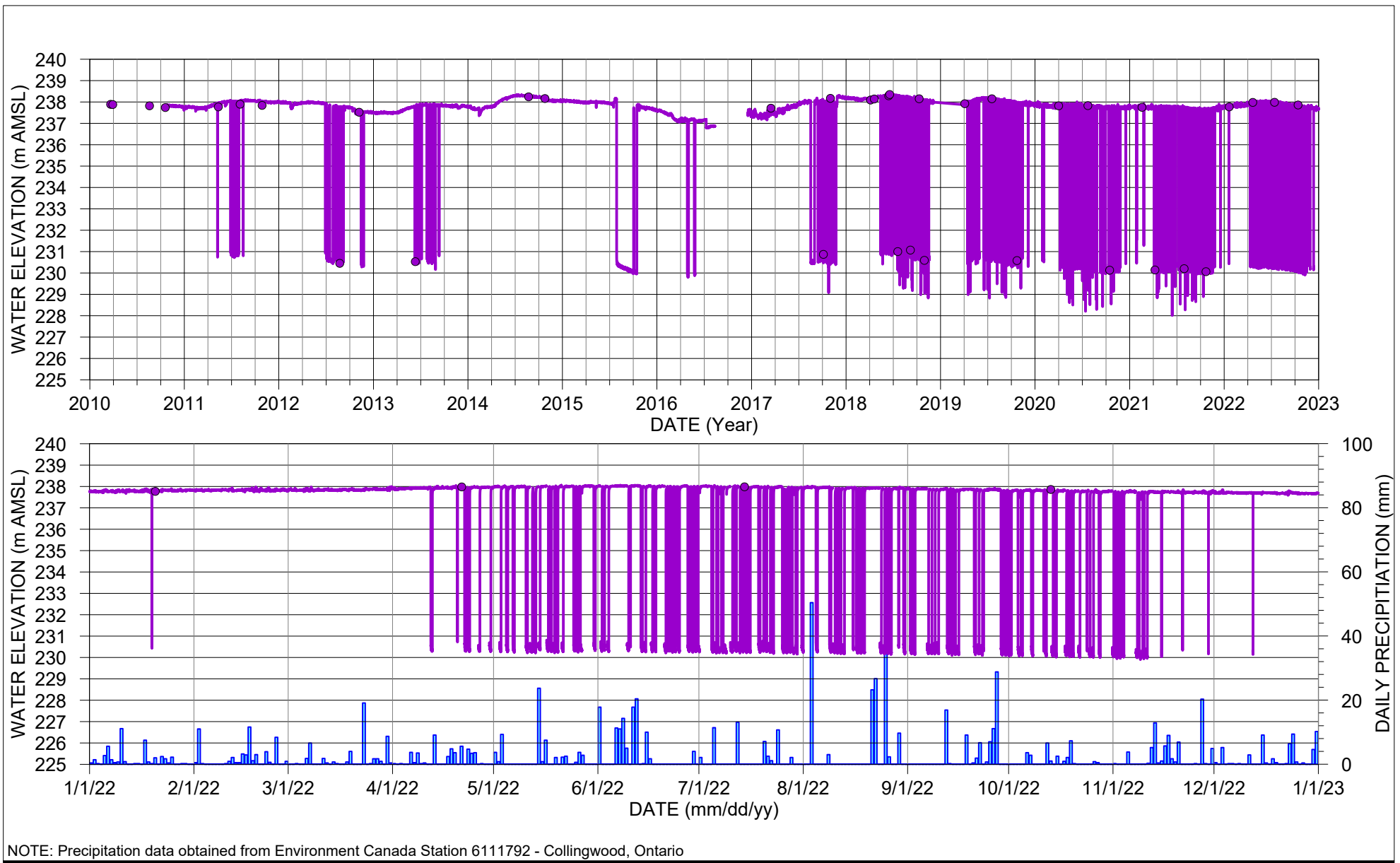


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date March 28, 2023

**HYDROGRAPH  
UPPER AQUIFER  
MW9-18**

**FIGURE C-9**

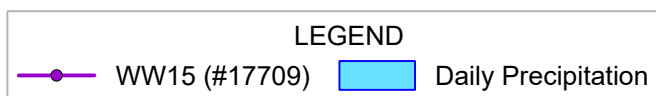
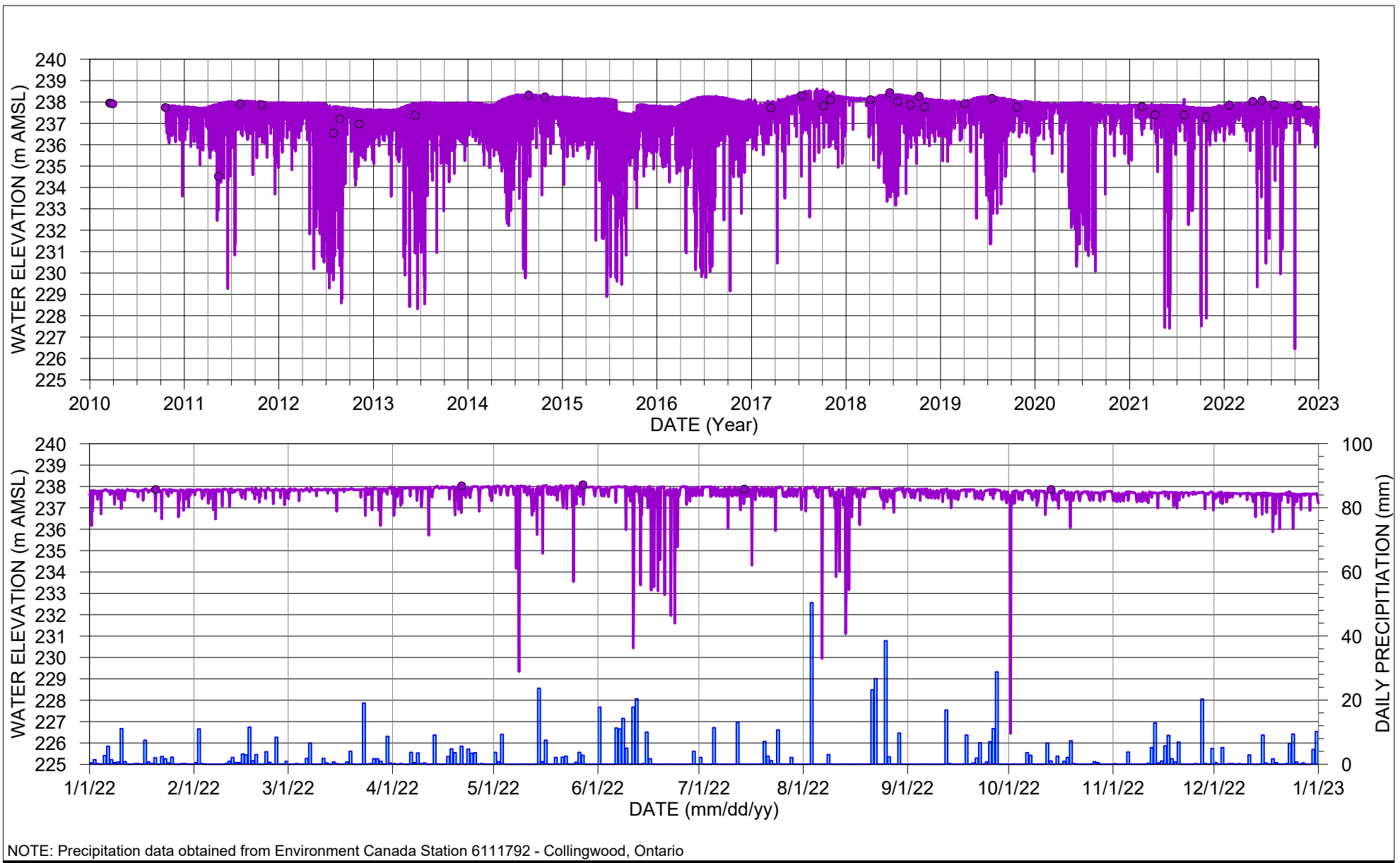


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP OF  
TINY, COUNTY OF SIMCOE, ONTARIO

**HYDROGRAPH UPPER AQUIFER  
PW1-09**

Project No. 11155365  
Date March 28, 2023

**FIGURE C-10**



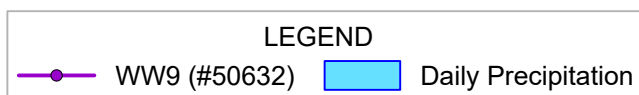
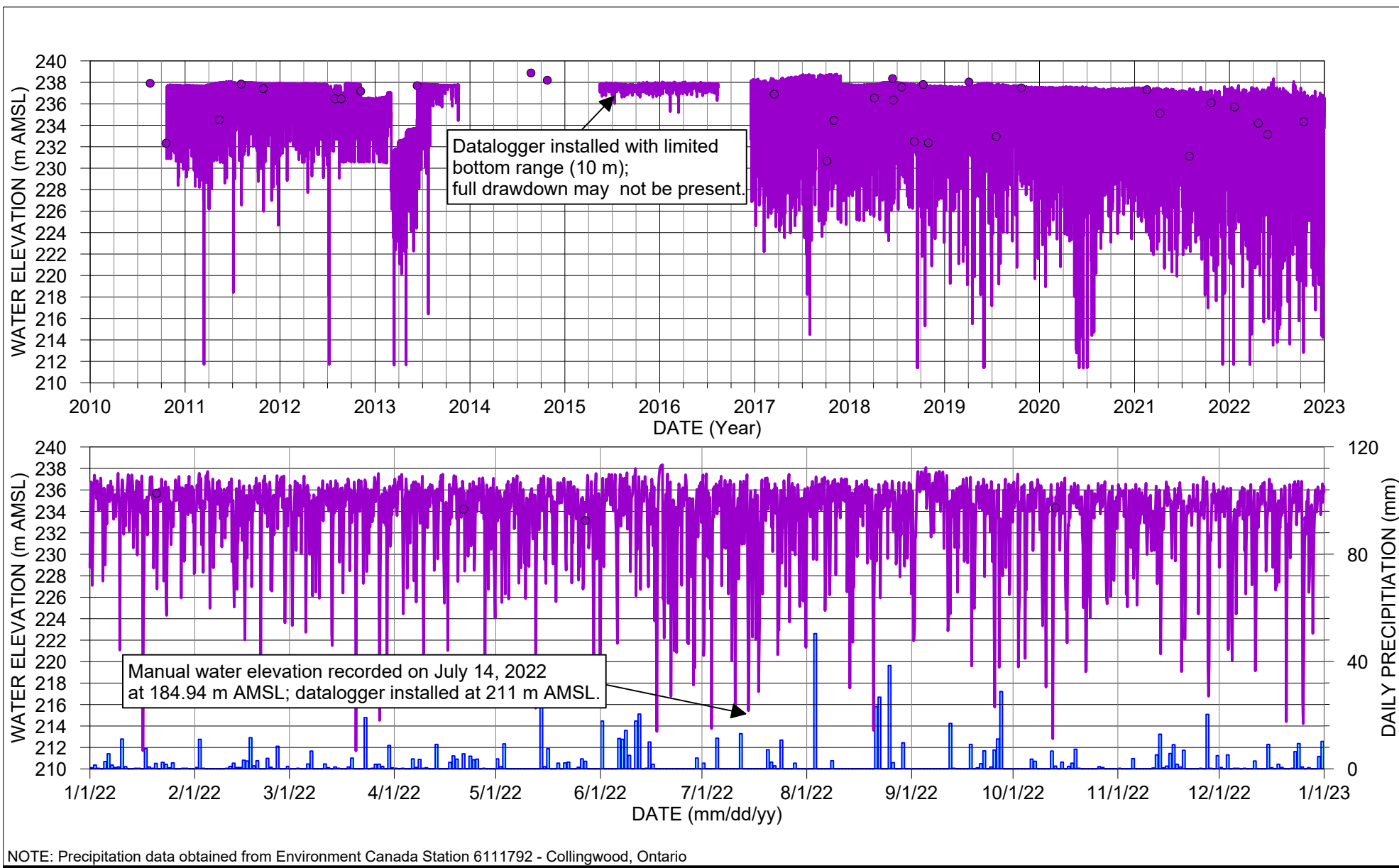
DUFFERIN AGGREGATES TEEDON PIT  
TOWNSHIP OF TINY, COUNTY OF SIMCOE,  
ONTARIO

HYDROGRAPH PRIVATE  
WELL WW15 (#17709)

Project No. **11155365**  
Date **March 28, 2023**

**FIGURE C-11**



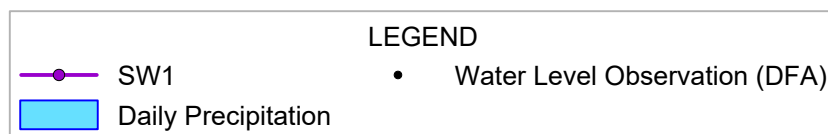
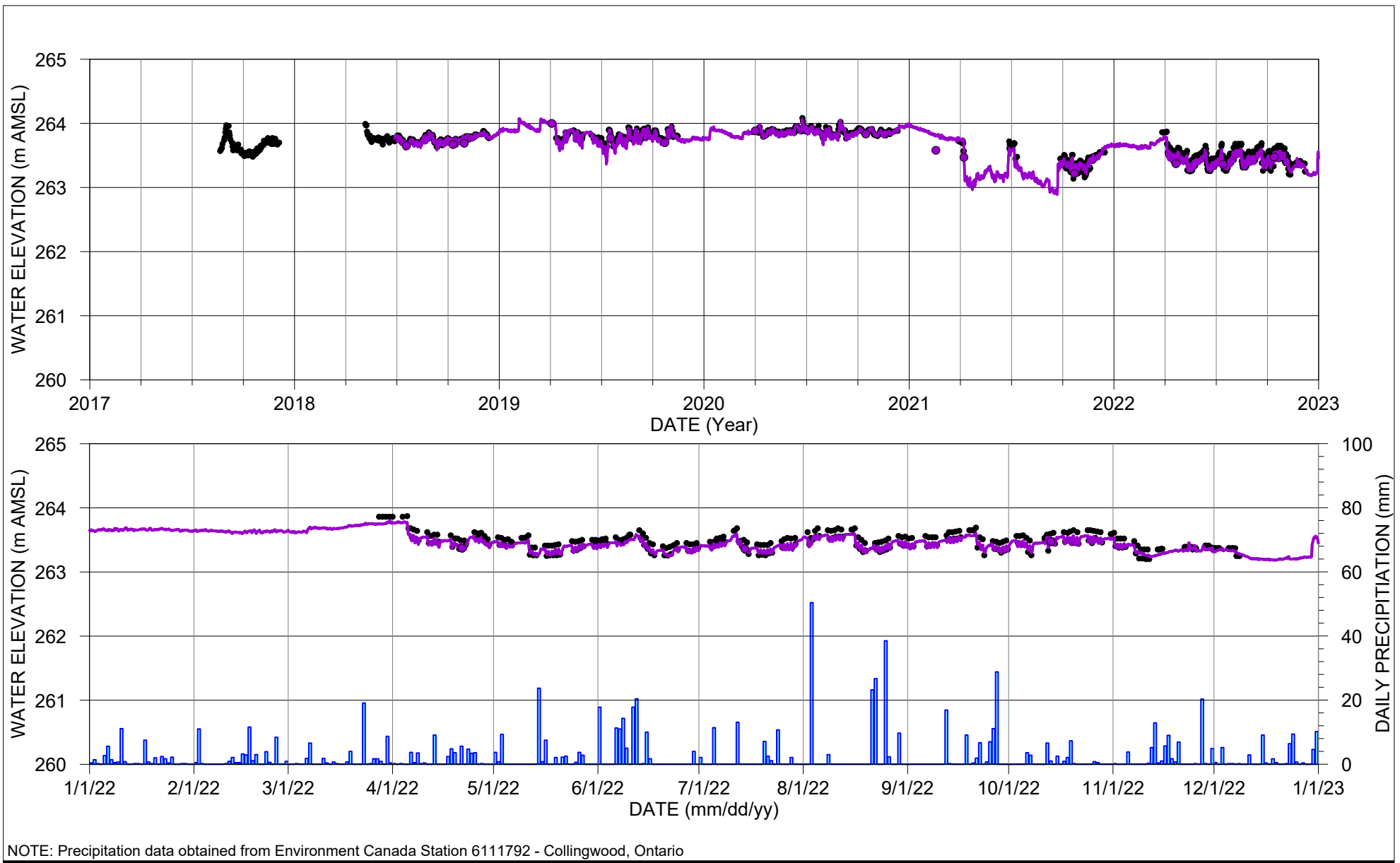


DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date April 12, 2023

HYDROGRAPH  
PRIVATE WELL WW9 (#50632)

FIGURE C-12



DUFFERIN AGGREGATES TEEDON PIT TOWNSHIP  
OF TINY, COUNTY OF SIMCOE, ONTARIO

Project No. 11155365  
Date April 26, 2023

HYDROGRAPH - SURFACE WATER SUMP  
POND (SW1)

**FIGURE C-13**

# **Appendix D**

## **Stratigraphic and Instrumentation Log – MW7R-22**



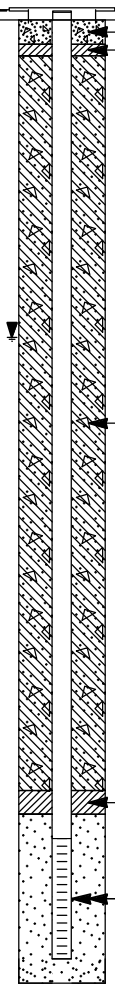
# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: CRH-TEEDON PIT  
PROJECT NUMBER: 11155365  
CLIENT: CRH CANADA GROUP INC  
LOCATION: TINY TOWNSHIP, ONTARIO

HOLE DESIGNATION: MW7R-22  
DATE COMPLETED: 2 November 2022  
DRILLING METHOD: SONIC  
FIELD PERSONNEL: Shawn Moloney

File: N:\CA\WINDSOR\LEGACY\LOG DATABASE\8-CHAR\11-111553-11155365\DATABASE\11155365-WI-V01.GPJ Library File: GHD\_ENVIRO\_V04.GLB Report: OVERBURDEN LOG Date: 30/11/22

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)		
	NORTHING: 4944985.63 EASTING: 591933.69	TOP OF RISER GROUND SURFACE	268.23 267.35					
	TOPSOIL - SILT, trace sand, loose, fine grained sand, brown, moist	266.66						
2	FILL - SAND, with silt, compact, fine grained sand, poorly graded, light grey, moist	265.90		0-10'		62.5		
4	SANDY SILT to SILTY SAND, compact, very fine grained sand, grey, dry - silty sand seam, fine grained sand, brown, dry from 2.31 to 2.41m BGS	263.23		10-20'		40		
6	SP - SAND with silt seam, fine grained sand, loose, wet, grey to brown - grey, slightly dilatant, moist at 4.50m BGS - dilatant, wet, grey at 6.10m BGS	260.21		20-30'		100		
8	- trace silt seam, loose, medium sand, grey, wet at 6.73m BGS - cobbles, full sample width (5"x3"x5") from 7.06 to 7.14m BGS			30-40'		100		
10	ML - SILT, trace sand, firm, very fine grained sand, grey, wet, dilatant			40-50'		100		
12	ML - SANDY SILT, very fine sand, compact, grey, moist	255.43		50-60'		100		
14	ML - SILT, with sand, very fine sand, compact, grey, wet	253.50		60-70'		100		
16				70-80'		100		
18								
20	- sandy silt seam, compact, very fine sand, grey, wet, dilatant from 20.96 to 23.65m BGS							
22								
24	- sandy silt seam, compact, very fine sand, grey, wet, dilatant from 23.68 to 23.77m BGS - trace clay lense at 24.03m BGS	242.96						
26	END OF BOREHOLE @ 24.38m BGS							
28								
30								
32								
34								

## WELL DETAILS

Screened interval:

246.62 to 243.57

20.73 to 23.77m BGS

Length: 3.05m

Diameter: 51mm

Slot Size: 0.010

Material: PVC SCH 80

Seal:

247.84 to 247.23

19.51 to 20.12m BGS

Material: BENTONITE PELLETS

Sand Pack:

247.23 to 242.96

20.12 to 24.38m BGS

Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STATIC WATER LEVEL 11/3/2022



**ghd.com**

**➔ The Power of Commitment**