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Impact Assessment Agency of Canada

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VISUALS

Under the Reservoir Impact Group Georgian Bay Pumped Storage IAAC Ref No. 69-803

Comments on the Initial Project Description Released on March 6, 2026 by the IACC TC Energy Proposed Ontario Pumped Storage Hydropower Project Near Meaford, Ontario, on Nottawasaga Bay (Georgian Bay)

Prepared by:

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Environmental Systems Planner, Hydrogeologist and Civil Engineer
Hunter and Associates

April 6, 2026

Our File No.: 22-402

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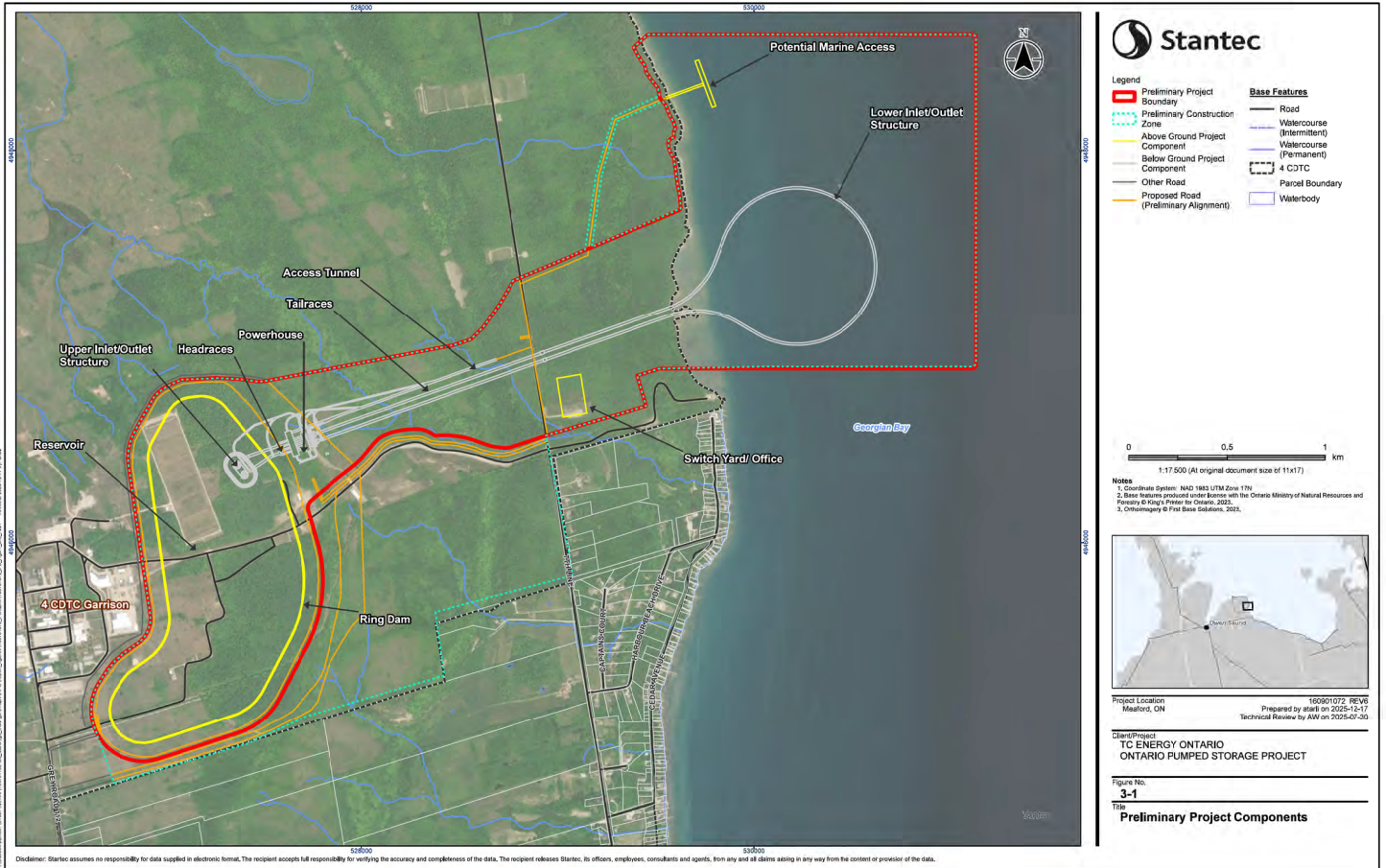
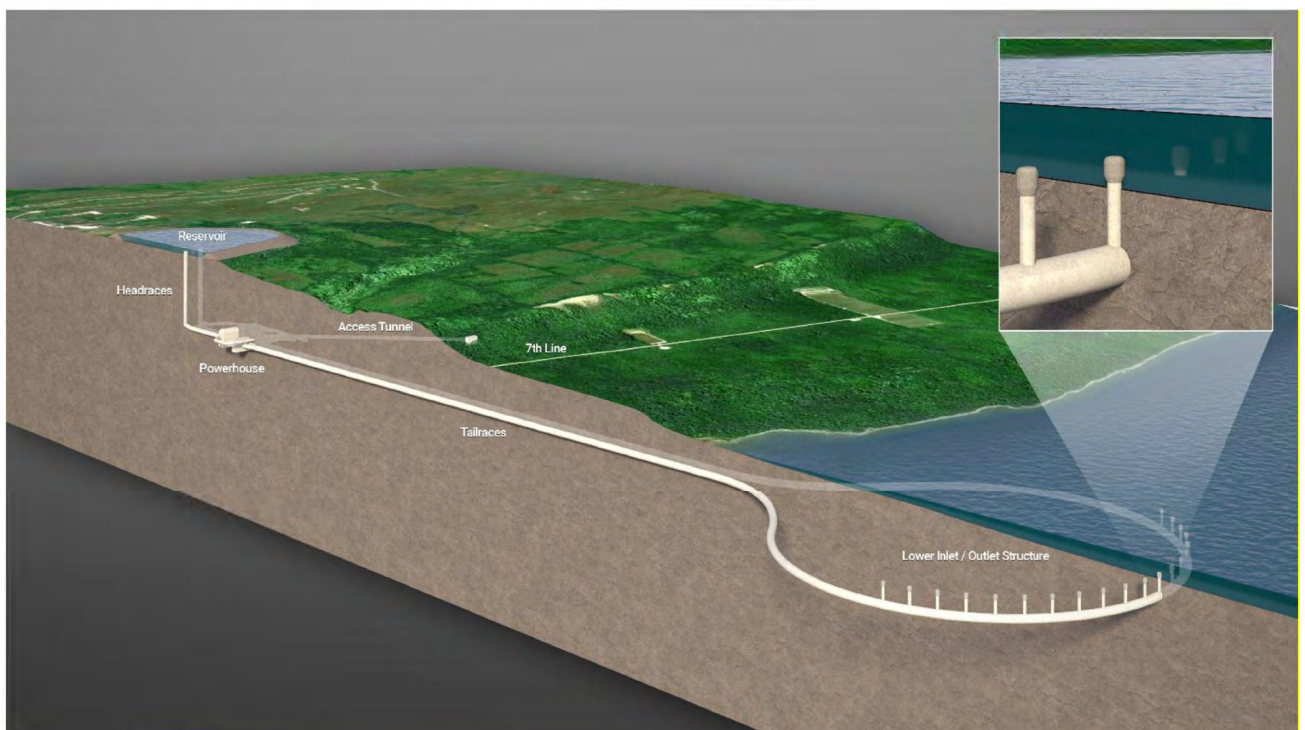


Figure 3-2: Conceptual Rendering of Key Project Components (Stantec)



Note: This figure is not to scale.

Near Garrison Proposed Pumped Storage Reservoir Site
(County Rd 112 and Sideroad 25 Area)

Fig H.2.1

Fractured
Dolostone

Impervious
Shale



Fractured
Dolostone

Impervious
Shale



South



Civilian Lands – Site Photos



March 8, 2026

Warren Hill Creek discharge to Georgian Bay. Turbid storm and meltwater flows originating from headwater riparian valley erosion on DND lands (Sideroad 30)



March 2026

Typical shoreline 'dug well' water supplies below the DND Pumped Storage Project

**Pumped Reservoir Storage
Taum Sauk Hydroelectric Power Station**
Missouri, United States

Fig H.2.3

Taum Sauk Ring Dam Replacement (circa April 2010)



<https://fyfluidynamics.com/2024/11/the-taum-sauk-dam-failure-and-its-legacy/>

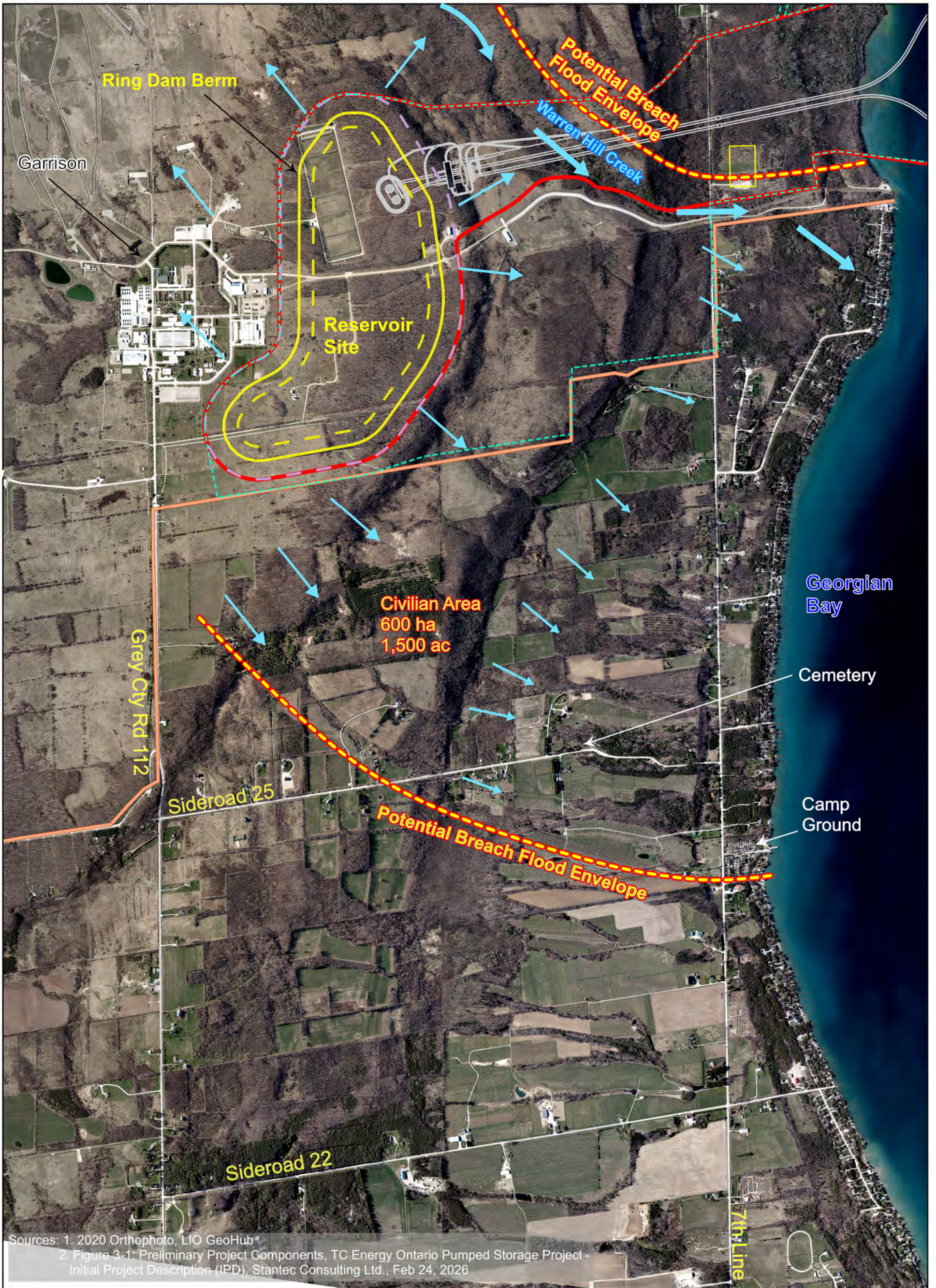
Taum Sauk Ring Dam Failure, Dec. 14, 2005



<https://www.stlpr.org/show/st-louis-on-the-air/2023-11-02/post-dispatch-columnist-finds-self-dealing-drained-taum-sauk-fund>

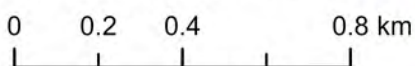


Potential Reservoir Breach Torrential Flooding Hazard Envelope



Sources: 1. 2020 Orthophoto, LIO GeoHub
 2. Figure 3-1: Preliminary Project Components, TC Energy Ontario Pumped Storage Project - Initial Project Description (IPD), Stantec Consulting Ltd., Feb 24, 2026

File Date: April 1, 2026
 Scale: 1:18,000 @ 11x17"

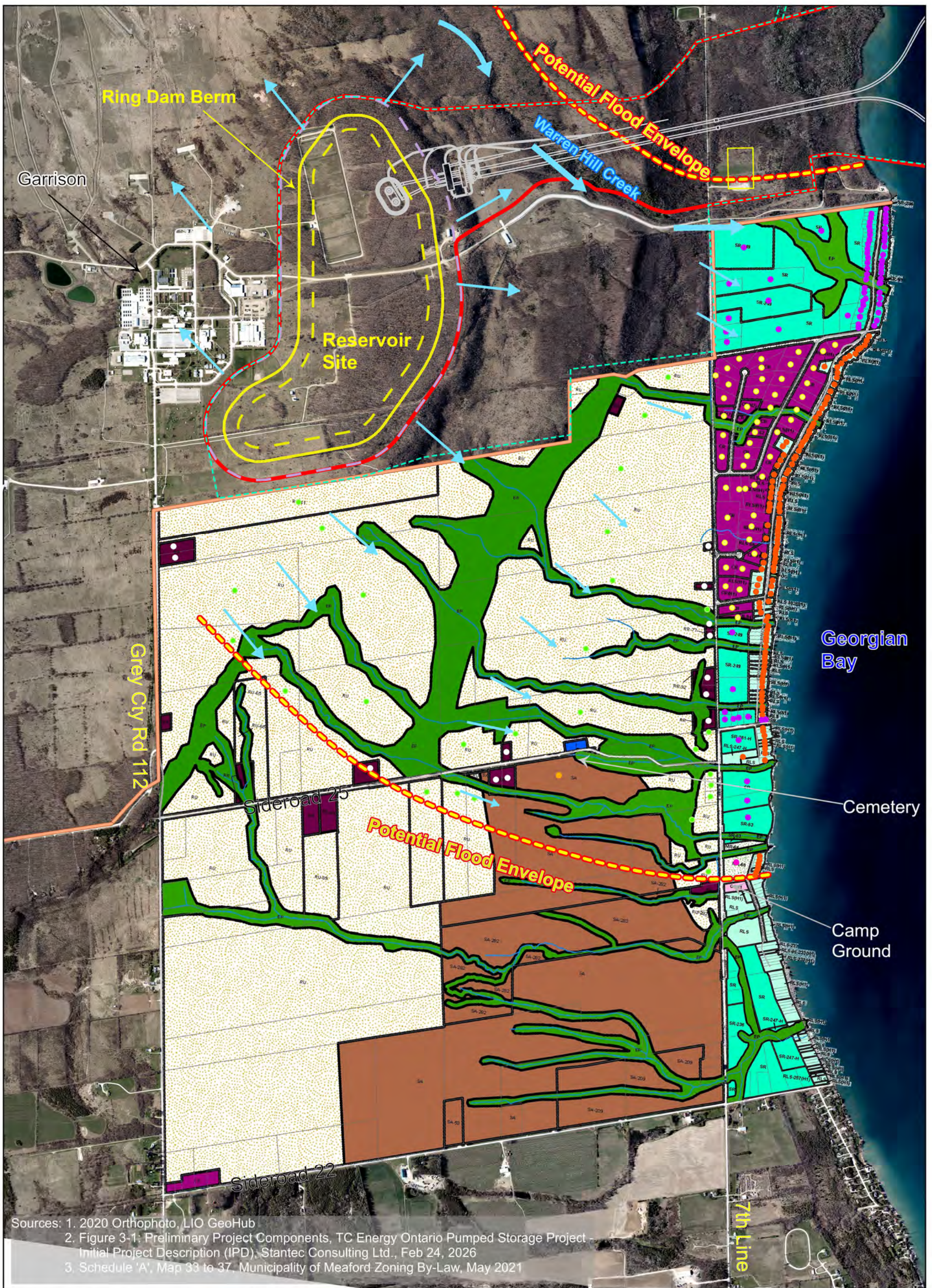


- DND Boundary (Approx.)
- Potential Breach Flood Envelope
- Active Reservoir Volume Bottom (3:1 slope) at 349 m asl
- Reservoir External Toe (4:1 slope) at 349 m asl
- Ring Dam
- Below Ground Project Component
- Above Ground Project Component
- Preliminary Construction Zone
- Preliminary Project Boundary
- Berm Breach and Leakage Potential Flow Path



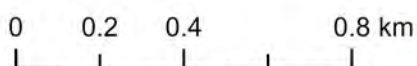
Potential Reservoir Breach Torrential Flooding Hazard Envelope
Parcel / Residence Count

Fig H.3.2



Sources: 1. 2020 Orthophoto, LIO GeoHub
 2. Figure 3-1: Preliminary Project Components, TC Energy Ontario Pumped Storage Project - Initial Project Description (IPD), Stantec Consulting Ltd., Feb 24, 2026
 3. Schedule 'A', Map 33 to 37, Municipality of Meaford Zoning By-Law, May 2021

File Date: April 2, 2026
 Scale: 1:18,000 @ 11x17"



- DND Boundary (Approx.)
- Potential Breach Flood Envelope
- Active Reservoir Volume Bottom (3:1 slope) at 349 m asl
- Reservoir External Toe (4:1 slope) at 349 m asl
- Preliminary Construction Zone
- Preliminary Project Boundary

Parcel / Residence in Harm's Way

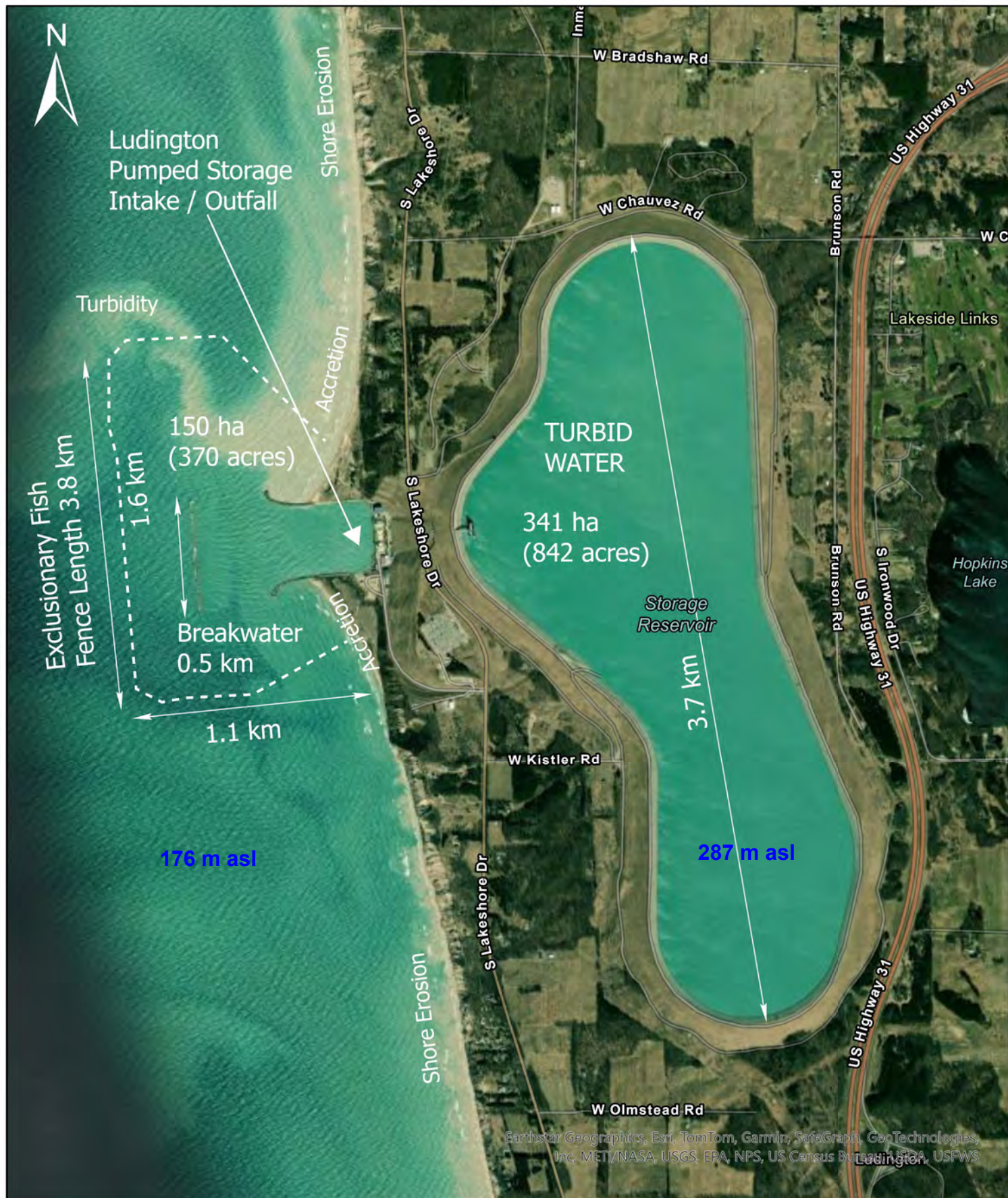
	Parcel	People (Approx.)
■ Country Residential	49	122
■ Major Recreation (campground)	80	120
■ Residential Limited Service	126	315
■ Rural Residential	13	32
■ Rural	27	67
■ Special Agriculture	1	2
■ Shoreline Residential	71	177
Total	288	835

→ Berm Breach / Leakage Potential Flow Path



Ludington, Michigan Pumped Storage Reservoir (Existing)

Fig H.4.1



High Voltage Transmission - Southern Ontario



File Date: March 31, 2026
Scale: Not to scale @ 11x17"

Source:
1. The Electric Power System of Canada, CIGRE, no date

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Fig H.5.1



Transmission Line Distances (km) ²:

Owen Sound TS to Meaford TS	29.8
Meaford TS to Stayner TS	<u>37.4</u>
Total	67.2

Meaford TS to Proposed Switch Yard ³: 20.9 km

Source:

1. The Electric Power System of Canada, CIGRE, no date
2. Utility Lines, GeoHub (downloaded March 2026)
3. Figure 3-1: Preliminary Project Components, TC Energy Ontario Pumped Storage Project - Initial Project Description (IPD), Stantec Consulting Ltd., Feb 24, 2026

Monitoring Locations
4 CDTC Meaford
Meaford, Ontario

LEGEND

Location Type

- Groundwater
- Stormwater
- Surface Water
- Benthic Lake Sites
- Benthic Stream Sites
- ★ Gate
- ~ River
- ▨ Wetland
- ▨ Waterbody
- ▨ Infrastructure
- ▨ Airstrip
- ▨ White Phosphorus Impact Area
- ▨ Dry Range
- ▨ Garrison
- ▨ Impact Area
- ▨ Out of Bounds
- ▨ Range
- ▨ Restricted Access
- ▨ Training Areas
- ▨ 4 CDTC Boundary

DATA RESOURCES

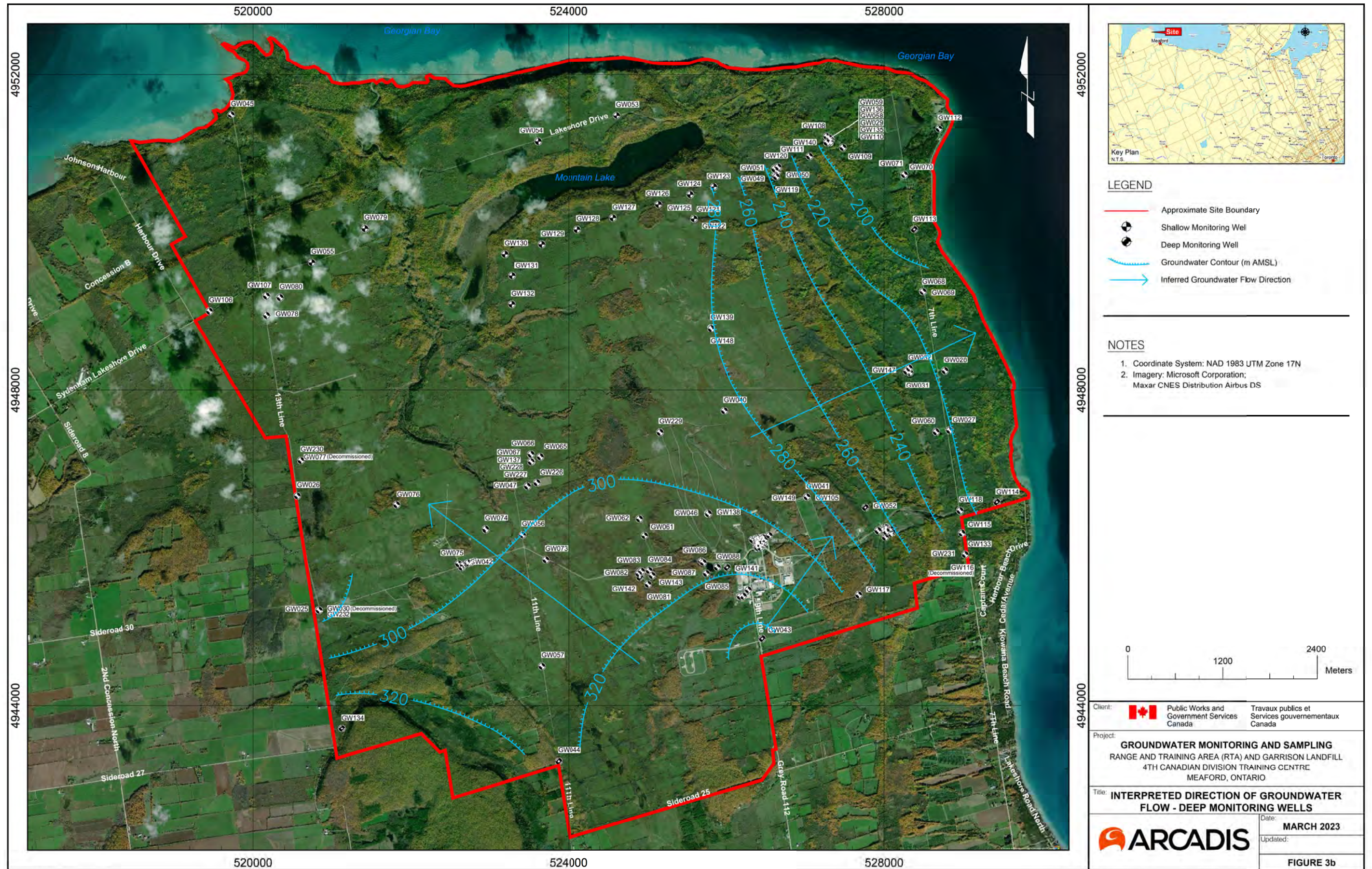
Original Sources: Government of Canada Environmental Sciences Group ESRI Basemap	Datum: North American Datum 1983 (NAD83)	Software: ESRI - ArcGIS Pro 3.4.0
Published: CREATED: 2025-05-14 PRINTED: 2025-07-08 Anna Shadrova, GIS Technician	Projection: Universal Transverse Mercator (UTM) Zone 17N	

Environmental Sciences Group (ESG)
The Royal Military College of Canada
PO Box 17000 Stn Forces
Kingston, Ontario K7M 7B4
Tel: (613) 541-6000 Ext: 6901
Fax: (613) 541-6596

Canada



Fig.H.6.1

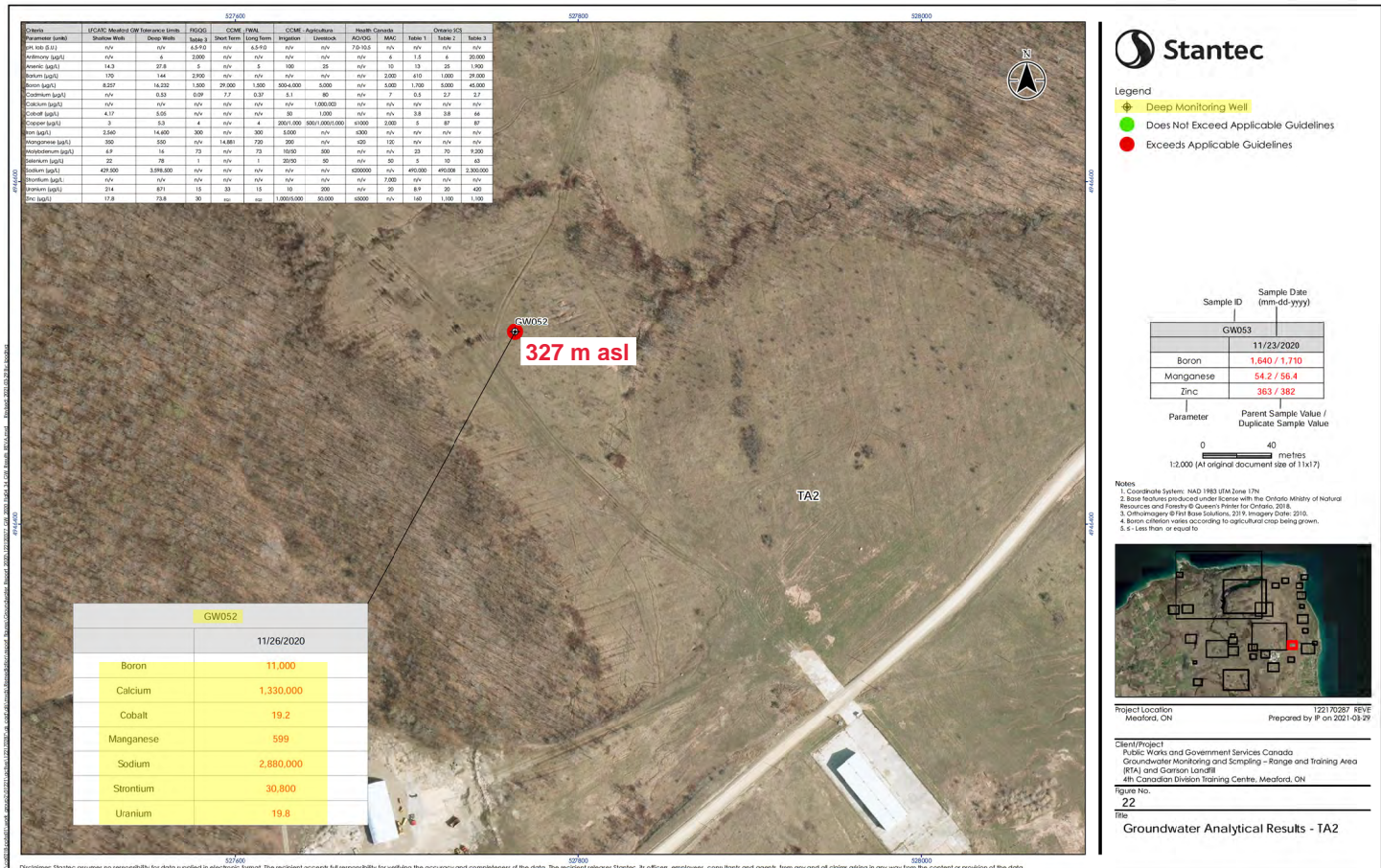


last saved 31-Mar-23 by iziba
File Date: April 1, 2026

Source: 2022 Groundwater Monitoring and Sampling Report Range and Training Area (RTA) and Garrison Landfill, 4th Canadian Division Training Centre, Meaford, ON, March 31, 2023

c:\users\iziba\onedrive - arcadis\documents\arcadis\30151845 msaford.cad\30151845 mw locations.dwg
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Fig.H.6.2



Source: 2020 Groundwater Monitoring and Sampling Report – Range and Training Area (RTA) and Garrison Landfill, 4th Canadian Division Training Centre, Meaford, ON, March 30, 2021 (above and below) Existing Ground Elevation m asl (CGVD2013) April 27, 2023 LiDAR DTM, LIO GeoHub



Legend

- ◆ Deep Monitoring Well
- Does Not Exceed Applicable Guidelines
- Exceeds Applicable Guidelines

Parameter	Parent Sample Value / Duplicate Sample Value
Boron	1,640 / 1,710
Manganese	54.2 / 56.4
Zinc	363 / 382

0 40 metres
1:2,000 (At original document size of 11x17)

- Notes
- Coordinate System: NAD 1983 UTM Zone 17N
 - Base features produced under license with the Ontario Ministry of Natural Resources and Forests © Queen's Printer for Ontario, 2018.
 - Orthorectified 8 Bit Base Solutions, 2018 Imagery Date: 2010.
 - Boron cation values according to agricultural crop being grown.
 - ± 1-metre from as reported.



Project Location: Meaford, ON
Prepared by: IP on 2021-03-29

Client/Project: Public Works and Government Services Canada
Groundwater Monitoring and Sampling - Range and Training Area (RTA) and Garrison Landfill
4th Canadian Division Training Centre, Meaford, ON

Figure No.: 22
Title: Groundwater Analytical Results - TA2



Legend

- ◆ Deep Monitoring Well
- Does Not Exceed Applicable Guidelines
- Exceeds Applicable Guidelines

Parameter	Parent Sample Value / Duplicate Sample Value
Boron	1,640 / 1,710
Manganese	54.2 / 56.4
Zinc	363 / 382

0 20 metres
1:1,000 (At original document size of 11x17)

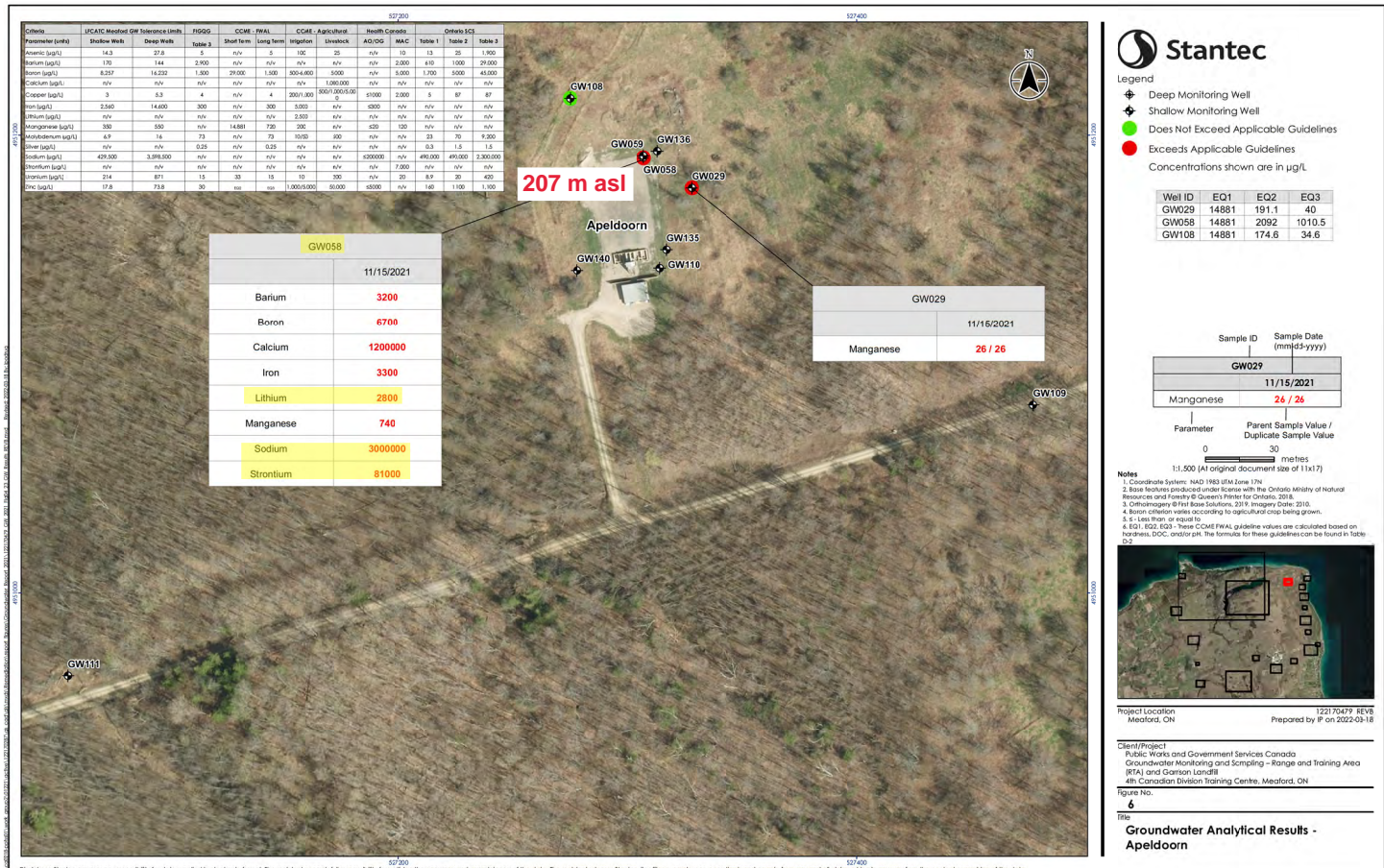
- Notes
- Coordinate System: NAD 1983 UTM Zone 17N
 - Base features produced under license with the Ontario Ministry of Natural Resources and Forests © Queen's Printer for Ontario, 2018.
 - Orthorectified 8 Bit Base Solutions, 2018 Imagery Date: 2010.
 - Boron cation values according to agricultural crop being grown.
 - ± 1-metre from as reported.



Project Location: Meaford, ON
Prepared by: IP on 2021-03-29

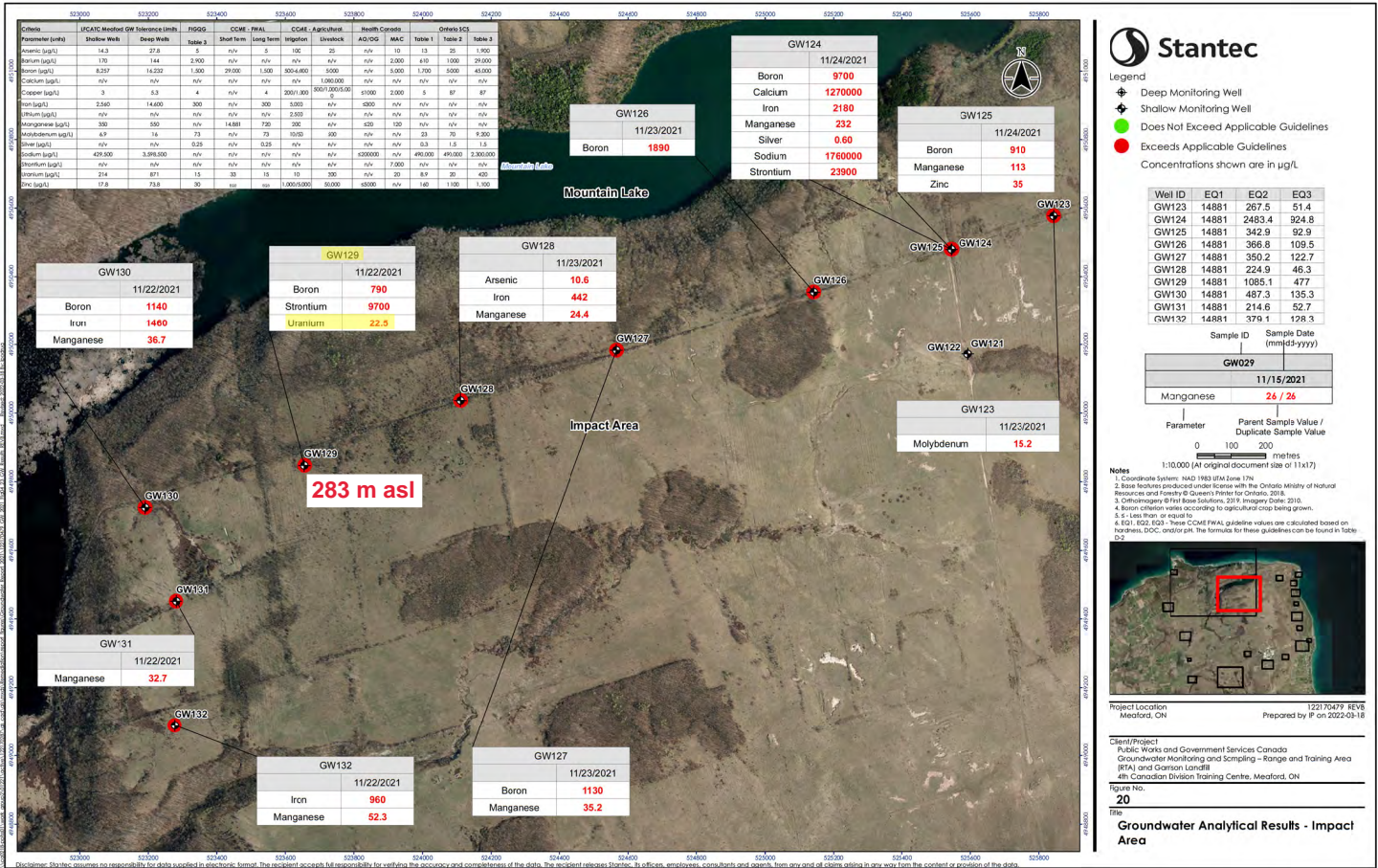
Client/Project: Public Works and Government Services Canada
Groundwater Monitoring and Sampling - Range and Training Area (RTA) and Garrison Landfill
4th Canadian Division Training Centre, Meaford, ON

Figure No.: 14
Title: Groundwater Analytical Results - Pumphouse Road

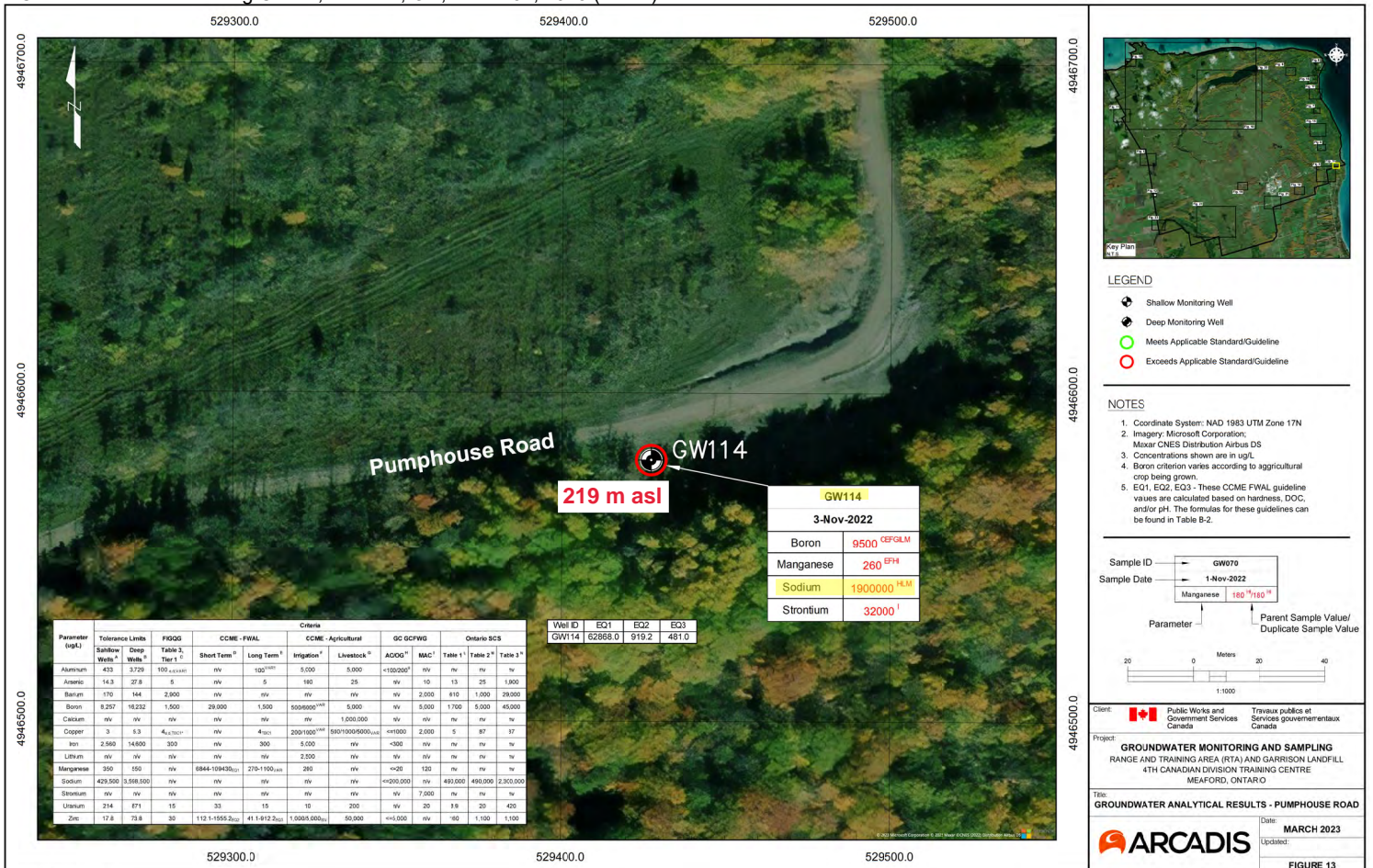


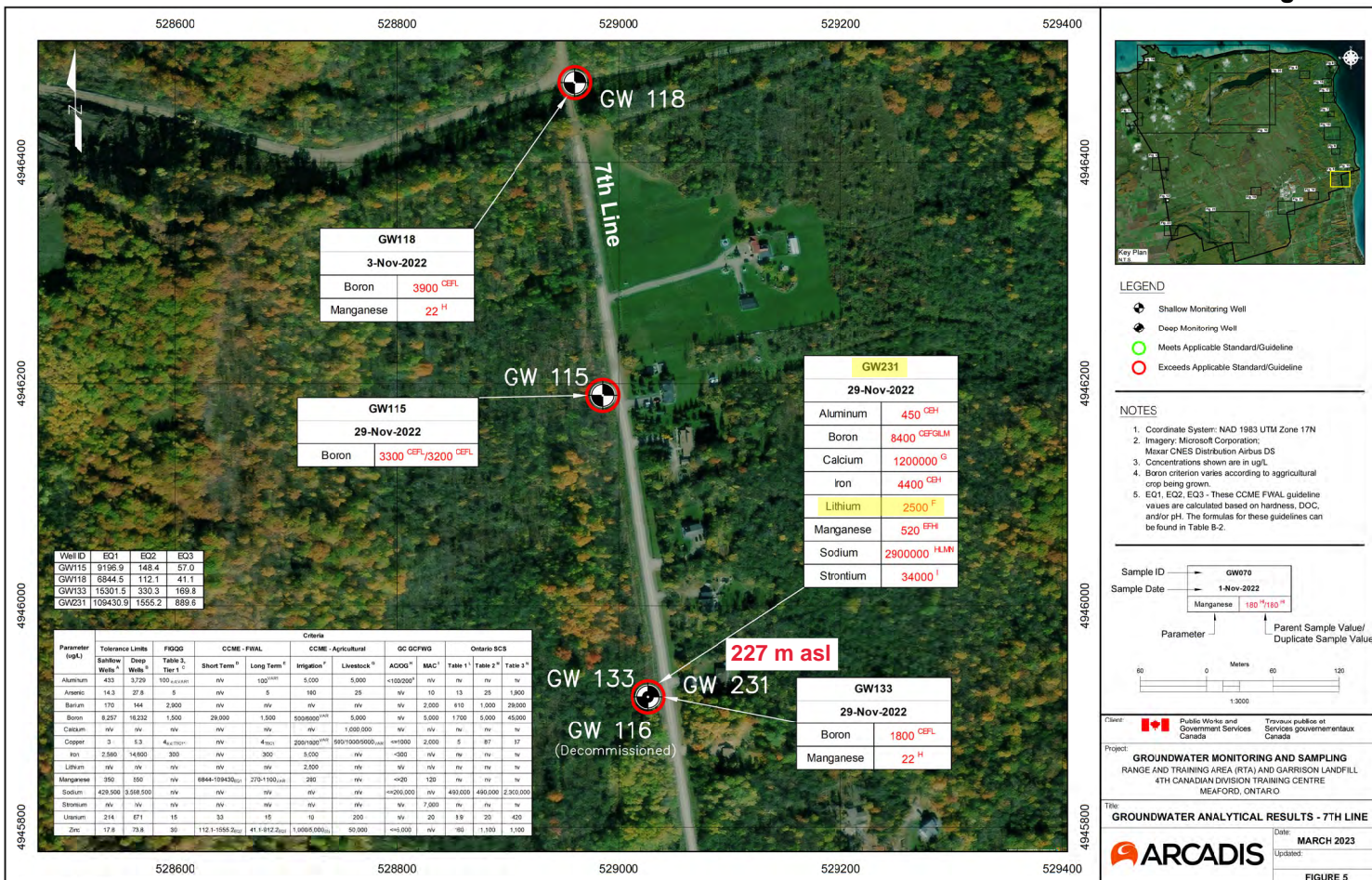
Source: 2021 Groundwater Monitoring and Sampling Report – Range and Training Area (RTA) and Garrison Landfill, 4th Canadian Division Training Centre, Meaford, ON, March 22, 2022 (above and below)
Existing Ground Elevation m asl (CGVD2013) April 27, 2023 LiDAR DTM, LIO GeoHub





Source: 1) 2021 Groundwater Monitoring and Sampling Report – Range and Training Area (RTA) and Garrison Landfill, 4th Canadian Division Training Centre, Meaford, ON, March 22, 2022 (above)
 2) 2022 Groundwater Monitoring and Sampling Report Range and Training Area (RTA) and Garrison Landfill, 4th Canadian Division Training Centre, Meaford, ON, March 31, 2023 (below)





Source:
 1) 2022 Groundwater Monitoring and Sampling Report Range and Training Area (RTA) and Garrison Landfill, 4th Canadian Division Training Centre, Meaford, ON, March 31, 2023
 2) Existing Ground Elevation m asl (CGVD2013) April 27, 2023 LiDAR DTM, LIO GeoHub

Key Plan

LEGEND

- Shallow Monitoring Well
- Deep Monitoring Well
- Meets Applicable Standard/Guideline
- Exceeds Applicable Standard/Guideline

NOTES

- Coordinate System: NAD 1983 UTM Zone 17N
- Imagery: Microsoft Corporation, Maxar CNES Distribution Airbus DS
- Concentrations shown are in ug/L
- Boron criterion varies according to agricultural crop being grown
- EQ1, EQ2, EQ3 - These CCME FWAL guideline values are calculated based on hardness, DOC, and/or pH. The formulas for these guidelines can be found in Table B-2.

Sample ID: GW070
Sample Date: 1-Nov-2022
Parameter: Manganese 180 ^H/180 ^H
Parent Sample Value/Duplicate Sample Value

Scale: 0 to 120 Meters, 1:3000

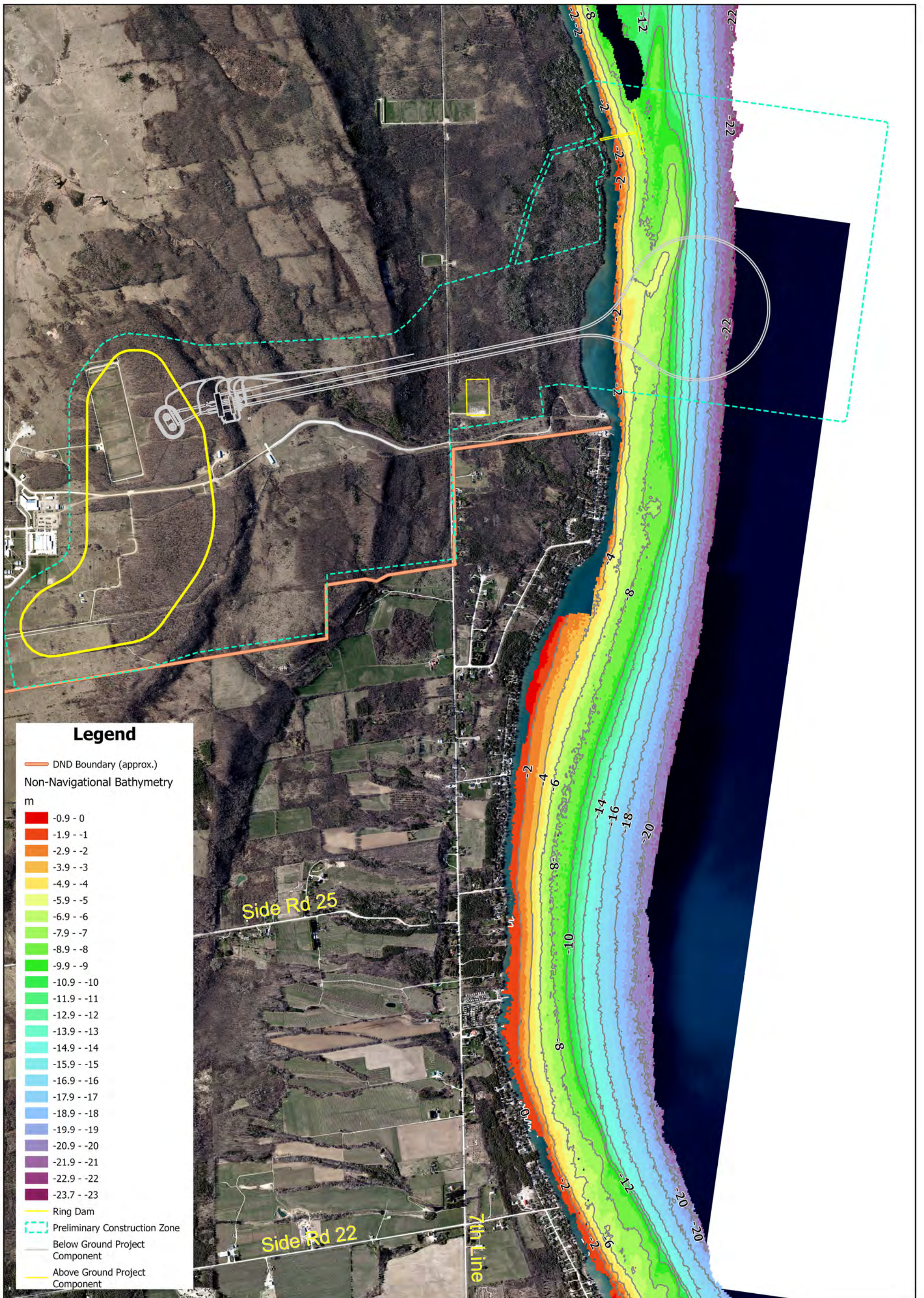
Client: Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

Project: GROUNDWATER MONITORING AND SAMPLING RANGE AND TRAINING AREA (RTA) AND GARRISON LANDFILL 4TH CANADIAN DIVISION TRAINING CENTRE MEAFORD, ONTARIO

Title: GROUNDWATER ANALYTICAL RESULTS - 7TH LINE

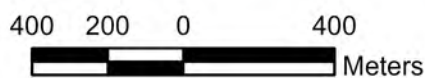
ARCADIS Date: MARCH 2023
 Updated:

FIGURE 5



File Date: April 2, 2026
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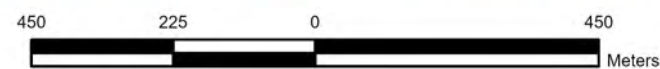
Source:
 1. 2020 Orthophoto, Ontario GeoHub
 2. Canadian Hydrographic Service Non-Navigational (NONNA) Bathymetric Data, Open Canada, downloaded on March 31, 2026



Project 2020 Orthophoto with MECP Water Wells - North



File Date: March 30, 2026
 Scale: 1:12,000 @ 11x17"
 Sources: 1) 2020 Orthophoto, Ontario GeoHub
 2) MECP Water Well Database, last updated Aug 31, 2025
 3) Figure 3-1: Preliminary Project Components, TC Energy Ontario Pumped Storage Project - Initial Project Description (IPD), Stantec Consulting Ltd., Feb 24, 2026



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Fig H.7.1

Project 2020 Orthophoto with MECP Water Wells - Central



- Legend**
- MECP Water Wells
 - Abandoned-Supply
 - ▲ Abandoned-Other
 - Observation Wells
 - Test Hole
 - Water Supply
 - Other
 - Water Type
 - Gas
 - Mineral
 - Salty
 - Sulphur
 - Infrastructure
 - Potential Breach Flood Envelope
 - DND Boundary (Approx.)
 - Ring Dam³⁾
 - Reservoir External Toe (4:1 slope) at 349 m asl
 - Reservoir External Toe (2:1 slope) at 349 m asl
 - Active Reservoir Volume Bottom (3:1 slope) at 349 m asl
 - - - Preliminary Construction Zone³⁾
 - Below Ground Project Component³⁾
 - Above Ground Project Component³⁾
 - Preliminary Project Boundary³⁾
 - ← Creek Outlet

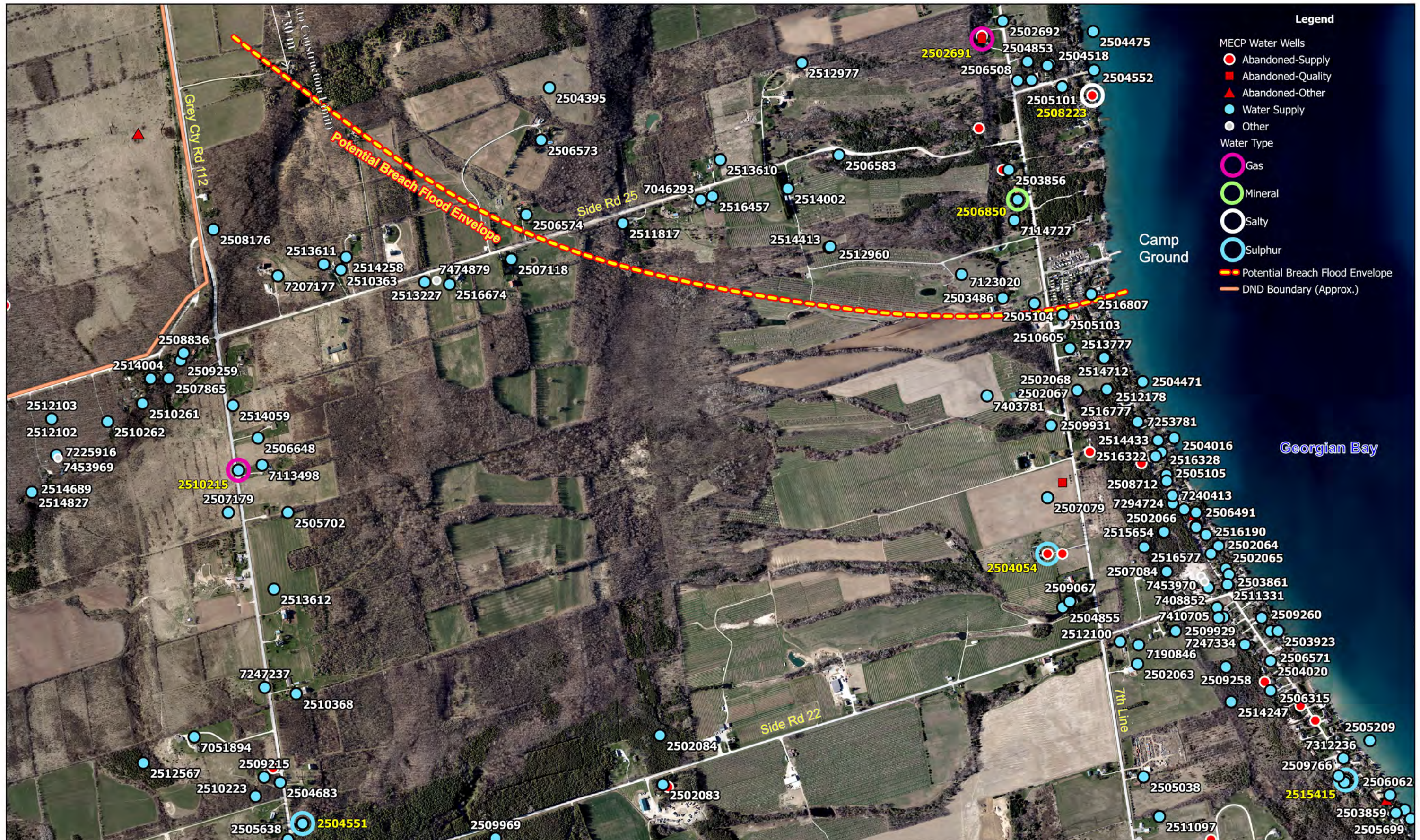
File Date: April 2, 2026
Scale: 1:12,000 @ 11x17"

Sources: 1) 2020 Orthophoto, Ontario GeoHub
2) MECP Water Well Database, last updated Aug 31, 2025
3) Figure 3-1: Preliminary Project Components, TC Energy Ontario Pumped Storage Project - Initial Project Description (IPD), Stantec Consulting Ltd., Feb 24, 2026



Fig H.7.2

Project 2020 Orthophoto with MECP Water Wells - South



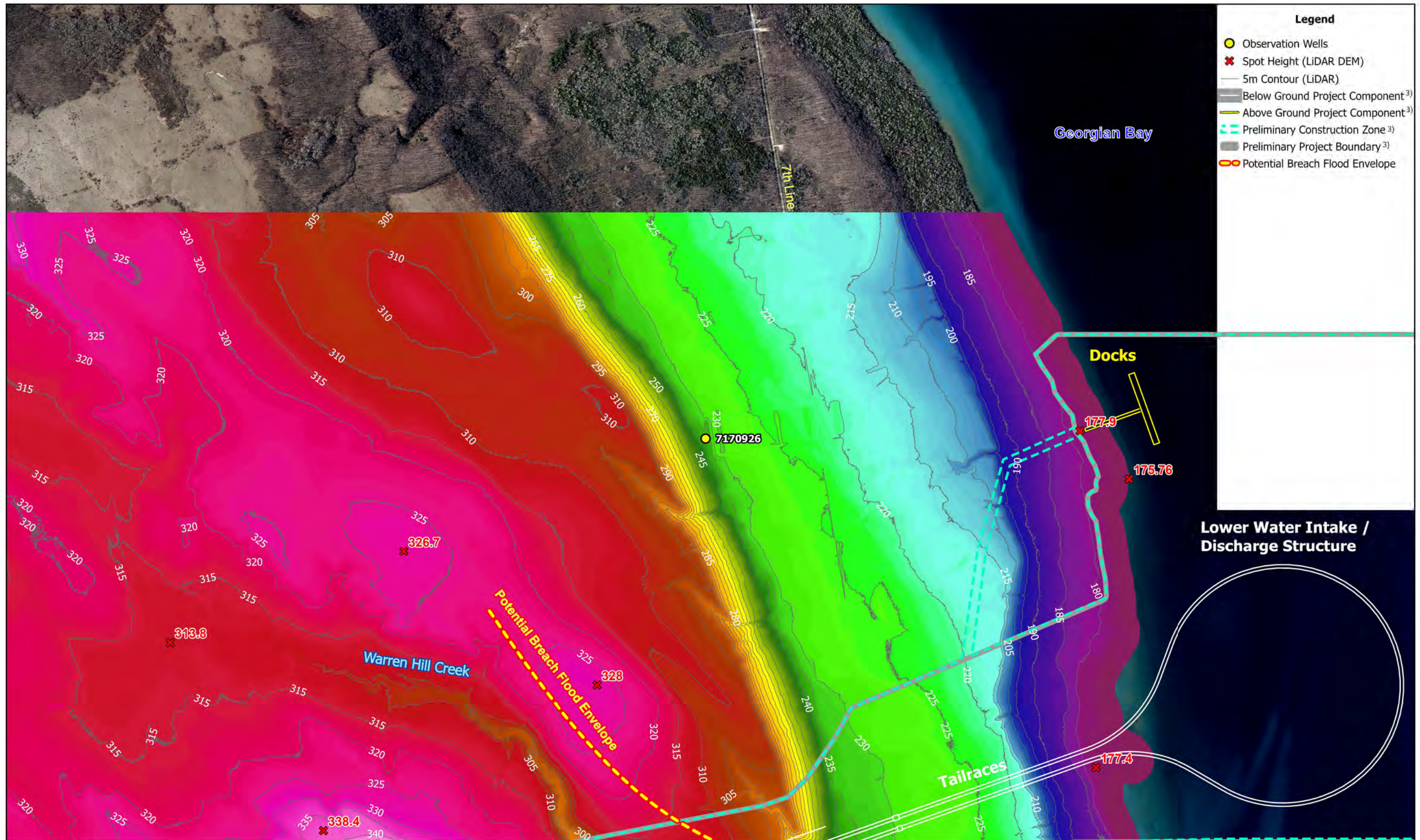
File Date: April 2, 2026
 Scale: 1:12,000 @ 11x17"
 Sources: 1) 2020 Orthophoto, Ontario GeoHub
 2) MECP Water Well Database, last updated Aug 31, 2025



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Fig H.7.3

Project Topographic Relief - North



File Date: April 1, 2026

Scale: 1:12,000 @ 11x17"

Sources: 1) April 27, 2023 LiDAR DTM, LIO GeoHub

2) MECP Water Well Database, last updated Aug 31, 2025

3) Figure 3-1: Preliminary Project Components, TC Energy Ontario Pumped Storage Project -

Initial Project Description (IPD), Stantec Consulting Ltd., Feb 24, 2026

4) 2020 Orthophoto, Ontario GeoHub



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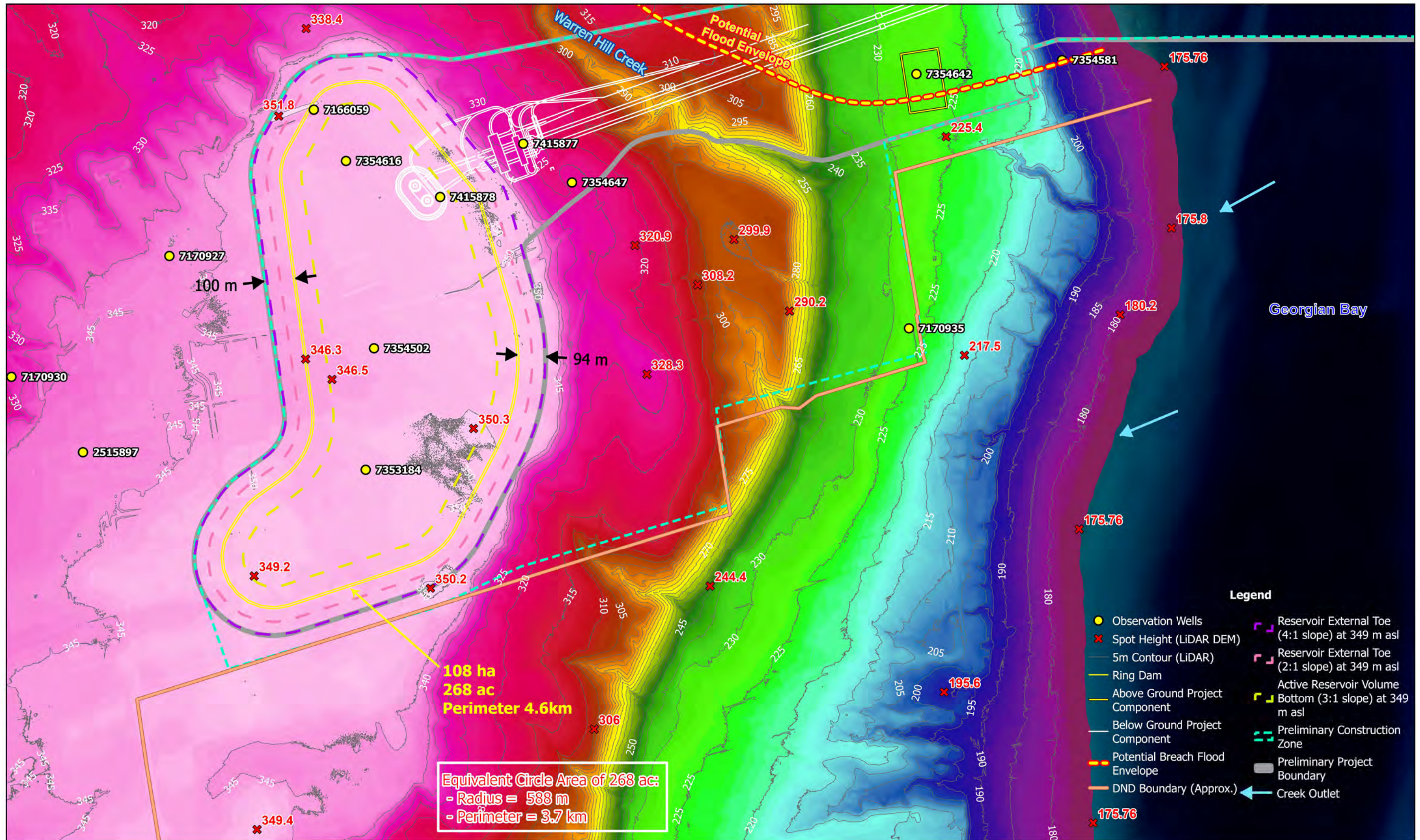
Environmental and Engineering Consultants

Website: www.hunter-gis.com

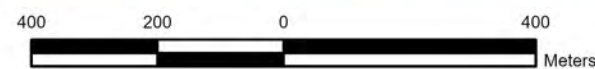


Fig H.8.1

Project Topographic Relief - Central



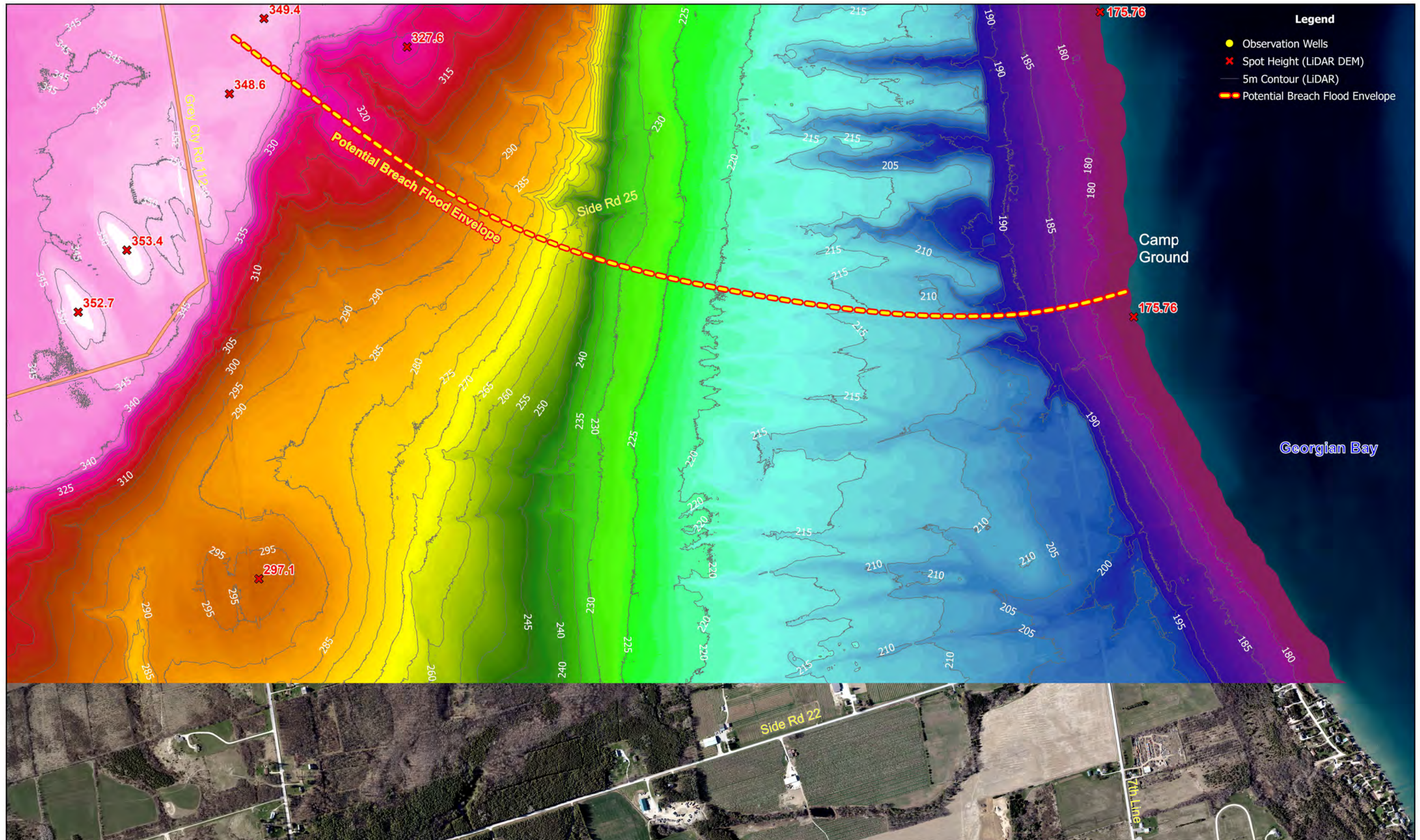
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 Sources: 1) April 27, 2023 LiDAR DTM, LIO GeoHub
 2) 2020 Orthophoto, Ontario GeoHub
 3) MECP Water Well Database, last updated Aug 31, 2025
 4) Figure 3-1: Preliminary Project Components, TC Energy Ontario Pumped Storage Project - Initial Project Description (IPD), Stantec Consulting Ltd., Feb 24, 2026



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Fig H.8.2

Project Topographic Relief - South



File Date: April 1, 2026
 Scale: 1:12,000 @ 11x17"
 Sources: 1) April 27, 2023 LiDAR DTM, LIO GeoHub
 2) 2020 Orthophoto, Ontario GeoHub
 3) MECP Water Well Database, last updated Aug 31, 2025

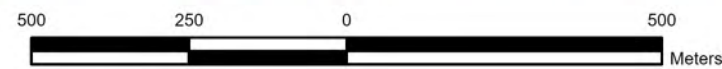


Fig.H.8.3

Georgian Bay Pumped Storage Reservoir - IPD Ring Dam and Underground Infrastructure

Cross Section through IPD Jelly Bean Shaped Reservoir with Top Water Surface area of 260 acres

Schematic

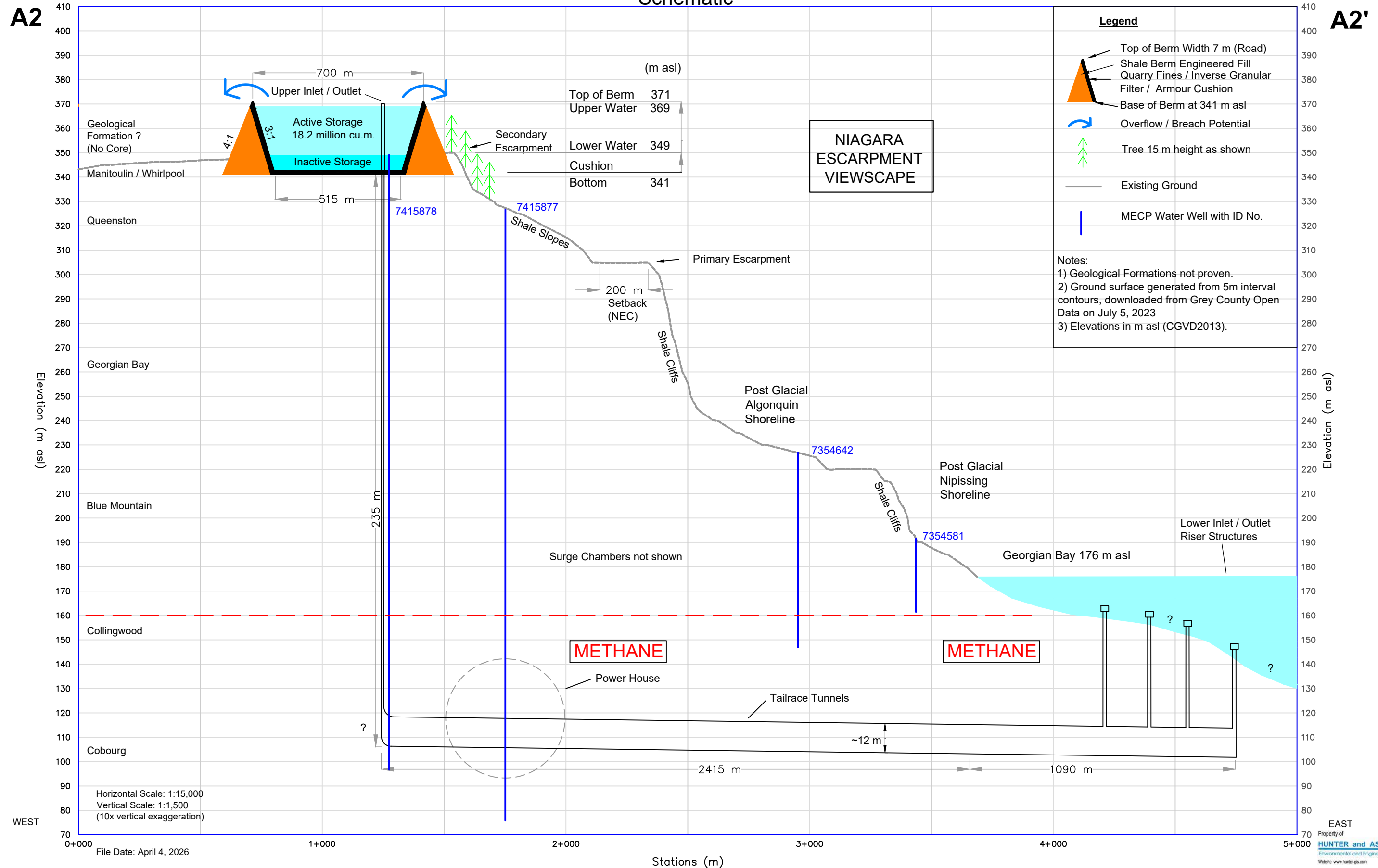


Fig H.9.1

Harbour Beach Road Flooding, March 2026



Absence of Major Storm Conveyance Capacity on Civilian lands downgradient of DND headwater tributaries . Photo at Harbour Beach Road about one km south of Warren Hill Creek. There is no capacity to convey additional future stormwater flows as result of Project land clearing, road and other construction and / or high elevation Reservoir operations.